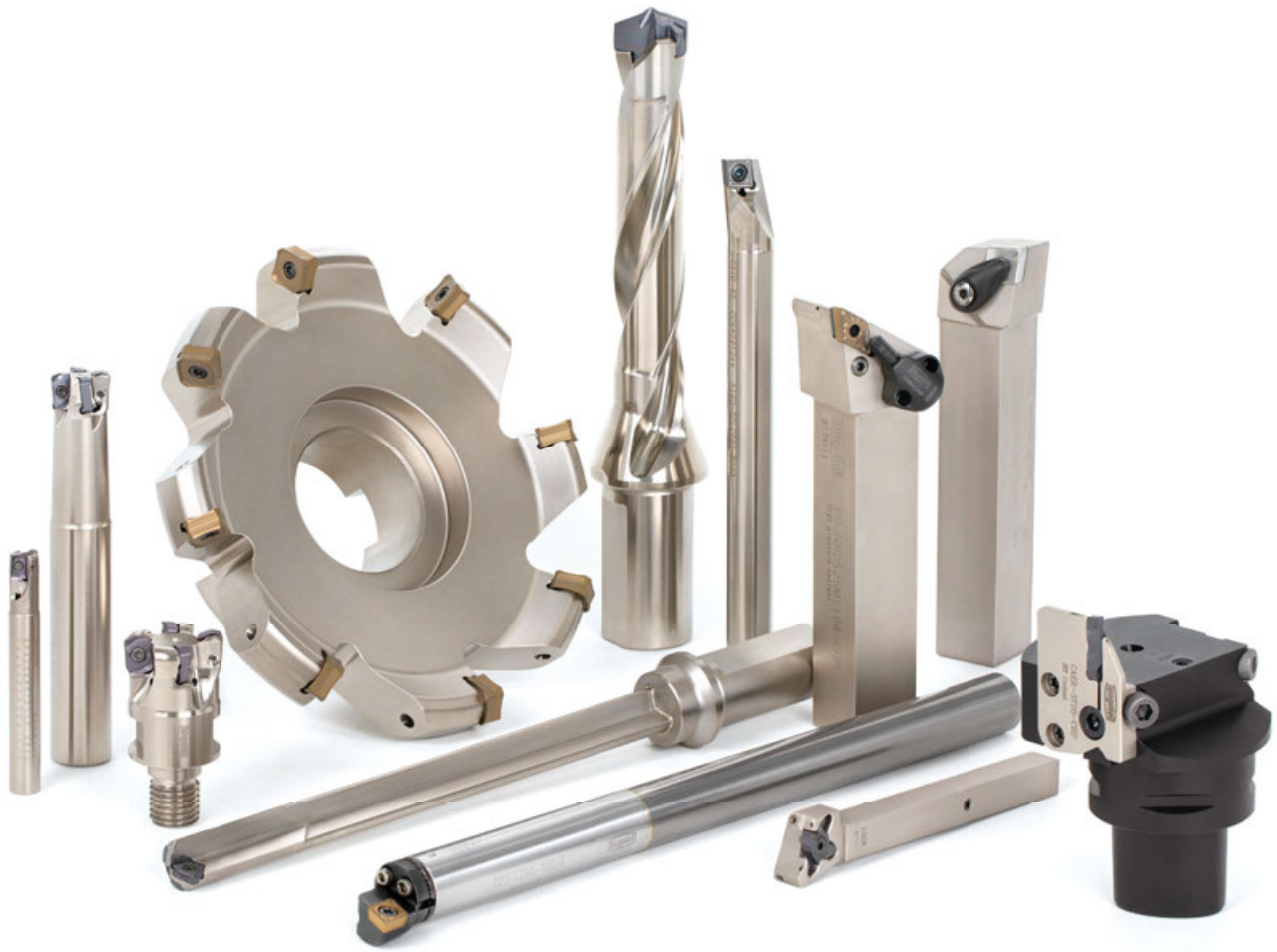
Member IMC Group
Tungaloy
INDUSTRY 4.0

ACCELERATED MACHINING



General Catalog

2021 / 2022

INDUSTRY 4.0
FEED the SPEED!


tungaloy

Member IMC Group Tungaloy INDUSTRY 4.0

In an accelerated world, a quick response to market needs is necessary. As a pioneer in innovation, **Tungaloy** leads the market in developing unique and powerful grades and geometries for this new era. TUNGFORCE, our newest line of products is designed for accelerated machining, bringing you the newest and greatest solutions for your machining needs.

Member IMC Group

Tungaloy

INDUSTRY 4.0

2021 / 2022

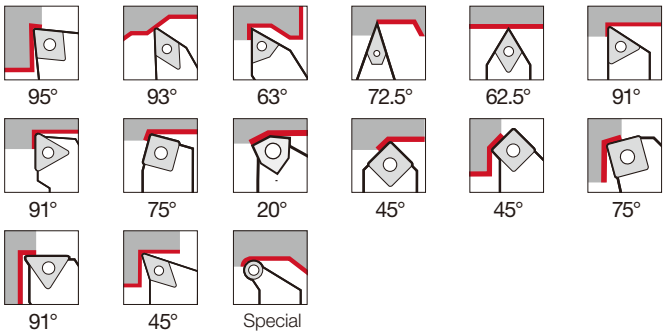
Full Product Line

www.tungaloy.com/us

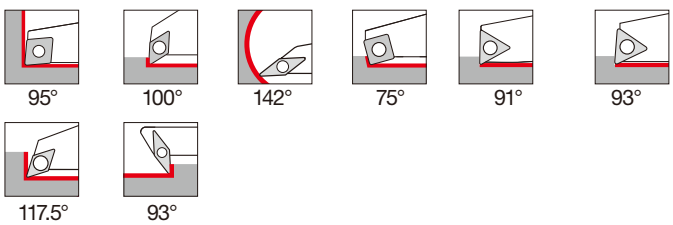
About Tungaloy Cutting Tool Catalog

Icons at the right / left side of each page

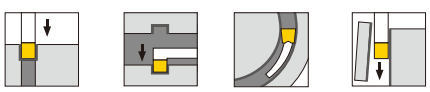
External toolholder (cutting edge shape / angle)



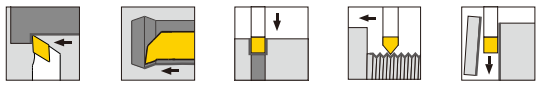
Internal toolholder (cutting edge shape / angle)



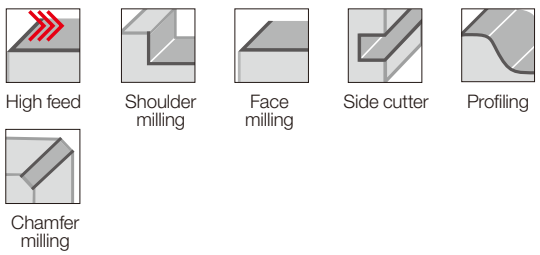
Parting, Grooving



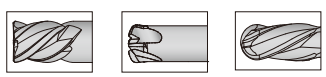
Miniature machining



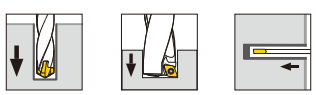
Mill



Endmill

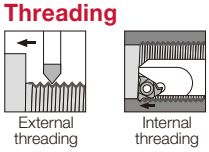


Drill

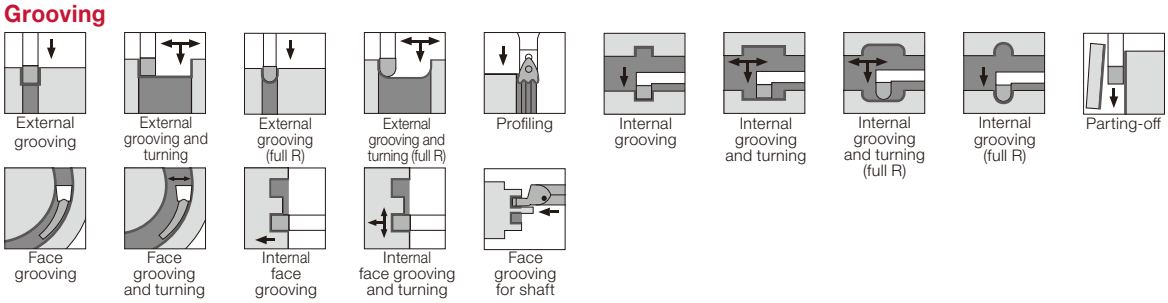


Icons for applications of each product

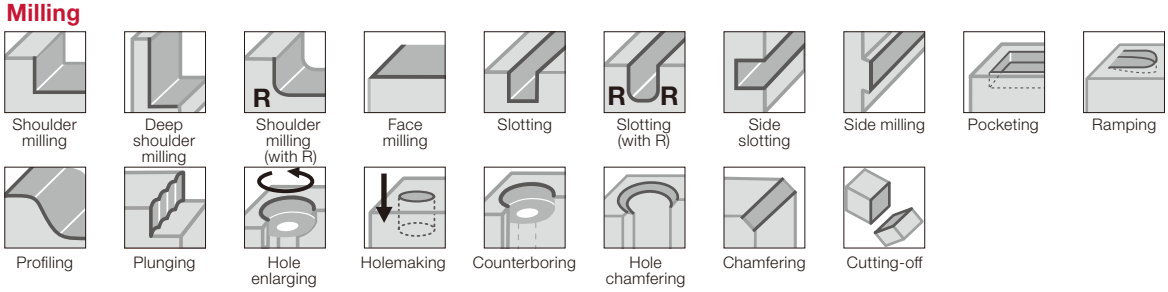
Threading



Grooving



Milling



Drilling

About Tungaloy Cutting Tool Catalog

Note in using this catalog:

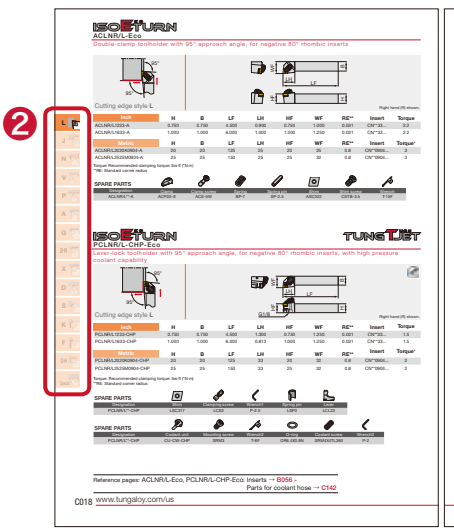
★ This catalog provides the information of Tungaloy's cutting tools as of July 2020.

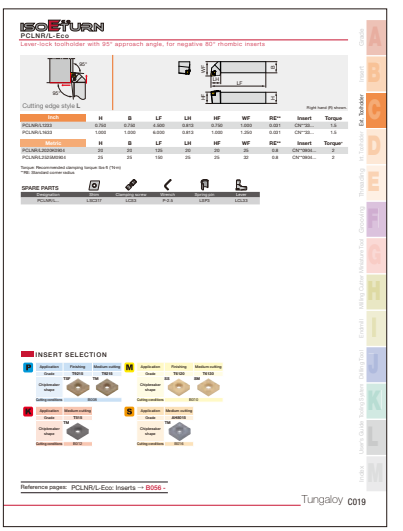
★ The specifications are subject to change without prior notice for product improvements. Also, the products may be discontinued in the future due to the development of new products.

★ The dimensions of all products are shown in inch (in) and millimeters (mm) where applicable.

★ For indexable tools, such as toolholders, cutters, drill bodies, applicable inserts or heads need to be ordered separately.

How to use this catalog:





❶ Select the tool category at product group index on the right pages.

❷ Check the tool designation on the page of the tool details.

❸ Select the tool type at the application index on the left pages.

*The index is in the alphanumerical order. Use it for your product search.

How to read the list for standard items:

★ Designations for indexable tools – toolholders, cutters, drill bodies, etc.

· Orders are to be received for the tools with the designations in the catalog.

· For the tool with right- and left-hand options, the designation includes **R/L** as shown below.

Ex. 1: Designation: A06-SCLC**R/L**2-D08

You can order both right- and left-hand tools. A06-SCLC**R**2-D08 (a right-hand tool) and A06-SCLC**L**2-D08 (a left-hand tool) will be available.

Ex. 2: Designation: E05-SEXP**R**04-D04

You can order only right-hand tools. Please contact us when you need left-hand tools.

★ Line up for inserts and solid tools

Blank : Please contact us regarding the product.

About the dimension symbols conforming to ISO13399

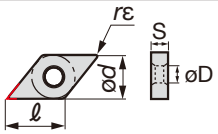
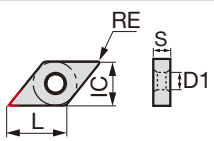
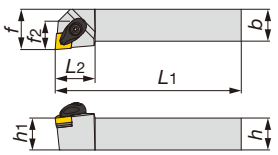
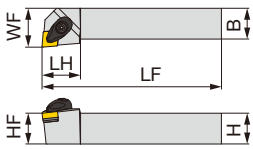
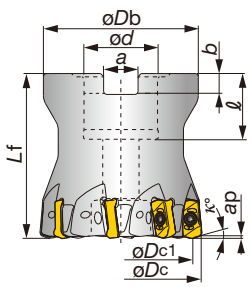
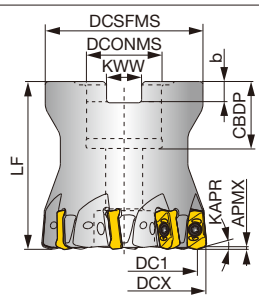
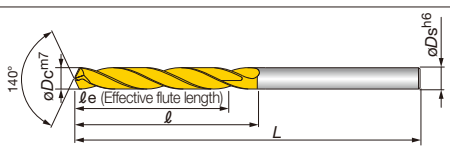
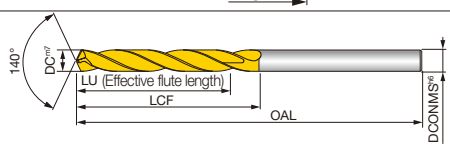
What is ISO13399?

ISO13399 is an international standard for the purpose of standardizing the electronic data of tools in the world.

Switching to the dimension symbols conforming to ISO13399

In this catalog, we use the dimension symbols (properties) conforming to ISO13399 international standard. Below are the examples of the change.

Examples of the change:

	Before	After
Insert		
Turning		
Milling		
Drilling		

ISO13399 standardizes not only the format of 2D and 3D CAD data but also the tool dimension symbols (properties) and reference position information. This allows the tool information to be read and combined into NC programs and CAM software, regardless of any tool maker's data. In addition in the General Catalog (paper catalog), we are also updating the symbols in the e-catalog (electronic catalog on our website) to the properties conforming to ISO13399. The e-catalog also provides 2D and 3D CAD data in accordance with ISO13399 standard.

Insert

New symbol	Old symbol	Description
AN	-	Main cutting edge relief angle
APMX	Max. *ap*	Maximum depth of cut
AS	A	Side cutting edge relief angle
BW	B	Body width
BS	bs	Side cutting edge (wiper) length
CDX	T max	Maximum groove depth
CW	*W*	Grooving edge width
D1	*ød*1	Mounting hole diameter
DCONMS	*øDs*	Mounting part diameter on the machine
DMIN	*øDm*	Minimum machining diameter
EPSR	-	Nose angle
GAN	-	Rake angle (insert)
IC	*ød*	Inscribed circle diameter
INSD	A	Insert diameter (round type)
INSL	B	Insert length
KAPR	κ	Approach angle
LBB	-	Chipbreaker width
LE	A	Effective cutting edge length
LF	*L*1	Standard length
M	m	Distance from inscribed circle to cutting edge (m dimension)
PDX	t	Thread position (X direction)
PDY	*ℓ*3	Thread position (Y direction)
PNA	*θ*	Cutting edge angle
PSIRL	*θ*	Left-hand front cutting edge angle
PSIRR	*θ*	Right-hand front cutting edge angle
RE	*r*	Corner radius
S	T	Thickness
W1	-	Insert width

Turning, Grooving

New symbol	Old symbol	Description
B	*b*	Shank width
BD	*øD*1, *øD*2, *øD*3	Body external diameter
CDX	*ar*	Maximum groove depth
CND	-	Oil hole diameter
CNT	-	Oil hole plug size
CUTDIA	*øD*max	Maximum parting diameter
CW	W	Grooving edge width
CWN	-	Minimum grooving edge width
CWX	-	Maximum grooving edge width
DAXN	*øDm*	Minimum diameter in face grooving
DAXX	*øD*max	Maximum diameter in face grooving
DCONMS	*øDs*	Mounting part diameter on the machine
DCONWS	*øD*, *ød*2	Mounting part diameter on the workpiece
DMIN	*øDm*	Minimum machining diameter
GAMF	α	Radial rake angle
GAMP	*θ*	Axial rake angle
H	*h*	Shank length
HBH	*h*2	Height of offset on the bottom of head
HBKL	*f*2	Length of uneven level on the back of head
HBKW	*L*2	Width of uneven level on the back of head
HBL	*L*2	Length of offset on the bottom of head
HF	h1	Standard height
KAPR	κ	Approach angle
LB	*L*	Body length
LF	*L*1	Standard length
LH	*L*2	Head length
OAH	*h*4	Overall height
OAL	*L*1	Overall length
OAW	*L*3	Overall width
PSIR	*β*	Lead angle
WB	-	Body width
WF	*f*	Standard width
WFS	*f*2	Standard width (the second corner)

Tooling system

New symbol	Old symbol	Description
APMX	**Max. *ap***	Maximum depth of cut
BD	***øD1, øD2, øD3***	Body external diameter
BHTA	**α**	Neck taper angle (half of nose angle)
BTED	***ød1***	Taper tip diameter
CRKS	**S**	Mounting screw size
DBC	***ød3***	Bolt hole pitch diameter
DCONMS	***øDs***	Mounting part diameter on the machine
DCONWS	***øD, ød2***	Mounting part diameter on the workpiece
DMIN	***øDm***	Minimum machining diameter
GAMF	**α, R.R.**	Radial rake angle
GAMP	***θ*, A.R.**	Axial rake angle
KAPR	**κ**	Cutting edge angle
LB	***L2, L3***	Body length
LF	***L***	Standard length
LPR	***L1***	Parting length
LS	***ℓs***	Shank length
LSC	***L*min**	Clamp length
LSCX	***L*max**	Maximum clamp length
OAH	**H4**	Overall height
OAL	***L***	Overall length
OAW	***W***	Overall width
THID	**-**	Mounting screw size
WB	***W***	Body width
WF	***f***	Standard width

Drilling

New symbol	Old symbol	Description
BD	***øD1, øD2, øD3***	Body external diameter
CND	**-**	Oil hole diameter
CNT	**-**	Oil hole plug size
CRKS	***S***	Mounting screw size
DC	***øDc***	Machining diameter
DCONMS	***øDs***	Mounting part diameter on the machine
DCONWS	***øD, ød2***	Mounting part diameter on the workpiece
DCSFMS	***øD***	Connecting part diameter
KAPR	**κ**	Cutting edge angle
LCF	***ℓ***	Flute length
LF	***L*f**	Standard length (from the drill shoulder)
LPR	**-**	Parting length (from flange to tip)
LS	***ℓ*s**	Shank length
LU	***ℓ***	Machinable depth
NOF	**z**	Number of flutes
OAL	***L***	Overall length (from tip)
PL	**PL**	Distance from drill tip to shoulder
ZEFP	**Z eff**	Number of effective cutting edges on periphery

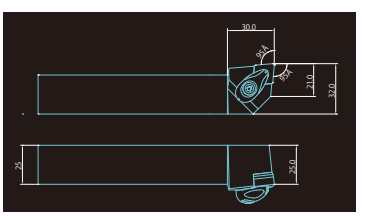
Milling

New symbol	Old symbol	Description
APMX	**Max. *ap***	Maximum depth of cut
BD	***øD1, øD2, øD3***	Body external diameter
BHTA	**α**	Neck taper angle (half of nose angle)
CBDP	***ℓ***	Mounting hole depth
CDX	**Max. *ae***	Maximum slot width
CHW	**k**	Chamfer width on the corner
CICT	**z**	Number of inserts
CRKS	**S**	Mounting screw size
CW	**W**	Slotting edge width
CWN	**-**	Minimum slotting edge width
CWX	**-**	Maximum slotting edge width
DBC	***ød3***	Bolt hole pitch diameter
DC	***øDc***	Machining diameter
DCONMS	***ød***	Mounting part diameter on the machine
DCONWS	***øD, ød2***	Mounting part diameter on the workpiece
DCSFMS	***øDb***	Mounting surface diameter on the machine
DCX	***øDc1***	Maximum machining diameter
GAMF	**R.R.**	Radial rake angle
GAMP	**A.R.**	Axial rake angle
H	**T**	Width across flat
KAPR	**κ**	Cutting edge angle
KWW	***a***	Drive key width
LF	***L*f**	Standard length
LH	***L*f**	Neck length
LS	***ℓ*s**	Shank length
NOF	**z**	Number of flutes
OAL	***L, L6***	Overall length
PDX	***t***	Thread position (X direction)
PNA	***θ***	Cutting edge angle
PSIR	***β***	Lead angle
RMPX	***θ***	Maximum ramping angle
THUB	**T**	Hub height (slot mill)
WT	**Kg**	Weight
ZEFP	**Z eff**	Number of effective cutting edges on periphery

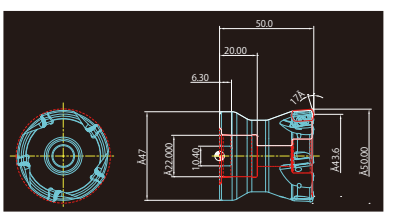
Note:
- Symbols unspecified in ISO13399 standard and Tungaloy's original symbols are not included.
- The symbols still under discussion are included. Please note any change or addition may occur.

CAD data provided in e-catalog

● **2D data (DXF format file)**



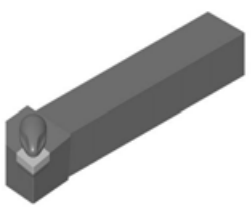
Turning:
Shows the insert with standard corner radius.



Milling:
Includes actual cutting edge curve (CUT layer) and body cross section (NOCUT layer).

● **3D data Light type (STP format file): Can be used to check tool path and interference.**

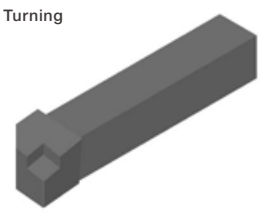
Turning: Equipped with an insert with a standard corner radius.



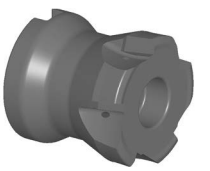
Milling: A rotating body model of an actual cutting edge curve and a body cross section.

● **3D data Detail type (STP format file): Can be used to create a new tool layout chart. (Can be combined with any insert model on a CAD software.)**

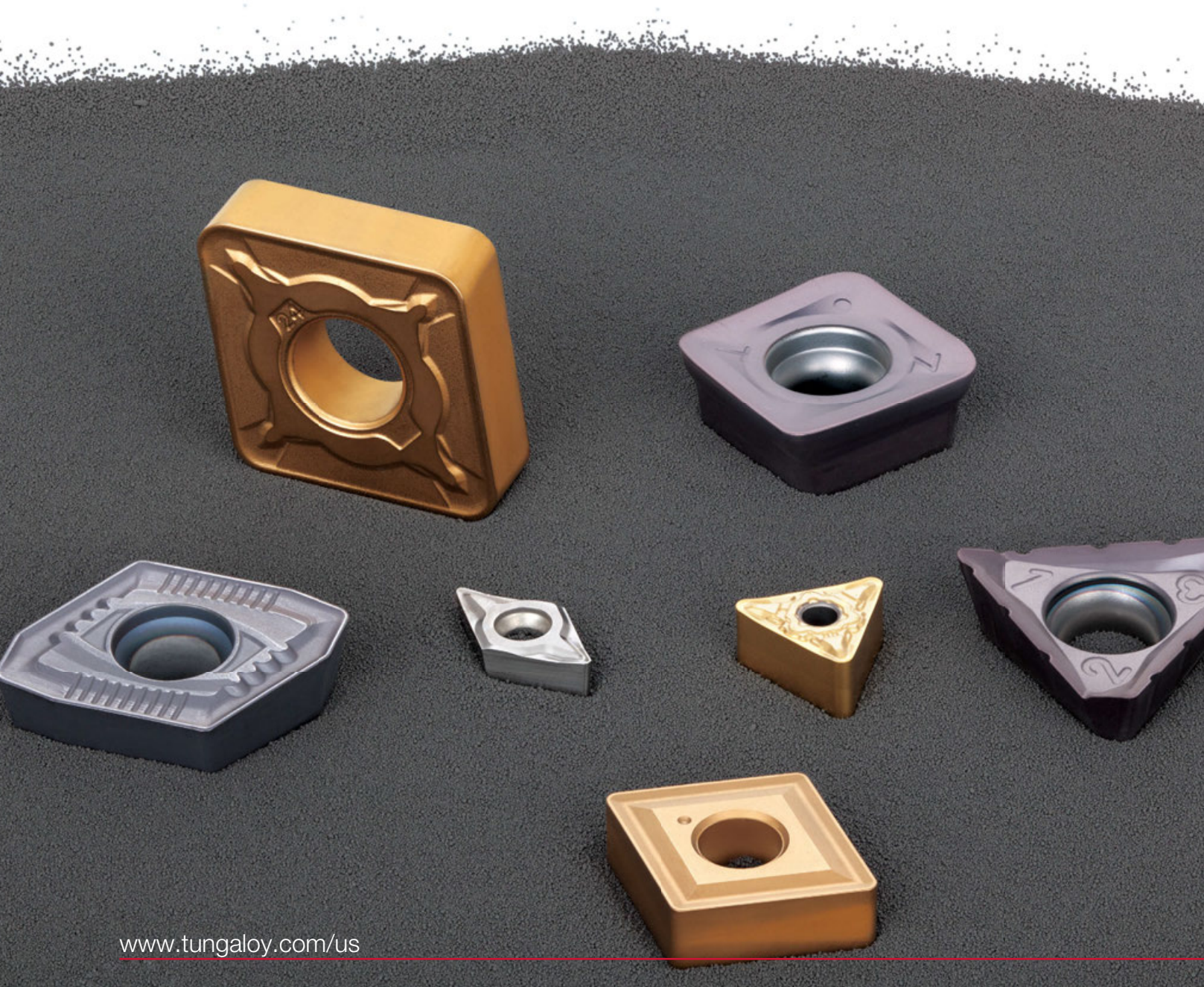
Turning



Milling



Grade



Grade

CVD - Coated Grade

Grade	Coating: Main composition	Coating: Thick-ness / µm	Applica-tion	Feature	Turning	Grooving	Milling	Drilling
New **T9205** P01 - P10 K10 - K20	Ti compound +Al2O3	18	P K	- High wear resistance - Excellent performance in high-speed cutting	■			
New **T9215** P10 - P20	Ti compound +Al2O3	18	P M K	- Well-balanced between wear and chipping resistance - First choice for steel - High versatility for a wide range of applications	■			
New **T9225** P15 - P25	Ti compound +Al2O3	18	P	- First choice for roughing to medium cutting - High fracture resistance	■	■		
New **T9235** P30 - P40	Ti compound +Al2O3	18	P	- High fracture resistance in heavy interrupted cutting	■			
T9105 P01 - P10 K10 - K20	TiCN-Al2O3	16	P K	- High wear resistance - Excellent performance in high-speed cutting	■			
T9115 P10 - P20 K15 - K30	TiCN-Al2O3	16	P K	- Good balance between wear and chipping resistance - Suitable for a wide range of applications	■			
T9125 P20 - P30	TiCN-Al2O3	16	P	- High chipping resistance in light to medium interrupted cutting	■	■		
T9135 P30 - P40	TiCN-Al2O3	16	P	- High fracture resistance in heavy interrupted cutting	■			
T6120 P10 - P20 M10 - M20	TiCN	6	M	- Excellent wear resistance in high-speed continuous cutting	■			
T6130 P15 - P30 M15 - M30	TiCN	6	M	- High wear resistance in cutting at medium to high speed - First choice for stainless steel	■			
T515 K10 - K20	TiCN-Al2O3	16	K	- High wear resistance even in high-speed machining - First choice for roughing cast iron	■	■		
T5105 K05 - K15	TiCN-Al2O3	16	K	- High resistance to wear and plastic deformation in high-speed continuous cutting	■			
T5115 K10 - K20	TiCN-Al2O3	16	K	- Stable machining in a wide range of applications from continuous to interrupted cutting	■			
T5125 K15 - K30	TiCN-Al2O3	16	K	- Toughness to prevent sudden fracture - Ideal for heavy interrupted cutting	■			
T313V -	TiCN-Al2O3	3	Threading	- High resistance to plastic deformation	■			
New **T3225** P20 - P35 M20 - M35	TiCN-Al2O3	10	P M	- High chipping and fracture resistance - Suitable for milling steel and stainless steel			■	
T3130 P20 - P40 M20 - M40	TiCN-Al2O3	6	P M	- Good balance between wear and chipping resistance - Suitable for milling steel and stainless steel			■	
New **T1215** K10 - K25	TiCN-Al2O3	10	K	- Good balance between wear and chipping resistance - Suitable for milling cast iron			■	
T1115 K10 - K25	TiCN-Al2O3	11	K	- High wear resistance - Suitable for milling cast iron			■	

PVD - Coated Grade

Grade	Coating: Main composition	Coating: Thickness / μm	Application	Feature	Turning	Grooving	Milling	Drilling
AH110 P05 - P15 M05 - M15 K10 - K25 S05 - S15	(Ti, Al)N	3	P M K S	- High wear resistance - Suitable for finishing steel, cast iron, and difficult-to-cut material	■		■	
AH120 P15 - P25 M15 - M25 K15 - K30 S10 - S25	(Ti, Al)N	3	P M K S	- Good balance between wear and fracture resistance - Suitable for machining steel, stainless steel, and cast iron under general cutting conditions	■		■	■
AH130 P25 - P40 M25 - M40	(Ti, Al)N	3	P M	- High chipping and fracture resistance - Designed for machining austenitic stainless steel under general cutting conditions			■	
AH140 M30 - M45	(Ti, Al)N	3	M	- High fracture resistance - Suitable for milling stainless steel			■	
AH170 P20 - P35 M20 - M35 K15 - K30	(Ti, Al)N	3	P M K	- High wear resistance - Designed for drilling carbon steel and cast iron				■
AH180 P20 - P35 M20 - M35 K15 - K30	(Ti, Al)N	3	P M K	- High wear resistance - Designed for drilling carbon steel, cast iron, and stainless steel				■
AH330 P15 - P30	(Ti, Al)N	3	P	- Excellent wear resistance	■		■	
AH630 P15 - P30 M15 - M30	(Ti, Al)N	5	M P	- Good resistance to wear and fracture in machining stainless steel at low to medium cutting speed	■			
AH645 P30 - P40 M30 - M40	(Ti, Al)N	5	M P	- High fracture resistance in machining stainless steel	■			
AH710 P05 - P15 K05 - K15 H05 - H15	(Ti, Al)N	3	P K H	- High wear resistance - Suitable for finishing cast iron and high-hardened steel	■	■	■	
AH725 P15 - P30 M15 - M30 K25 - K30 S15 - S25	(Ti, Al)N	2	P M K S	- Good balance between wear and chipping resistance - Suitable for machining steel and stainless steel under general cutting conditions	■	■	■	■
New **AH7025** P20 - P30 M20 - M30 S15 - S25	(Ti, Al)N	3.5	P M S	- Excellent wear resistance and high rigidity - First choice for grooving of various materials		■		
AH730 P15 - P30	(Ti, Al)N	3	P	- Good balance between wear and fracture resistance	■		■	
AH740 P25 - P40	(Ti, Al)N	3	P	- Excellent chipping resistance in machining steel				■
AH750 H15 - H30	(Ti, Al)N	3	H	- High wear resistance - Designed for milling high-hardened material			■	
AH8005 M01 - M10 S01 - S10	(Al,Ti)N	3.5	M S H	- Good resistance to wear and adhesion - Excellent performance in machining heat-resistant alloy at high speed	■		■	
AH8015 M10 - M20 S10 - S20	(Al,Ti)N	3.5	S M H P K	- Good balance between wear and fracture resistance - First choice for machining heat-resistant alloy under general cutting conditions	■		■	■
AH905 S01 - S10	(Al, Ti)N	1.5	S	- High resistance to wear and built-up edge	■	■		

PVD - Coated Grade

Grade	Coating: Main composition	Coating: Thickness / µm	Application	Feature	Turning	Grooving	Milling	Drilling
New **AH3225** P20 - P35 M20 - M35	(Ti, Al)N	5	P M	- Good balance between wear and fracture resistance - Suitable for steel and stainless steel			■	
AH3035 P20 - P45 H20 - H30	(Ti, Al)N	5	P H	- Good balance between wear and chipping resistance - Suitable for machining high-hardened steel at high feed			■	
AH3135 P30 - P40 M30 - M40	(Ti, Al)N	4	P M	- High fracture resistance - Suitable for machining steel and stainless steel under general cutting conditions			■	■
AH4035 M30 - M45	(Ti, Al)N	5	M	- Good balance between wear and fracture resistance - Suitable for difficult-to-cut stainless steel			■	
AH6030 M25 - M35 S15 - S30	(Ti, Al)N	5	M S	- High fracture resistance - Suitable for drilling stainless steel and heat-resistant alloy under general cutting conditions				■
AH9030 P15 - P35 K10 - K25	(Ti, Al)N	5	P K	- High wear resistance - Suitable for drilling steel and cast iron at high speed				■
New **AH9130** P15 - P35 M25 - M35 K10 - K25 S15 - S30	(Ti, Al)N	4.5	P M K S	- High wear resistance - Designed for drilling various materials				■
SH725 P20 - P30 M20 - M30	(Ti, Al)N	2	P M	- High wear resistance - Designed for machining steel and stainless steel	■	■		
SH730 P20 - P35 M20 - M35 S05 - S15	(Ti, Al)N	1	P M S	- High wear resistance - Designed for machining steel, stainless steel, and difficult-to-cut material	■	■		
GH110 K10 - K25 N05 - N15	Ti(C, N, O)	3	P M K N S	- High wear resistance	■		■	
GH130 P25 - P40 M25 - M40 K25 - K40	Ti(C, N, O)	3	P M K	- High chipping and fracture resistance - Suitable for steel, stainless steel, and cast iron		■	■	■
GH330 P15 - P30 M15 - M30 K05 - K30	Ti(C, N, O)	3	P M K	- High resistance to wear and fracture - Suitable for continuous to medium interrupted cutting	■	■	■	
GH730 P20 - P35 M20 - M35 K20 - K30	Ti(C, N, O)	3	P M K	- High wear resistance - Suitable for turning and grooving at low speed	■	■		
J740 -	TiN	1	For small lathes	- Ultra-fine-grain cemented carbide coated with TiN-based compound	■	■		
YH170 P20 - P35 M20 - M35	Ti(C, N)	1.5	P M	- High resistance to wear and fracture - Designed for drilling carbon steel and stainless steel				■
YH180 P20 - P35 M20 - M35	Ti(C, N)	1.5	P M	- High wear resistance - Designed for drilling carbon steel and stainless steel				■
JM10 P20 - P35 M20 - M35	TiN	1	P M	- High wear resistance - Designed for drilling carbon steel and stainless steel				■
DS1100 N05 - N20	DLC coating	Thin layer	N	- High wear resistance - Suitable for finishing aluminum			■	
DS1200 N10 - N25	DLC coating	Thin layer	N	- Good balance between wear and chipping resistance - Suitable for semi-finishing to finishing of aluminum			■	

Ceramic

Grade	Hardness (HRA)	Application	Feature	Turning	Grooving	Milling	Drilling
LX11	94.0	H	- Alumina base - Excellent chipping resistance in continuous cutting of cast iron	■			
New TZ120	93.0	K	- Alumina zirconia based - Excellent wear resistance for high-speed machining of cast iron	■			
LX21	94.0	K	- Alumina base - Suitable for continuous cutting of high-hardened material	■			
FX105	93.0	K	- Silicon nitride base - Suitable for high-speed machining of cast iron	■		■	
CX710	92.9	K	- Silicon nitride base - Suitable for high-speed machining of cast iron	■			
TW43	94.0	S	- Whisker-reinforced Al2O3 ceramic for super alloy machining.	■			
New TS200	93.1	S	- SiAlON ceramic for super alloy semi finish machining	■		■	
New TS300	94.3	S	- SiAlON ceramic for super alloy rough machining	■		■	
New FX510	94.0	S K N	- Sialon base - Suitable for heat-resistant alloy, such as nickel-based alloy			■	

Cermet

Grade	Coating: Main composition	Coating: Thick-ness / µm	Applica-tion	Feature	Turning	Grooving	Milling	Drilling
New AT9530	(Ti,Al)N laminated coating	3	P	- High wear resistance - First choice for machining alloy steel	■			
GT9530	Ti(C, N, O)	3	P K	- High wear resistance - Excellent surface quality in finishing	■			
J9530	TiN	1	For Swiss lathes	- Suitable for small-part machining	■	■		
NS9530	Uncoated	-	P K	- High fracture resistance - Suitable for finishing to medium cutting of steel	■	■		
NS740	Uncoated	-	P	- High resistance to fracture and thermal crack - High-rigidity grade for milling			■	
NS520	Uncoated	-	P K	- High wear resistance	■			
GT720	Ti(C, N, O)	3	P K	- High wear resistance in face milling at high speed	■			
X407	Uncoated	-	P	- High wear resistance in finishing with dry cutting	■		■	
N308	Uncoated	-	P	- High wear resistance			■	

CBN

Grade	Hardness (Hv)	T.R.S. (GPa)	Application	Feature	Turning	Grooving	Milling	Drilling
New BXA10	3200 ~ 3400	1.00 ~ 1.10	H	- Coated T-CBN for excellent performance in continuous cutting of hardened steel	■			
BXA20	3300 ~ 3500	1.30 ~ 1.50	H	- Coated T-CBN for excellent performance in machining hardened steel	■			
BXM10	2700 ~ 2900	0.80 ~ 0.90	H	- Coated T-CBN for excellent performance in high-speed continuous cutting of hardened steel	■			
BXM20	3500 ~ 3700	1.35 ~ 1.50	H	- Coated T-CBN for machining hardened steel in a wide range of application area	■			
BXC50	3500 ~ 3700	1.15 ~ 1.30	H	- Coated T-CBN with high fracture resistance in continuous to interrupted cutting	■			
BX310	2700 ~ 2900	0.80 ~ 0.90	H	- High wear resistance - Designed for high-speed continuous cutting of hardened steel	■			
BX330	2800 ~ 3000	0.85 ~ 0.95	H	- Excellent sharpness - Designed for finishing hardened steel	■			
BX360	3200 ~ 3400	1.00 ~ 1.10	H	- Suitable for general machining of hardened steel	■	■		
BX380	3500 ~ 3700	1.15 ~ 1.30	H	- High fracture resistance - Designed for heavy interrupted cutting of hardened steel	■			
BX530	2800 ~ 3000	0.85 ~ 0.95	H	- Designed for finishing hardened steel with good surface quality	■			
BXC90 (BX90S)	3900 ~ 4100	1.80 ~ 1.90	K	- Coated T-CBN for high-speed machining of cast iron	■		■	
BX910	2600 ~ 2800	0.80 ~ 0.90	K	- Excellent wear resistance in high-speed machining - Designed for centrifugally cast iron	■		■	
BX930	3000 ~ 3200	0.95 ~ 1.20	K	- Designed for ductile cast iron	■			
BX850	3300 ~ 3500	0.75 ~ 0.85	H	- High fracture resistance - Good performance in high-speed face milling			■	
BX870	3000 ~ 3200	0.95 ~ 1.20	K	- High wear resistance - Designed for centrifugally cast iron	■		■	
BX470	4100 ~ 4300	1.90 ~ 2.10	Sintered metal	- Excellent sharpness - Suitable for ferrous sintered metal	■			
BX480	4100 ~ 4300	1.90 ~ 2.10	Sintered metal K	- Hardest T-CBN - Ideal for ferrous sintered metal - Suitable for high-speed face milling of cast iron	■		■	
New BX815	3000 ~ 3200	1.00 ~ 1.10	S	- High wear resistance and thermo stability - Suitable for high-speed machining of Inconel	■			

PCD (T-DIA)

Grades	Grain size (μm)	Hard-ness (Hv)	T.R.S. (GPa)	Appli-cation	Feature	Turning	Grooving	Milling	Drilling
New DX110	< 1	8500	1.8	N	- Excellent sharpness for high surface quality - Suitable for finishing non-ferrous metal and nonmetal	■		■	
DX120	4.5	9000	1.8	N	- Suitable for finishing non-ferrous metal and nonmetal	■		■	
DX140	12.5	10000	1.7	N	- High wear resistance - Designed for non-ferrous metal and nonmetal	■		■	
DX160	28	11000	1.6	N	- Designed for ceramic, cemented carbide, and nonmetal	■		■	
DX180	45	12000	1.5	N	- High wear resistance - Designed for ceramic, cemented carbide, and nonmetal	■			

Uncoated Cemented Carbide

Grades	Hardness (HRA)	T.R.S. (GPa)	Application	Turning	Grooving	Milling	Drilling
UX30 P30 M30	91.1	2.3	P M	■	■	■	
TH10 P10 M10 K10 N10	92.0	2.4	P M K N	■	■	■	
KS05F K05 S05 N05	93.0	2.9	K S N	■	■	■	
KS15F N15	91.5	3.0	N	■		■	
KS20 K20 N20 S20	90.8	2.8	K S N	■			
TH03 P05 M05 K05 N05	93.8	1.9	P M K N	■			
F	93.4	2.5	P K				■
EM10 P10 - P25 K10 - K25	91.5	3.4	P K				■

Grades	Hardness (HRA)	T.R.S. (GPa)	Application	Turning	Grooving	Milling	Drilling
UM K10 - K25 N10 - N25	90.9	3.5	K N				■
G2 K10 - K25 N10 - N25	90.8	2.7	K N				■
G1F P10 - P25 K10 - K25	92	2.6	P K				■
MD10 P10 - P25 M10 - M25	92.8	3.4	P M				■
MD20 P20 - P35 M20 - M35	91.5	3.9	P M				■

●CVD Coated Grades for Turning

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	TaeguTec	Widia	Walter	Ceratizit
Classifi-cation	Symbol															
P	P01	**T9205 T9105**	UE6105	AC810P	GC4305	CA510	HG8010	JC110V		TP0500 TP0501	KCP05	IC8150 IC9150 IC9015	TT8115	TN10P TN20K	WPP01 WPP05 WPP05S	
	P10	**T9205 T9105 T9215 T9115**	UE6105 MC6015	AC810P AC8015P	GC4305 GC4315	CA515	HG8010 GM8020	JC110V JC215V	CP7 CP5	TP0500 TP1500 TP0501 TP1501	KCP10	IC8150 IC9150 IC8080 IC9080 IC9015	TT8115	TN10P TN20K WP15CT	WPP05 WPP10 WAK20 WPP05S WPP10S	CTC3110 CTCK120
	P20	**T9215 T9115 T9225 T9125**	MC6015 MC6025	AC8015P AC8025P	GC4315 GC4325	CA515 CA525 CA025P	HG8025 GM8020 GM25	JC110V JC215V	CP7 CP5	TP1500 TP2500 TP1501 TP2501	KCP25	IC8150 IC9150 IC9015 IC8250 IC9250	TT8125 TT5100	TN10P TN15M WP25CT	WPP20 WPP20S	CTCP115 CTCP125 CTC1425
	P30	**T9225 T9125 T9235 T9135 T6130**	MC6025 MC6035	AC8025P AC8035P	GC4325 GC4335	CA530 CA025P	HG8025 GM8035 GM25	JC215V JC325V		TP2500 TP3500 TP2501 TP3501	KCP30	IC8080 IC656 IC9350	TT8125 TT5100 TT8135	TN30P TN30M WP35CT	WPP30 WAK30 WPP30S	CTCP125 CTC1425 CTC1135 CTC1435 CTC2135
	P40	**T9235 T9135 T6130**	MC6035	AC8035P AC630M	GC4335	CA530	GM8035 GX30	JC325V		TP3500 TP3501	KC9140 KC9240 KCP40	IC9350 IC635	TT8135 TT7100	TN30P TN30M	WPP30 WAK30 WPP30S	CTC1135 CTC1435 CTC2135
M	M10	**T9215 T9115**	MC7015	AC6020M	GC2015	CA6515		JC110V			KCM15	IC9250 IC520M	TT9215	TN15M WM15CT		CTCP115
	M20	**T6120 T9215 T9115**	MC7015 MC7025	AC6020M	GC2015 GC2025	CA6525	HG8025 GM25	JC110V		TM2000	KCM15 KCM25	IC9025 IC9350 IC4050	TT9215 TT9225	TN15M WM25CT		CTC1425 CTCP125 CTC1135
	M30	**T6130**	MC7025	AC6030M	GC2025	CA6525	GM8035 GM25 GX30	JC215V		TM2000 TM4000	KCM25 KCM35	IC9350 IC4050 IC635	TT9225 TT9235	TN30M WM35CT		CTC1435 CTC2135
	M40						GX30			TM4000	KCM35	IC635	TT9235			
K	K01	**T5105**	MC5005		GC3205	CA310	HX3505	JC050W JC105V	CP1	TK0501	KCK05	IC8080		WK05CT		
	K10	**T5105 T515 T5115 T9215**	MC5015	AC4010K	GC3210	CA315	HX3515 GM10 HG8010	JC105V JC110V	CP1	TK1501	KCK05 KCK15	IC9150 IC5100 IC4100	TT7005	WK05CT	WKK10S	CTC3110 CTC1425
	K20	**T515 T5115 T5125 T9215**	MC5015	AC4015K AC420K	GC3225	CA320	HX3515 GM8020	JC110V JC215V	CP1	TK2001	KCK15 KCK20	IC9150 IC5100 IC4100 IC9080	TT7310	WK20CT	WKK20S	CTC1435 CTCK120 CTCP115
	K30	**T5125**					HG8025	JC215V				IC520M IC4050			WKP30S	CTCP125

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●PVD Coated Grade for Turning

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	TaeguTec	Widia	Walter	Ceratizit
Classification	Symbol															
P	P01					PR1005									WXN10	
	P10	**AH710**	VP10RT		GC1525	PR930 PR1005 PR1115 PR1215 PR1425	IP2000	JC5003 JC5030	VM1 DT4 DM4	TS2000 CP200	KC5010 KC5510 KCU10	IC507 IC807 IC907		WS10PT	WSM10 WSM21	
	P20	**AH120 AH725 AH730 SH725 SH730 J740**	VP10RT VP15TF VP20MF VP20RT UP20M	AC520U	GC1525 GC1125	PR930 PR1025 PR1115 PR1215 PR1425 PR1225	IP2000 IP3000	JC5030 JC5040	VM1 DT4 DM4	TS2500 CP200	KC5025 KC5525 KCU25	IC507 IC807 IC907	TT9030	WS10PT WS25PT	WSM20 WSM21	
	P30	**AH120 AH725 AH7025 SH725 AH730 SH730 GH730 GH330 J740**	VP15TF VP20MF VP20RT UP20M	AC530U	GC1125	PR1025 PR1225	IP3000	JC5040	DT4 DM4 QM3	CP500	KC5025 KC5525 KCU25	IC328 IC928 IC3028	TT9030 TT8020	WS25PT	WSM30	CTP1235 CTP1625 CTP2235
	P40	**AH120 AH725 AH645**		AC530U						CP500		IC328 IC3028	TT8020			CTP1235 CTP2235
M	M01											IC520			WXM10	
	M10	**AH8005 AH630**	VP10RT		GC1105 GC1115 GC1525	PR1025 PR1215	IP100S IP050S	JC5003 JC8015	TM4 ZM3	TS2000 TS2500 CP200	KC5010 KC5510 KCU10	IC520 IC507 IC807 IC907		WS10PT	WSM10 WSM10S	
	M20	**AH8015 AH630 AH120 AH7025 AH725 SH725 SH730**	VP10RT VP15TF VP20MF VP20RT UP20M	AC520U	GC1115 GC1125 GC1525	PR930 PR1025 PR1125 PR1215 PR1425 PR1225	IP100S IP050S	JC5015 JC5030 JC8015	TM4 ZM3 DT4 DM4	TS2500 CP200 CP500	KC5025 KC5525 KCU25	IC520 IC507 IC807 IC907 IC308 IC3028	TT9030 TT8010	WS10PT WS25PT	WSM20 WSM21 WSM20S	CTP1235 CTP2120
	M30	**AH645 AH120 AH725 SH725 SH730 J740**	VP15TF VP20MF VP20RT UP20M MP7035	AC530U AC6040M AC1030U	GC1125 GC2035	PR1125	IP100S	JC5015 JC5030 JC5040	TM4 ZM3 DT4 DM4	CP500	KC5025 KC5525 KCU25	IC3028 IC308 IC908 IC928	TT8020	WS25PT	WSM30 WSM30S	CTP1235 CTP2120 CTP2235 CTP1625
	M40	**AH645**	MP7035	AC530U AC6040M	GC2035							IC228 IC328				
K	K01	**AH110**										IC910				
	K10	**GH110 AH110**	VP10RT	AC510U		PR905 PR1215		JC5003 JC5015		TS2000 CP200	KC5010 KC5510 KCU10	IC910 IC308 IC508	TT9030	WS10PT		CTP6215
	K20	**AH120 AH7025**	VP10RT VP20RT VP15TF			PR905 PR1215		JC5015		TS2500 CP200 CP250	KC5025 KC5525 KCU25	IC910 IC308 IC508 IC928 IC1008	TT9030	WS10PT WS25PT		CTP6215
	K30	**AH120 GH130**	VP20RT VP15TF							CP500		IC928 IC1008	TT9030	WS25PT		CTP1625
S	S01	**AH8005**	VP05RT MP9005					JC8003							WSM10	
	S10	**AH8005 AH8015**	VP10RT MP9015	AC510U AC520U AC5015S	GC1105	PR1305 PR1310		JC8015 JC5015	DT4 DM4	TS2000 TS2500 CP200 CP500	KC5010 KC5510 KCU10	IC507 IC807 IC808 IC907 IC908	TT8010	WS10PT	WSM10 WSM10S	CTP2235
	S20	**AH8015 AH7025**	VP15TF MP9015 VP20RT	AC520U AC1030U AC5025S	GC1115 GC1125	PR1310		JC8015 JC5015	DT4 DM4	TS2000 TS2500 CP200 CP500	KC5025 KC5525 KCU25	IC507 IC807 IC808 IC907 IC908	TT8020	WS10PT WS25PT	WSM20 WSM21 WSM20S	CTP2235
	S30	**AH630 AH7025**	VP15TF VP20RT	AC520U AC5025S	GC1125	PR1325						IC830 IC928		WS25PT	WSM30 WSM30S	

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●Cermet for Turning

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	TaeguTec	Widia	Walter	Ceratizit
Classification	Symbol															
P	P01	**NS520**	AP25N VP25N	T110A T1000A		TN30 PV30 TN6010 PV7010		LN10	Q15 C7Z		KT1120		PV3010 CT3000			
	P10	**AT9530** **GT9530** **J9530**	AP25N VP25N NX2525	T1500Z T2000Z T1200A T1500A	CT5015	TN60 TN6010 PV7010 TN610 PV710	CZ25	CX50 PX75	C7Z Z15	TP1020 C15M	KT315	IC30N IC530N	PV3010 CT3000	TTI15	WCE10	TCC410 TCM10 TCM407
	P20	**AT9530** **GT9530** **NS9530** **J9530**	AP25N VP25N VP45N NX2525 NX3025	T1200A T1500A T1500Z T2000Z	CT5015 GC1525	TN90 TN6020 PV7020 PV7025 TN620 PV720	CZ25 CH550	CX75 PX75 PX90	C7Z T15	TP1020 TP1030 C15M	KT5020	IC30N IC530N	PV3010 CT3000	TTI15	WCE10	TCC410 TCM10
	P30	**NS9530**	VP45N NX4545	T3000Z	GC1525			PX90	N40 C7X							
M	M10	**NS520**	AP25N VP25N NX2525	T1000A T2000Z	CT5015	TN60 TN6020 PV7020 PV7025		LN10 CX50	C7Z C7X	TP1020 TP1030	KT315 KT5020		PV3010 CT3000	TTI15		TCC410 TCM10 TCM407
	M20	**AT9530** **GT9530** **NS9530** **J9530**	NX2525 AP25N VP25N	T1500A T2000Z	GC1525	TN90 TN6020 PV7020 PV7025	CZ25 CH550	CX75	C7Z C7X	C15M	KT5020	IC30N IC530N	PV3010 CT3000			
	M30	**NS9530**	NX4545	T3000Z												
K	K01	**NS520**	AP25N VP25N	T1000A		TN30 PV30 PV7005		LN10					PV3010 CT3000			TCC410
	K10	**AT9530** **GT9530** **NS9530** **J9530**	AP25N VP25N NX2525	T1500A T2000Z	CT5015	TN60 TN6010 PV7005 PV7010	CZ25 CH550	LN10 CX75			KT315 KT5020	IC30N IC530N	CT3000	TTI15		TCC410 TCM10 TCM407
	K20	**NS9530**	AP25N VP25N NX2525	T3000Z				CX75			KT5020					TCM407

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User's Guide- Grade Comparison Chart

●Cemented Carbide for Turning

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classification	Symbol																
P	P01																
	P10	**TH10**		ST10P			WS10	SRT			P10	IC70		P10	TN15U		
	P20	**KS20**	UTi20T	ST20E	SMA H10F		EX35	SRT SR20	KM1	S10M	K125M TTM	IC70	P40	P20	TN15U		
	P30	**KS15F** **UX30**	UTi20T	A30 A30N	SM30 H10F	PW30	EX40	DX30 SR30	KM3	S25M	GK K600 TTR	IC28 IC54	P40	P30			S40T
	P40	**TX40**		ST40E			EX45	SR30		S60M	G13	IC28 IC54		P40			S40T
M	M01																
	M10	**TH10**		U10E EH510	H10A		WA10B	UMN	KM1	890	K313	IC20		M10	TN15U WU10HT		
	M20	**KS20**	UTi20T	U2 EH520	H13A		EX35	DX25 UMS		HX 883	K68 KMF K125M TTM	IC20	IN30M	M20	TN15U WU10HT		CTW7120 H210T
	M30	**UX30**	UTi20T	A30 A30N	H10F SM30		EX45	UMS			GK K600 TTR	IC28	IN30M				
	M40	**TU40**						UM40			G13	IC28	IN30M	M40			S40T
K	K01	**KS05F**	HTi05T	H2 H1			WH01 WH05	KG03			K605			UF1	TN15U WU10HT		
	K10	**TH10**	HTi10	H1 EH10 EH510	H10	KW10	WH10	KG10 KT9 CR1	KM1	890	K313 K110M THM THM-U	IC20 IC09T	IN05S	K10	TN15U WU10HT		H210T H216T H10T
	K20	**KS15F** **KS20**	UTi20T	G10E EH20 EH520	H13A H10F	KW10 GW15	WH20	KT9 CR1 KG20 FB15		890 HX 883	K715 KMF K600	IC20 IC09T	IN05S IN10K IN15K IN30M	K20	TN15U WU10HT		CTW7120 H210T H216T H10T
	K30		UTi20T	G10E	H13A H10F	GW25		KG30		883	THR	IC28	IN10K IN15K IN30M	K30			
	K40										G13		IN30M				
N	N01	**KS05F**		H1	H10	KW10					K605	IC20					
	N10	**TH10**	HTi10	H1	H10 H10F	GW15	WH10	KT9 CR1	KM1	890 HX KX H15	K313 K110M THM THM-U	IC20 IC28	IN05S IN10K	K10	TN15U WU10HT	WK1 WK10	H210T H216T H10T
	N20	**KS15F**			H10F H13A		WH20	KT9 CR1	KM1	890 HX KX 883	K715 KMF K600	IC20 IC28	IN10K IN15K	K20	TN15U WU10HT	WK1 WK10	CTW7120 H210T H216T H10T
	N30									883 H25	G13 THR		IN15K IN30M			WK40 WMG40	
S	S01		RT9005									IC20					
	S10	**KS05F** **TH10**	RT9005 RT9010	EH510	H10 H10A	KW10	WH10	KG10	KM1	890 883	K10 K313 THM	IC20	IN05S IN10K	K10	TN15U WU10HT	WK1	H210T H216T H10T
	S20	**KS15F** **KS20**	RT9010 TF15	EH520	H10F H13A	GW25	WH20	KG20	KM1	890 883 H25	K715 KMF	IC20 IC28	IN10K IN15K	K20	TN15U WU10HT	WK1 WMG40	CTW7120 H210T H216T H10T
	S30		TF15							883	G13 K600 THR		IN15K IN30M			WMG40	
H	H01							KG03				IC20					
	H10	**TH10**			H13A			FZ05				IC20	IN10K	K10			
	H20							FZ15		890 HX 883			IN15K				

Note: The above table is selected from a publication. We have not obtained approval from each company.

●PCBN and PCD for Turning

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classifi-cation	Symbol															
K	K01	**BX930 BX910 BX870**	MB710 MB5015	BN500 BNC500	CB7525 CB7050 CB50	KBN60M		B52		KB9610 KD120 KB1630	IB10K		KB90	WBH10C	WCB80	TA100 CTL3215
	K10	**BX470 BX480**	MB730 MB4020	BN7000 BN7500	CB7050 CB7925 CB50	KBN60M	JBN795	B23 B30 B52	CBN200 CBN300 CBN400C CBN010	KB9640 KD120 KB1630	IB05S IB10S		KB90A	WBK40U	WCB80 WCB50	TA120 TA201 CTL3215
	K20	**BX480**	MB730 MB4020	BN700 BN7000	CB7050	KBN60M		B23 B30 B52	CBN300 CBN500 CBN600 CBN010	KB1340 KB1345	IB90 IB25KD			WBK45U	WCB80	CTL3215
	K30	**BXC90 BX90S**	BC8130	BNS800		KBN900		B16	CBN500 CBN600	KB1340 KB1345						
S	S01	**BX815**	MB730	BN350			JBN795	JP2	CBN170				KB90			
	S10	**BX470 BX480**		BN7500	CB7050	KBN65B KBN65M		B23 B30	CBN200	KB1630	IB05S IB10S		KB90A	WBK45U	WCB80	TA201
H	H01	**BXM10 BXA10 BX310**	BC8110 MBC010 MB810 BC8105	BNC100 BNC160 BNC2010 BNX10 BN1000	CB20 CB7105	KBN510 KBN05M KBN10M		B52 B5K	CBN10 CBN100 CBN160C CBN050C	KB1610 KB5610	IB05H IB10HC		KB50	WBH10C	WCB30	
	H10	**BXM10 BXA10 BX330 BX530**	BC8110 MBC020 MB8025 BC8020 BC8120	BNC160 BNC200 BNC2020 BN250 BN1000	CB7015 CB20 CB50 CB7115	KBN525 KBN05M KBN25M	JBN245	B36 B52 B6K	CBN150 CBN200 CBN300 CBN060K CBN050C CBN160C CBN300P CBN400C	KB9610 KB1610 KB5610	IB50 IB55 IB10H IB10HC IB20H IB25HA		KB50 TB650	WBH10C WBH10P WBH10U	WCB30 WCB50	CTL3215 TA100
	H20	**BXM20 BXA20 BX360**	MBC020 BC8120 MB8025 MB825 BC8020	BNC200 BNC2020 BN250 BNX20 BNX25 BN2000	CB7025 CB20 CB7035 CB7125	KBN525 KBN05M KBN10M KBN25M	JBN300 JBN330	B22 B36 B40 B6K	CBN150 CBN200 CBN300 CBN060K CBN160C CBN300P CBN400C	KB5625 KB1625	IB20H IB20HC IB25HA IB25HC		TB650	WBH25P	WCB50 WCB80	CTL3215 TA120
	H30	**BXC50 BX380**	BC8130 MB835	BNC300 BN350 BNX25	CB7525 CB7135	KBN35M KBN900	JBN300 JBN330	B22 B40	CBN500	KB1630 KB9640	IB25HC			WBH40C		TA201
N	N01	**DX160 DX180**	MD205	DA90	CD10		JDA30 JDA735			KD1400 KD1405 KD100	ID5				WCD10	CTD4125
	N10	**DX140**	MD220	DA150	CD10	KPD230	JDA715	PD1	PCD05 PCD10	KD100 KD1400 KD1425	ID5	IN90D	KP500	WDN25U	WCD10	CTD4125 CTD4110
	N20	**DX120**	MD220	DA2200	CD10	KPD010	JDA715	PD1	PCD05 PCD20	KD1425		IN90D	KP300	WDN25U	WCD10	CTD4205
	N30	**DX110**	MD230	DA1000		KPD001	JDA10		OVD20 PCD30 PCD30M				KP100			

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●Ceramics for Turning

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classifi-cation	Symbol																
K	K01	**TZ120 LX11 LX21**		NB90S NB90M	CC6190 CC650	KA30 A65 KT66 PT600M			HC1 HW2 SE1 HC2		KY1310 KY1615			AW20 AB30 AS10	CW2015		CTN3105 CTS3105
	K10	**CX710 FX105**			CC6190 CC650	A65 KT66 A66N PT600M			HC1 HW2 SE1 WA1 WA5		KY1310 KY1320 KY1615 KY3400		IN70N	AB30 AS10	CW2015 CW5025	WSN10	CTN3105 CTM3110 CTI3105 CTN3110 CTS3105
	K20	**FX105 CX710**			CC6190	KS6000			SP9 SX1 SX8 SX9		KY1320 KY3400 KY3500 KY4300		IN70N	AS10	CW5025	WSN10	CTM3110 CTN3110
S	S01								JX1		KY1525 KY2100						
	S10	**TW43 TS200 TS300**		WX120	CC670 CC6060 CC6065	CF1			WA1 WA5 SX9		KY1525 KY1540 KY2100 KY4300			AS20 TC430	CW3020		
H	H01	**LX11**		NB100C	CC6050 CC650	A65 KT66 A66N PT600M			ZC4 ZC7		KY4300			AW20	CW2015		CTS3105
	H10			NB100C	CC6050 CC670 CC6190	A65 KT66 A66N PT600M			HC4 HC7 WA1		KY1615 KY4400			AB2010 AB20 AB30	CW2015		CTS3105

Note: The above table is selected from a publication. We have not obtained approval from each company.

●CVD Coated Grade for Milling

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classifi-cation	Symbol																
P	P01											IC9015 IC5400 IC8080 IC9080			TN2510		
	P10		FH7020	ACP100	GC4220 GC4230			JC730U		MP1500	KCPM20	IC9015 IC5400 IC8080 IC9080 IC4100 IC5100			TN2510 TN7525	WKP25	GM226+
	P20	**T3225**	FH7020 F7030	ACP100	GC4220 GC4230		GX2140 GX2160	JC730U		MP1500 MP2500 T25M	KCPM20 KCPK30 KCPM30 KC927M	IC8080 IC9080 IC4100 IC5100 IC9250 IC520M	IN6530	TT7800	TN7525 TN7535	WKP25 WKP35 WKP35S	GM226+
	P30	**T3130** **T3225**	F7030	ACP100	GC4230 GC4240 GC2040		GX2140 GX2160			MP1500 MP2500 T350M T25M	KCPK30 KCPM30 KC927M	IC9250 IC520M IC4050 IC635	IN6530	TT7800	TN7525 TN7535	WKP25 WKP35 WKP35S	GM226+ GM246 GM43+
	P40				GC4230 GC4240 GC2040		GX2160			MM4500 T350M	KCPK30 KCPM30	IC4050 IC635	IN6530	TT7800	TN7535	WKP35 WKP35S	GM246 GM43+
M	M10			ACM200	GC2015			JC730U			KCPM20	IC9250 IC520M IC9350			TN7525		
	M20	**T3225**	F7030	ACM200	GC4230	CA6535		JC730U		MP2500 T350M T25M	KCPM20 KCPM30 KC927M	IC9250 IC520M IC9350 IC4050 IC635	IN6530	TT7800	TN7525 TN7535		CTC5235 GM226+
	M30	**T3225** **T3130**	F7030	ACM200	GC2040 GC4230 GC4240 S40T	CA6535	GX2160	JC730U		MP2500 T350M T25M	KCPM30 KC927M	IC9350 IC4050 IC635	IN6530	TT7800	TN7525 TN7535		CTC5235 CTC5240 GM226+ GM246 GM43+
	M40				GC2040 GC4240 S40T	CA6535	GX2160			MM4500 T350M		IC635	IN6530		TN7535		CTC5235 CTC5240 GM246 GM43+
K	K01		MC5020	ACK200		CA420M		JC605W			KC907M	IC8080 IC4100 IC5100 IC9150			TN2510 TN5505	WKP15	CTC3215
	K10	**T1215** **T1115**	MC5020	ACK200	GC3220	CA420M	GX2120	JC605W JC608X JC610		MK1500	KC907M KC914M KC917M KC924M KCK15	IC8080 IC4100 IC5100 IC9150 IC9080 IC520M		TT6800	TN2510 TN5505 TN5515 TN5520	WKP15 WKP25	CTC3215 SR216 SR226+
	K20	**T1215**	MC5020	ACK200	GC3220 GC3330 GC3040 GC4220 GC4230	CA420M	GX2120 GX2140	JC605W JC608X JC610		MK1500 MP1500	KC917M KC924M KCK15 KCPM20 KCPK30 KC927M	IC5100 IC9150 IC9080 IC520M IC4050	IN6515 IN6530	TT6800	TN5515 TN5520	WKP15 WKP25 WKP35 WKP35S	SR216 SR226+
	K30		MC5020		GC3330 GC3040 GC4220 GC4230 GC4240		GX2140	JC610		MK1500 MP1500	KCPM20 KCPK30 KC927M	IC520M IC4050	IN6515 IN6530			WKP25 WKP35 WKP35S	

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●PVD Coated Grade for Milling

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classification	Symbol																
P	P01	**AH710 AH110**			GC1010		ATH80D JP4105	JC8003			KC505M KC510M KC515M	IC903		TT2510 TT5505	TN2505 TN6505		
	P10	**AH120 AH725**	MP6120 VP15TF	ACP200	GC1010 GC1025	PR830 PR1225 PR1230 PR1525	ATH80D PN08M ATH10E PN15M JP4105 JP4115 JP4120	JC8003 JC8015 JC5015 JC5118	DM4		KC505M KC510M KC515M KC610M KC715M	IC903 IC907 IC950 IC908 IC910 IC380 IC900	IN2505	TT2510 TT5505 TT5515 TT7080	TN2505 TN2525 TN6425 TN6505	WHH15 WXM15	
	P20	**AH120 AH725 AH3135 AH9030 AH3225 AH9130**	MP6120 VP15TF MP6130 UP20M VP20RT	ACP200 ACP300	GC1025 GC1030 GC2030	PR830 PR1225 PR1230 PR1525	JP4120 JS4045 CY250	JC8015 JC5015 JC5118 JC5040		MP3000 F25M	KC522M KC525M KC527M KC530M KC610M KC620M KC635M KC715M KC720M KC730M	IC907 IC950 IC908 IC910 IC380 IC900 IC830 IC928 IC1008	IN2040 IN2505 IN4005 IN4030	TT2510 TT5505 TT5525 TT7080 TT9030 TT9080	TN2525 TN6425 TN6430 TN6525	WHH15 WXM15	CTP1235 CTP1625
	P30	**AH120 AH725 AH3135 AH130 AH6030 AH3225 AH9130**	MP6120 VP15TF MP6130 UP20M VP20RT VP30RT	ACP200 ACP300	GC1025 GC1030 GC2030	PR830 PR1225 PR1230 PR1525	JS4045 CY250 JM4160	JC5118 JC5040 JC8050 JC7560		MP3000 F25M F30M F40M	KC525M KC527M KC530M KC537M KC610M KC620M KC720M KC725M KC730M KC735M	IC907 IC950 IC908 IC910 IC380 IC900 IC830 IC928 IC1008	IN2040 IN2505 IN2530 IN4005 IN4030	TT5525 TT7080 TT8020 TT8080 TT9030 TT9080	TN6430 TN6525 TN6540	WSP45 WSP46	CTP1235 CTP1625 CTP2235
	P40	**AH140**	VP30RT	ACP300	GC1030 GC2030		JM4160	JC5118 JC5040 JC8050 JC7560		MP3000 F40M T60M	KC537M KC720M KC725M KC735M	IC830 IC928 IC1008	IN2040 IN2530 IN4005 IN4030	TT8020	TN6540	WSP45 WSP46	CTP1235 CTP2235
M	M01			ACM100 ACK300	GC1010		PCS08M		DM4			IC907 IC903					
	M10	**AH725**	VP15TF	ACM100 ACK300 ACP300	GC1010 GC1025 GC1030 GC2030	PR830 PR1225 PR1525 PR1535	PCS08M CY150		DM4		KC515M KC610M KC635M KC720M	IC907 IC903	IN2505	TT5525 TT9030 TT9080	TN6425 TN6525	WXM15	
	M20	**AH725 AH3135 AH130 AH6030 AH3225 AH9130**	VP15TF MP7130 MP7030 UP20M VP20RT	ACM300 ACP300	GC1025 GC1030 GC1040 GC2030	PR830 PR1225 PR1525 PR1535	CY150 CY250	JC8015 JC5015 JC5118	DM4	MP3000 MS2050 F25M F30M	KC522M KC525M KC530M KC610M KC635M KC720M KC730M	IC380 IC900 IC908 IC928 IC1008	IN2005 IN2505 IN2530 IN4005	TT8020 TT8080	TN6425 TN6525	WXM15 WSM35 WSM36	CTP1235 CTP1625
	M30	**AH3135 AH130 AH9130**	VP15TF MP7130 MP7030 UP20M VP20RT MP7140 VP30RT	ACM300	GC1040 GC2030	PR830 PR1225 PR1525 PR1535	CY250 JM4160	JC8015 JC5015 JC5118 JC8050 JC7560		MP3000 MS2050 F30M F40M	KC522M KC525M KC530M KC537M KC725M KC730M KC735M	IC380 IC900 IC908 IC928 IC1008 IC328 IC330	IN2005 IN2505 IN2530 IN4005 IN4030	TT8020 TT8080	TN6540	WSM35 WSM36 WSP45 WSP46	CTP1235 CTP2235
	M40	**AH140**	MP7140 VP30RT	ACM300	GC1040	PR1225 PR1525 PR1535	JM4160	JC5015 JC5118 JC8050 JC7560		MS2050 F40M	KC725M	IC1008 IC328 IC330	IN2005 IN2530 IN4005 IN4030	TT8020	TN6540	WSM35 WSM36 WSP45 WSP46	CTP2235
K	K01	**AH110**	MP8010		GC1010	PR1510	ATH80D JP4105	JC8003				IC380 IC900		TT6080	TN2505 TN6405 TN6505		AMZ
	K10	**AH110 AH120**	MP8010 VP15TF		GC1010 GC1020	PR1210 PR1510	ATH80D JP4105 JP4120 CY150	JC8015		MK2050	KC514M KC515M KC520M KC620M	IC380 IC900 IC810 IC910	IN2015 IN2505 IN4015	TT6080	TN2505 TN6405 TN6505 TN6510	WHH15 WXM15 WKK25	AMZ CTP3220 CTP6215
	K20	**AH120 AH9030 AH9130**	MP8010 VP15TF VP20RT	ACK300	GC1020	PR1210 PR1510	JP4120 CY150 CY250	JC8015 JC5015		MK2050	KC514M KC520M KC522M KC524M KC527M KC610M KC620M KC635M	IC810 IC910 IC950 IC350 IC830 IC928	IN2015 IN2505 IN4015 IN4030		TN2525 TN6510 TN6520 TN6525	WHH15 WXM15 WKK25	CTP3220 CTP1625
	K30	**AH120**	VP15TF VP20RT	ACK300		PR1510	CY250	JC8015 JC5015		MK2050	KC522M KC524M KC527M KC537M KC610M KC620M KC635M	IC830 IC928 IC1008 IC808 IC908	IN2015 IN2505 IN4015 IN4030		TN6430 TN6525 TN6540	WKK25	

Note: The above table is selected from a publication. We have not obtained approval from each company.

●PVD Coated Grade for Milling

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classification	Symbol																
N	N01										KC410M KC510M KC5410			TT6080	TN6501		AMZ
	N10	**DS1100**		DL1000	GC1025 GC1030		SD5010 HD7010				KC410M KC510M KC5410 KC620M			TT6080 TT8020	TN6501 TN6502	WXN15	AMZ
	N20	**DS1200**	LC15TF	DL1000	GC1025 GC1030		SD5010 HD7010			F15M	KC422M KC620M			TT8020		WXN15	
S	S01	**AH110** **AH710**		ACM100 ACK300	GC1010	PR905 PR1210 PR1535		JC8003 JC8015			KC510M	IC808 IC907 IC908			TN6405		AMZ
	S10	**AH120** **AH725**	MP9120 VP15TF MP9130 MP9030	ACM100 ACK300	S30T GC1010 GC1030 GC2030	PR905 PR1210 PR1535	PTH13S JS1025	JC8003 JC8015 JC5015 JC5118		MS2050	KC510M KC610M	IC808 IC907 IC908 IC903	IN2505 IN2530	TT9030 TT9080 TT8080	TN6405 TN6425		AMZ CTP1625
	S20	**AH725** **AH130** **AH6030**	MP9120 VP15TF MP9130 MP9030	ACM300	S30T GC1030 GC1040 GC2030 GC2040	PR905 PR1210 PR1535	PTH13S JS1025	JC8015 JC5015 JC5118 JC8050 JC7560		MS2050 F40M	KC522M KC525M KC610M	IC300 IC900 IC830 IC928	IN2505 IN2530	TT8080 TT8020	TN6425	WSM35 WSM36	CTP1235 CTP1625
	S30	**AH130**	MP9130 MP9030	ACM300	S30T GC1040 GC2040	PR1535		JC5118 JC8050 JC7560		MS2050 F40M	KC522M KC525M KC725M	IC830 IC928	IN2530	TT8020	TN6540	WSM35 WSM36 WSP45 WSP46	CTP1235 CTP2235
H	H01	**AH110** **AH710** **AH8005**	MP8010		GC1010			DH102 JC6102 JC8003 JC8008			KC510M	IC903		TT2510 TT5505	TN2505		
	H10	**AH110** **AH120** **AH710** **AH8015**	MP8010 VP15TF		GC1010 GC1025 GC1030		PTH08M JP4105	JC6102 JC8003 JC8008 JC8015 JC5118		MH1000 F15M	KC505M KC510M KC635M	IC903 IC808 IC907 IC908		TT5515 TT6080	TN2505 TN2525	WHH15	CTP6215
	H20	**AH120** **AH725** **AH9030**	VP15TF		GC1025 GC1030		JP4105	JC8015 JC5118		F15M	KC635M	IC808 IC907 IC908 IC380 IC900		TT5515 TT6080	TN2525	WHH15	CTP6215
	H30									MP3000 F30M		IC380 IC900 IC1008					

Note: The above table is selected from a publication. We have not obtained approval from each company.

●Cermet for Milling

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classifi-cation	Symbol																
P	P01			T250A	CT530	TN60 TN100M	MZ1000						IN0560	CT3000			TCC410
	P10	**NS740**	NX2525	T250A	CT530	TN60 TN100M TC60M	MZ1000 MZ2000 CH550	NIT CX75 CX90		MP1020	KTPK20	IC30N	IN0560 IN60C	CT3000 CT7000	TTI25		TCC410 TCM10
	P20	**NS740**	NX2525 NX4545	T250A T4500A		TN60 TN100M TC60M	MZ2000 MZ3000 CH500 CH7030	NIT CX75 CX90 SC30		MP1020	KTPK20	IC30N	IN60C	CT3000 CT7000	TTI25		TCM10
	P30		NX4545	T4500A			MZ3000 CH7035		C7X			IC30N	IN0545	CT7000			
M	M10	**NS740**	NX2525	T250A	CT530	TN60 TN100M TC60M	MZ1000 CH550	NIT CX75			KTPK20	IC30N	IN0560	CT3000 CT7000	TTI25		TCC410
	M20	**NS740**	NX2525 NX4545	T250A T4500A		TN60 TN100M TC60M	MZ2000 MZ3000 CH500 CH7030	NIT CX75 SC30	C7X	MP1020	KTPK20	IC30N		CT7000	TTI25		TCC410 TCM10
	M30		NX4545	T4500A			MZ3000 CH7035	SC30									
K	K01						MZ1000 CH550	NIT									TCC410
	K10	**NS740**	NX2525				MZ2000 MZ3000 CH500 CH7030	NIT CX75			KTPK20			CT7000			TCC410 TCM10
	K20						MZ2000 MZ3000 CH500 CH7030 CH7035	CX75			KTPK20						

Note: The above table is selected from a publication. We have not obtained approval from each company.

●Uncoated Carbide for Milling

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classifi-cation	Symbol																
P	P01																
	P10																S26T
	P20		UTi20T	A30N			EX35				K125M	IC50M		P30	TTM		S26T
	P30	**UX30**	UTi20T	A30N	SM30		EX40				K125M	IC50M IC28		P30	TTM TTR		S26T
	P40				SM30							IC28			TTR		
M	M01																
	M10											IC20 IC07 IC08					S26T
	M20		UTi20T		SM30							IC07 IC08			TTM		S26T
	M30		UTi20T	A30N	SM30							IC28			TTM TTR		S26T
	M40			A30N								IC28			TTR		
K	K01					KW10					K115M K313			K10	THM-F		
	K10	**TH10**	HTi10	G10E	H13A	KW10 GW25	WH10				K115M K313 K110M	IC20		K10	THM-F THM		CTW4615 H216T
	K20		HTi10 UTi20T	G10E	H13A	KW10 GW25				HX	KMF	IC20	IN10K		THM THR		CTW4615 H216T
	K30		UTi20T								KMF		IN10K		THR		
	K40												IN10K				
N	N01	**KS05F**	HTi10		H10	KW10					K115M				THM-U	WK10	
	N10	**TH10**	HTi10		H10 H13A H10F	KW10 GW25	WH10			H15	K115M K313 K110M	IC20 IC08		K10 UF10	THM-U THM-F THR-S	WK10	CTW4615 H216T
	N20	**KS15F**	HTi10 TF15	H1	H13A H10F	KW10 GW25				HX H15 H25	KMF K313 K110M	IC20 IC08 IC28		K10 UF10	THM-F THR-S THM	WMG40	CTW4615 H216T
	N30		TF15	H1						H25	KMF	IC28				WMG40	
S	S01					KW10					K313	IC20					
	S10			EH520	H13A	KW10 GW25		FZ15			K313 K110M	IC20 IC07 IC08			THM-F		
	S20	**KS20**		EH520	H10F H13A	KW10 GW25		FZ15		HX H25	KMF	IC20 IC07 IC08 IC28			THM		
	S30				H10F							IC07 IC08					
H	H01				H1P			FZ05									
	H10				H1P			FZ05 FZ15				IC20			THM-F		
	H20							FZ15									

Note: The above table is selected from a publication. We have not obtained approval from each company.

User's Guide- Grade Comparison Chart

●PCBN and PCD for Milling

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classifi-cation	Symbol															
K	K10	**BX480**	MB710 MB730	BN700 BN7000 BN500	CB50	KBN475	JBN795 JBN500	B30 B52	CBN200		IB85	IN80B	KB90	WBK40U	WCB80	TA201
	K20	**BXC90** **BX90S**	MBS140	BNS800					CBN300 CBN400C	KB1340						
H	H20	**BX850**					JBN245		CBN100							
	H30	**BX940**		BNX25	CB50					KB1340		IN80B			WCB80	TA201
N	N10	**DX140**	MD220		CD10	KPD230	JDA30 JDA735	PD1	PCD20 PCD30M	KD1415	ID5	IN90D		WDN25U	WCD10	CTD4205
	N20			DA2200		KPD010	JDA10			KD1425	ID8					
	N30	**DX110**		DA1000		KPD001			PCD05	KD1420						

Note: The above table is selected from a publication. We have not obtained approval from each company.

●Ceramics for Milling

ISO		Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Sandvik	Kyocera	Mitsubishi Hitachi Tool	Dijet	NTK	Seco Tools	Kennametal	Iscar	Ingersoll	TaeguTec	Widia	Walter	Ceratizit
Classifi-cation	Symbol																
K	K01	**LX11** **LX21**		NB90S NB90M	CC6190 CC650	KA30 A65 KT66 PT600M			HC1 HW2 SE1 HC2		KY1310 KY1615			AW20 AB30 AS10	CW2015		CTN3105 CTS3105
	K10	**CX710** **FX105**			CC6190 CC650	A65 KT66 A66N PT600M			HC1 HW2 SE1 WA1 WA5		KY1310 KY1320 KY1615 KY3400		IN70N	AB30 AS10	CW2015 CW5025	WSN10	CTN3105 CTM3110 CTI3105 CTN3110 CTS3105
	K20	**FX105** **CX710**			CC6190	KS6000			SP9 SX1 SX8 SX9		KY1320 KY3400 KY3500 KY4300		IN70N	AS10	CW5025	WSN10	CTM3110 CTN3110
S	S01								JX1		KY1525 KY2100						
	S10	**FX510** **TS200**		WX120	CC670 CC6060 CC6065	CF1			WA1 WA5 SX9		KY1525 KY1540 KY2100 KY4300			AS20 TC430 TC3020	CW3020		
	S20	**TS300**												TC3030			
H	H01	**LX11**		NB100C	CC6050 CC650	A65 KT66 A66N PT600M			ZC4 ZC7		KY4300			AW20	CW2015		CTS3105
	H10			NB100C	CC6050 CC670 CC6190	A65 KT66 A66N PT600M			HC4 HC7 WA1		KY1615 KY4400			AB2010 AB20 AB30	CW2015		CTS3105

Note: The above table is selected from a publication. We have not obtained approval from each company.

User's Guide- Chipbreaker Comparison Chart

●Negative insert type

ISO Classification	Cutting Mode	Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Kyocera	Sandvik	Mitsubishi Hitachi Tool	Kennametal	Dijet	Iscar	TaeguTec	Widia	Walter	Ceratizit
P	Precision finishing	**01** **TF**	PK FH	FA	DP	QF	FE	FS , LF	PF	SF , PP , TF	FA			
	Finishing and light cutting	**TS , TSF** **ZF** **11 , NS** **AS** **TQ** **NM** **CB** **C**	SA FY C SH MP	SU FL SE , SX	PQ , VF CJ PQ GP , PP HQ GS CQ	PF , QF LC MF R/L-K	BE , BH AB , CT CE	FF , FN	UA , FT UR , UT	F3P NF , SF	FG VF , EA FC MC ML , MP	4 AP	NF3 NS6	CF , TF
	Finishing and light cutting (With Wiper)	**AFW , FW** **ASW , SW**	SW	LUW SEW GUW	WP WQ	WL , WF WMX WM , WR		FW MW RW		WF WG	WS WT	FW MW	NF NM	TFQ TMQ
	Medium cutting	**TM , AM** **DM , ZM** **All-round , TA**	MA MH , MP	GU GE , UX	HS , PT , GT CS , PS	PM , QM XM , XRM	AH AE , AY , B	P MN	PG , UB GN GNP	M3P , M3M PP , TF , GN	PC , MT MC , MG-	48	NMT , NM4	TMF , TMM M50
	Medium to heavy cutting	**TH** **THS**	RP , GH HZ , HL	MU , ME HG	PH All-round	HM , PR MR	RE	RN , RP MR	GG , UD	NR MR	RT	49	NM5 , NM6 NM9	TM TRM
	Heavy cutting	**TU** **TRS** **TUS**	HM , HX HV	HG , HP HU , HW HF	PX	PR , MR HR , QR	TE , UE HX , HE H	RM RH	UC	R3P NM	HT , HD RX , RH HY , HZ		NR6 NRF NRR	TRR , TR R28 , R58 R88
M	Finishing and light cutting	**SF , SA** **SS**	GM , MS SH , LM	EX , EG SU , EF	GU MQ	MF , XF LC , R/L-K	MP BH , AB	FP	SF	TF , VL	EA , SF , SU FG		NF4 NMS	CF , F30 , M34 F32 , TF
	Medium cutting	**SM** **S , TA**	MM , MA ES	GU HM	TK MU	MM , QM XM , XRM	PV , SE DE	MP , P	SZ	M3M , PP	EM , ET		NM4	TMF , M42 M30 , M52
	Heavy cutting	**TH , SH** **TU**	GH , RM , HZ	EM , MU	MS	MR HM , PR	AH , AE	UP , RP	SG	MR , MH		SR	NR4 NRT , NRS	TM , M60 TRM , TMR , TRR R80
K	Finishing	**CF , TA**	LK, MA	UZ	C	KF , XF	Y , AH	FN		GN	FG			CF
	Medium cutting	**CM** **All-round**	MK GK	GZ	ZS All-round	KM , QM XM , XRM	V, AE VA	RP , UN	PG		MT MG		NM5	M50
	Heavy cutting	**CH** **Flat-top**	RK **Flat-top**	**Flat-top**	GC **Flat-top**	KR **Flat-top**	RE **Flat-top**	**Flat-top**	GG , UD **Flat-top**		RT		**Flat-top**	TMR , TR R28 R58 , R88
N	Cutting of non-ferrous metals	**P**		AX	AH , A3	MF QM	**Flat-top**	MS , MP MG		PP	ML			F32
S	Finishing	**HRF**	FJ , LS	EF EX	MQ	SF 01		FS , LS MS			SF		NFT NF4	
	Medium cutting	**HRM** **HMM** **SA**	MS RS , GJ	EG MU	TK , MS , MU	MM , QM SMR		UP , P , NGP RP		PP	SU	SM	NMS NM4 , NRS , NR4	M34 , M52

Note: Above charts are based on published data and not authorized by each manufacturer.

User's Guide- Chipbreaker Comparison Chart

●Positive insert type

ISO Classification	Cutting Mode	Tungaloy	Mitsubishi Carbide	Sumitomo Electric	Kyocera	Sandvik	Mitsubishi Hitachi Tool	Kennametal	Dijet	Iscar	TaeguTec	Widia	Walter	Ceratizit
P	Precision finishing	**01**	FV , SMG	FC , FW	CF CK		No sign MP	UF		SF		2	PF2	F32
P	Finishing and light cutting	**PSF , PF , SS** **PS , PSS , TS** **TSF** **TSW** **W08~20**	FP , FV , SV LP SW , MW R/L , R/L-FD R/L-FS R/L-MV R/L-F , R/L-L	FP , FZ , LU FK , SS , SC SU , SK , SF US LUW , SDW W , SD FX , FY	GQ , GK GP , HQ XP , XQ	R/L-K PF , XF UF , PM WF , WK , WM	JQ	11 , GM LF	FT	PF SM , 14 , 17 19 , XL R/L RF , LF No sign	FA FG GF	41	PF5 PF4 PS5 PF , PM	SF SMF SMQ , 25Q
P	Medium cutting	**PM** **TM** **23** **24** **All-round** **RS**	MP MV No sign	SU , MU UJ SC (except for G-class inserts) RP	All-round VF , MF	PM , XM UM , PR , XR UR	JE	GM , MP , MR	GG	DT , HQ	MT MT	43	PM5	SM
P	High-feed, small depth of cut cutting	**61**	No sign			No mark	WE			No sign 14	No sign	No sign		
M	Finishing	**PSF , SS**	FM , FV , SV	FC		R/L-K UF , MF	MP	GM , LF			FG	41		
M	Finishing to Medium cutting	**PSS** **PS**	LM SV		MQ	MM , XM UM	JQ	MF					PF4	SF , SMF
M	Medium cutting	**PM**	MM , MV	MU		MR , XR UR	JE						PM5	F23 , F43 SM
K	Cutting of cast irons	**CM** **Flat-top**	MK **Flat-top**	**Flat-top**	**Flat-top**	KF , XF KM , XM UM , KR , XR	JQ , JE	**Flat-top**	**Flat-top**	19	MT **Flat-top**		PS5 , PM5 **Flat-top**	SF 25P 27 , 29
N	Cutting of non-ferrous metals	**AL** **PP** **Ground**	AZ R/L-F R/L	AG AX , AY	AH , A3	AL		GT-HP		AS	FL	AL1, AL2 , AL3	PF2 PM2	23P 25P 27 , 29
S	Finishing	**PSF**	FJ	FC	MQ	MF , UF , R/L-K								SF
S	Finishing to Medium cutting	**PSS** **PS**		FX , FY		MM , XM								F23
S	Medium cutting	**All-round**		SI		UM , MR , UR , XR					FG		PF2 , PF4	SM , 25P , 29
P M N S	Turning on small lathes	**01** **W08 , W15 , W20** **J10** **JRP , JSP , JPP** **TS , JTS** **TSW** **SS , JSS** **JS**	R/L-SR R/L-SN R/L-SS FS , F SW , MW SMG	W , SD FX , FY LUW , SDW LU , FP , FK , SU FB , LB FC , SI , SC	R/L-F , R/L-FSF ER/L-U FR/L-U R/L-U FR/L-U , R/L-USF MF , R/L-FSF GK E-GK	F , M	No sign		MF , MM ALU , MM1 ASF FT , ACB		GF , GW		PM5	

Note: The above table is selected from a publication. We have not obtained approval from each company.

MEMO

Insert

Insert - Content structure

- Inserts grouped in Negative type, Positive type and CBN/PCD.
- The list is in alphabetical order.
- The order of the list: C (80°) → D (55°) → R (360°) → S (90°) → T (60°) → V (35°) → W (80°) → Y (25°) → Other shapes
- The order of inserts:
  - Negative type (each shape with hole → without hole)
  - Positive type (each shape with hole → without hole)
- The order of chipbreakers:
  From precision finishing to heavy cutting, in the order of the values of cutting depth and feed rate.
- Insert without chipbreaker is on the last page of each shape.
- Introduces the proposed inserts according to the workpiece materials and the shape of workpiece materials.
- The standard cutting conditions for typical chipbreakers are at the bottom of the pages.
- ● in the catalog describes our standard stock items, and ▲ means the item to be discontinued in the future.

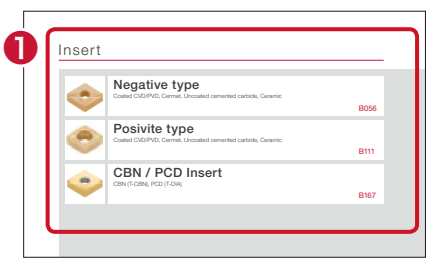
How to use the page

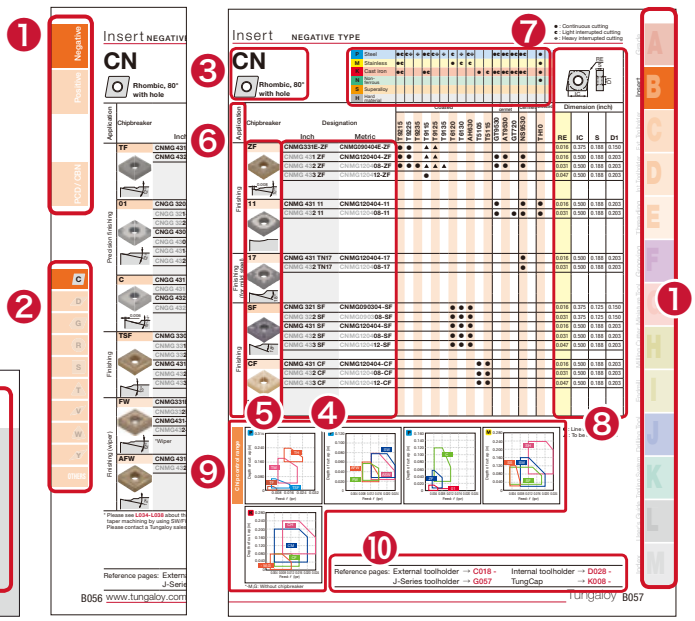
Method ①

Select an insert at the right end, and choose the information page by the insert type (❶) and the outer shape of the insert (❷) at the left end.

Method ②

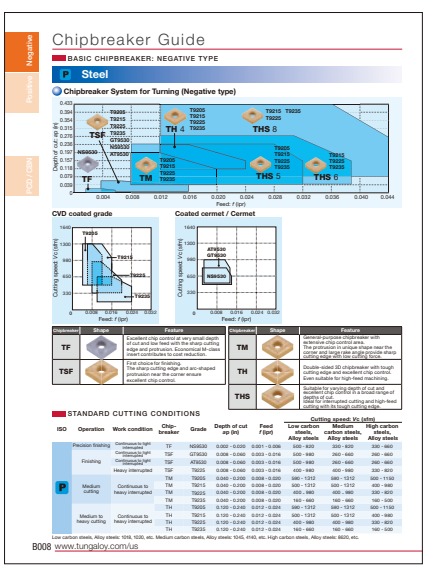
Check the page of each insert type from the index on B003 (❶), and choose the page of the setting information according to the outer shape of the insert (❷).

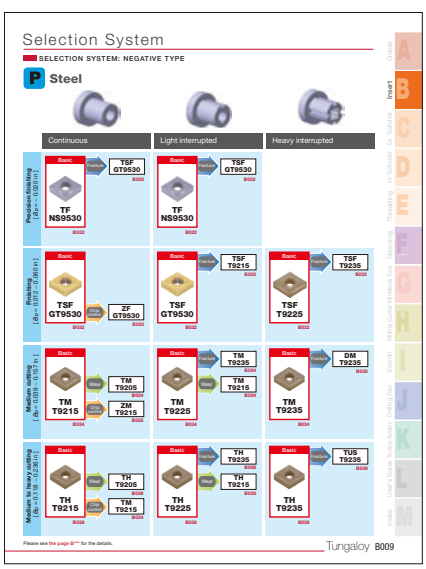




Method ③

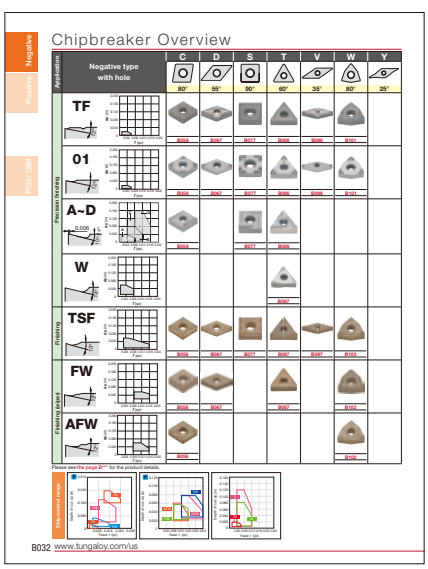
Select an insert at the chipbreaker introduction and the selection guide on B006 - B029 and check the details on the product page.





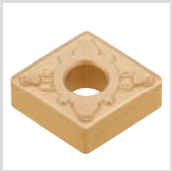
Method ④

Select an insert from the list of chipbreaker shapes on B030-B053 and check the details on each page.



When ordering

- Please specify the designation, grade, and quantity.
  e.g. **CNMG 432 TM T9225 ... 10 pieces** (10 inserts per package)
  *You will find a note if the number per package is not 10.



Negative type

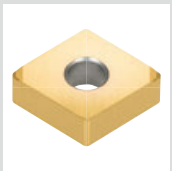
Coated CVD/PVD, Cermet, Uncoated cemented carbide, Ceramic

B056

Posivite type

Coated CVD/PVD, Cermet, Uncoated cemented carbide, Ceramic

B111



CBN / PCD Insert

CBN (T-CBN), PCD (T-DIA)

B167

Designation system for Insert

Symbol	Shape	Nose angle (degree)	Figure
H	Hexagonal	120°	
O	Octagonal	135°	
P	Pentagonal	108°	
S	Square	90°	
T	Triangular	60°	
C	Rhombic	80°	
D		55°	
E		75°	
F		50°	
G	G-shape (Tungaloy's symbol)	70°	
M	Rhombic	86°	
V		35°	
Y	Y-shape (Tungaloy's symbol)	25°	
W	Trigon	80°	
L	Rectangular	90°	
A	Parallelogram	85°	
B		82°	
K		55°	
R	Round	-	

❶ Shape

Note: For rhombic and parallelogram inserts, use the smaller nose angle.

Symbol	Relief angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Others
X	Special

❷ Relief angle

Symbol (class)	Tolerance (inch)		
	Cutting point	Thickness (S)	I.C. dia. (IC)
A	±0.0002	±0.0001	±0.0001
F	±0.0002	±0.0001	±0.0005
C	±0.0005	±0.0001	±0.0001
H	±0.0005	±0.0001	±0.0005
E	±0.001	±0.001	±0.001
G	±0.001	±0.005	±0.001
J	±0.0002	±0.001	±0.002 ~ ±0.005
K	±0.0005	±0.001	±0.002 ~ ±0.005
L	±0.001	±0.001	±0.002 ~ ±0.005
M	±0.003 ~ ±0.007	±0.005	±0.002 ~ ±0.005
N	±0.003 ~ ±0.007	±0.001	±0.002 ~ ±0.005
U	±0.005 ~ ±0.015	±0.005	±0.003 ~ ±0.01

❸ Accuracy

	❶	❷	❸	❹	❺
[Example]	T	N	M	G	3
[Example]	C	C	G	T	3

❹ Groove and hole

Symbol	Hole	Shape of hole	Chip-breaker	Shape
N	Without	-	Without	
R			Single-sided	
F			Double-sided	
A	With	Cylindrical hole	Without	
M			Single-sided	
G			Double-sided	
W		Partly cylindrical hole, single-side 40° ~ 60° Counter sink	Without	
T			Single-sided	
Q		Partly cylindrical hole, double-side 40° ~ 60° Counter sink	Without	
U			Double-sided	
B		Partly cylindrical hole, single-side 70° ~ 90° Counter sink	Without	
H			Single-sided	
C J X		Partly cylindrical hole, double-side 70° ~ 90° Counter sink	Without	

❺ Size (I.C)

Symbol		Dimensions (in)	
Normal series	Small series	I.C.	Fraction
(1.2)	5	0.156	5/32
(1.5)	6	0.187	3/16
(1.8)	7	0.219	7/32
2	(8)	0.250	1/4
(2.5)	0	0.313	5/16
3		0.375	3/8
4		0.500	1/2
5		0.625	5/8
6		0.750	3/4
7		0.875	7/8
8		1.000	1
(10)		1.250	1-1/4

ANSI Designation

● Detailed accuracy

Corner angles larger than 55°

(in)

Inscribed circle	Tolerance on inscribed circle dia. (IC)		Tolerance on corner height (M)		Shape
	J,K,M,N (class)	U (class)	J,K,M,N (class)	U (class)	
0.250	±0.002	±0.003	±0.003	±0.005	H W O R P S T C,E,M
0.375					
0.500	±0.003	±0.005	±0.005	±0.008	
0.625	±0.004	±0.007	±0.006	±0.010	
0.750					
1.000	±0.005	±0.010	±0.007	±0.015	

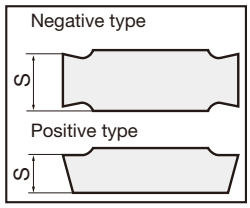
For angles at 55° (M-Class)

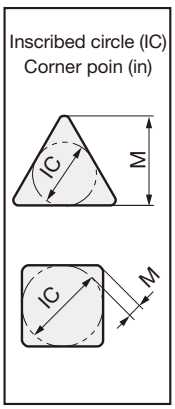
(in)

Inscribed circle	Tolerance on inscribed circle dia. (IC)	Tolerance on corner height (M)	Applicable insert shape
0.250	±0.002	±0.004	D
0.375			
0.500	±0.003	±0.006	
0.625	±0.004	±0.007	
0.750			

● Note on insert thickness

Thickness of insert with chpbreaker grooves is defined as shown to the right.





Symbol		Thickness (in)	
Normal series	Small series		
-	2	0.062	1/16
1.5	3	0.094	3/32
2	4	0.125	1/8
2.5	5	0.156	5/32
3	6	0.187	3/16
3.5	-	0.219	7/32
4	-	0.250	1/4
5	-	0.313	5/16
6	-	0.375	3/8

⑥ Thickness

[Example]

⑥	⑦				⑩
3	2				TM
2.5	1	F	N	-	JS
⑥	⑦	⑧	⑨ (Optional symbol)		⑩

⑦ Corner radius

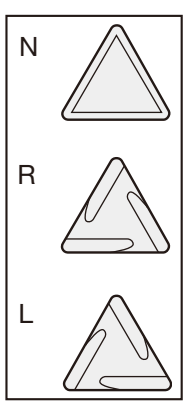
Symbol	Corner radius RE (in)	
V	0.001	-
0	0.004	1/256
0.5	0.008	1/128
1	0.016	1/64
2	0.031	1/32
3	0.047	3/64
4	0.062	1/16
5	0.078	5/64
6	0.094	3/32
7	0.109	7/64
8	0.125	1/8

⑧ Major cutting edge (Optional symbol)

Symbol	Cutting edge	Shape
F	Sharp	

⑨ Hand of insert

Symbol	Hand
R	Right
L	Left
N	Neutral



⑩

Our company's own symboles showing cutting edge conditions.
For details, refer to page B007.

Insert hole size chart

	Insert hole size	
	I.C.	Diameter
Negatives	1/4	0.089
	3/8	0.150
	1/2	0.203
	5/8	0.250
	3/4	0.312
	1	0.359
	1 1/4	0.346
Positives	5/32	0.087
	3/16	0.087
	13/64	0.110
	7/32	0.094
	1/4	0.110
	5/16	0.134
	3/8	0.173
	1/2	0.217
	5/8	0.217

Designation system for Insert

● How to decide the insert designation (conforms to JIS B4120-1998, ISO 1832 / AM1:1998)

Symbol	Shape	Nose angle (degree)	Figure
H	Hexagonal	120°	
O	Octagonal	135°	
P	Pentagonal	108°	
S	Square	90°	
T	Triangular	60°	
C	Rhombic	80°	
D		55°	
E		75°	
F		50°	
G	G-shape (Tungaloy's symbol)	70°	
M	Rhombic	86°	
V		35°	
Y	Y-shape (Tungaloy's symbol)	25°	
W	Trigon	80°	
L	Rectangular	90°	
A	Parallelogram	85°	
B		82°	
K		55°	
R	Round	-	

❶ Shape

Note: For rhombic and parallelogram inserts, use the smaller nose angle.

Symbol	Relief angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
O	Others
X	Special

❷ Relief angle

Symbol (class)	Tolerance (mm)		
	Corner height (M)	Thickness (S)	I.C. dia. (IC)
A	±0.005	±0.025	±0.025
F	±0.005	±0.025	±0.013
C	±0.013	±0.025	±0.025
H	±0.013	±0.025	±0.013
E	±0.025	±0.025	±0.025
G	±0.025	±0.13	±0.025
J	±0.005	±0.025	±0.005 ~ ±0.13
K	±0.013	±0.025	±0.05 ~ ±0.13
L	±0.025	±0.025	±0.05 ~ ±0.13
M	±0.08 ~ ±0.18	±0.13	±0.05 ~ ±0.13
N	±0.08 ~ ±0.18	±0.025	±0.05 ~ ±0.13
U	±0.13 ~ ±0.38	±0.13	±0.08 ~ ±0.25

❸ Accuracy

	❶	❷	❸	❹	❺
[Example]	T	N	M	G	16
[Example]	C	C	G	T	09

❹ Groove and hole

Symbol	Hole	Shape of hole	Chip-breaker	Shape
N	Without	-	Without	
R			Single-sided	
F			Double-sided	
A	With	Cylindrical hole	Without	
M			Single-sided	
G			Double-sided	
W		Partly cylindrical hole, single-side 40° ~ 60° Counter sink	Without	
T			Single-sided	
Q		Partly cylindrical hole, double-side 40° ~ 60° Counter sink	Without	
U			Double-sided	
B		Partly cylindrical hole, single-side 70° ~ 90° Counter sink	Without	
H			Single-sided	
C		Partly cylindrical hole, double-side 70° ~ 90° Counter sink	Without	
J			Double-sided	
X	Special			

❺ Cutting edge length and I.C. symbol

*R Symbol	*R Length	S Symbol	S Length	C Symbol	C Length	W Symbol	W Length	T Symbol	T Length	D Symbol	D Length	V Symbol	V Length	K Symbol	K Length	I.C. dia.
		03	3.97	03	4.0			06	6.9	04	4.8					3.97
		04	4.76	04	4.8			08	8.2	05	5.8	08	8.3			4.76
05	5	–	–	–	–	–	–	–	–	–	–	–	–	–	–	5
		05	5.56	05	5.6	03	3.8	09	9.6	06	6.8					5.56
06	6	–	–	–	–	–	–	–	–	–	–	–	–	–	–	6
		06	6.35	06	6.5	04	4.3	11	11	07	7.8	11	11.2			6.35
		07	7.94	08	8.1	05	5.4	13	13.8	09	9.7					7.94
08	8	–	–	–	–	–	–	–	–	–	–	–	–	–	–	8
09	9.525	09	9.525	09	9.7	06	6.5	16	16.5	11	11.6	16	16.6	16	19.7	9.525
10	10	–	–	–	–	–	–	–	–	–	–	–	–	–	–	10
12	12	–	–	–	–	–	–	–	–	–	–	–	–	–	–	12
12	12.7	12	12.7	12	12.9	08	8.7	22	22	15	15.5	22	22.1			12.7
15	15.875	15	15.875	16	16.1	10	10.9	27	27.5	19	19.4					15.875
16	16	–	–	–	–	–	–	–	–	–	–	–	–	–	–	16
19	19.05	19	19.05	19	19.3	13	13	33	33	23	23.3					19.05
20	20	–	–	–	–	–	–	–	–	–	–	–	–	–	–	20
		22	22.225	22	22.6			38	38.5	27	27.1					22.225
25	25	–	–	–	–	–	–	–	–	–	–	–	–	–	–	25
25	25.4	25	25.4	25	25.8			44	44	31	31					25.4
31	31.75	31	31.75	32	32.2			55	55	38	38.8					31.75
32	32	–	–	–	–	–	–	–	–	–	–	–	–	–	–	32

*When M0 is included in Designation, the inscribed-circle diameter is metric size.

(mm)

ISO Designation

● Detailed accuracy for J,K,L,M,N and U classes

For inserts with nose corner angles larger than 55°

(mm)

Inscribed circle	Tolerance on inscribed circle dia. (IC)		Tolerance on corner height (M)		Applicable insert shape
	J,K,L,M,N (class)	U (class)	J,K,L,M,N (class)	U (class)	
6.35	±0.05	±0.08	±0.08	±0.13	H W O R P S T C,E,M
9.525					
12.7	±0.08	±0.13	±0.13	±0.2	
15.875	±0.1	±0.18	±0.15	±0.27	
19.05					
25.4	±0.13	±0.25	±0.18	±0.38	
31.75	±0.15	±0.25	±0.2	±0.38	
32					

For M-type inserts with nose corner angles of 55° (Shape: D), 35° (Shape: V), 25° (Shape: Y)

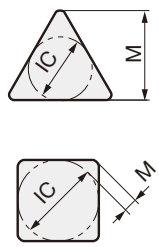
(mm)

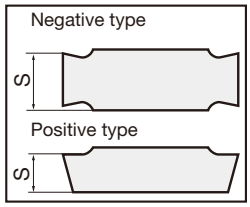
Inscribed circle	Tolerance on inscribed circle dia. (IC)	Tolerance on corner height (M)	Applicable insert shape
6.35	±0.05	±0.11	D
9.525			
12.7	±0.08	±0.15	
15.875	±0.1	±0.18	
19.05			
6.35	±0.05	±0.16	V Y
9.525			

● Insert thickness

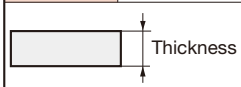
For many of the inserts with chipbreaker, the insert height of the cutting edge is lower. In that case, the insert thickness outlined in the drawing of external dimensions is equivalent of "S" in the figure on the right.

Inscribed circle (IC)
Corner height (M)





Symbol	Thickness (mm)
X1	1.39
01	1.59
T1	1.98(1.79)
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52



⑥ Thickness

[Example]

⑥	⑦		⑧	⑨		⑩
04	08				-	TM
T3	04		F	N	-	JS

(Optional symbol) (Optional symbol) (Supplementary symbol)

⑦ Corner radius

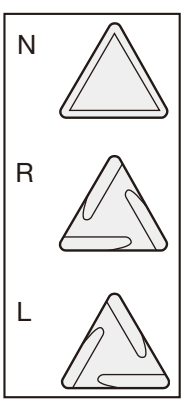
Symbol	Corner radius RE (mm)
00	0.03
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
20	2.0
24	2.4
28	2.8
32	3.2

⑧ Major cutting edge

Symbol	Cutting edge	Shape
F	Sharp	

⑨ Hand of insert

Symbol	Hand
R	Right
L	Left
N	Neutral



⑩ Chipbreaker

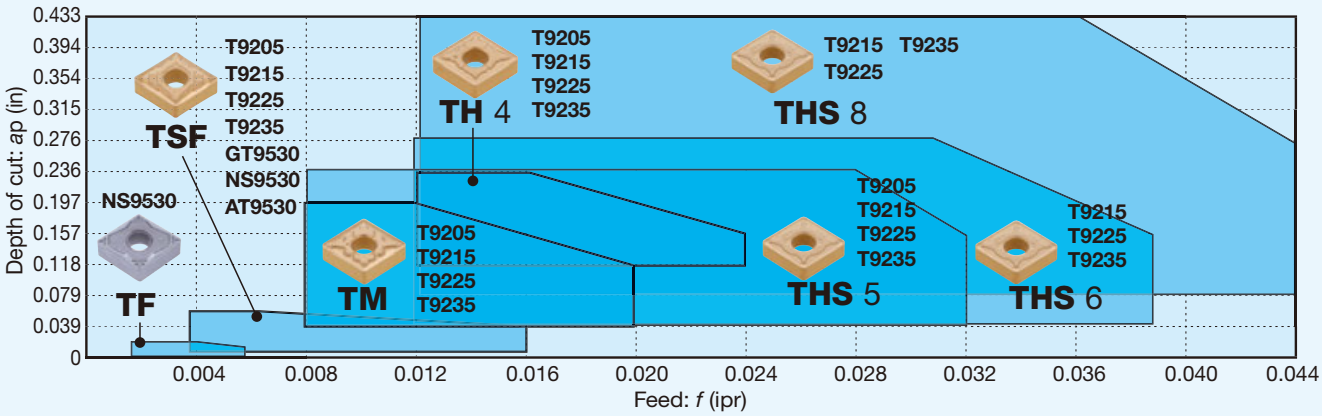
Symbol	Applications	Symbol	Applications
01(TF)	Precision finishing (Basic selection)	AFW	Small depth of cut and high feed (Wiper type Inserts)
TS	Finishing (Basic selection)	ASW	Small depth of cut and high feed (Wiper type Inserts)
TSF	Finishing (Basic selection)	CB	Medium cutting
TM	Medium cutting (Basic selection)	CM	Medium cutting of cast irons
THS	Medium to heavy cutting (Basic selection)	All-round	Medium cutting
TRS	Medium to heavy cutting	A	Finishing (Right and left hand)
TUS	Heavy cutting	B	Finishing (Right and left hand)
DM	Medium cutting	C	Finishing (Right and left hand)
HRF	Finishing	D	Finishing (Right and left hand)
HRM	Finishing to medium cutting	P	Finishing of Aluminium alloys
HMM	Finishing to medium cutting	W	Finishing (Angular type)
SF	Finishing of stainless steels	PSF	Finishing (Positive type)
SS	Finishing of stainless and mild steels	PSS	Finishing to light cutting (Positive insert)
SM	Medium cutting of stainless steels	PS	Finishing to medium cutting (Positive type Basic selection)
S	Medium cutting of stainless steels	PM	Medium cutting (Positive type)
SH	Medium to heavy cutting of stainless steels	AL	Finishing to medium cutting of aluminium alloys
SA	For heat-resisting alloys and stainless steels	RS	Medium cutting (For round inserts)
ZF	Finishing and profiling	W□□	Finishing (Angular type)
ZM	Finishing to medium cutting and profiling	H□□	Finishing to medium cutting (Parallel)
NS	Finishing and profiling	11	Finishing
NM	Finishing to medium cutting and profiling	61	Small depth of cut and high feed (For round inserts)
AS	Small depth of cut and high feed	S1	Finishing (For KNMX type)
TA	Medium cutting	J08,J10	For small lathes
TQ	Medium cutting	JS	For small lathes
AM	Small depth of cut and high feed	JRP	For small lathes
FW	Finishing (Wiper type)	JPP	For small lathes
SW	Finishing to medium cutting (Wiper type)	JSP	For small lathes

Chipbreaker Guide

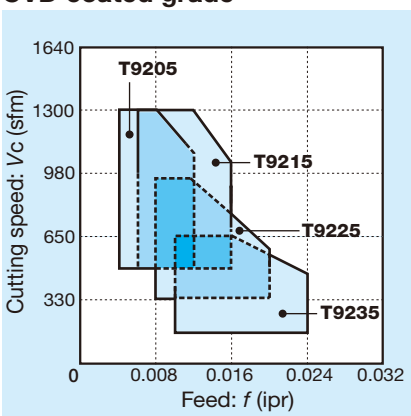
BASIC CHIPBREAKER: NEGATIVE TYPE

P Steel

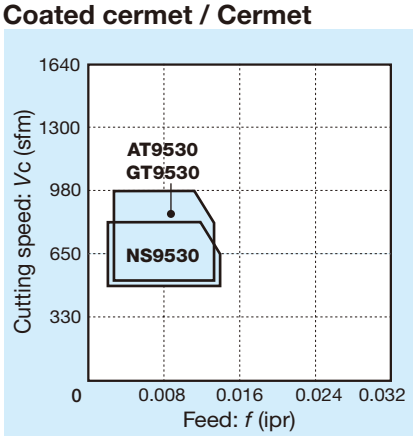
Chipbreaker System for Turning (Negative type)

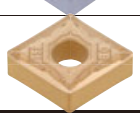


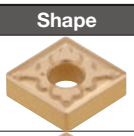
CVD coated grade



Coated cermet / Cermet



Chipbreaker	Shape	Feature
TF		Excellent chip control at very small depth of cut and low feed with the sharp cutting edge and protrusion. Economical M-class insert contributes to cost reduction.
TSF		First choice for finishing. The sharp cutting edge and arc-shaped protrusion near the corner ensure excellent chip control.

Chipbreaker	Shape	Feature
TM		General-purpose chipbreaker with extensive chip control area. The protrusion in unique shape near the corner and large rake angle provide sharp cutting edge with low cutting force.
TH		Double-sided 3D chipbreaker with tough cutting edge and excellent chip control. Even suitable for high-feed machining.
THS		Suitable for varying depth of cut and excellent chip control in a broad range of depths of cut. Ideal for interrupted cutting and high-feed cutting with its tough cutting edge.

STANDARD CUTTING CONDITIONS

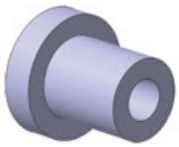
ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm) Low carbon steels, Alloy steels	Medium carbon steels, Alloy steels	High carbon steels, Alloy steels
P	Precision finishing	Continuous to light interrupted	TF	NS9530	0.002 - 0.020	0.001 - 0.006	500 - 820	330 - 820	330 - 660
	Finishing	Continuous to light interrupted	TSF	GT9530	0.008 - 0.060	0.003 - 0.016	500 - 980	260 - 660	260 - 660
		Continuous to light interrupted	TSF	AT9530	0.008 - 0.060	0.003 - 0.016	500 - 980	260 - 660	260 - 660
		Heavy interrupted	TSF	T9225	0.008 - 0.060	0.003 - 0.016	400 - 980	400 - 980	330 - 820
	Medium cutting	Continuous to heavy interrupted	TM	T9205	0.040 - 0.200	0.008 - 0.020	590 - 1312	590 - 1312	500 - 1150
			TM	T9215	0.040 - 0.200	0.008 - 0.020	500 - 1312	500 - 1312	400 - 980
			TM	T9225	0.040 - 0.200	0.008 - 0.020	400 - 980	400 - 980	330 - 820
			TM	T9235	0.040 - 0.200	0.008 - 0.020	160 - 660	160 - 660	160 - 500
	Medium to heavy cutting	Continuous to heavy interrupted	TH	T9205	0.120 - 0.240	0.012 - 0.024	590 - 1312	590 - 1312	500 - 1150
			TH	T9215	0.120 - 0.240	0.012 - 0.024	500 - 1312	500 - 1312	400 - 980
			TH	T9225	0.120 - 0.240	0.012 - 0.024	400 - 980	400 - 980	330 - 820
			TH	T9235	0.120 - 0.240	0.012 - 0.024	160 - 660	160 - 660	160 - 500

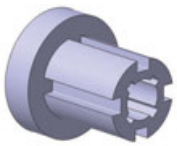
Low carbon steels, Alloy steels: 1018, 1020, etc. Medium carbon steels, Alloy steels: 1045, 4140, etc. High carbon steels, Alloy steels: 8620, etc.

Selection System

SELECTION SYSTEM: NEGATIVE TYPE

P Steel





	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.020 in]	Basic: **TF NS9530** B032 → Fracture: **TSF GT9530** B032	Basic: **TF NS9530** B032 → Fracture: **TSF GT9530** B032	
Finishing [a_p = 0.012 ~ 0.060 in]	Basic: **TSF GT9530** B032 → Chip control: **ZF GT9530** B033	Basic: **TSF GT9530** B032 → Fracture: **TSF T9215** B032	Basic: **TSF T9225** B032 → Fracture: **TSF T9235** B032
Medium cutting [a_p = 0.039 ~ 0.157 in]	Basic: **TM T9215** B034 → Wear: **TM T9205** B034; Chip control: **ZM T9215** B035	Basic: **TM T9225** B034 → Fracture: **TM T9235** B034; Wear: **TM T9215** B034	Basic: **TM T9235** B034 → Fracture: **DM T9235** B035
Medium to heavy cutting [a_p = 0.118 ~ 0.236 in]	Basic: **TH T9215** B038 → Wear: **TH T9205** B038; Chip control: **TM T9215** B034	Basic: **TH T9225** B038 → Fracture: **TH T9235** B038; Wear: **TH T9215** B038	Basic: **TH T9235** B038 → Fracture: **TUS T9235** B039

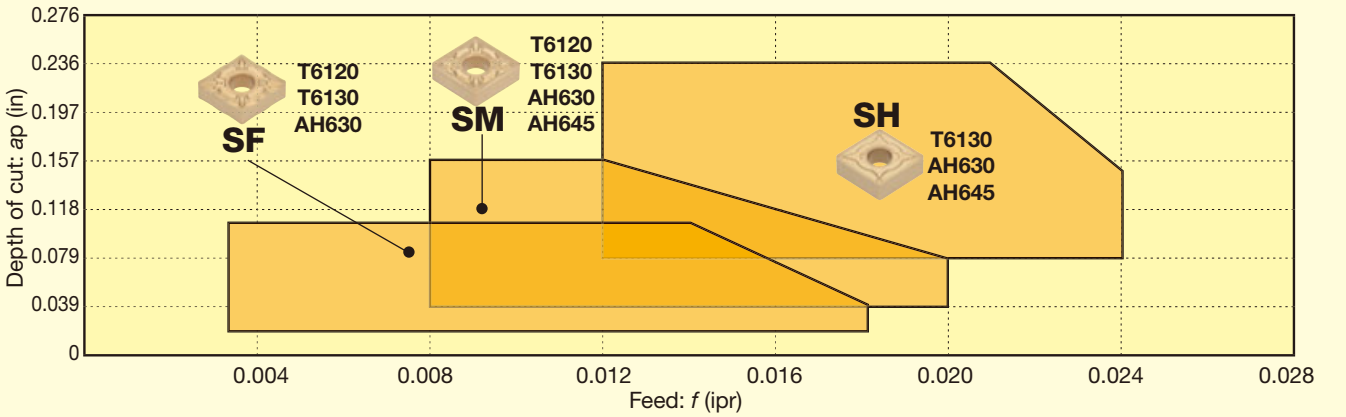
Please see the page B*** for the details.

Chipbreaker Guide

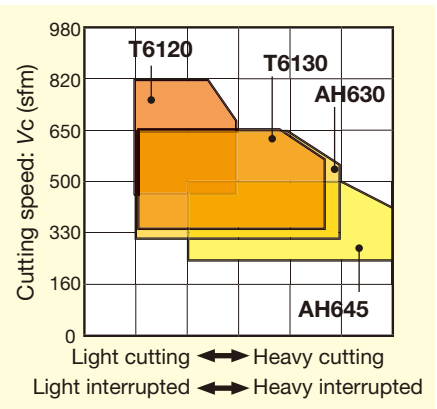
BASIC CHIPBREAKER: NEGATIVE TYPE

M Stainless Steel

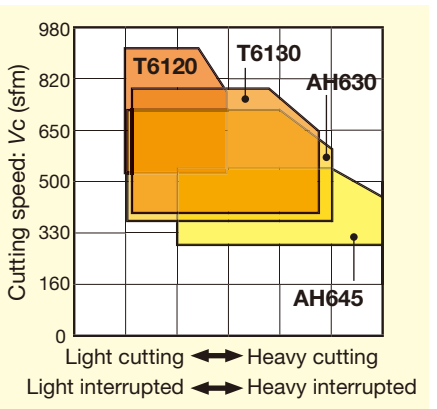
Chipbreaker System for Turning (Negative type)



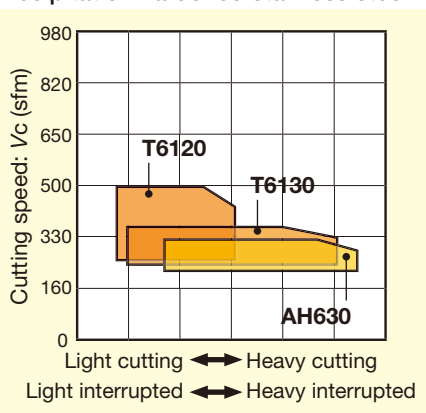
Austenitic stainless steel



Ferritic / martensite stainless steel



Precipitation hardened stainless steel



Chipbreaker	Shape	Feature
SF		Excellent chip control with small depth of cut at high feed. Suitable for finishing stainless steel.
SH		Suitable for medium to heavy cutting. High fracture resistance with specially reinforced cutting edge. Ideal for machining that requires cutting edge strength. such as roughing and interrupted cutting.

Chipbreaker	Shape	Feature
SM		General-purpose chipbreaker with sharpness and good chip control. First choice for stainless steel.

STANDARD CUTTING CONDITIONS

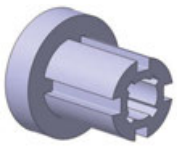
ISO	Operation	Work condition	Chipbreaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed *Vc* (sfm)
M	Finishing	Continuous	SF	T6120	0.020 - 0.098	0.003 - 0.018	460 - 790
		Continuous to light interrupted	SF	T6130	0.020 - 0.098	0.003 - 0.018	330 - 660
		Heavy interrupted	SF	AH630	0.020 - 0.098	0.003 - 0.018	300 - 620
	Medium cutting	Continuous	SM	T6120	0.040 - 0.160	0.008 - 0.020	460 - 790
		Continuous to light interrupted	SM	T6130	0.040 - 0.160	0.008 - 0.020	330 - 660
		Light interrupted	SM	AH630	0.040 - 0.160	0.008 - 0.020	300 - 620
		Heavy interrupted	SM	AH645	0.040 - 0.160	0.008 - 0.020	230 - 500
	Medium to heavy cutting	Continuous to light interrupted	SH	T6130	0.080 - 0.240	0.012 - 0.024	330 - 660
		Light interrupted	SH	AH630	0.080 - 0.240	0.012 - 0.024	300 - 620
		Heavy interrupted	SH	AH645	0.080 - 0.240	0.012 - 0.024	230 - 500

Stainless steels: 304SS, 316SS, etc.

SELECTION SYSTEM: NEGATIVE TYPE

M Stainless Steel





	Continuous	Light interrupted	Heavy interrupted
Finishing [a_p = 0.020 ~ 0.060 in]	Basic **SF T6120** B033 → Fracture: **SF T6130** B033	Basic **SF T6130** B033 → Fracture: **SF AH630** B033; Wear: **SF T6120** B033	Basic **SF AH630** B033 → Fracture: **SF AH645** B033; Wear: **SF T6130** B033
Medium cutting [a_p = 0.039 ~ 0.157 in]	Basic **SM T6130** B037 → Wear: **SM T6120** B037; Chip control: **SF T6130** B033	Basic **SM AH630** B037 → Fracture: **SM AH645** B037; Wear: **SM T6130** B037	Basic **SM AH645** B037 → Fracture: **SH AH645** B039
Medium to heavy cutting [a_p = 0.079 ~ 0.236 in]	Basic **SH T6130** B039 → Fracture: **SH AH630** B039; Wear: **SH T6120** B039; Chip control: **SM T6130** B037	Basic **SH AH630** B039 → Fracture: **SH AH645** B039; Wear: **SH T6130** B039	Basic **SH AH645** B039 → Wear: **SH AH630** B039

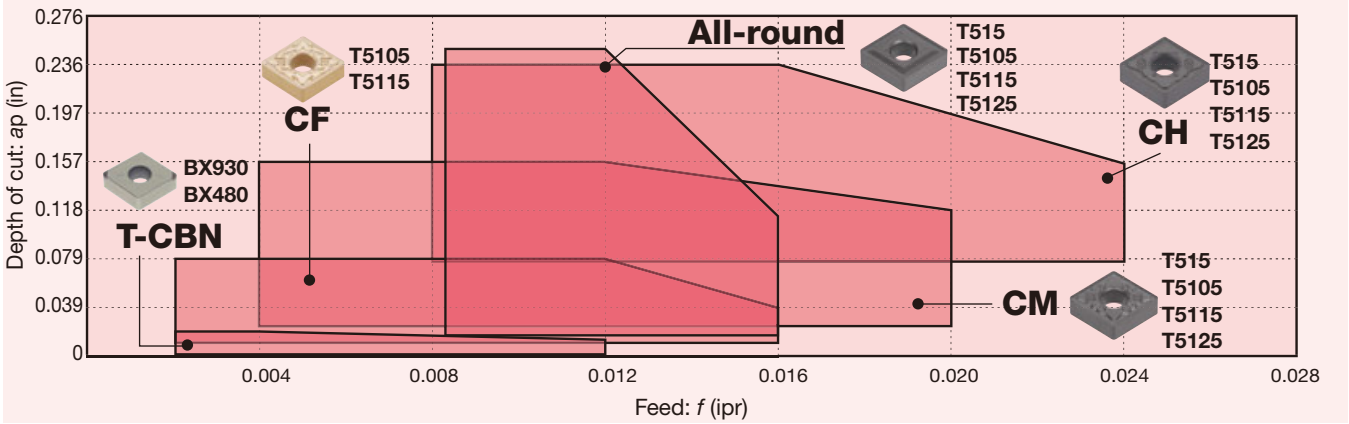
Please see the page B*** for the details.

Chipbreaker Guide

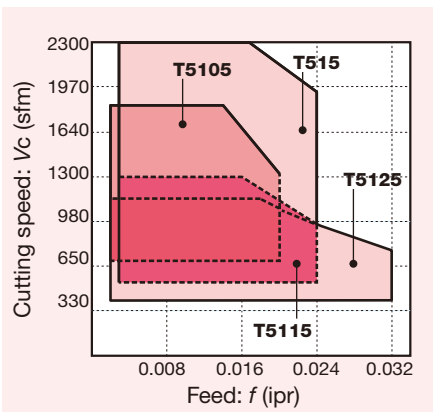
BASIC CHIPBREAKER: NEGATIVE TYPE

K Cast Iron

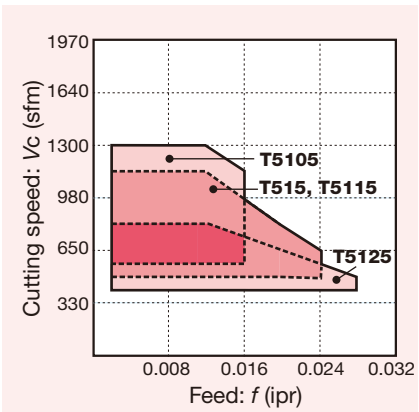
Chipbreaker System for Turning (Negative type)



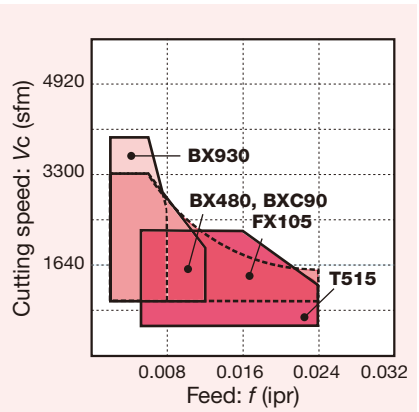
Grey cast iron

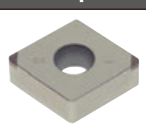
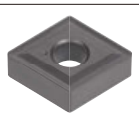


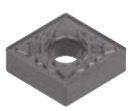
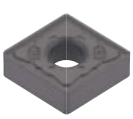
Ductile cast iron



Grey cast iron (high speed cutting)



Chipbreaker	Shape	Feature
No chip-breaker (T-CBN)		Excellent performance in high-speed finishing of cast iron with CBN sintered body on the cutting edge.
CF		Low cutting force chipbreaker for cast iron. Combined with an arc-shaped high rake angle (substantially 20°) drastically reduces cutting force and prevents the deformation and burr of thin-walled components.
All-round		Excellent performance in interrupted cutting. Highly reliable chipbreaker with great stability.

Chip-breaker	Shape	Feature
CM		First choice for cast iron. Versatile chipbreaker for a wide range of applications from continuous to interrupted cutting thanks to the positive land and wide chip pocket.
CH		Chipbreaker with reinforced cutting edge. The negative land and the land support provide stable insert seating and increase cutting edge strength, resulting in no fracture even in heavy cutting.

STANDARD CUTTING CONDITIONS

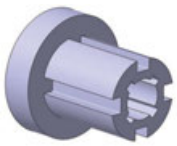
ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)	
							Grey cast iron	Ductile cast iron
K	High speed cutting	Continuous	Without	BX930	0.002 - 0.020	0.002 - 0.008	984 - 3937	328 - 1640
		Light interrupted	Without	BX480	0.002 - 0.020	0.002 - 0.012	984 - 3281	328 - 984
		Continuous	Without	BXC90	0.003 - 0.118	0.002 - 0.016	984 - 3281	328 - 984
	Finishing	Continuous	All-round	T515	0.039 - 0.197	0.004 - 0.020	490 - 2297	459 - 1214
		Light interrupted	All-round	T515	0.039 - 0.197	0.004 - 0.020	490 - 2297	459 - 1214
		Heavy interrupted	All-round	T515	0.039 - 0.197	0.004 - 0.020	490 - 2297	459 - 1214
	Medium cutting	Continuous	All-round	T515	0.039 - 0.197	0.004 - 0.020	490 - 2297	459 - 1214
		Light interrupted	All-round	T515	0.039 - 0.197	0.004 - 0.020	490 - 2297	459 - 1214
		Heavy interrupted	CH	T515	0.118 - 0.236	0.008 - 0.024	490 - 2297	459 - 1214
	Medium to heavy cutting	Continuous	All-round	T515	0.039 - 0.197	0.004 - 0.020	490 - 2297	459 - 1214
		Light interrupted	All-round	T515	0.039 - 0.197	0.004 - 0.020	490 - 2297	459 - 1214
		Heavy interrupted	CH	T515	0.118 - 0.236	0.008 - 0.024	490 - 2297	459 - 1214

Grey cast iron: Class 25, etc. Ductile cast irons: 65-45-12, etc.

SELECTION SYSTEM: NEGATIVE TYPE

K Cast Iron





	Continuous	Light interrupted	Heavy interrupted
Finishing [a_p = 0.020 ~ 0.079 in]	Basic: All-round T515 B035 → Wear: All-round T5105 B035; Burr occurrence: CF T5105 B033	Basic: All-round T515 B035 → Wear: All-round T5105 B035; Fracture: CH T515 B039; Burr occurrence: CF T5115 B033	Basic: CH T515 B039 → Wear: CH T5105 B039; Fracture: CH T5125 B039; Burr occurrence: All-round T515 B035
Medium cutting [a_p = 0.039 ~0.197 in]	Basic: All-round T515 B035 → Wear: All-round T5105 B035; Burr occurrence: CF T5105 B033	Basic: All-round T515 B035 → Wear: All-round T5105 B035; Fracture: CH T515 B039; Burr occurrence: CF T5115 B033	Basic: CH T515 B039 → Wear: CH T5105 B039; Fracture: CH T5125 B039; Burr occurrence: All-round T515 B035
Medium to heavy cutting [a_p = 0.118 ~ 0.236 in]	Basic: All-round T515 B035 → Wear: All-round T5105 B035; Burr occurrence: CF T5105 B033	Basic: All-round T515 B035 → Wear: All-round T5105 B035; Fracture: CH T515 B039; Burr occurrence: CF T5115 B033	Basic: CH T515 B039 → Wear: CH T5105 B039; Fracture: CH T5125 B039; Burr occurrence: All-round T515 B035

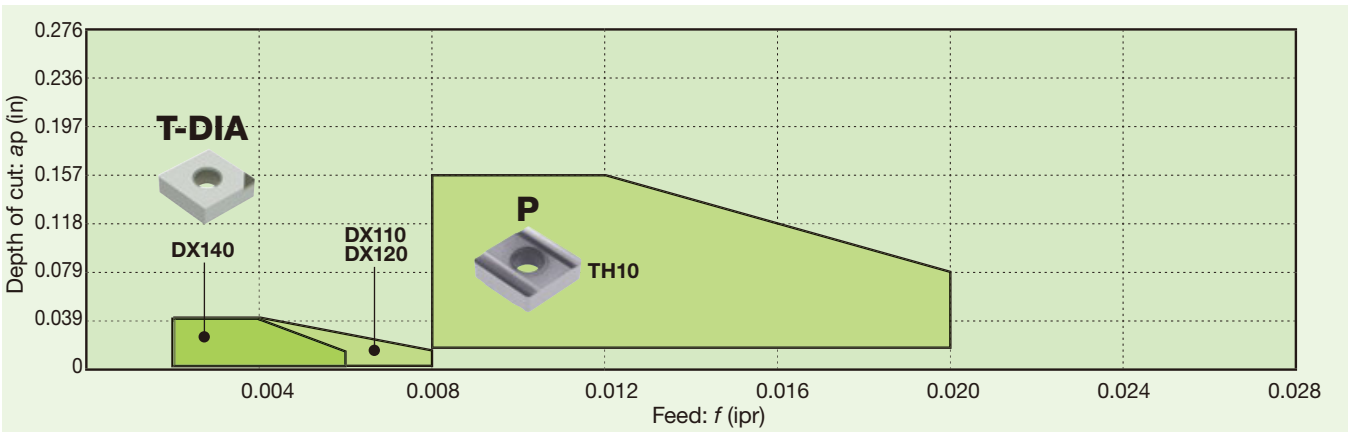
Please see the page B*** for the details.

Chipbreaker Guide

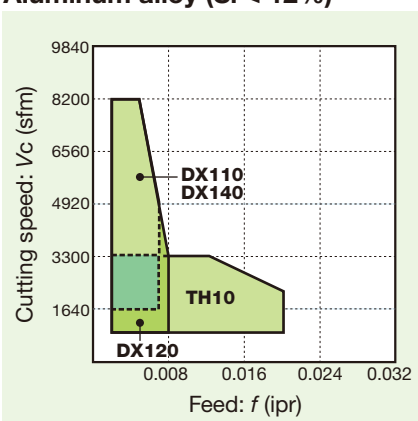
BASIC CHIPBREAKER: NEGATIVE TYPE

N Non-ferrous Metal

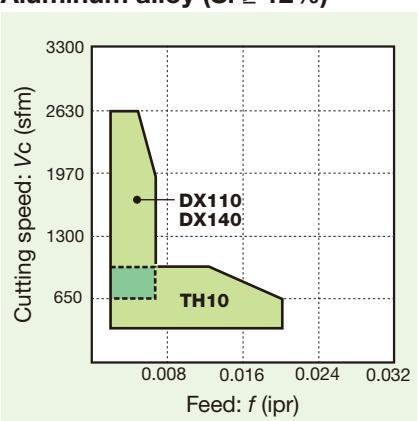
Chipbreaker System for Turning (Negative type)



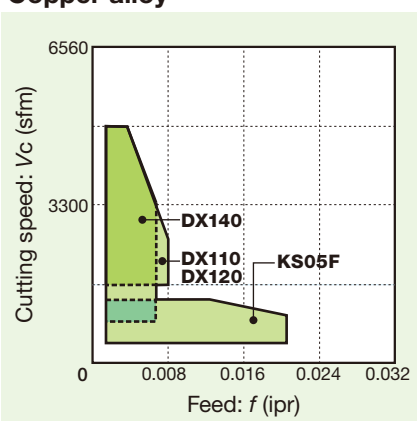
Aluminum alloy (Si < 12%)

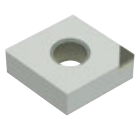
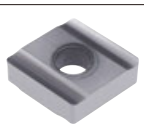


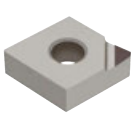
Aluminum alloy (Si ≥ 12%)



Copper alloy



Chipbreaker	Shape	Feature
No chip-breaker (T-DIA)		Excellent performance in high-speed finishing of non-ferrous metal, such as aluminum and copper alloy, with diamond sintered body on the cutting edge.
P		Excellent sharpness for non-ferrous metal, such as aluminum and copper alloy.

Chipbreaker	Shape	Feature
With chip-breaker (T-DIA)		Wide chipbreaker for excellent chip control.

STANDARD CUTTING CONDITIONS

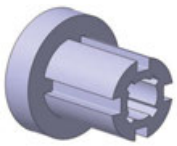
ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm) Aluminum alloy (Si < 12%)	Aluminum alloy (Si ≥ 12%)	Copper alloy
N	Precision finishing	Continuous	With	DX110	0.002 - 0.040	0.002 - 0.006	1640 - 8200	1310 - 2630	1640 - 4920
		Light interrupted	Without	DX140	0.002 - 0.040	0.002 - 0.008	980 - 8200	-	1640 - 4920
	Finishing	Continuous	Without	DX140	0.002 - 0.040	0.002 - 0.006	1640 - 8200	1310 - 2630	1640 - 4920
		Light interrupted	Without	DX140	0.002 - 0.040	0.002 - 0.006	980 - 5900	1310 - 1970	1310 - 3940
		Heavy interrupted	P	TH10	0.020 - 0.160	0.008 - 0.020	330 - 1640	330 - 660	330 - 660
	Medium cutting	Continuous	P	TH10	0.020 - 0.160	0.008 - 0.020	330 - 3280	330 - 980	330 - 980
		Light interrupted	P	TH10	0.020 - 0.160	0.008 - 0.020	330 - 2630	330 - 660	330 - 660
		Heavy interrupted	P	TH10	0.020 - 0.160	0.008 - 0.020	330 - 1640	330 - 660	330 - 660

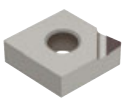
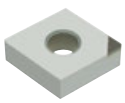
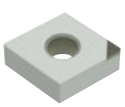
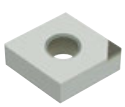
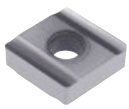
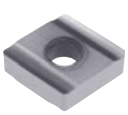
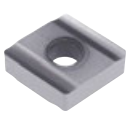
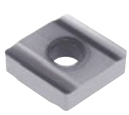
Selection System

SELECTION SYSTEM: NEGATIVE TYPE

N Non-ferrous Metal





	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.020 in]	Basic  With chipbreaker **DX110** B194, B196 Wear → **T-DIA DX140** B195, B197, B198	Basic  **T-DIA DX140** B195, B197, B198 Surface quality → With chipbreaker T-DIA **DX110** B194, B196 Wear → **T-DIA DX160** B195, B197	
Finishing [a_p = 0.020 ~0.079 in]	Basic  **T-DIA DX140** B195, B197, B198 Surface quality → With chipbreaker T-DIA **DX110** B194, B196 Wear → **T-DIA DX160** B195, B197	Basic  **T-DIA DX140** B195, B197, B198 Fracture → **P TH10** B037 Wear → **T-DIA DX160** B195, B197	Basic  **P TH10** B037
Medium cutting [a_p = 0.039 ~ 0.157 in]	Basic  **P TH10** B037 Wear → **T-DIA DX140** B195, B197, B198	Basic  **P TH10** B037 Wear → **T-DIA DX140** B195, B197, B198	Basic  **P TH10** B037

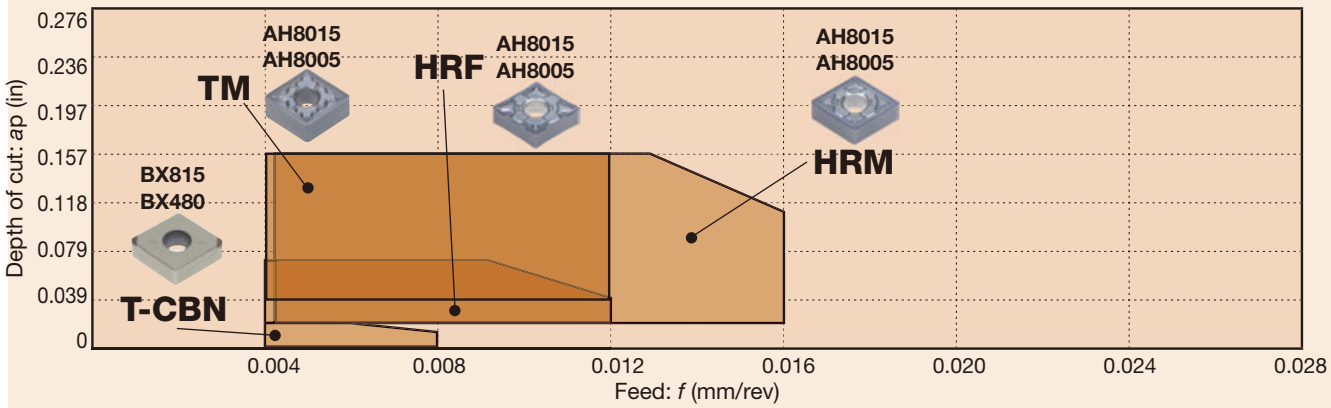
Please see the page B*** for the details.

Chipbreaker Guide

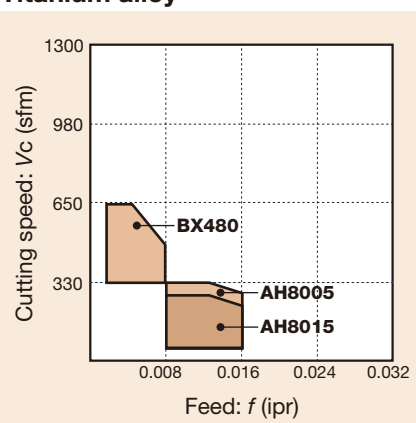
BASIC CHIPBREAKER: NEGATIVE TYPE

S Superalloys and titanium

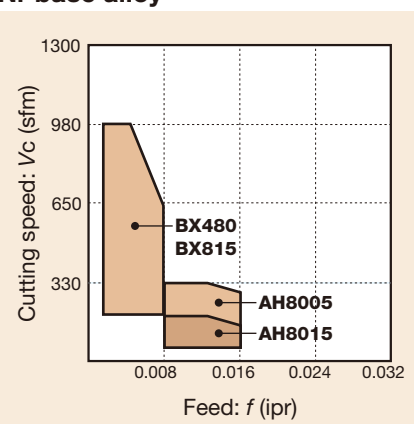
Chipbreaker System for Turning (Negative type)

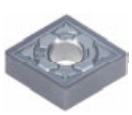


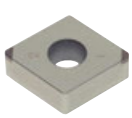
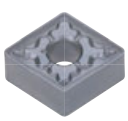
Titanium alloy



Ni-base alloy



Chipbreaker	Shape	Feature
HRF		Suitable for finishing superalloy. Unique protrusion improves chip control in cutting low depth.
HRM		First choice for heat-resistant alloy. The geometry optimized for a wide range of depths of cut.

Chipbreaker	Shape	Feature
No chip-breaker (T-CBN)		Excellent performance in finishing of heat-resistant alloy and titanium alloy with CBN sintered body on the cutting edge.
TM		General-purpose chipbreaker with extensive chip control area. The protrusion in unique shape near the corner and large rake angle provide sharp cutting edge with low cutting force.

STANDARD CUTTING CONDITIONS

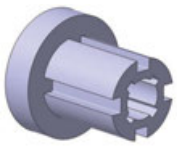
ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)	
							Titanium alloy	Ni-base alloy
S	Precision finishing	Continuous	Without	BX480	0.004 - 0.020	0.002 - 0.008	330 - 660	230 - 980
			Without	BX815	0.004 - 0.020	0.002 - 0.008	-	230 - 1310
		Light interrupted	Without	BX480	0.004 - 0.020	0.002 - 0.008	330 - 660	-
	Finishing to medium cutting	Continuous	HRF	AH8005	0.020 - 0.060	0.002 - 0.010	66 - 330	66 - 330
		Light interrupted	HRF	AH8015	0.020 - 0.060	0.002 - 0.010	66 - 260	66 - 160
		Heavy interrupted	HRF	AH8015	0.020 - 0.060	0.002 - 0.010	33 - 200	33 - 130
	Medium cutting	Continuous	HRM	AH8005	0.020 - 0.160	0.004 - 0.016	66 - 330	66 - 330
		Light interrupted	HRM	AH8015	0.020 - 0.160	0.004 - 0.016	66 - 260	66 - 160
		Heavy interrupted	HRM	AH8015	0.020 - 0.160	0.004 - 0.016	33 - 200	33 - 130

Ni-base alloy: INCONEL718, etc. Titanium alloy: Ti-6Al-4V, etc.

SELECTION SYSTEM: NEGATIVE TYPE

S Superalloys and titanium





	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.020 in]	Basic **T-CBN BX470 BX815** B170 - B188	Basic **T-CBN BX470** B170 - B188 Fracture → No chipbreaker **TH10** B038	
Finishing [a_p = 0.020 ~ 0.060 in]	Basic **HRF AH8005** B033 Fracture → **HRF AH8015** B033 Chip control → **28 AH8005** B036	Basic **HRF AH8015** B033 Fracture → **HRM AH8015** B037 Wear → **HRF AH8005** B033 Chip control → **28 AH8015** B036	Basic **HRF AH8015** B033 Fracture → **HRM AH8015** B037 Wear → **HRF AH8005** B033
Medium cutting [a_p = 0.020 ~ 0.157 in]	Basic **HRM AH8005** B037 Fracture → **HRM AH8015** B037 Burr occurrence → **HRF AH8015** B033 Chip control → **28 AH8005** B036	Basic **HRM AH8015** B037 Fracture → **TM AH8015** B034 Wear → **HRM AH8005** B037 Chip control → **28 AH8015** B036	Basic **HRM AH8015** B037 Fracture → **TM AH8015** B034 Wear → **HRM AH8005** B037

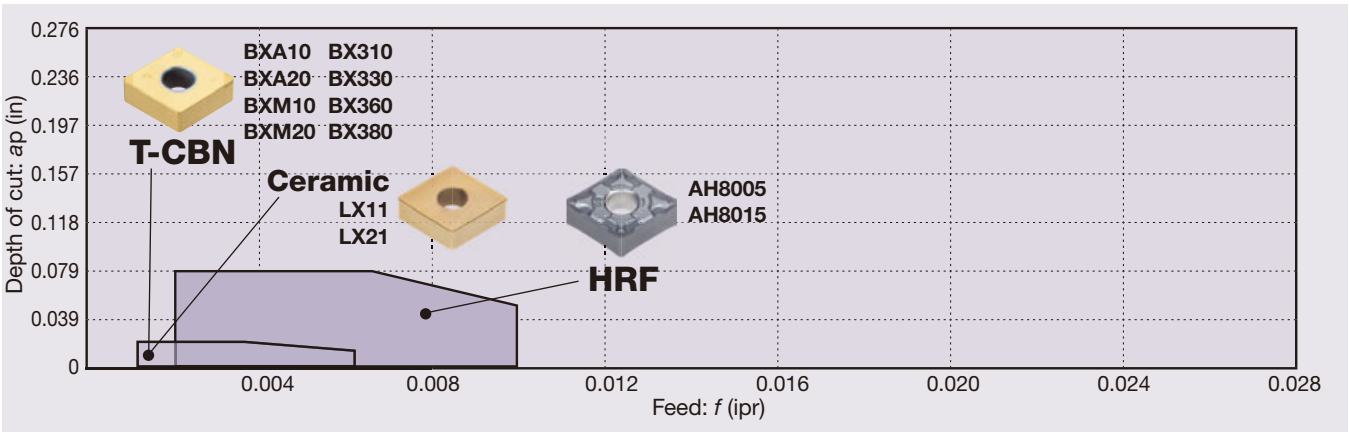
Please see the page B*** for the details.

Chipbreaker Guide

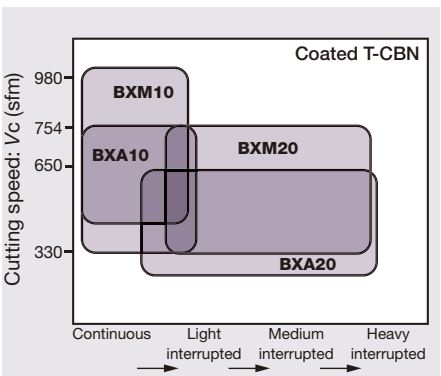
BASIC CHIPBREAKER: NEGATIVE TYPE

H Hard Materials

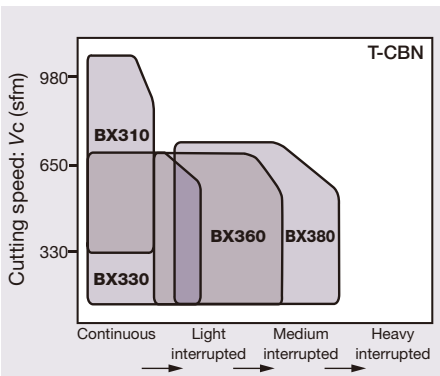
Chipbreaker System for Turning (Negative type)



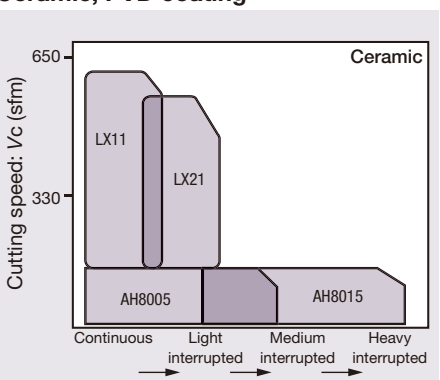
Coated T-CBN

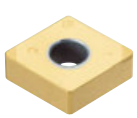


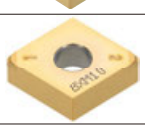
T-CBN



Ceramic, PVD coating



Chipbreaker	Shape	Feature
No chip-breaker (T-CBN)		Excellent performance in finishing of hard material with CBN sintered body on the cutting edge.
No chip-breaker (Ceramic)		Realizes economical hardened steel medium speed finishing.

Chipbreaker	Shape	Feature
HF		Excellent chip control in removing carburized layer at small depth of cut.
HM		Excellent chip control in removing carburized layer at large depth of cut.
HP		Excellent chip control in precision finishing.
HRF		Excellent chip control in Hardent steel medium finishing.

STANDARD CUTTING CONDITIONS

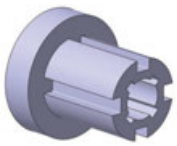
ISO	Operation	Work condition	Chipbreaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed *Vc* (sfm)
H	Precision finishing	Continuous to light interrupted	HP	BXA10 BXA20 BXM10	0.002 - 0.008	0.001 - 0.007	500 - 1150
	Finishing	Continuous to heavy interrupted	Without	BXA10 BXA20 BXM10	0.002 - 0.020	0.002 - 0.010	230 - 720
	Finishing (Economical)	Continuous to light interrupted	Without	LX11 LX21	0.002 - 0.020	0.002 - 0.010	197 - 590
	Removing of carburized layer	Continuous	HF	BXM20	0.008 - 0.030	0.002 - 0.008	230 - 660
		Continuous	HM	BXA20 BXM20	0.020 - 0.040	0.002 - 0.008	230 - 660
	Medium cutting	Continuous to medium interrupted	HRF	AH8005 AH8015	0.002 - 0.080	0.002 - 0.010	33 - 164

Hardened steels, Pre-hardened steels: D2, H13, etc.

SELECTION SYSTEM: NEGATIVE TYPE

H Hard Materials





	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.008 in]	Basic → **T-CBN HP BXA10** — B173, B176, B182	Basic → **T-CBN BXA20** — B172 - B181 Fracture → **-H BXM20** — B172 - B180 High-speed wear → **T-CBN BXA10** — B172 - B181	
Finishing [a_p = ~ 0.020 in]	Basic → **T-CBN BXA10** — B172 - B181 Eco-noming → **LX11** — B065	Basic → **T-CBN BXA20** — B172 - B181 Fracture → **-H BXM20** — B172 - B180 High-speed wear → **T-CBN BXA10** — B172 - B181 Eco-noming → **LX21** — B065	Basic → **T-CBN BXM20** — B172 - B181 Fracture → **-H BXM20** — B172 - B180
Medium cutting [a_p = ~ 0.020 in]	Basic → **HRF AH8005** — B058 Fracture → **HRF AH8015** — B172 - B180	Basic → **HRF AH8015** — B058 Fracture → **HRM AH8015** — B058	Basic → **HRF AH8015** — B058 Fracture → **HRM AH8015** — B058

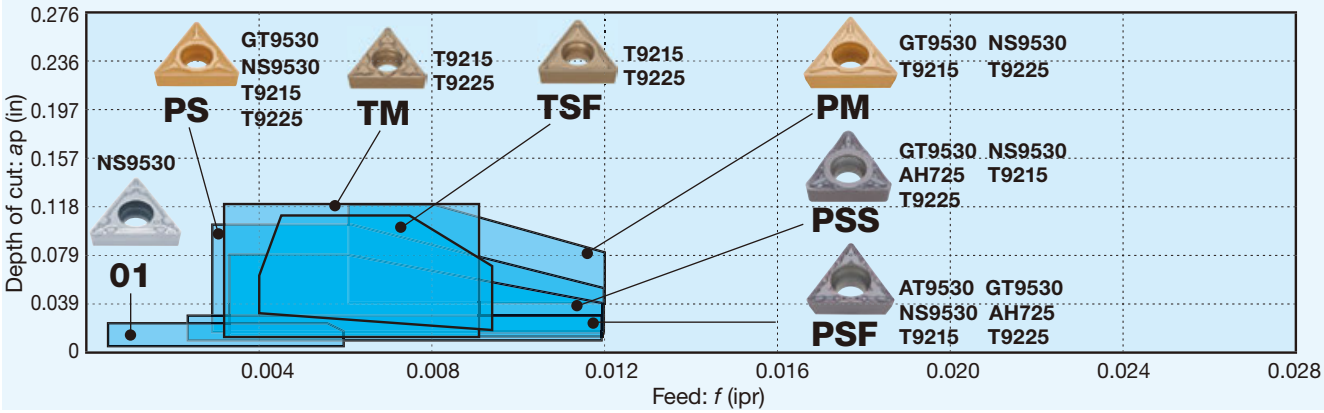
Please see the page B*** for the details.

Chipbreaker Guide

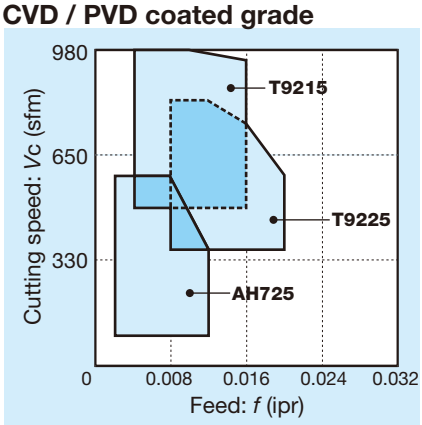
BASIC CHIPBREAKER: POSITIVE TYPE

P Steel

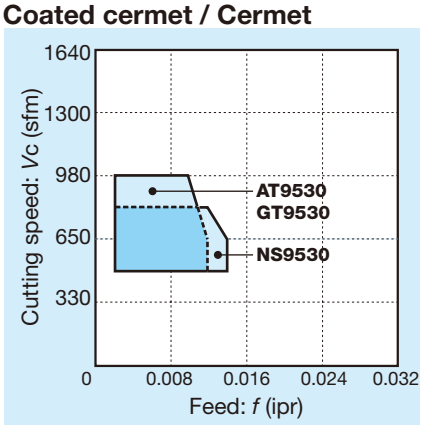
Chipbreaker System for Turning (Positive Type)

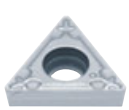
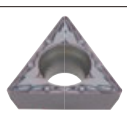
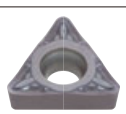


CVD / PVD coated grade



Coated cermet / Cermet



Chipbreaker	Shape	Feature
01		Excellent chip control in machining very small depth of cut thanks to the sharp cutting edge and protrusion.
PSF		Low cutting force and high wear resistance. First choice for finishing. Excellent chip control in finishing prevents chip entanglement in internal machining.
PSS		3D chipbreaker for finishing to medium cutting with excellent chip control and low cutting force.

Chipbreaker	Shape	Feature
PS		3D chipbreaker for finishing to medium cutting with excellent chip control and sharpness. M-class insert delivers cost reduction and highly efficient boring in a wide range of applications.
PM		First choice for medium cutting with excellent sharpness and good chip control. Delivers stable machining of stainless steel.

Chipbreaker	Shape	Feature
TSF		Optimal chipbreaker geometry ensures smooth chip control in a high feed range.
TM		Optimal cutting edge and chipbreaker geometry provides effective chip evacuation at greater depths of cut.

STANDARD CUTTING CONDITIONS

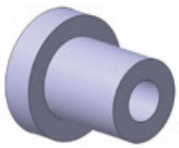
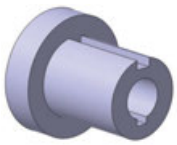
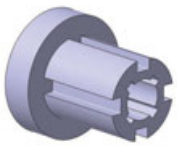
ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm) Low carbon steels, Alloy steels	Medium carbon steels, Alloy steels	High carbon steels, Alloy steels
P	Precision finishing	Continuous	01	NS9530	0.002 - 0.020	0.001 - 0.006	500 - 820	260 - 720	260 - 590
		Light interrupted	01	NS9530	0.002 - 0.020	0.001 - 0.006	500 - 820	260 - 720	260 - 590
	Finishing	Continuous	PSS	NS9530	0.004 - 0.020	0.002 - 0.012	500 - 820	260 - 720	260 - 590
		Light interrupted	PSS	NS9530	0.004 - 0.020	0.002 - 0.012	500 - 820	260 - 720	260 - 590
		Heavy interrupted	PSS	NS9530	0.004 - 0.020	0.002 - 0.012	500 - 820	260 - 720	260 - 590
	Finishing to light cutting	Continuous	PS	NS9530	0.012 - 0.079	0.003 - 0.012	500 - 820	260 - 720	260 - 590
		Light interrupted	PS	NS9530	0.012 - 0.079	0.003 - 0.012	500 - 820	260 - 720	260 - 590
		Heavy interrupted	PS	NS9530	0.012 - 0.079	0.003 - 0.012	500 - 820	260 - 720	260 - 590
	Finishing to Medium cutting	Continuous to Heavy interrupted	PS	T9215	0.020 - 0.098	0.003 - 0.012	400 - 1148	330 - 1148	260 - 820
			PS	T9225	0.020 - 0.098	0.003 - 0.012	330 - 660	260 - 980	260 - 820
	Medium cutting	Continuous to Heavy interrupted	PM	-	0.040 - 0.120	0.006 - 0.012	500 - 980	330 - 660	260 - 590
			PM	-	0.040 - 0.120	0.006 - 0.012	400 - 820	260 - 590	260 - 400

Low carbon steels, Alloy steels: 1018, 1020, etc. Medium carbon steels, Alloy steels: 1045, 4140, etc. Hi carbon steels, Alloy steels: 8620, etc.

Selection System

SELECTION SYSTEM: POSITIVE TYPE

P Steel

	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.020 in]	Basic: 01 NS9530 — B042, B047	Basic: 01 NS9530 — B042, B047 Fracture: PSF NS9530 — B042, B047, B051	
Finishing [a_p = 0.004 ~ 0.020 in]	Basic: PSS NS9530 — B042, B047, B051 Wear: PSS GT9530 — B042, B047, B051 Fracture: PS NS9530 — B042, B047, B051 Chip control: PSF NS9530 — B042, B047, B051	Basic: PSS NS9530 — B042, B047, B051 Wear: PSS GT9530 — B042, B047, B051 Fracture: PS NS9530 — B042, B047, B051 Chip control: PSF NS9530 — B042, B047, B051	Basic: PSS NS9530 — B042, B047, B051 Wear: PSS GT9530 — B042, B047, B051 Fracture: PS NS9530 — B042, B047, B051 Chip control: PSF NS9530 — B042, B047, B051
Finishing to medium cutting [a_p = 0.020 ~ 0.098 in]	Basic: PS T9215 — B042, B047, B051 Fracture: PS T9225 — B042, B047, B051 Wear: PS NS9530 — B042, B047, B051	Basic: PS T9215 — B042, B047, B051 Fracture: PS T9225 — B042, B047, B051 Wear: PS NS9530 — B042, B047, B051	Basic: PS T9215 — B042, B047, B051 Fracture: PM T9225 — B044, B048 Chip control: TSF T9215 — B042, B047
Medium cutting [a_p = 0.039 ~ 0.118 in]	Basic: PM T9215 — B044, B048 Wear: PM NS9530 — B044, B048	Basic: PM T9215 — B044, B048 Fracture: PM T9255 — B044, B048	Basic: PM T9215 — B044, B048 Chip control: TM T9215 — B043, B047

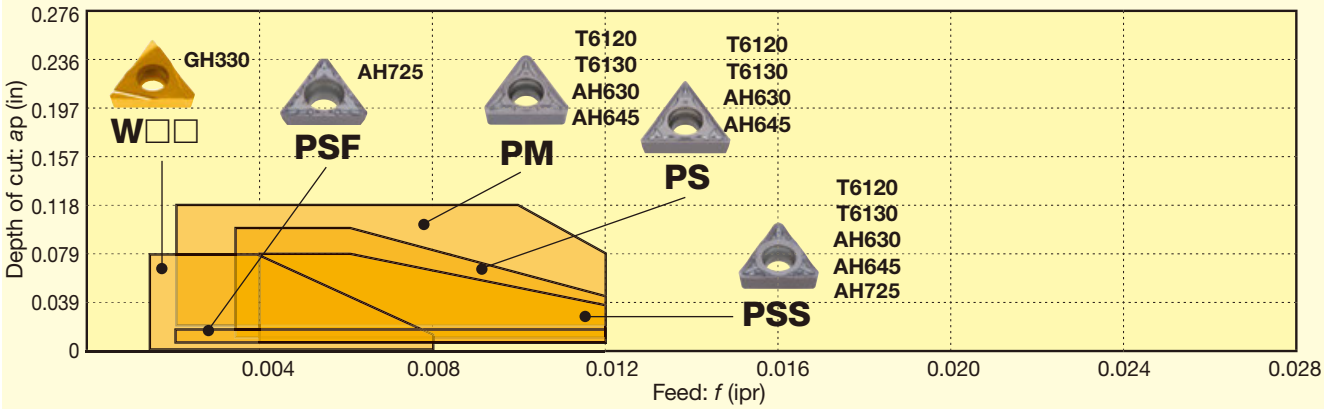
Please find the details on the pages: B***/7° relief angle, B***/11° relief angle, B***/5° relief angle.

Chipbreaker Guide

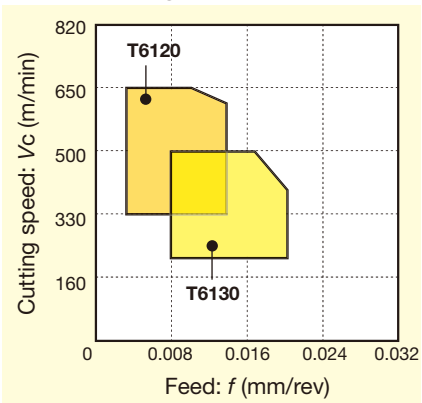
BASIC CHIPBREAKER: POSITIVE TYPE

M Stainless Steel

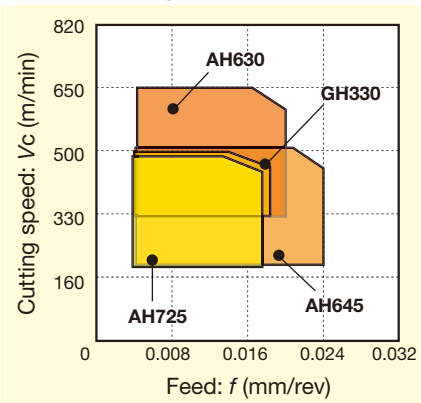
Chipbreaker System for Turning (Positive Type)

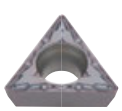


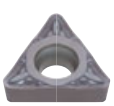
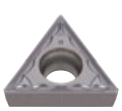
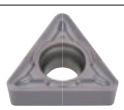
CVD coated grade



PVD coated grade



Chipbreaker	Shape	Feature
W□□		Designed to control the direction of chip flow in precision finishing. Smooth chip evacuation in boring.
PSF		Low cutting force and high wear resistance. First choice for finishing. Excellent chip control in finishing prevents chip entanglement in internal machining.

Chipbreaker	Shape	Feature
PSS		3D chipbreaker for finishing to medium cutting with excellent chip control and low cutting force.
PS		3D chipbreaker for finishing to medium cutting with excellent chip control and sharpness. M-class insert delivers cost reduction and highly efficient boring in a wide range of applications.
PM		First choice for medium cutting with excellent sharpness and good chip control. Delivers stable machining of stainless steel.

STANDARD CUTTING CONDITIONS

ISO	Operation	Work condition	Chipbreaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed *Vc* (sfm)
M	Precision finishing	Continuous	W□□	GH330	0.002 - 0.079	0.001 - 0.008	330 - 500
	Finishing	Continuous	PSF	AH725	0.004 - 0.020	0.002 - 0.012	160 - 500
		Light interrupted	PSF	AH725	0.004 - 0.020	0.002 - 0.012	160 - 500
		Heavy interrupted	PSF	AH725	0.004 - 0.020	0.002 - 0.012	160 - 400
	Finishing to light cutting	Continuous	PSS	AH630	0.012 - 0.079	0.003 - 0.012	300 - 620
		Light interrupted	PSS	AH630	0.012 - 0.079	0.003 - 0.012	300 - 620
		Heavy interrupted	PSS	AH630	0.012 - 0.079	0.003 - 0.012	300 - 620
	Finishing to medium cutting	Continuous	PS	T6130	0.020 - 0.098	0.003 - 0.012	330 - 660
		Light interrupted	PS	AH630	0.020 - 0.098	0.003 - 0.012	300 - 620
		Heavy interrupted	PS	AH630	0.020 - 0.098	0.003 - 0.012	300 - 620
	Medium cutting	Continuous	PM	T6130	0.040 - 0.120*	0.006 - 0.012	330 - 660
		Light interrupted	PM	AH630	0.040 - 0.120*	0.006 - 0.012	300 - 620
		Heavy interrupted	PM	AH630	0.040 - 0.120*	0.006 - 0.012	300 - 620

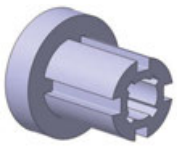
* For CCMT0602 and DCMT0702 type inserts, *ap* = 0.020 - 0.098, Stainless steels: 304SS, 316SS, etc.

Selection System

SELECTION SYSTEM: POSITIVE TYPE

M Stainless Steel





	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.020 in]	Basic W□□ GH330 B043, B048, B051	Basic W□□ GH330 B043, B048, B051	
Finishing [a_p = 0.012 ~ 0.060 in]	Basic PSF AH725 B042, B047, B051 Wear → PSS T6130 B042, B047, B051	Basic PSF AH725 B042, B047, B051 Fracture → PSS AH630 B042, B047, B051 Wear → PSS T6130 B042, B047, B051	Basic PSF AH725 B042, B047, B051 Fracture → PSS AH630 B042, B047, B051
Finishing to medium cutting [a_p = 0.020 ~ 0.098 in]	Basic PSS AH630 B042, B047, B051 Wear → PS T6130 B042, B047, B051	Basic PS AH630 B042, B047, B051 Fracture → PM AH645 B044, B048 Wear → PS T6130 B042, B047, B051	Basic PS AH630 B042, B047, B051 Fracture → PM AH645 B044, B048 Wear → PS T6130 B042, B047, B051
Medium cutting [a_p = 0.039 ~ 0.118 in]	Basic PM T6130 B044, B048	Basic PM AH630 B044, B048 Fracture → PM AH645 B044, B048 Wear → PM T6130 B044, B048	Basic PM AH630 B044, B048 Fracture → PM AH645 B044, B048

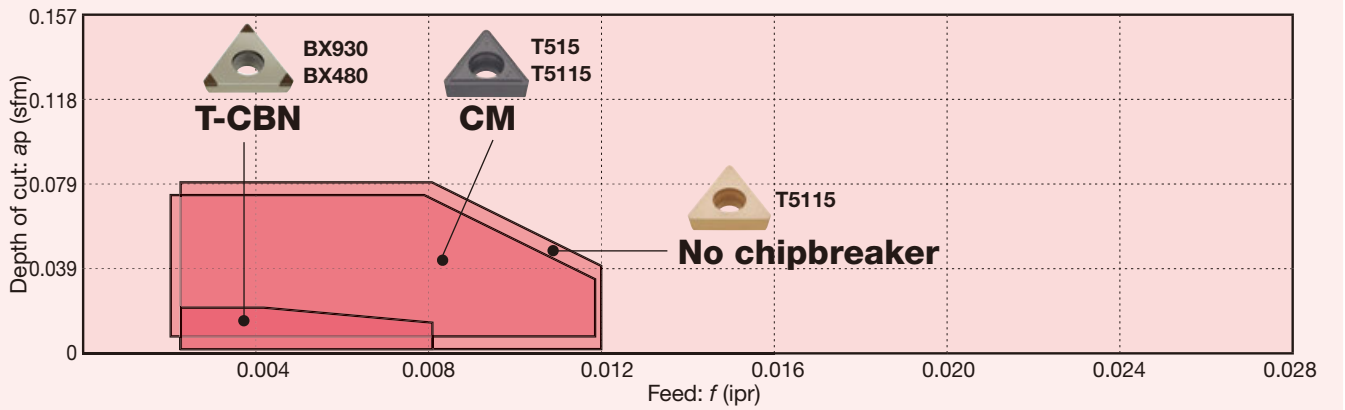
Please find the details on the pages: B***/7° relief angle, B***/11° relief angle, B***/5° relief angle.

Chipbreaker Guide

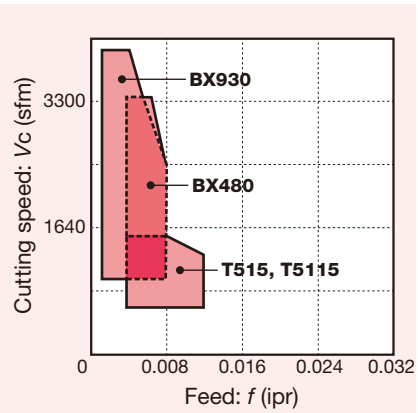
BASIC CHIPBREAKER: POSITIVE TYPE

K Cast Iron

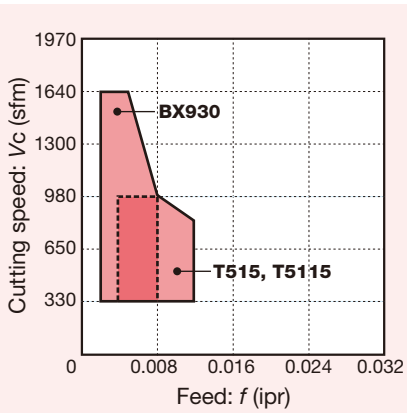
Chipbreaker System for Turning (Positive Type)

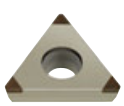


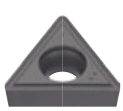
Grey cast iron



Ductile cast iron



Chipbreaker	Shape	Feature
No chip-breaker (T-CBN)		Excellent performance in high-speed finishing of cast iron with CBN sintered body on the cutting edge.
No chip-breaker		Suitable for a wide range of applications from finishing to roughing cast iron. Excellent performance with high cutting edge strength.

Chipbreaker	Shape	Feature
CM		Highly versatile all-round chipbreaker with low cutting force. Suitable for finishing to medium cutting.

STANDARD CUTTING CONDITIONS

ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)	
							Grey cast iron	Ductile cast iron
K	Precision finishing	Continuous	Without	BX930	0.002 - 0.020	0.002 - 0.008	980 - 3940	330 - 1640
		Light interrupted	Without	BX480	0.002 - 0.020	0.002 - 0.008	980 - 2630	330 - 980
		Light interrupted	Without	BX470	0.002 - 0.020	0.002 - 0.008	980 - 2630	330 - 980
	Finishing	Continuous	CM	T515	0.002 - 0.079	0.002 - 0.012	500 - 2300	500 - 980
		Heavy interrupted	CM	T515	0.002 - 0.079	0.002 - 0.012	330 - 660	330 - 660
	Medium cutting	Light interrupted	CM	T515	0.002 - 0.079	0.002 - 0.012	330 - 980	330 - 820

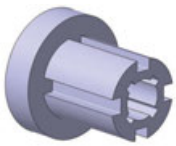
Grey cast irons: Class 25, etc. , Ductile cast irons: 65-45-12, etc.

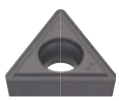
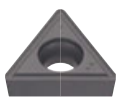
Selection System

SELECTION SYSTEM: POSITIVE TYPE

K Cast Iron





	Continuous	Light interrupted	Heavy interrupted
Finishing to Medium cutting [a_p = 0.020 ~ 0.118 in]	Basic  CM T515 B044, B048, B051 Wear → T-CBN BX930 B183 -	Basic  CM T515 B044, B048, B051	Basic  CM T515 B044, B048, B051

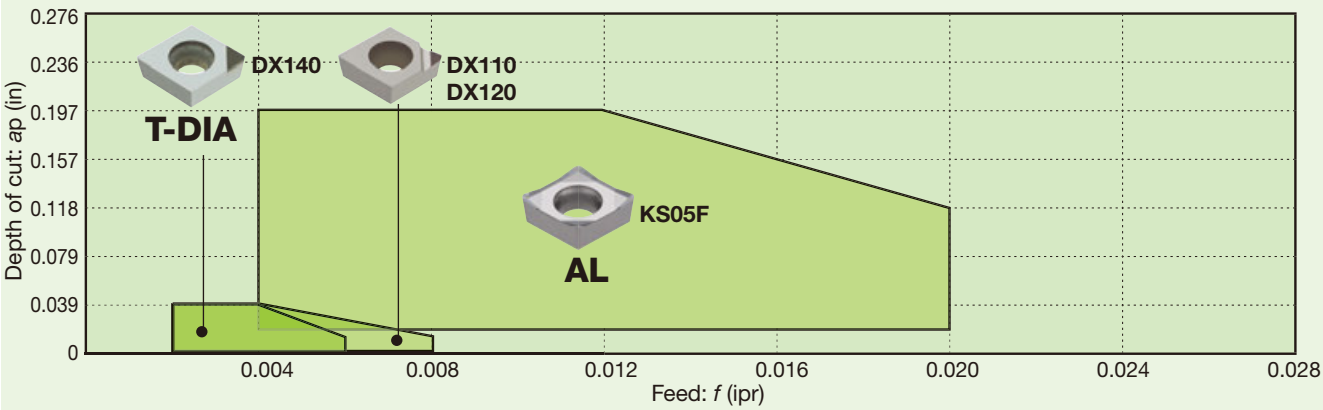
Please find the details on the pages: B***/7° relief angle, B***/11° relief angle, B***/5° relief angle.

Chipbreaker Guide

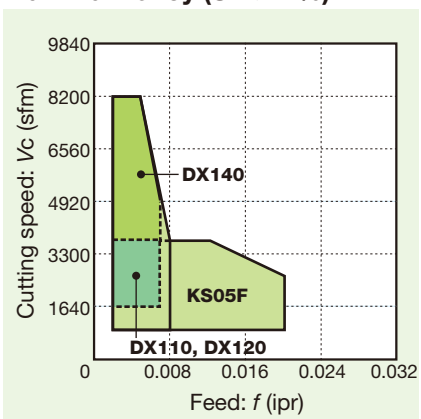
BASIC CHIPBREAKER: POSITIVE TYPE

N Non-ferrous Metal

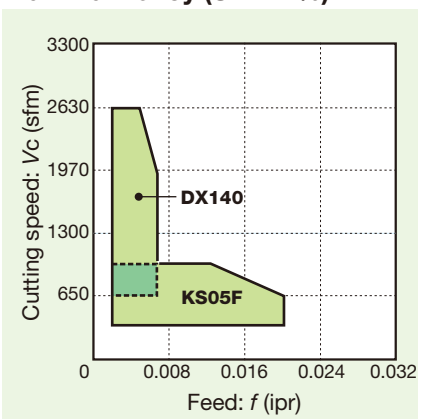
Chipbreaker System for Turning (Positive Type)



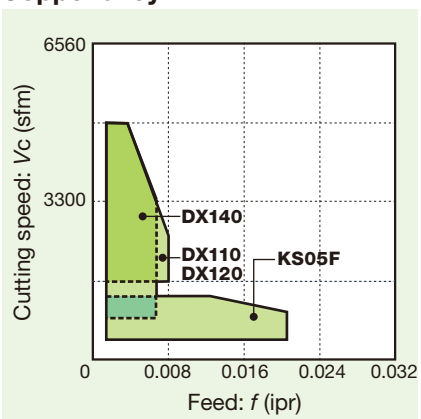
Aluminum alloy (Si < 12%)

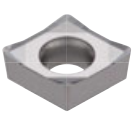


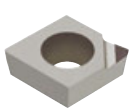
Aluminum alloy (Si ≥ 12%)



Copper alloy



Chipbreaker	Shape	Feature
No chip-breaker (T-DIA)		Excellent performance in high-speed finishing of non-ferrous metal with diamond sintered body on the cutting edge.
AL		Large rake angle and sharp cutting edge reduce cutting force. Lapped rake face prevents adhesion. Large inclination on the cutting edge (wavy cutting edge) for more stable chip control.

Chipbreaker	Shape	Feature
With chip-breaker (T-DIA)		Wide chipbreaker for smooth chip evacuation. Large rake face reduces cutting force. DIA on the cutting edge delivers high-speed machining and long tool life.

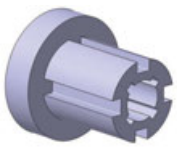
STANDARD CUTTING CONDITIONS

ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm) Aluminum alloy (Si < 12%)	Aluminum alloy (Si ≥ 12%)	Copper alloy
N	Precision finishing	Continuous	With	DX110	0.002 - 0.040	0.002 - 0.006	1640 - 8200	1310 - 2630	1640 - 4920
		Light interrupted	Without	DX140	0.002 - 0.040	0.002 - 0.008	980 - 8200	-	1640 - 4920
	Finishing	Continuous	Without	DX140	0.002 - 0.040	0.002 - 0.006	1640 - 8200	1310 - 2630	1640 - 4920
		Light interrupted	Without	DX140	0.002 - 0.040	0.002 - 0.006	980 - 5900	1310 - 1970	1310 - 3940
		Heavy interrupted	AL	KS05F	0.020 - 0.197	0.004 - 0.020	330 - 1970	330 - 660	-
	Medium cutting	Continuous	AL	KS05F	0.020 - 0.197	0.004 - 0.020	330 - 3940	330 - 980	330 - 980
		Light interrupted	AL	KS05F	0.020 - 0.197	0.004 - 0.020	330 - 2950	330 - 660	330 - 660
		Heavy interrupted	AL	KS05F	0.020 - 0.197	0.004 - 0.020	330 - 1970	330 - 660	-

SELECTION SYSTEM: POSITIVE TYPE

N Non-ferrous Metal





	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.020 in.]	Basic: With chipbreaker **DX110** (B194, B196) → Wear: **T-DIA DX140** (B195, B197, B198)	Basic: With chipbreaker **DX110** (B194, B196) → Wear: **T-DIA DX140** (B195, B197, B198)	
Finishing [a_p = 0.020 ~ 0.079 in.]	Basic: **T-DIA DX140** (B195, B197, B198) → Wear: **T-DIA DX160** (B195, B197); Chip control: With chipbreaker T-DIA **DX110** (B194, B196)	Basic: **T-DIA DX140** (B195, B197, B198) → Fracture: **AL KS05F** (B044); Wear: **T-DIA DX160** (B195, B197)	Basic: **AL KS05F** (B044)
Medium cutting [a_p = 0.039 ~ 0.197 in.]	Basic: **AL KS05F** (B044) → Wear: With chipbreaker T-DIA **DX120** (B194, B196)	Basic: **AL KS05F** (B044) → Wear: **T-DIA DX140** (B195, B197, B198)	Basic: **AL KS05F** (B044)

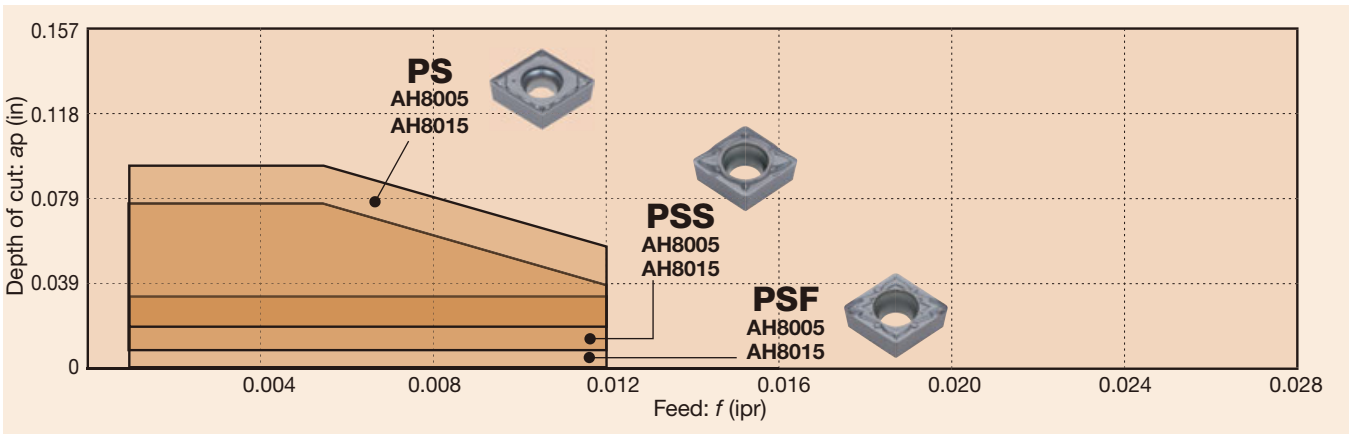
Please find the details on the pages: B***/7° relief angle, B***/11° relief angle, B***/5° relief angle.

Chipbreaker Guide

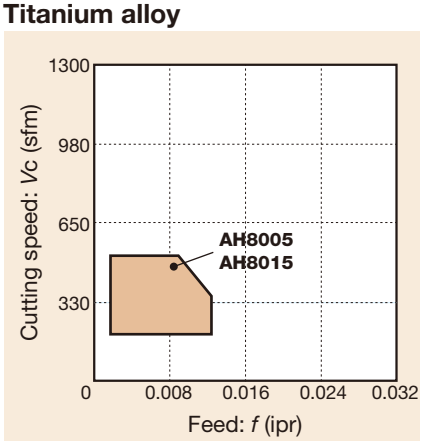
BASIC CHIPBREAKER: POSITIVE TYPE

S Superalloys and titanium

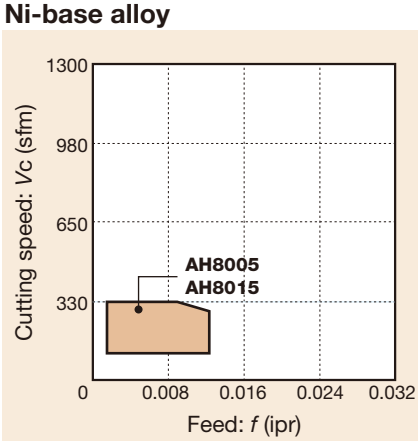
Chipbreaker System for Turning (Positive Type)



Titanium alloy



Ni-base alloy



Chipbreaker	Shape	Feature
PS		3D chipbreaker for finishing to medium cutting with excellent chip control and sharpness. M-class insert delivers cost reduction and highly efficient boring in a wide range of applications.

Chipbreaker	Shape	Feature
PSF		Low cutting force and high wear resistance. First choice for finishing. Excellent chip control in finishing prevents chip entanglement in internal machining.
PSS		3D chipbreaker for finishing to medium cutting with excellent chip control and low cutting force.

STANDARD CUTTING CONDITIONS

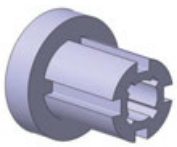
ISO	Operation	Work condition	Chip-breaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)	
							Titanium alloy	Ni-base alloy
S	Finishing	Continuous	PSS	AH8015	0.012 - 0.079	0.001 - 0.012	66 - 500	66 - 330
		Light interrupted	PSS	AH8015	0.012 - 0.079	0.001 - 0.012	66 - 500	66 - 330
	Finishing to medium cutting	Continuous	PS	AH8015	0.020 - 0.098	0.001 - 0.012	66 - 500	66 - 330
		Light interrupted	PS	AH8015	0.020 - 0.098	0.001 - 0.012	66 - 500	66 - 330

Ni-base alloy: INCONEL718, etc.
Titanium alloy: Ti-6Al-4V, etc.

SELECTION SYSTEM: POSITIVE TYPE

S Superalloys and titanium





	Continuous	Light interrupted	Heavy interrupted
Finishing [a_p = 0.012 ~ 0.079 in.]	Basic: PSS AH8015 (B042, B047, B051) → Wear: PSS AH8005 (B044, B047, B051)	Basic: PSS AH8015 (B042, B047, B051) → Wear: PSS AH8005 (B042, B047, B051); Fracture: PS AH8015 (B042, B047, B051)	
Finishing to medium cutting [a_p = 0.020 ~ 0.098 in.]	Basic: PS AH8015 (B042, B047, B051) → Wear: PSS AH8005 (B042, B047, B051)	Basic: PS AH8015 (B042, B047, B051) → Fracture: All-round AH8015 (B044, B049)	Basic: PS AH8015 (B042, B047, B051) → Fracture: All-round AH8015 (B044, B049)

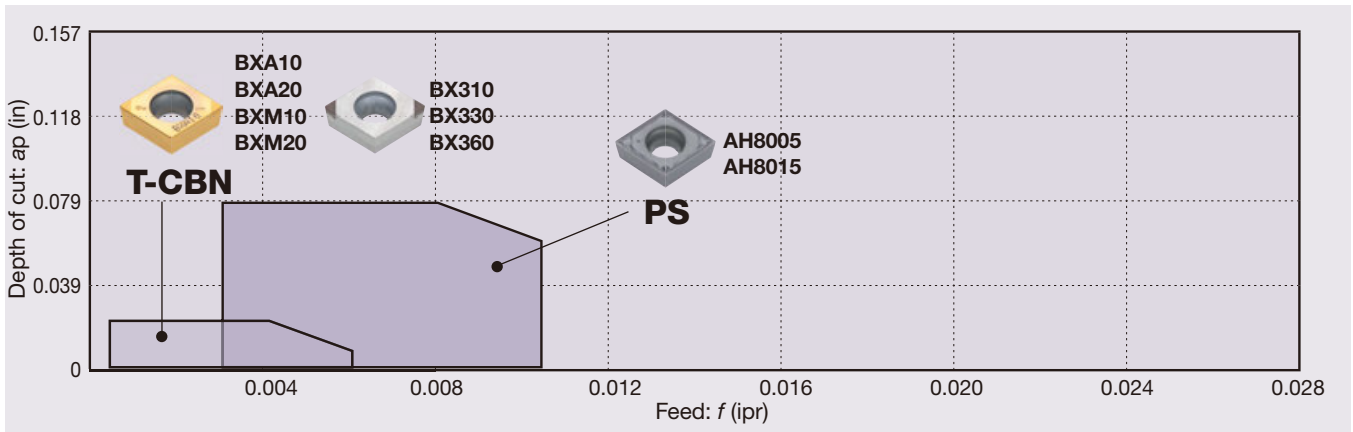
Please find the details on the pages: B***/7° relief angle, B***/11° relief angle, B***/5° relief angle.

Chipbreaker Guide

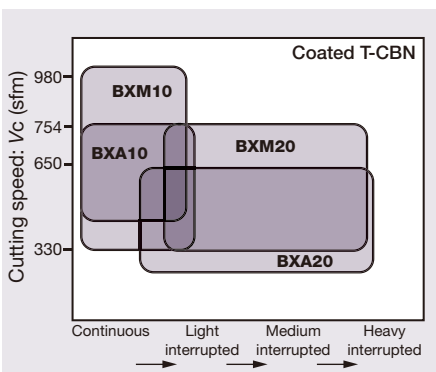
BASIC CHIPBREAKER: POSITIVE TYPE

H Hard Materials

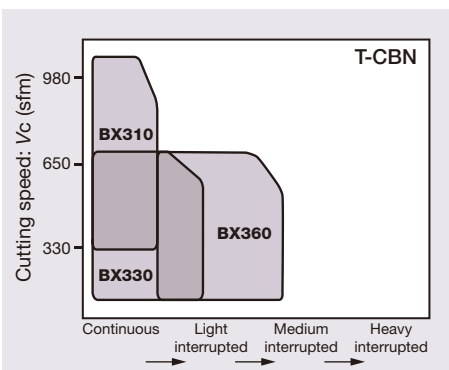
Chipbreaker System for Turning (Positive Type)



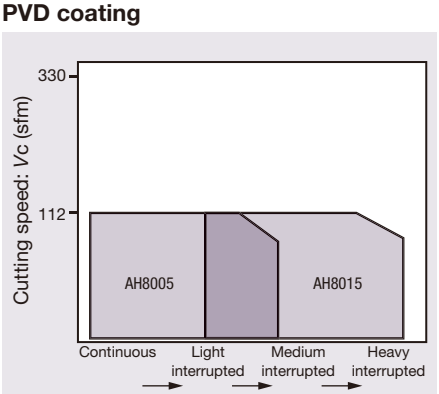
Coated T-CBN

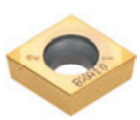


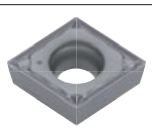
T-CBN



PVD coating



Chipbreaker	Shape	Feature
No chip-breaker (T-CBN)		Excellent performance in high-speed finishing of hard material with CBN sintered body on the cutting edge.

Chipbreaker	Shape	Feature
HP (T-CBN)		Excellent chip control in precision finishing.
PS		Excellent chip control in hardened steel medium finishing.

STANDARD CUTTING CONDITIONS

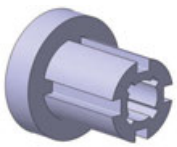
ISO	Operation	Work condition	Chipbreaker	Grade	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed *Vc* (sfm)
H	Precision finishing	Continuous	HP	BXA10 BXA20 BXM10	0.002 - 0.080	0.001 - 0.006	500 - 1150
		Light interrupted	Without	BXA20 BXM20	0.002 - 0.080	0.001 - 0.006	230 - 720
	Finishing	Continuous to heavy interrupted	Without	BXA10 BXA20 BXM10	0.003 - 0.020	0.002 - 0.012	230 - 720
	Medium cutting	Continuous to medium interrupted	PS	AH8005 AH8015	0.002 - 0.080	0.002 - 0.010	33 - 164

Hardened steels, Pre-hardened steels: D2, H13, etc.

SELECTION SYSTEM: POSITIVE TYPE

H Hard Materials

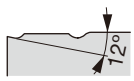
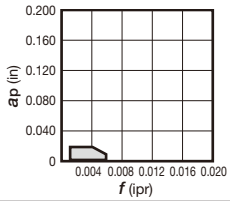
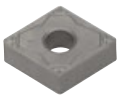
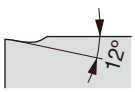
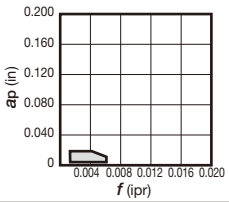
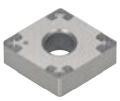
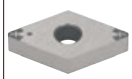
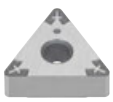
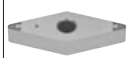
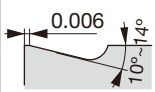
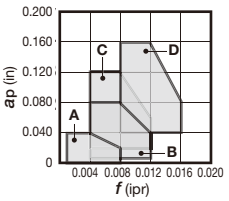
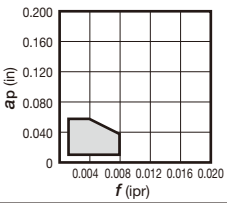
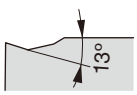
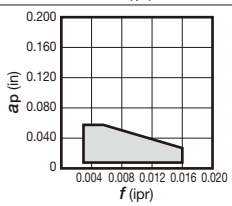
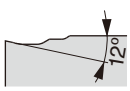
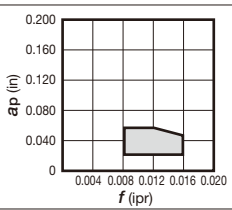
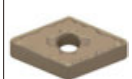
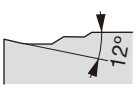
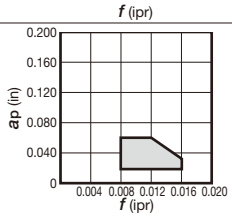




	Continuous	Light interrupted	Heavy interrupted
Precision finishing [a_p = ~ 0.012 in]	Basic **T-CBN HP BXA10** B173, B176, B182	Basic **T-CBN BXA10** B173, B176, B182 Fracture → **T-CBN BXA20** B172 - B184 B188 - B189 B191 - B192	
Finishing [a_p = ~ 0.020 in]	Basic **T-CBN BXA10** B173, B176, B182	Basic **T-CBN BXA10** B173, B176, B182 Fracture → **T-CBN BXM20** B182 - B192	Basic **T-CBN BXA20** B173, B176, B182 Fracture → **T-CBN BXA20-H** B172 - B184 B188 - B189 B191 - B192
Medium cutting [a_p = ~ 0.020 in]	Basic **PS AH8005** B112, B118, B153 Fracture → **PS AH8015** B112, B118, B153	Basic **PS AH8015** B112, B118, B153 Fracture → **All-round AH8015** B120	Basic **PS AH8015** B112, B118, B153 Fracture → **All-round AH8015** B120

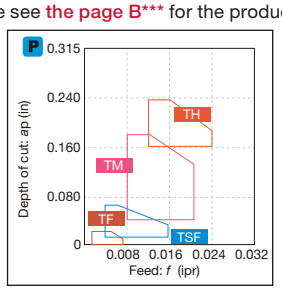
Please find the details on the pages: B***/7° relief angle, B***/11° relief angle, B***/5° relief angle.

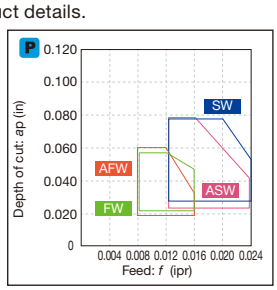
Chipbreaker Overview

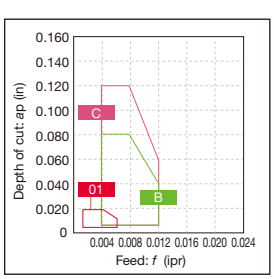
Application	Negative type with hole	C 80°	D 55°	S 90°	T 60°	V 35°	W 80°	Y 25°
Precision finishing	TF  	 B056	 B067	 B077	 B086	 B096	 B101	
Precision finishing	01  	 B056	 B067	 B077	 B086	 B096	 B101	
Precision finishing	A~D  	 B056		 B077	 B086			
Precision finishing	W  				 B087			
Finishing	TSF  	 B056	 B067	 B077	 B087	 B097	 B102	
Finishing (wiper)	FW  	 B056	 B067		 B087		 B102	
Finishing (wiper)	AFW  	 B056					 B102	

Please see the page B*** for the product details.

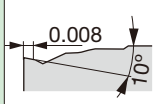
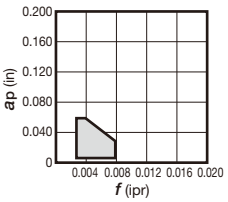
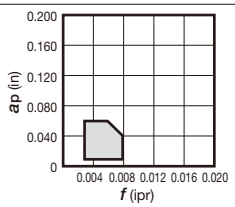
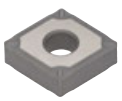
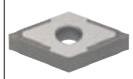
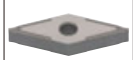
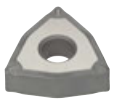
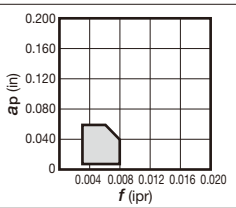
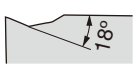
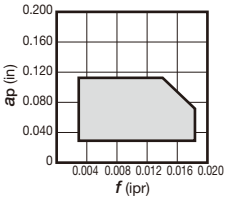
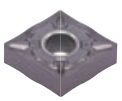
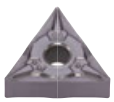
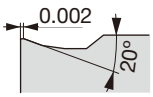
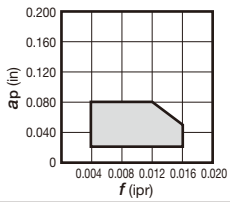
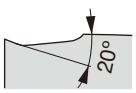
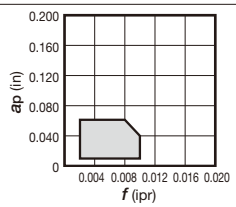
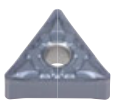
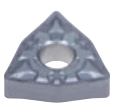
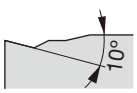
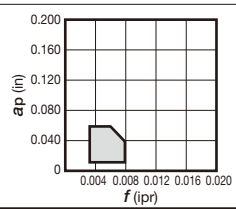
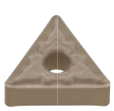
Chip control range





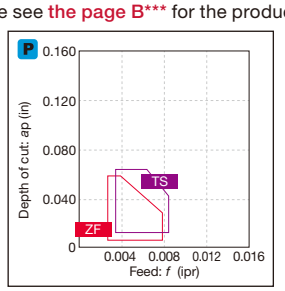


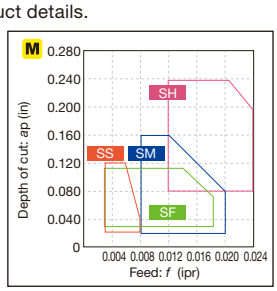
Chipbreaker Overview

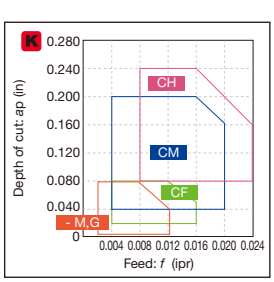
Application	Negative type with hole	C 80°	D 55°	S 90°	T 60°	V 35°	W 80°	Y 25°
Finishing	ZF  	 B057	 B068		 B088	 B097	 B102	 B109
Finishing	11  	 B057	 B068	 B078	 B088	 B097	 B102	
Finishing (for mild steel)	17  	 B057	 B068	 B078	 B088		 B102	
Finishing	SF  	 B057	 B068	 B078	 B088	 B097	 B103	
Finishing	CF  	 B057	 B068	 B078	 B088	 B098	 B103	
Finishing	HRF  	 B058	 B068	 B078	 B088	 B098	 B103	
Finishing	TS  	 B058	 B069	 B078	 B089	 B098	 B103	

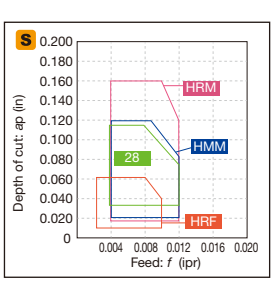
Please see the page B*** for the product details.

Chip control range



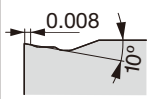
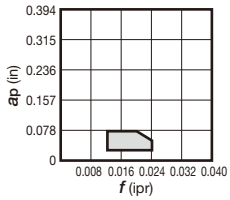
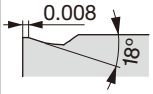
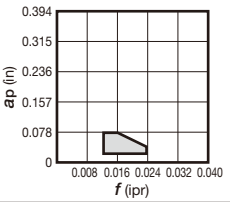
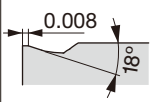
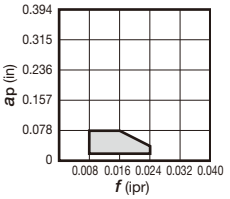
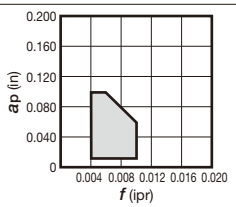
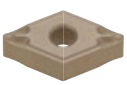
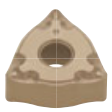
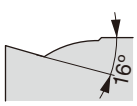
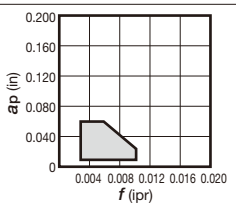
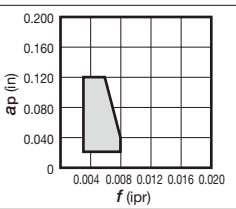
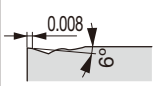
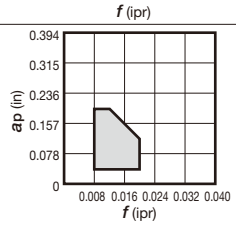
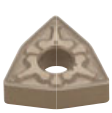






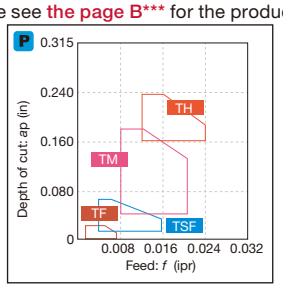
*-M,G: Without chipbreaker

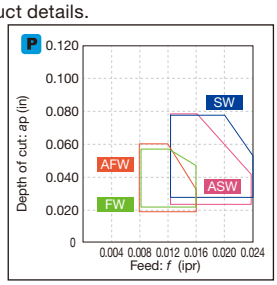
Chipbreaker Overview

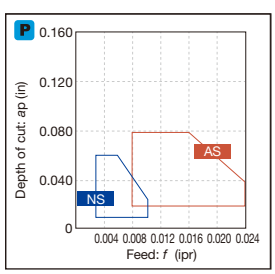
Application	Negative type with hole	C 80°	D 55°	S 90°	T 60°	V 35°	W 80°	Y 25°
Finishing to medium cutting (wiper)	SW  	 B058	 B069		 B089		 B104	
Finishing to medium cutting (wiper)	ASW  	 B058					 B104	
High feed, small depth of cut	AS  	 B058	 B069	 B078	 B089		 B104	
Boring (double side)	CB  	 B058	 B069		 B089		 B104	
Finishing	NS  	 B058	 B069	 B079	 B089		 B104	
Finishing	SS  	 B059	 B070	 B079	 B090	 B098	 B104	
Medium cutting	TM  	 B059	 B070	 B079	 B090	 B098	 B105	

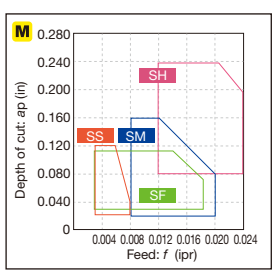
Please see the page B*** for the product details.

Chip control range

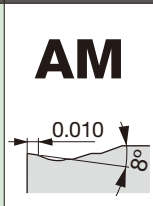
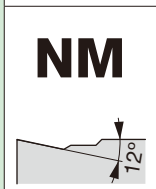
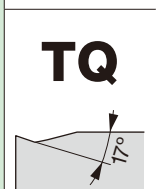
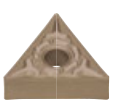
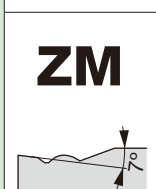
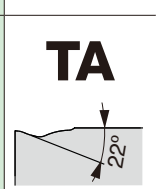
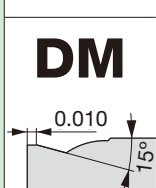
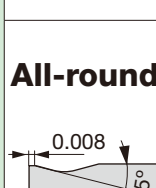
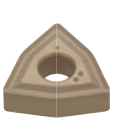






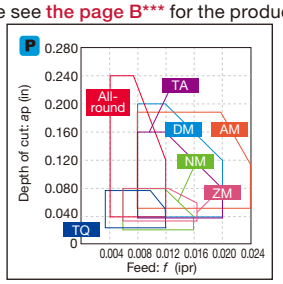


Chipbreaker Overview

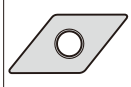
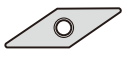
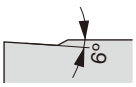
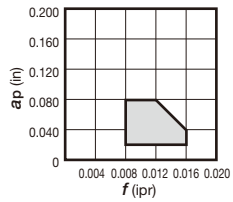
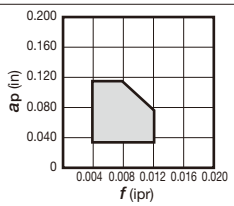
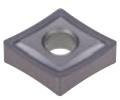
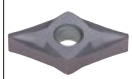
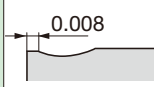
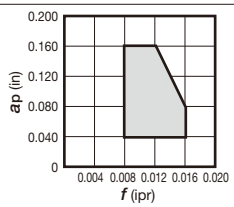
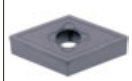
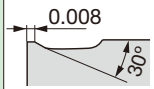
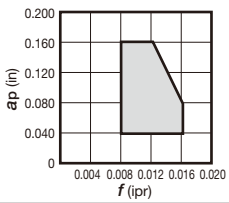
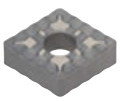
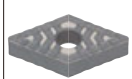
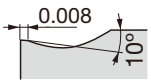
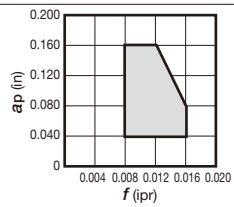
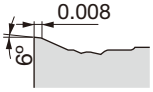
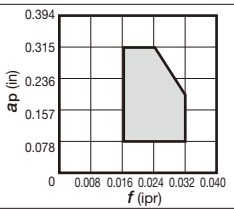
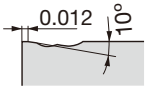
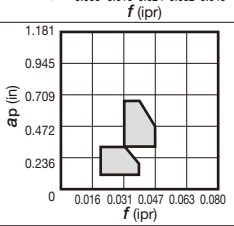
Application	Negative type with hole	C 80°	D 55°	S 90°	T 60°	V 35°	W 80°	Y 25°
Finishing to medium cutting	**AM** 	 B059	 B070		 B090		 B105	
	NM 	 B059	 B070		 B090		 B105	
	TQ 	 B060	 B071		 B090	 B098	 B105	
	ZM 	 B060	 B071	 B079	 B091	 B099	 B106	 B109
Medium cutting	**TA** 	 B060		 B079	 B090		 B105	
	DM 	 B060	 B071	 B080	 B091	 B099	 B106	
	All-round 	 B060	 B071	 B080	 B091	 B099	 B106	

Please see the page B*** for the product details.

Chip control range

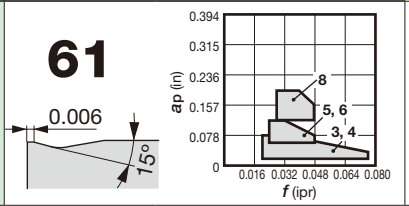
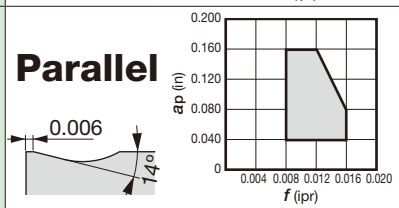
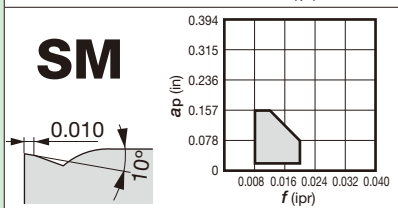
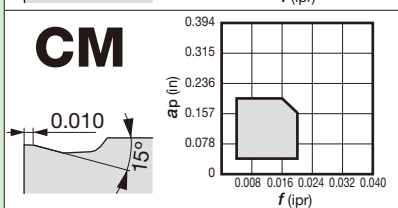
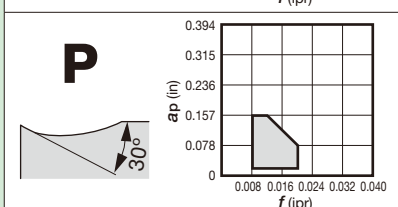
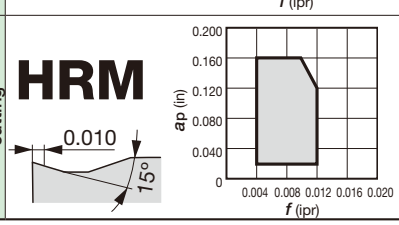


Chipbreaker Overview

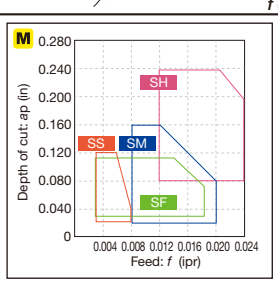
Application	Negative type with hole	C	D	S	T	V	W	Y
								
		80°	55°	90°	60°	35°	80°	25°
Finishing to medium cutting	**27**  	 B061	 B071	 B080	 B091		 B106	
Medium cutting	**28**  	 B061	 B072		 B092	 B099		
	33 0.008  	 B061	 B072	 B080	 B092	 B099	 B106	
	37 0.008 30°  	 B061	 B073	 B080	 B092		 B106	
	38 0.008 10°  	 B061	 B072		 B092			
	57 0.008 6°  	 B063	 B074	 B083	 B094			
	65 0.012 10°  	 B064		 B083				

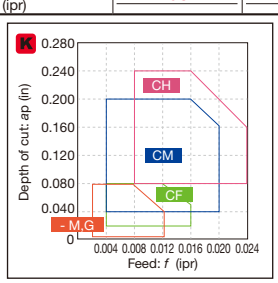
Please see the page B*** for the product details.

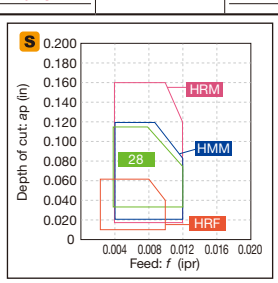
Chipbreaker Overview

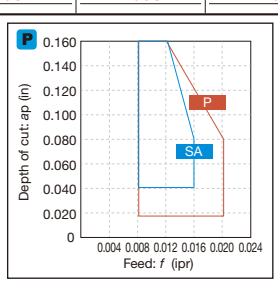
Application	Negative type with hole	C 80°	D 55°	R	S 90°	T 60°	V 35°	W 80°
Heavy cutting	**61** 			B076				
Medium cutting	**Parallel** 		B072					
	SM 	B062	B072		B081	B092	B100	B107
	CM 	B062	B072		B081	B092	B100	B107
	P 	B062	B073		B081	B093	B096	
Finishing to medium cutting	**HRM** 	B062	B073		B082	B093	B100	B107

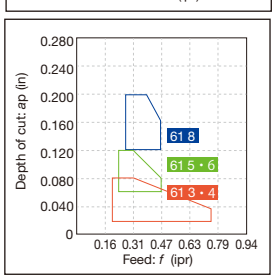
Chip control range







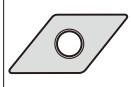
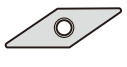
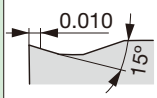
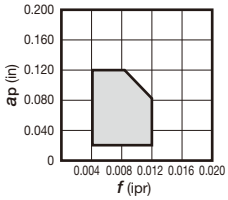
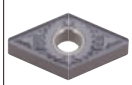
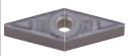
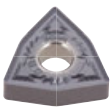
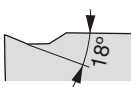
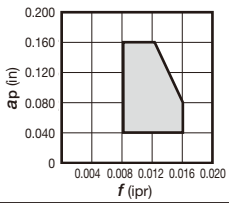
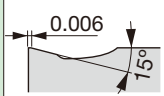
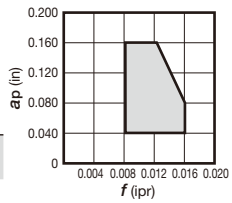
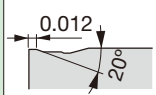
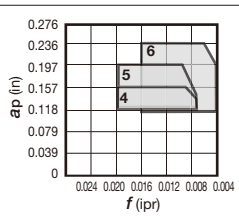
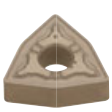
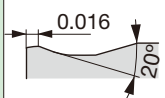
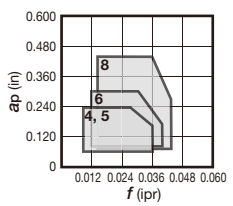
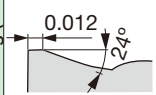
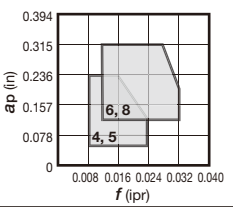




*-M,G: Without chipbreaker

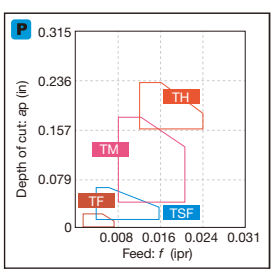
Please see the page B*** for the product details.

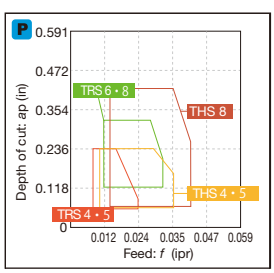
Chipbreaker Overview

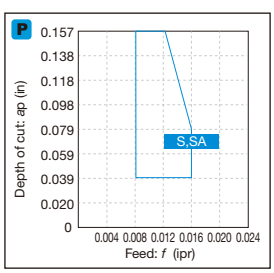
Application	Negative type with hole	C	D	R	S	T	V	W
								
		80°	55°		90°	60°	35°	80°
Medium cutting	HMM  	 B062	 B073		 B082	 B093	 B100	 B107
	SA  	 B062	 B073		 B082	 B093		 B108
	S  	 B063	 B073		 B082	 B094		
Medium to heavy cutting	TH  	 B063	 B074		 B082	 B094		 B108
	THS  	 B063	 B074		 B082	 B094		 B108
Medium to heavy cutting (single side)	TRS  	 B064			 B083			

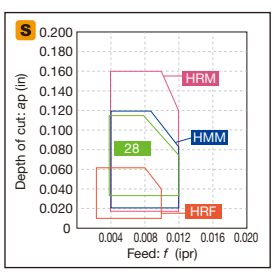
Please see the page B*** for the product details.

Chip control range

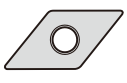
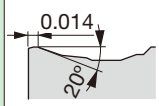
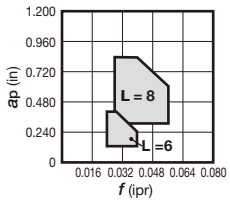
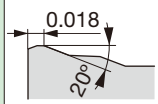
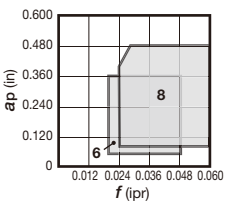
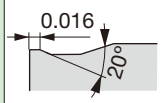
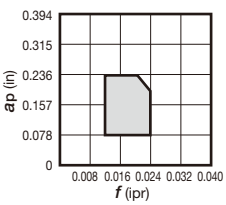
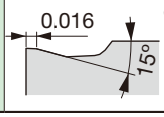
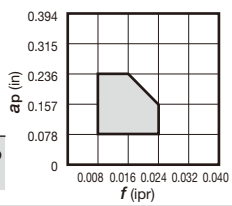
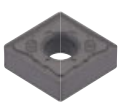
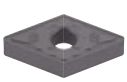
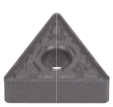






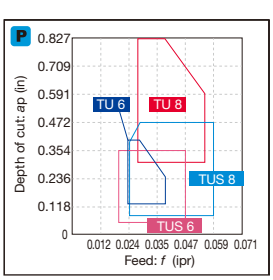


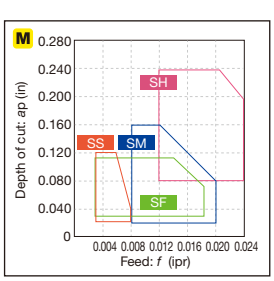
Chipbreaker Overview

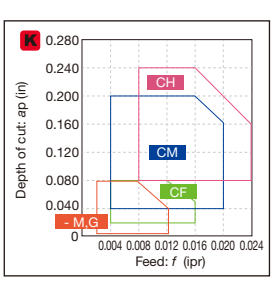
Application	Negative type with hole	C	D	R	S	T	V	W
								
		80°	55°		90°	60°	35°	80°
Heavy cutting (single side)	**TU**  	 B064			 B083			
	TUS  	 B064			 B083			
Medium to heavy cutting	**SH**  	 B064	 B074		 B084			 B108
	CH  	 B064	 B074		 B084	 B094		 B108

Please see the page B*** for the product details.

Chip control range

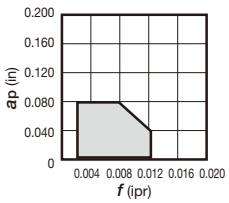
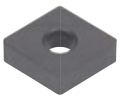
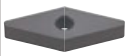
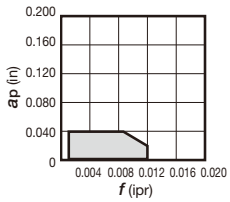
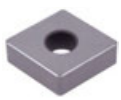


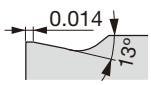
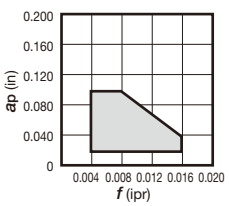




*-M,G: Without chipbreaker

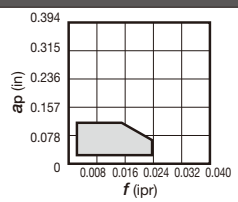
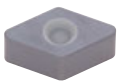
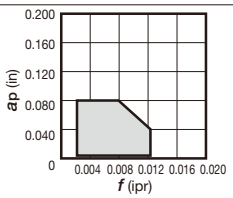
Chipbreaker Overview

Application	Negative type with hole	C	D	R	S	T	V	W
		80°	55°		90°	60°	35°	80°
Finishing to medium cutting	— M,G-class  	 B065	 B074	 B076	 B084	 B095	 B100	 B109
	Wiper M-class  	 B065						

Application	Negative type with hole	C	D	KNMX	LNGN	R	S	T
		80°	55°	55°	90°		90°	60°
Finishing	S1  			 B110				

Please see the page B*** for the product details.

Chipbreaker Overview

Application	Negative type without hole	C	D	H	R	S	T	V
								
		80°	55°	120°		90°	60°	35°
Finishing to medium cutting	— G-class  	 B066	 B075	 B110		 B085		 B101
	— M,G-class  	 B066	 B075		 B076	 B085	 B096	

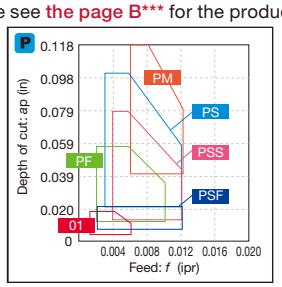
Please see the page B*** for the product details.

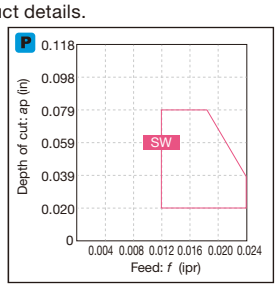
Chipbreaker Overview

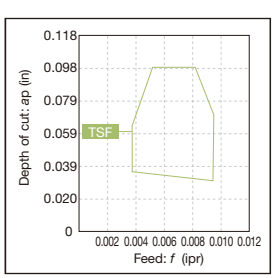
Application	Positive 7° with hole	C	D	R	S	T	V	Y
		80°	55°		90°	60°	35°	25°
Precision finishing	01	B111	B121			B139		
Finishing	PSF	B111	B121			B139	B155	
Finishing	PF	B111	B121				B155	
Finishing to light cutting	PSS	B112	B122			B139	B155	
Medium cutting (wiper)	SW	B112						
Finishing to medium cutting	PS	B112	B122		B135	B140	B155	
Finishing to medium cutting	TSF	B112	B122			B140	B155	

Please see the page B*** for the product details.

Chip control range





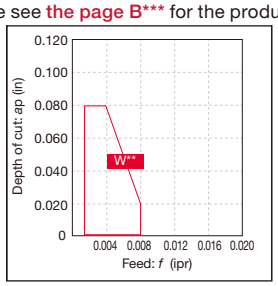


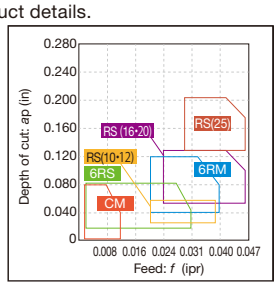
Chipbreaker Overview

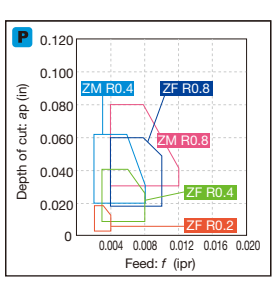
Application	Positive 7° with hole	C	D	R	S	T	V	Y
		80°	55°		90°	60°	35°	25°
Finishing to medium cutting	TM	B112	B122			B140	B155	
	ZF							B163
	ZM							B163
	23	B113	B122		B135	B140		
Medium cutting	24	B113	B122		B135	B140	B156	
Finishing	W**	B113, B114	B123			B140		
Finishing to medium cutting	RS			B131				

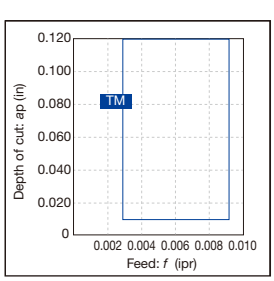
Please see the page B*** for the product details.

Chip control range

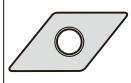
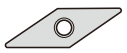
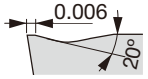
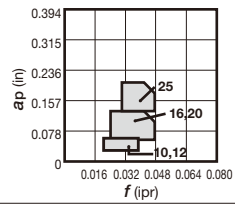
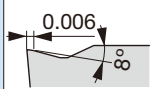
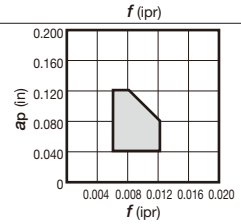
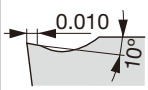
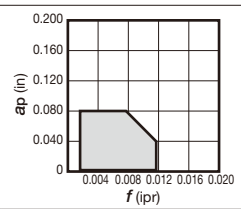
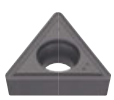
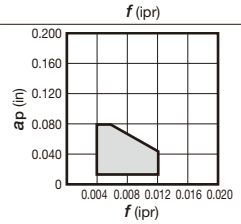
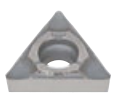
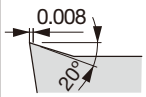
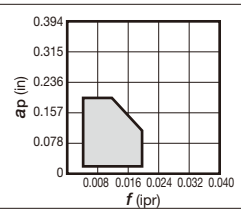
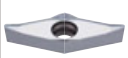
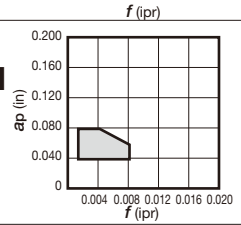
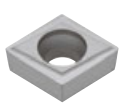
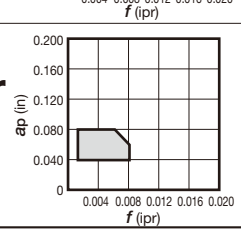






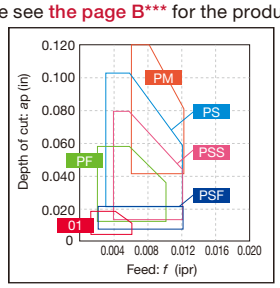


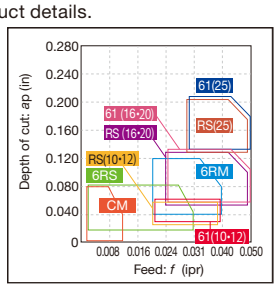
Chipbreaker Overview

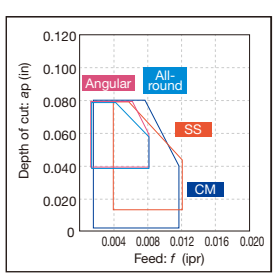
Application	Positive 7° with hole	C	D	R	S	T	V	Y
								
		80°	55°		90°	60°	35°	25°
Heavy cutting	**61**  			 B132				
Medium cutting	**PM**  	 B114	 B123		 B135	 B141		
Finishing to medium cutting	**CM**  	 B114	 B123	 B131	 B135	 B141	 B156	
	SS  					 B141		
	AL  	 B115	 B124	 B131		 B141	 B156	
	All-round  	 B115	 B124				 B156	
	Angular  	 B115	 B124					

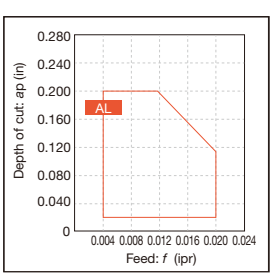
Please see the page B*** for the product details.

Chip control range

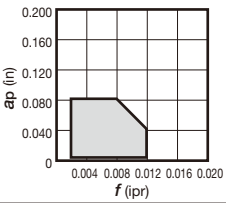
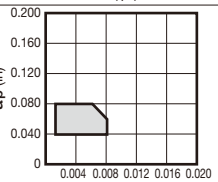
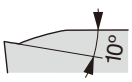
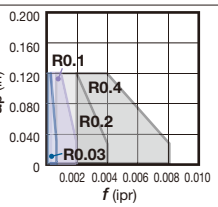
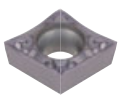
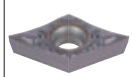
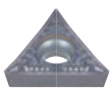
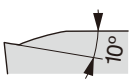
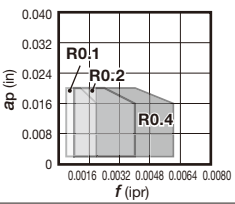
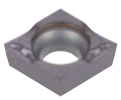
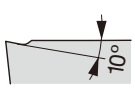
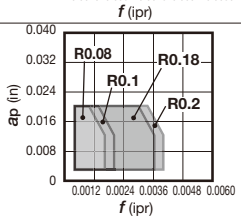
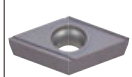
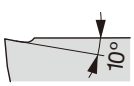
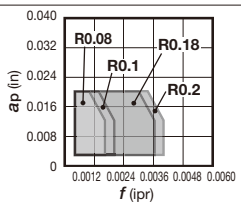
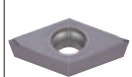






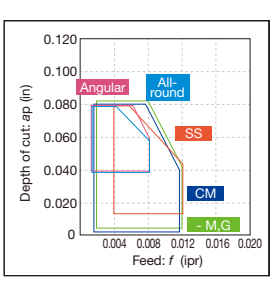


Chipbreaker Overview

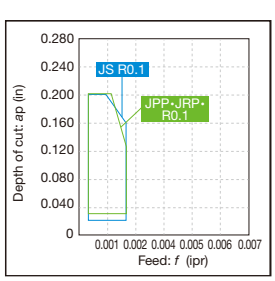
Application	Positive 7° with hole	C 80°	D 55°	R	S 90°	T 60°	V 35°	Y 25°
Finishing to medium cutting	— M,G-class  	 B115	 B124					
Finishing	— (with hand)  					 B142		
For external turning on Swiss lathes (including sharp edge type)	JS  	 B116	 B125			 B142		
	JS  	 B116						
For external turning on Swiss lathes (sharp edge)	JPP  		 B125					
	JRP  		 B126					

Please see the page B*** for the product details.

Chip control range

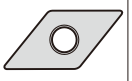
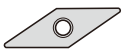
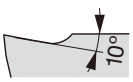
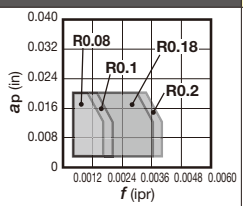
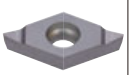
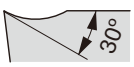
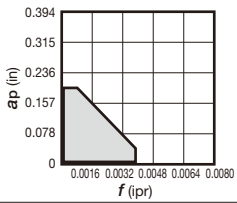
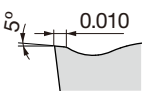
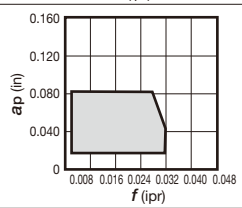
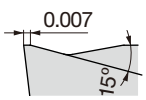
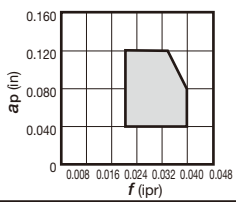


*-M,G: Without chipbreaker



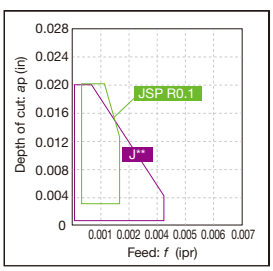
*Chip control range with typical R0.1

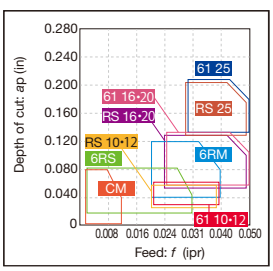
Chipbreaker Overview

Application	Positive 7° with hole	C	D	R	S	T	V	Y
								
		80°	55°		90°	60°	35°	25°
For external turning on Swiss lathes (sharp edge)	**JSP**  		 B126					
	J**  	 B117	 B126			 B142, B143		
Low cutting force	**6RS**  			 B131				
Medium cutting	**6RM**  			 B131				

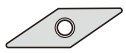
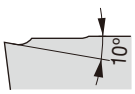
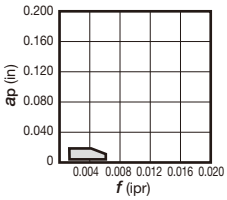
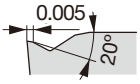
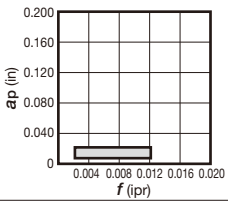
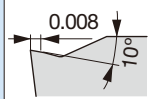
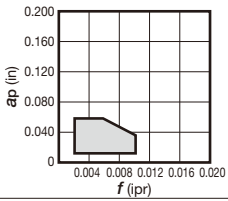
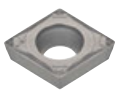
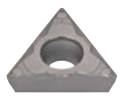
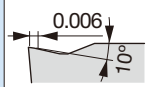
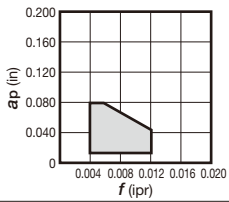
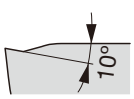
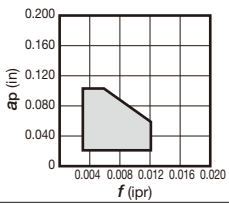
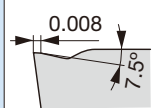
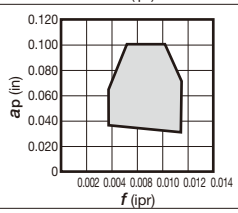
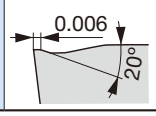
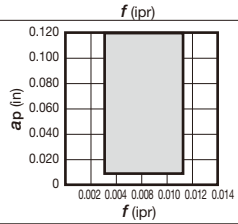
Please see the page B*** for the product details.

Chip control range



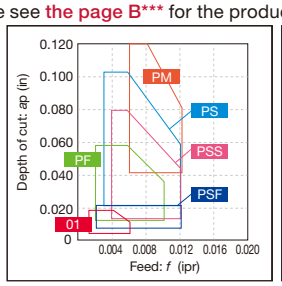


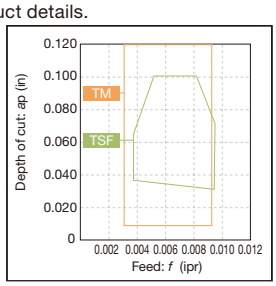
Chipbreaker Overview

Application	Positive 11° with hole	C	E	S	T	V
						
		80°	75°	90°	60°	35°
Precision finishing	01  				 B144	
Finishing	PSF  	 B118			 B144	
	PF  	 B118			 B144	
Finishing to light cutting	PSS  	 B118			 B145	
Finishing to medium cutting	PS  	 B118		 B136	 B145	
	TSF  	 B118			 B145	
	TM  	 B118			 B146	

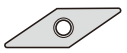
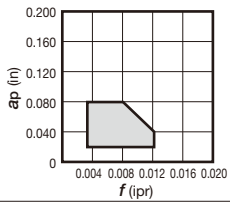
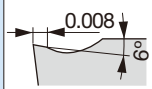
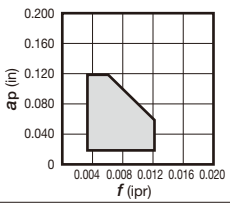
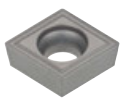
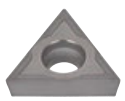
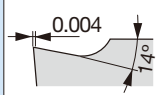
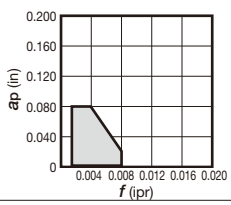
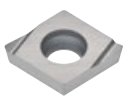
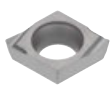
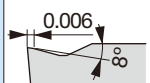
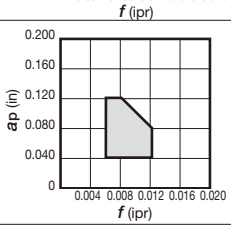
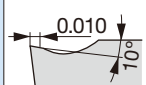
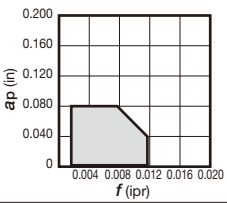
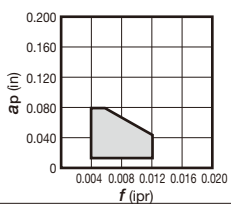
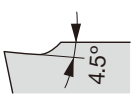
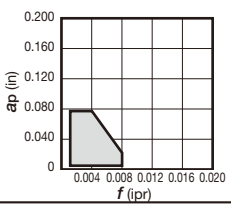
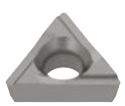
Please see the page B*** for the product details.

Chip control range



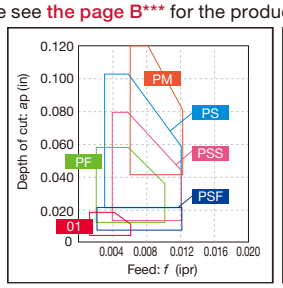


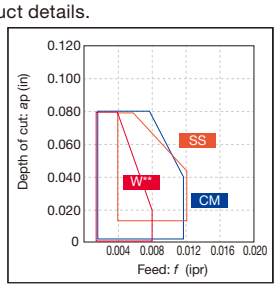
Chipbreaker Overview

Application	Positive 11° with hole	C	E	S	T	V
						
		80°	75°	90°	60°	35°
Finishing to medium cutting	23  			 B136	 B146	
Medium cutting	24  	 B119		 B136	 B146	
Finishing	W**  	 B119	 B129	 B136	 B146, B147	
Medium cutting	PM  	 B120			 B148	
Finishing to medium cutting	CM  	 B120		 B137	 B148	
	SS  				 B148	
	H**  				 B148	

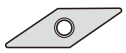
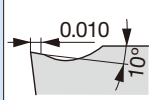
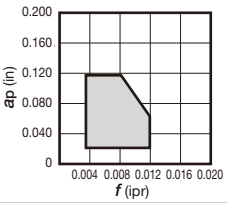
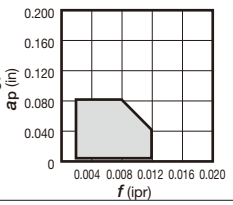
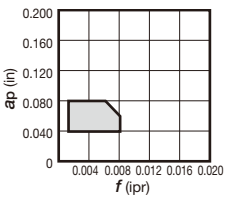
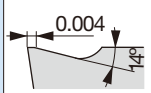
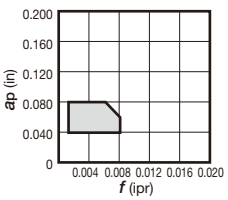
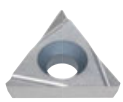
Please see the page B*** for the product details.

Chip control range



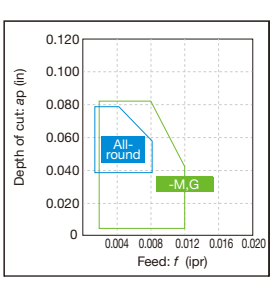


Chipbreaker Overview

Application	Positive 11° with hole	C	E	S	T	V
						
		80°	75°	90°	60°	35°
Medium cutting	**All-round**  	 B120				
Finishing to medium cutting	— **M,G-class**  	 B120		 B137	 B149, B150	
Finishing to medium cutting	— (with hand)  			 (Tungaloy standard hole specification) ISO non-compliant B137		
Finishing to medium cutting	— (with hand)  				 (Tungaloy standard hole specification) ISO non-compliant B150	

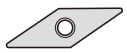
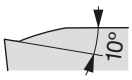
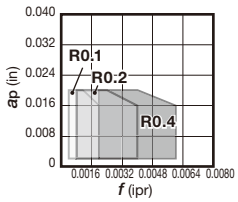
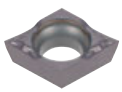
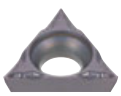
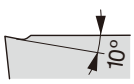
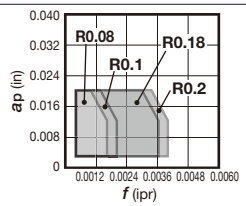
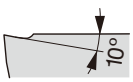
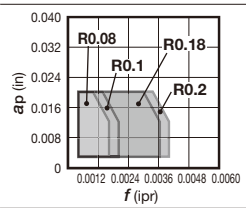
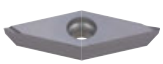
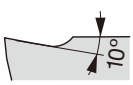
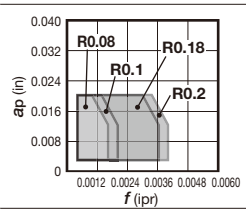
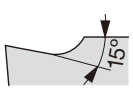
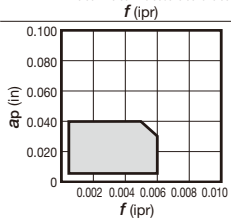
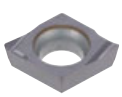
Please see the page B*** for the product details.

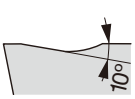
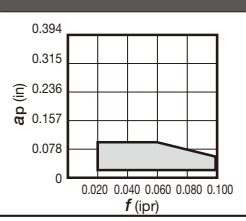
Chip control range

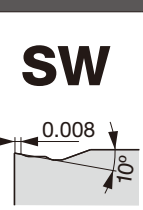


*-M,G: Without chipbreaker

Chipbreaker Overview

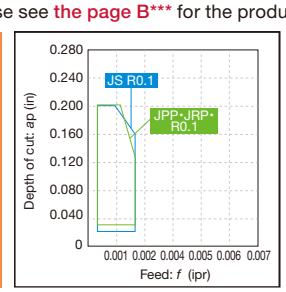
Application	Positive 11° with hole	C	E	S	T	V
						
		80°	75°	90°	60°	35°
For internal turning on Swiss lathes	JS  		 B130		 B150	
For external turning on Swiss lathes (sharp edge)	JPP  					 B157
	JRP  					 B157
	JSP  					 B158
Finishing	J08  		 B130			

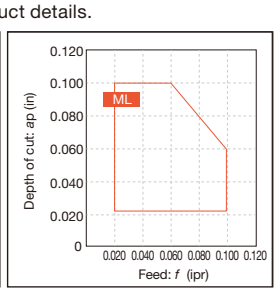
Application	Positive 11° with hole	W
		
		80°
Heavy cutting	ML  	 B159

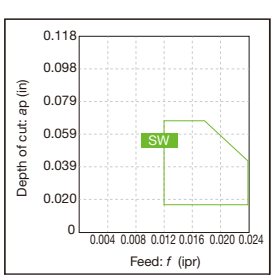
Application	Positive 7° with hole	C
		
		80°
Medium cutting (wiper)	SW 0.008 	 B112

Please see the page B*** for the product details.

Chip control range

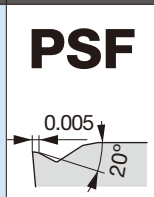
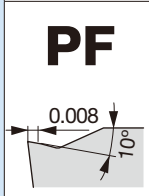
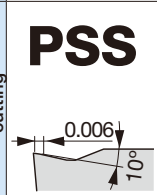
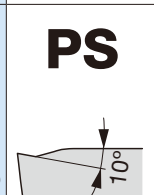
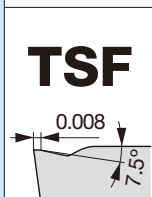
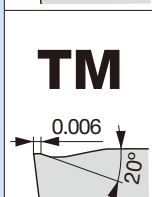
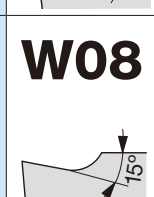


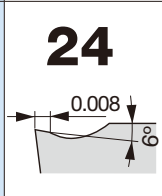
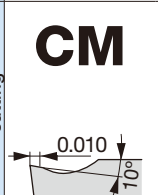
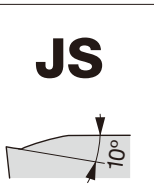
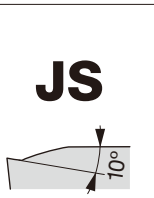
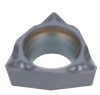
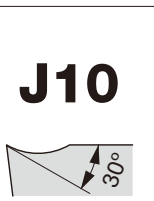
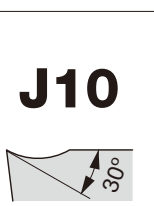




*Chip control range with typical R0.1

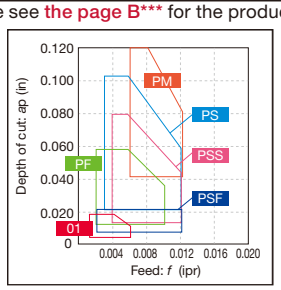
Chipbreaker Overview

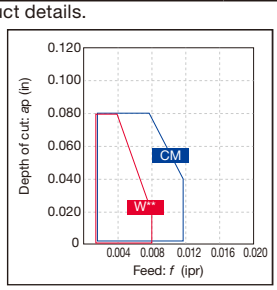
Application	Positive 5° with hole	V 35°	W 80°
Finishing	**PSF** 	 B152	
Finishing	**PF** 	 B153	
Finishing to light cutting	**PSS** 	 B153	
Finishing to medium cutting	**PS** 	 B153	
Finishing to medium cutting	**TSF** 	 B153	
Finishing to medium cutting	**TM** 	 B153	
Finishing	**W08** 		 B159

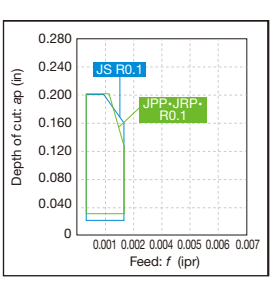
Application	Positive 5° with hole	V 35°	W 80°
Finishing	**W11** 		 B160
Medium cutting	**24** 	 B154	
Finishing to medium cutting	**CM** 	 B154	
For external turning on Swiss lathes (sharp edge)	**JS** 	 B154	
For internal turning on Swiss lathes	**JS** 		 B160
For external turning on Swiss lathes (sharp edge)	**J10** 	 B154	
For external turning on Swiss lathes (honed edge)	**J10** 	 B154	

Please see the page B*** for the product details.

Chip control range

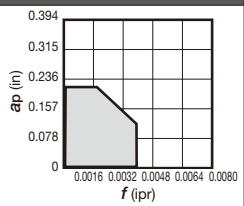


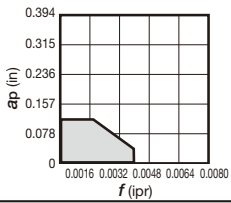


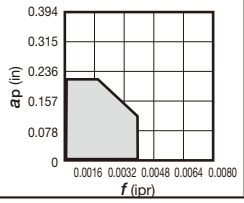


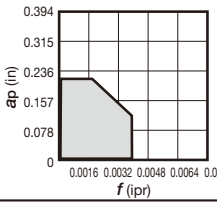
*Chip control range with typical R0.1

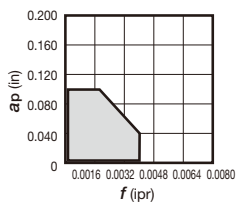
Chipbreaker Overview

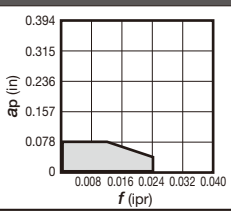
Application	Positive type with hole	JXF
Front turning	— 	 B163

Application	Positive type with hole	J10E
Back turning	— 	 B165, B166

Application	Positive type with hole	JXB
Back turning	— 	 B164

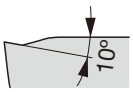
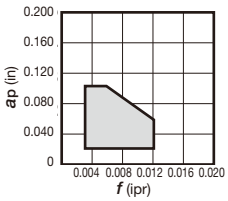
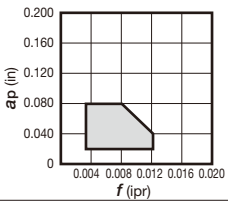
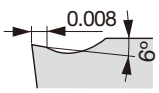
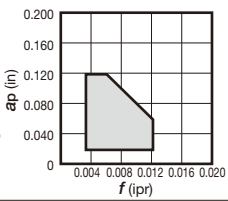
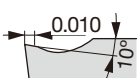
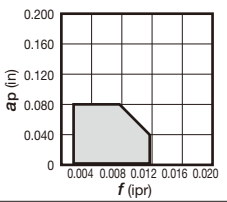
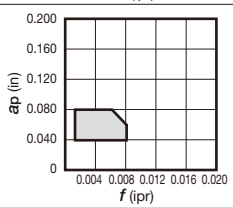
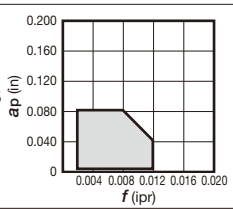
Application	Positive type with hole	JXR
Reverse turning	— 	 B164

Application	Positive type with hole	JTB
Back turning	— 	 B165

Application	Round	RT
Medium cutting	— 	Special round insert  B132

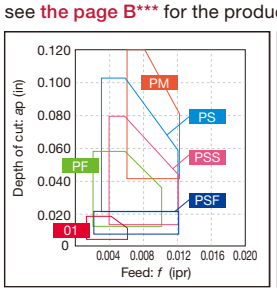
Please see the page B*** for the product details.

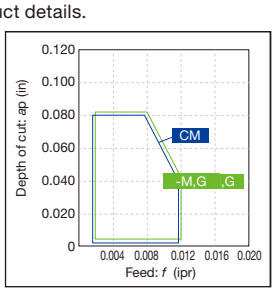
Chipbreaker Overview

Application	Positive 11° without hole	R	S	T
			90°	60°
Finishing to medium cutting	**PS**  			 B151
	23  		 B138	 B151
Medium cutting	**24**  			 B151
Finishing to medium cutting	**CM**  		 B138	 B151
	— (with hand)  		 B138	 B152
	— M,G-class  		 B138	 B152

Please see the page B*** for the product details.

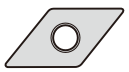
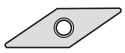
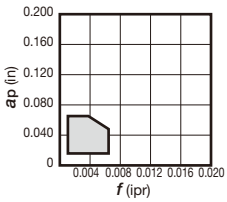
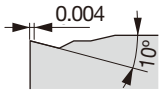
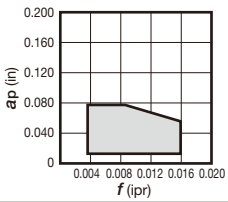
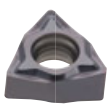
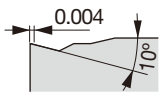
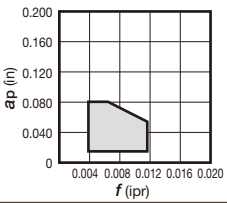
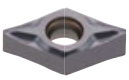
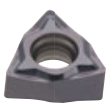
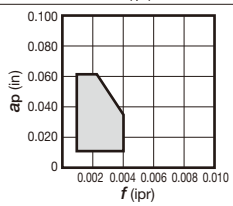
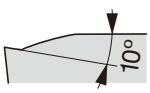
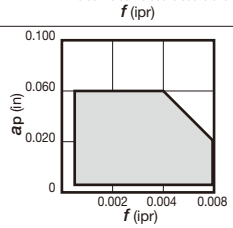
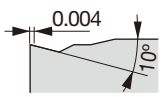
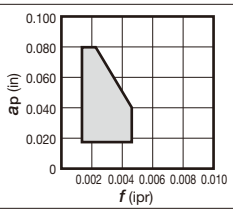
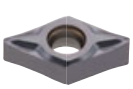
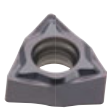
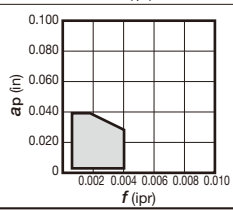
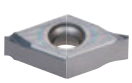
Chip control range





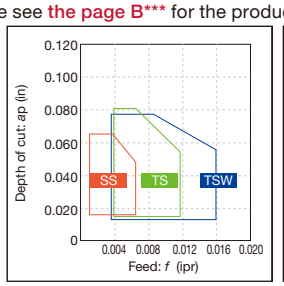
*-M,G: Without chipbreaker

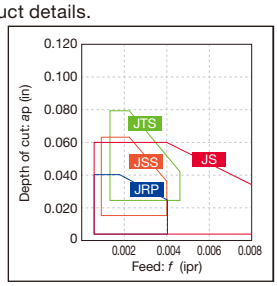
Chipbreaker Overview

Application	Double-sided positive type with hole	D	V	W
				
		55°	35°	80°
Finishing (low cutting force)	SS  	 B128		 B162
Finishing (wiper)	TSW  			 B162
Finishing to medium cutting	TS  	 B128		 B162
Finishing (low cutting force) (sharp edge)	JSS  	 B128		 B162
Finishing to medium cutting (sharp edge)	JS  	 B127	 B158	 B160
Finishing to medium cutting (sharp edge)	JTS  	 B128		 B161
Finishing (sharp edge)	JRP  	 B127	 B158	

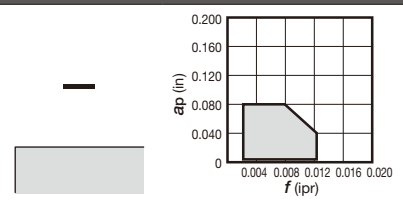
Please see the page B*** for the product details.

Chip control range



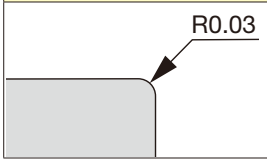
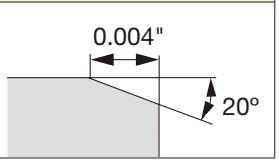


Chipbreaker Overview

Application	Positive 7° without hole	RCGX
		Special round insert
Medium cutting		 B133

Please see the page B*** for the product details.

Cutting edge preparations for ceramic insert

E	T1
	

Grade	Symbols	Shape of edge
LX11	-	T01525
LX21	-	T01030
FX105	-	T02025
CX710	-	T02025
TS200	-E	R003
	-T1	T01020
TS300	-E	R003
	-T1	T01020
TZ120	-	T01020

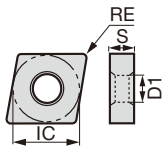
Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T515	AH110	AH120	AH8015	GH110	GT9530	AT9530	NS9530	NS520	TH10
P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣		●			●	●◐	●◐	●◐	●◐	●
M	Stainless		●◐								●	●◐	◐	●					●
K	Cast iron	●◐	●◐			●◐	●◐			●◐	●	●◐		●	●◐	●◐	●◐	●◐	●
N	Non-ferrous																		●
S	Superalloy										●	●◐	◐	●					
H	Hard material																		



Application	Chipbreaker	Designation Inch	Designation Metric	T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T515	AH110	AH120	AH8015	GH110	GT9530	AT9530	NS9530	NS520	TH10	RE	IC	S	D1
				Coated													Coated cermet		Cermet		Un-coated	Dimension (inch)			
Precision finishing	TF	CNMG 431 TF	CNMG120404-TF																●		●	0.016	0.500	0.188	0.203
		CNMG 432 TF	CNMG120408-TF																●			0.031	0.500	0.188	0.203
	01	CNGG 320.5-01	CNGG090302-01																●			0.008	0.375	0.125	0.150
		CNGG 321-01	CNGG090304-01																●			0.016	0.375	0.125	0.150
		CNGG 322-01	CNGG090308-01																●			0.031	0.375	0.125	0.150
		CNGG 430-01	CNGG120401-01										●									0.004	0.500	0.188	0.203
		CNGG 430.5-01	CNGG120402-01										●						●	●	●	0.008	0.500	0.188	0.203
		CNGG 431-01	CNGG120404-01										●						●	●	●	0.016	0.500	0.188	0.203
		CNGG 432-01	CNGG120408-01										●						●	●	●	0.031	0.500	0.188	0.203
	C	CNGG 431 R-C	CNGG120404R-C													●			●			0.016	0.500	0.188	0.203
		CNGG 431 L-C	CNGG120404L-C																●			0.016	0.500	0.188	0.203
		CNGG 432 R-C	CNGG120408R-C																●			0.031	0.500	0.188	0.203
		CNGG 432 L-C	CNGG120408L-C																●			0.031	0.500	0.188	0.203
Finishing	TSF	CNMG 330.5E TSF	CNMG090402E-TSF											●	●							0.008	0.375	0.188	0.150
		CNMG 331E TSF	CNMG090404E-TSF		●	●			▲	▲				●	●		●	●	●			0.016	0.375	0.188	0.150
		CNMG 332E TSF	CNMG090408E-TSF		●	●			▲	▲				●	●		●	●	●			0.031	0.375	0.188	0.150
		CNMG 431 TSF	CNMG120404-TSF	●	●	●		▲	▲	▲		●		●	●		●	●	●			0.016	0.500	0.188	0.203
		CNMG 432 TSF	CNMG120408-TSF	●	●	●	●	▲	▲	▲	▲	●		●	●		●	●	●			0.031	0.500	0.188	0.203
		CNMG 433 TSF	CNMG120412-TSF		●	●			▲	▲		●		●	●							0.047	0.500	0.188	0.203
Finishing (wiper)	FW	CNMG 331E FW	CNMG090404E-FW	●	●	●		▲	▲	▲							●		●			0.016	0.375	0.188	0.150
		CNMG 332E FW	CNMG090408E-FW	●	●	●		▲	▲	▲							●		●			0.031	0.375	0.188	0.150
		CNMG 431 FW	CNMG120404-FW		●				▲								●		●			0.016	0.500	0.188	0.203
		CNMG 432 FW	CNMG120408-FW	●	●	●		▲	▲	▲							●		●			0.031	0.500	0.188	0.203
		*Wiper																							
	AFW	CNMG 431 AFW	CNMG120404-AFW		●	●			▲	▲							●		●			0.016	0.500	0.188	0.203
		CNMG 432 AFW	CNMG120408-AFW	●	●	●	●	▲	▲	▲	▲						●					0.031	0.500	0.188	0.203

* Please see **L034-L038** about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact a Tungaloy sales representative with questions.

● : Line up
▲ : To be discontinued

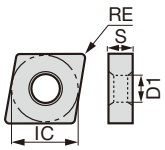
Reference pages: External toolholder → C018 - Internal toolholder → D028 -
J-Series toolholder → G057 TungCap → K008 -

● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

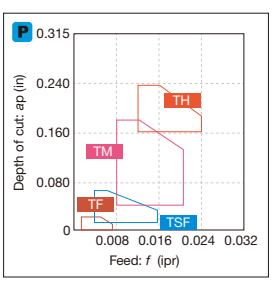
Rhombic, 80° with hole

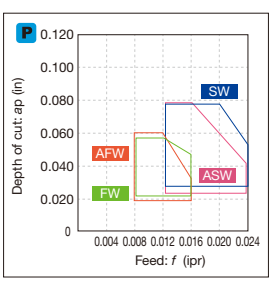
P	Steel	●ⓒ	ⓒ✣	✣	●ⓒ	ⓒ✣	✣	ⓒ	✣	ⓒ✣			●ⓒ	●ⓒ	●ⓒ	●ⓒ		●		
M	Stainless	●ⓒ						●	ⓒ	ⓒ								●		
K	Cast iron	●ⓒ			●ⓒ						●	ⓒ	●ⓒ	●ⓒ	●ⓒ	●ⓒ		●		
N	Non-ferrous																	●		
S	Superalloy																			
H	Hard material																			

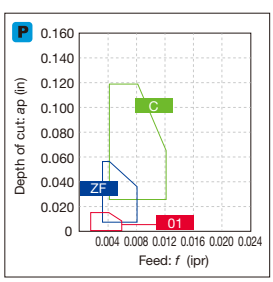


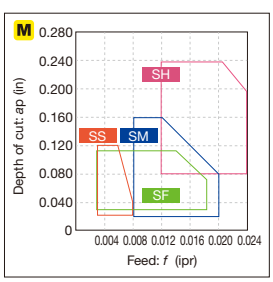
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9235	T9115	T9125	T9135	T6120	T6130	AH630	T5105	T5115	Coated cermet GT9530	AT9530	GT720	Cermet NS9530	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Finishing	ZF	CNMG 331E ZF	CNMG090404E-ZF	●	●		▲	▲												0.016	0.375	0.188	0.150
		CNMG 431 ZF	CNMG120404-ZF	●	●		▲	▲							●	●		●		0.016	0.500	0.188	0.203
		CNMG 432 ZF	CNMG120408-ZF	●	●	●	▲	▲	▲						●	●		●		0.031	0.500	0.188	0.203
		CNMG 433 ZF	CNMG120412-ZF				▲													0.047	0.500	0.188	0.203
	11	CNMG 431-11	CNMG120404-11												●			●	●	0.016	0.500	0.188	0.203
		CNMG 432-11	CNMG120408-11												●		●	●	●	0.031	0.500	0.188	0.203
Finishing (for mild steel)	17	CNMG 431-17	CNMG120404-17															●		0.016	0.500	0.188	0.203
		CNMG 432-17	CNMG120408-17															●		0.031	0.500	0.188	0.203
Finishing	SF	CNMG 321 SF	CNMG090304-SF							●	●	●								0.016	0.375	0.125	0.150
		CNMG 322 SF	CNMG090308-SF							●	●	●								0.031	0.375	0.125	0.150
		CNMG 431 SF	CNMG120404-SF							●	●	●								0.016	0.500	0.188	0.203
		CNMG 432 SF	CNMG120408-SF							●	●	●								0.031	0.500	0.188	0.203
		CNMG 433 SF	CNMG120412-SF							●	●	●								0.047	0.500	0.188	0.203
	CF	CNMG 431 CF	CNMG120404-CF										●	●						0.016	0.500	0.188	0.203
		CNMG 432 CF	CNMG120408-CF										●	●						0.031	0.500	0.188	0.203
		CNMG 433 CF	CNMG120412-CF										●	●						0.047	0.500	0.188	0.203

Chip control range

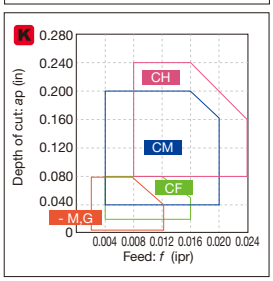








● : Line up
▲ : To be discontinued



*-M,G: Without chipbreaker

Reference pages: External toolholder → C018 - Internal toolholder → D028 -
J-Series toolholder → G057 TungCap → K008 -

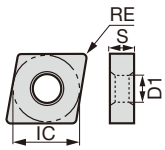
Insert NEGATIVE TYPE

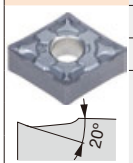
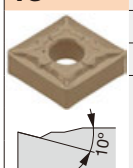
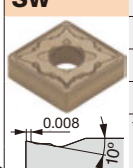
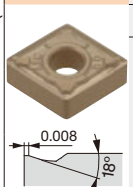
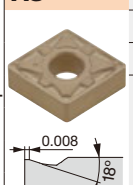
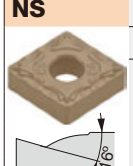
● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6130	T515	T5115	AH8005	AH8015	GT9530	AT9530	NS9530	NS520
P	Steel	●	●ⓒ	●ⓒ✣	✣	●	●ⓒ	●ⓒ✣	✣	✣					●ⓒ	●ⓒ	●ⓒ	●ⓒ
M	Stainless		●ⓒ							ⓒ			●	ⓒ				
K	Cast iron	●ⓒ	●ⓒ			●ⓒ	●ⓒ				●ⓒ	ⓒ			●ⓒ	●ⓒ	●ⓒ	●ⓒ
N	Non-ferrous																	
S	Superalloy												●	ⓒ				
H	Hard material																	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated												Coated cermet		Cermet		Dimension (inch)			
				T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6130	T515	T5115	AH8005	AH8015	GT9530	AT9530	NS9530	NS520	RE	IC	S	D1
Finishing	**HRF**	**CNMG 431 HRF**	**CNMG120404-HRF**												●	●					0.016	0.500	0.188	0.203
		**CNMG 432 HRF**	**CNMG120408-HRF**												●	●					0.031	0.500	0.188	0.203
		CNMG 433 HRF	**CNMG120412-HRF**												●	●					0.047	0.500	0.188	0.203
	TS	**CNMG 431 TS**	**CNMG120404-TS**		●	●	●		▲	▲	▲						●	●	●	●	0.016	0.500	0.188	0.203
		**CNMG 432 TS**	**CNMG120408-TS**	●	●	●	●	▲	▲	▲	▲	●					●	●	●	●	0.031	0.500	0.188	0.203
		CNMG 433 TS	**CNMG120412-TS**		●	●	●		▲	▲	▲										0.047	0.500	0.188	0.203
Finishing to medium cutting (wiper)	**SW**	**CNMG 332E SW**	**CNMG090408E-SW**	●	●	●		▲	▲	▲				●							0.031	0.375	0.188	0.150
		**CNMG 333E SW**	**CNMG090412E-SW**	●	●	●		▲	▲	▲				●							0.047	0.375	0.188	0.150
		CNMG 432 SW	**CNMG120408-SW**	●	●	●		▲	▲	▲			●	●							0.031	0.500	0.188	0.203
		CNMG 433 SW	**CNMG120412-SW**	●	●	●		▲	▲	▲			●	●							0.047	0.500	0.188	0.203
		*Wiper																						
	ASW	**CNMG 432 ASW**	**CNMG120408-ASW**	●	●	●		▲	▲	▲									●		0.031	0.500	0.188	0.203
		**CNMG 433 ASW**	**CNMG120412-ASW**	●	●	●		▲	▲	▲											0.047	0.500	0.188	0.203
High feed, small depth of cut	**AS**	**CNMG 431 AS**	**CNMG120404-AS**	●	●	●		▲	▲	▲									●		0.016	0.500	0.188	0.203
		**CNMG 432 AS**	**CNMG120408-AS**	●	●	●	●	▲	▲	▲	▲								●		0.031	0.500	0.188	0.203
		CNMG 433 AS	**CNMG120412-AS**		●	●	●		▲	▲	▲										0.047	0.500	0.188	0.203
Boring (double side)	**CB**	**CNMG 321 CB**	**CNMG090304-CB**																●		0.016	0.375	0.125	0.150
		**CNMG 322 CB**	**CNMG090308-CB**																●		0.031	0.375	0.125	0.150
Finishing	**NS**	**CNMG 431 NS**	**CNMG120404-NS**																●		0.016	0.500	0.188	0.203
		**CNMG 432 NS**	**CNMG120408-NS**		●	●			▲	▲									●		0.031	0.500	0.188	0.203

* Please see **L034-L038** about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact a Tungaloy sales representative with questions.

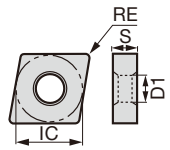
● : Line up
▲ : To be discontinued

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

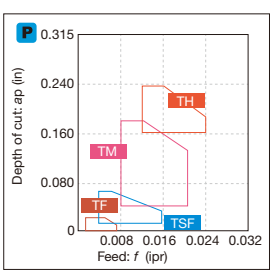
P	Steel	● ◐ ◐ ✣ ✣ ● ◐ ◐ ✣ ✣ ◐ ✣ ◐ ✣ ✣ ● ◐ ◐ ◐ ◐ ◐
M	Stainless	◐ ◐ ● ◐ ◐ ✣ ● ◐ ◐ ✣ ◐ ◐ ◐
K	Cast iron	◐ ◐ ◐ ◐ ◐ ◐ ◐ ◐ ◐ ◐ ◐
N	Non-ferrous	
S	Superalloy	● ◐ ◐ ● ◐
H	Hard material	

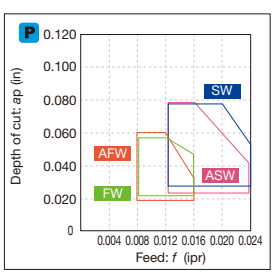


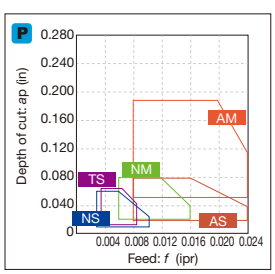
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH645	T515	AH110	AH120	AH725	AH8015	GH330	Cer-met NS9530	Dimension (inch) RE	IC	S	D1
Finishing	SS	CNMG 331E SS	CNMG090404E-SS											●	●								0.016	0.375	0.188	0.150
		CNMG 332E SS	CNMG090408E-SS											●	●								0.031	0.375	0.188	0.150
		CNMG 431 SS	CNMG120404-SS									●	●	●	●			●			●		0.016	0.500	0.188	0.203
		CNMG 432 SS	CNMG120408-SS									●	●	●	●			●			●		0.031	0.500	0.188	0.203
		CNMG 433 SS	CNMG120412-SS									●	●	●	●						●		0.047	0.500	0.188	0.203
Medium cutting	TM	CNMG 321 TM	CNMG090304-TM		●	●			▲	▲													0.016	0.375	0.125	0.150
		CNMG 322 TM	CNMG090308-TM		●	●	●		▲	▲	▲												0.031	0.375	0.125	0.150
		CNMG 331E TM	CNMG090404E-TM		●	●			▲	▲		●	●	●		●		●		●			0.016	0.375	0.188	0.150
		CNMG 332E TM	CNMG090408E-TM		●	●			▲	▲		●	●	●		●		●		●			0.031	0.375	0.188	0.150
		CNMG 333E TM	CNMG090412E-TM		●	●			▲	▲		●	●	●		●		●		●			0.047	0.375	0.188	0.150
		CNMG 431 TM	CNMG120404-TM	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●	●		●			0.016	0.500	0.188	0.203
		CNMG 432 TM	CNMG120408-TM	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●	●	●	●			0.031	0.500	0.188	0.203
		CNMG 433 TM	CNMG120412-TM	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●	●		●			0.047	0.500	0.188	0.203
		CNMG 434 TM	CNMG120416-TM		●	●	●		▲	▲	▲	●	●	●	●	●		●		●			0.063	0.500	0.188	0.203
		CNMG 543 TM	CNMG160612-TM	●	●	●	●	▲	▲	▲	▲							●		●			0.047	0.625	0.250	0.250
		CNMG 642 TM	CNMG190608-TM	●	●	●	●	▲	▲	▲	▲							●					0.031	0.750	0.250	0.312
		CNMG 643 TM	CNMG190612-TM	●	●	●	●	▲	▲	▲	▲							●					0.047	0.750	0.250	0.312
Finishing to medium cutting	AM	CNMG 432 AM	CNMG120408-AM		●	●			▲	▲													0.031	0.500	0.188	0.203
		CNMG 433 AM	CNMG120412-AM		●	●			▲	▲													0.047	0.500	0.188	0.203
		CNMG 434 AM	CNMG120416-AM		●	●			▲	▲													0.063	0.500	0.188	0.203
	NM	CNMG 432 NM	CNMG120408-NM	●	●	●	●	▲	▲	▲	▲											●	0.031	0.500	0.188	0.203
		CNMG 433 NM	CNMG120412-NM		●	●	●		▲	▲	▲												0.047	0.500	0.188	0.203

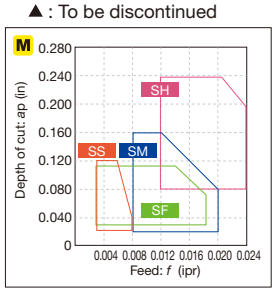
● : Line up
▲ : To be discontinued

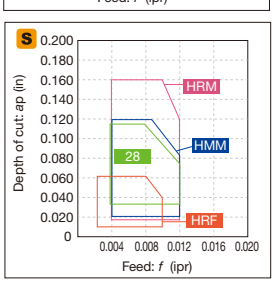
Chip control range











Reference pages: External toolholder → C018 - Internal toolholder → D028 -
J-Series toolholder → G057 TungCap → K008 -

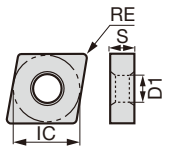
Insert NEGATIVE TYPE

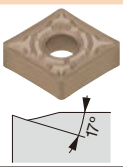
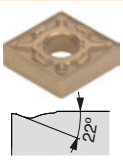
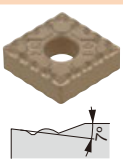
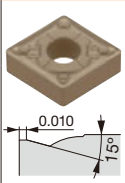
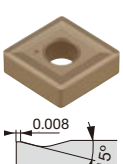
●: Continuous cutting
ⓒ: Light interrupted cutting
✣: Heavy interrupted cutting

CN

Rhombic, 80° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T515	T5105	T5115	T5125	AH110	AH120	GT9530	AT9530	GT720	NS9530	NS520	TH10
P	Steel	●	●ⓒ	●ⓒ✣	✣	●	●ⓒ	●ⓒ✣	✣					●	●ⓒ	●ⓒ	●ⓒ	●ⓒ	●ⓒ	●ⓒ	●
M	Stainless		●ⓒ											●	●ⓒ						●
K	Cast iron	●ⓒ	●ⓒ			●ⓒ	●ⓒ			●ⓒ	●	ⓒ	✣	●	●ⓒ	●ⓒ	●ⓒ	●ⓒ	●ⓒ	●ⓒ	●
N	Non-ferrous																				●
S	Superalloy													●	●ⓒ						
H	Hard material																				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated														Coated cermet			Cermet		Uncoated	Dimension (inch)			
				T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T515	T5105	T5115	T5125	AH110	AH120	GT9530	AT9530	GT720	NS9530	NS520	TH10	RE	IC	S	D1
Finishing to medium cutting	**TQ**	**CNMG 431 TQ**	**CNMG120404-TQ**		●	●												●	●		●			0.016	0.500	0.188	0.203
		CNMG 432 TQ	CNMG120408-TQ		●	●												●	●		●			0.031	0.500	0.188	0.203
Medium cutting	**TA**	**CNMG 432 TA**	**CNMG120408-TA**		●	●																		0.031	0.500	0.188	0.203
		CNMG 433 TA	CNMG120412-TA		●	●																		0.047	0.500	0.188	0.203
Finishing to medium cutting	**ZM**	**CNMG 332E ZM**	**CNMG090408E-ZM**		●	●			▲	▲														0.031	0.375	0.188	0.150
		**CNMG 432 ZM**	**CNMG120408-ZM**		●	●	●		▲	▲	▲							●			●			0.031	0.500	0.188	0.203
		CNMG 433 ZM	CNMG120412-ZM		●	●	●		▲	▲	▲							●						0.047	0.500	0.188	0.203
		CNMG 434 ZM	CNMG120416-ZM		●	●			▲	▲														0.063	0.500	0.188	0.203
Medium cutting	**DM**	**CNMG 431 DM**	**CNMG120404-DM**		●	●			▲	▲														0.016	0.500	0.188	0.203
		CNMG 432 DM	CNMG120408-DM	●	●	●	●	▲	▲	▲	▲													0.031	0.500	0.188	0.203
		CNMG 433 DM	CNMG120412-DM	●	●	●	●	▲	▲	▲	▲													0.047	0.500	0.188	0.203
		CNMG 543 DM	**CNMG160612-DM**		●					▲														0.047	0.625	0.250	0.250
	All-round	**CNMG 321**	**CNMG090304**		●	●			▲	▲											●			0.016	0.375	0.125	0.150
		CNMG 322	CNMG090308	●	●	●	●	▲	▲	▲	▲									●	●			0.031	0.375	0.125	0.150
		CNMG 431	**CNMG120404**	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●	●			●		●	0.016	0.500	0.188	0.203
		CNMG 432	CNMG120408	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●	●			●	●	●	0.031	0.500	0.188	0.203
		CNMG 433	CNMG120412	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●					●	●	0.047	0.500	0.188	0.203
		CNMG 434	CNMG120416	●	●	●	●	▲	▲	▲	▲	●	●	●	●									0.063	0.500	0.188	0.203
		CNMG 542	**CNMG160608**	●	●	●	●	▲	▲	▲	▲		●	●	●		●							0.031	0.625	0.250	0.250
		CNMG 543	CNMG160612	●	●	●	●	▲	▲	▲	▲	●	●	●	●		●							0.047	0.625	0.250	0.250
		CNMG 544	CNMG160616	●	●	●	●	▲	▲	▲	▲	●	●	●	●									0.063	0.625	0.250	0.250
		CNMG 642	**CNMG190608**		●	●	●		▲	▲	▲													0.031	0.750	0.250	0.312
		CNMG 643	CNMG190612	●	●	●	●	▲	▲	▲	▲	●	●	●	●		●							0.047	0.750	0.250	0.312
		CNMG 644	CNMG190616		●	●	●		▲	▲	▲	●	●	●	●		●							0.063	0.750	0.250	0.312

●: Line up
▲: To be discontinued

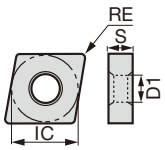
Reference pages: External toolholder → C018 - Internal toolholder → D028 -
J-Series toolholder → G057 TungCap → K008 -

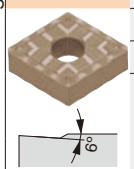
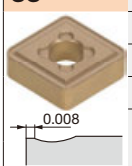
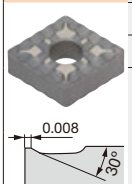
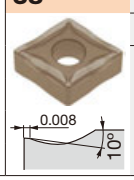
● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

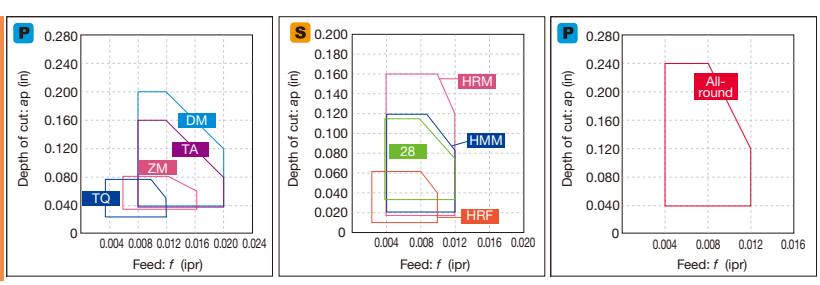
P	Steel	●	●ⓒ	●ⓒ✣	✣	●ⓒ	●ⓒ✣	✣	●	●ⓒ	ⓒ	●ⓒ			●ⓒ	●ⓒ	●ⓒ	●				
M	Stainless		●ⓒ						●	●ⓒ	ⓒ	●ⓒ	●	ⓒ	●ⓒ			●				
K	Cast iron	●ⓒ	●ⓒ			●ⓒ			●	●ⓒ	ⓒ	●ⓒ			●ⓒ	●ⓒ	●ⓒ	●	●			
N	Non-ferrous																	●	●			
S	Superalloy								●	●ⓒ	●		●	ⓒ					●			
H	Hard material																					



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9115	T9125	T9135	AH110	AH120	AH725	AH905	AH8005	AH8015	GH330	Coated cermet GT720	Cer-met NS9530	Un-coated TH10	Un-coated KS05F	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	27	CNMG 431-27	CNMG120404-27		●	●		▲	▲										●			0.016	0.500	0.188	0.203
		CNMG 432-27	CNMG120408-27		●	●	●	▲	▲	▲									●			0.031	0.500	0.188	0.203
		CNMG 433-27	CNMG120412-27			●			▲													0.047	0.500	0.188	0.203
Medium cutting	28	CNGP 430-28	CNGP120401-28								●	●		●								0.004	0.500	0.188	0.203
		CNGP 430.5-28	CNGP120402-28								●	●		●								0.008	0.500	0.188	0.203
		CNGP 431-28	CNGP120404-28								●	●		●							●	0.016	0.500	0.188	0.203
		CNGP 432-28	CNGP120408-28								●	●		●							●	0.031	0.500	0.188	0.203
		CNMG 431-28	CNMG120404-28			●			▲		●	●			●	●						0.016	0.500	0.188	0.203
		CNMG 432-28	CNMG120408-28								●	●			●	●						0.031	0.500	0.188	0.203
		CNMG 433-28	CNMG120412-28									●			●	●						0.047	0.500	0.188	0.203
	33	CNMG 432-33	CNMG120408-33								●							●				0.031	0.500	0.188	0.203
		CNMG 434-33	CNMG120416-33		●			▲														0.063	0.500	0.188	0.203
		CNMG 543-33	CNMG160612-33		●			▲														0.047	0.625	0.250	0.250
		CNMG 643-33	CNMG190612-33		●			▲														0.047	0.750	0.250	0.312
	37	CNMG 431-37	CNMG120404-37		●			▲											●			0.016	0.500	0.188	0.203
		CNMG 432-37	CNMG120408-37		●			▲									●		●	●		0.031	0.500	0.188	0.203
		CNMG 433-37	CNMG120412-37		●			▲														0.047	0.500	0.188	0.203
	38	CNMG 431-38	CNMG120404-38														●					0.016	0.500	0.188	0.203
		CNMG 432-38	CNMG120408-38		●			▲					●				●					0.031	0.500	0.188	0.203

● : Line up
▲ : To be discontinued

Chip control range



Reference pages: External toolholder → C020 - Internal toolholder → D029 -
J-Series toolholder → G057 TungCap → K008 -

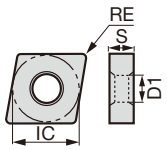
Insert NEGATIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

P	Steel	ɔ	✣	ɔ✣	✣	●	●ɔ					ɔ				●	●ɔ	●ɔ	●ɔ	●ɔ	●			
M	Stainless	●	ɔ	ɔ	✣	●	●ɔ					ɔ	●	ɔ		●	●ɔ			●				
K	Cast iron					●	●ɔ	●ɔ	●	ɔ	✣	ɔ				●	●ɔ	●ɔ	●ɔ	●	●	ɔ✣		
N	Non-ferrous																			●	●	ɔ✣		
S	Superalloy					●	●ɔ					●	●	ɔ	ɔ	●					●	ɔ✣		
H	Hard material																							



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T6120	T6130	AH630	AH645	AH110	AH120	T515	T5105	T5115	T5125	AH725	AH8005	AH8015	AH905	GH110	GH330	Coated cermet GT720	Cer-met NS9530	Uncoated TH10	KS05F	KS20	Dimension (inch) RE	IC	S	D1
Medium cutting	**SM**	**CNMG 331E SM**	**CNMG090404E-SM**	●	●	●																			0.016	0.375	0.188	0.150
		CNMG 332E SM	CNMG090408E-SM	●	●	●																			0.031	0.375	0.188	0.150
		CNMG 333E SM	CNMG090412E-SM	●	●	●																			0.047	0.375	0.188	0.150
		CNMG 431 SM	**CNMG120404-SM**	●	●	●	●							●											0.016	0.500	0.188	0.203
		CNMG 432 SM	CNMG120408-SM	●	●	●	●							●			●								0.031	0.500	0.188	0.203
		CNMG 433 SM	CNMG120412-SM	●	●	●	●							●			●								0.047	0.500	0.188	0.203
		CNMG 543 SM	**CNMG160612-SM**	●	●																				0.047	0.625	0.250	0.250
	CM	**CNMG 431 CM**	**CNMG120404-CM**							●	●	●	●												0.016	0.500	0.188	0.203
		CNMG 432 CM	CNMG120408-CM							●	●	●	●												0.031	0.500	0.188	0.203
		CNMG 433 CM	CNMG120412-CM							●	●	●	●												0.047	0.500	0.188	0.203
		CNMG 542 CM	**CNMG160608-CM**								●	●	●												0.031	0.625	0.250	0.250
		CNMG 543 CM	CNMG160612-CM							●	●	●	●												0.047	0.625	0.250	0.250
	P	**CNGG 431 R-P**	**CNGG120404R-P**															●			●	●			0.016	0.500	0.188	0.203
		CNGG 431 L-P	CNGG120404L-P															●			●	●			0.016	0.500	0.188	0.203
		CNGG 432 R-P	CNGG120408R-P															●				●			0.031	0.500	0.188	0.203
		CNGG 432 L-P	CNGG120408L-P															●				●			0.031	0.500	0.188	0.203
Finishing to medium cutting	**HRM**	**CNMG 431 HRM**	**CNMG120404-HRM**												●	●									0.016	0.500	0.188	0.203
		CNMG 432 HRM	CNMG120408-HRM												●	●									0.031	0.500	0.188	0.203
		CNMG 433 HRM	CNMG120412-HRM												●	●									0.047	0.500	0.188	0.203
		CNMG 542 HRM	**CNMG160608-HRM**												●	●									0.031	0.625	0.250	0.250
		CNMG 543 HRM	CNMG160612-HRM												●	●									0.047	0.625	0.250	0.250
		CNMG 643 HRM	**CNMG190612-HRM**												●	●									0.047	0.750	0.250	0.312
		CNMG 644 HRM	CNMG190616-HRM												●	●									0.063	0.750	0.250	0.312
Medium cutting	**HMM**	**CNMG 431 HMM**	**CNMG120404-HMM**														●								0.016	0.500	0.188	0.203
		CNMG 432 HMM	CNMG120408-HMM														●						●		0.031	0.500	0.188	0.203
		CNMG 433 HMM	CNMG120412-HMM														●								0.047	0.500	0.188	0.203
		CNMG 542 HMM	**CNMG160608-HMM**														●								0.031	0.625	0.250	0.250
		CNMG 543 HMM	CNMG160612-HMM														●								0.047	0.625	0.250	0.250
		CNMG 544 HMM	CNMG160616-HMM														●								0.063	0.625	0.250	0.250
	SA	**CNMG 431 SA**	**CNMG120404-SA**	●	●	●	●		●																0.016	0.500	0.188	0.203
		CNMG 432 SA	CNMG120408-SA	●	●	●	●	●	●															●	0.031	0.500	0.188	0.203
		CNMG 433 SA	CNMG120412-SA	●	●	●	●		●															●	0.047	0.500	0.188	0.203
		CNMG 643 SA	**CNMG190612-SA**						●															●	0.047	0.750	0.250	0.312
		CNMG 644 SA	CNMG190616-SA						●															●	0.063	0.750	0.250	0.312

● : Line up
▲ : To be discontinued

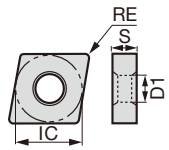
Reference pages: External toolholder → C018 - Internal toolholder → D028 -
J-Series toolholder → G057 TungCap → K008 -

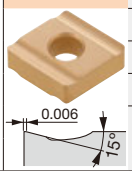
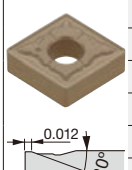
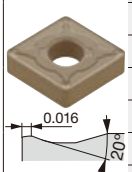
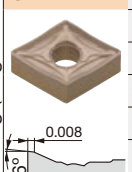
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

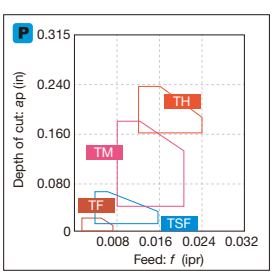
P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣	✣		●◐		✣					
M	Stainless		●◐							◐		●◐	◐	✣	◐				
K	Cast iron	●◐	●◐			●◐	●◐				●◐	●◐				●◐	●◐		●◐
N	Non-ferrous																		
S	Superalloy											●◐			◐				
H	Hard material																		

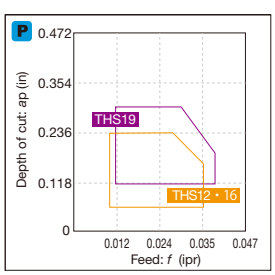


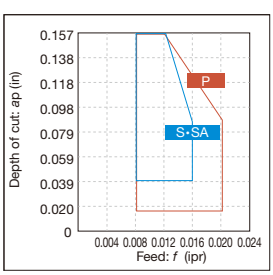
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6130	T515	AH120	AH630	AH645	AH8015	GH330	Coated cermet GT720	Cermet NS9530	Dimension (inch) RE	IC	S	D1
Medium cutting	S	CNMG 431 R-S	CNMG120404R-S			●	●			▲	▲	●			●	●		●	●	●	0.016	0.500	0.188	0.203
		CNMG 431 L-S	CNMG120404L-S			●	●			▲	▲	●			●	●		●		●	0.016	0.500	0.188	0.203
		CNMG 432 R-S	CNMG120408R-S			●	●			▲	▲	●			●	●		●	●	●	0.031	0.500	0.188	0.203
		CNMG 432 L-S	CNMG120408L-S			●	●			▲	▲	●			●	●		●		●	0.031	0.500	0.188	0.203
Medium to heavy cutting	TH	CNMG 432 TH	CNMG120408-TH	●	●	●	●	▲	▲	▲	▲	●	●	●			●				0.031	0.500	0.188	0.203
		CNMG 433 TH	CNMG120412-TH	●	●	●	●	▲	▲	▲	▲	●	●	●			●				0.047	0.500	0.188	0.203
		CNMG 434 TH	CNMG120416-TH	●	●	●	●	▲	▲	▲	▲		●	●			●				0.063	0.500	0.188	0.203
		CNMG 543 TH	CNMG160612-TH	●	●	●	●	▲	▲	▲	▲			●							0.047	0.625	0.250	0.250
		CNMG 544 TH	CNMG160616-TH	●	●	●	●	▲	▲	▲	▲			●							0.063	0.625	0.250	0.250
		CNMG 643 TH	CNMG190612-TH	●	●	●	●	▲	▲	▲	▲			●							0.047	0.750	0.250	0.312
		CNMG 644 TH	CNMG190616-TH	●	●	●	●	▲	▲	▲	▲			●							0.063	0.750	0.250	0.312
	THS	CNMG 432 THS	CNMG120408-THS	●	●	●	●	▲	▲	▲	▲										0.031	0.500	0.188	0.203
		CNMG 433 THS	CNMG120412-THS	●	●	●	●	▲	▲	▲	▲										0.047	0.500	0.188	0.203
		CNMG 434 THS	CNMG120416-THS	●	●	●	●	▲	▲	▲	▲										0.063	0.500	0.188	0.203
		CNMG 543 THS	CNMG160612-THS	●	●	●	●	▲	▲	▲	▲										0.047	0.625	0.250	0.250
		CNMG 544 THS	CNMG160616-THS	●	●	●	●	▲	▲	▲	▲										0.063	0.625	0.250	0.250
		CNMG 643 THS	CNMG190612-THS		●	●	●		▲	▲	▲										0.047	0.750	0.250	0.312
		CNMG 644 THS	CNMG190616-THS		●	●	●		▲	▲	▲										0.063	0.750	0.250	0.312
		CNMG 646 THS	CNMG190624-THS		●	●	●		▲	▲	▲										0.094	0.750	0.250	0.312
		CNMG 866 THS	CNMG250924-THS		●	●	●		▲	▲	▲										0.094	1.000	0.375	0.359
Medium to heavy cutting (single side)	57	CNMM 431-57	CNMM120404-57			●				▲											0.016	0.500	0.188	0.203
		CNMM 432-57	CNMM120408-57		●	●			▲	▲											0.031	0.500	0.188	0.203
		CNMM 433-57	CNMM120412-57			●				▲											0.047	0.500	0.188	0.203
		CNMM 643-57	CNMM190612-57			●				▲											0.047	0.750	0.250	0.313
		CNMM 644-57	CNMM190616-57			●				▲											0.063	0.750	0.250	0.313

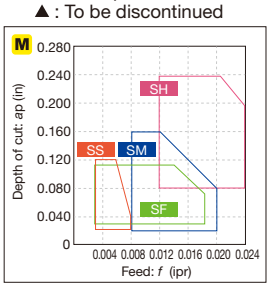
● : Line up
▲ : To be discontinued

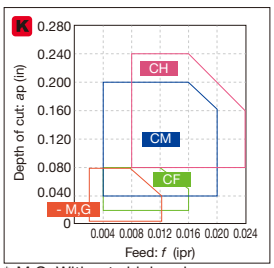
Chip control range

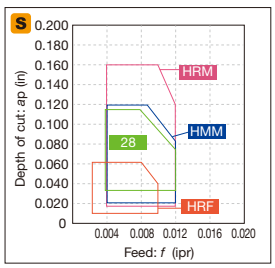












*-M,G: Without chipbreaker

Reference pages: External toolholder → C020 -
Internal toolholder → D029 -
J-Series toolholder → G057
TungCap → K008 -

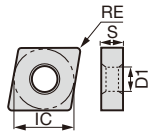
Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

		T9205	T9215	T9225	T9235	T9115	T9125	T9135	T6130	AH630	AH645	T515	T5105	T5115	T5125
P	Steel	●	●◐	◐✣	✣	●◐	◐✣	✣	✣	◐✣	✣				
M	Stainless		●◐						◐	◐	✣				
K	Cast iron	●◐	●◐			●◐						●◐	●	◐	✣
N	Non-ferrous														
S	Superalloy														
H	Hard material														



Application	Chipbreaker	Designation Inch	Designation Metric	RE	IC	S	D1
Medium to heavy cutting (single side)	**TRS**	**CNMM 432 TRS**	**CNMM120408-TRS**	0.031	0.500	0.188	0.203
		CNMM 433 TRS	CNMM120412-TRS	0.047	0.500	0.188	0.203
		CNMM 543 TRS	**CNMM160612-TRS**	0.047	0.625	0.250	0.250
		CNMM 544 TRS	CNMM160616-TRS	0.063	0.625	0.250	0.250
		CNMM 644 TRS	**CNMM190616-TRS**	0.063	0.750	0.250	0.312
		CNMM 646 TRS	CNMM190624-TRS	0.094	0.750	0.250	0.312
		CNMM 866 TRS	**CNMM250924-TRS**	0.094	1.000	0.375	0.359
Heavy cutting (single side)	**TU**	**CNMM 643 TU**	**CNMM190612-TU**	0.047	0.750	0.250	0.312
		CNMM 644 TU	CNMM190616-TU	0.063	0.750	0.250	0.312
		CNMM 646 TU	CNMM190624-TU	0.094	0.750	0.250	0.312
		CNMM 866 TU	**CNMM250924-TU**	0.094	1.000	0.375	0.359
	TUS	**CNMM 642 TUS**	**CNMM190608-TUS**	0.031	0.750	0.250	0.312
		CNMM 643 TUS	CNMM190612-TUS	0.047	0.750	0.250	0.312
		CNMM 644 TUS	CNMM190616-TUS	0.063	0.750	0.250	0.312
		CNMM 646 TUS	CNMM190624-TUS	0.094	0.750	0.250	0.312
		CNMM 648 TUS	CNMM190632-TUS	0.125	0.750	0.250	0.312
		CNMM 864 TUS	**CNMM250916-TUS**	0.063	1.000	0.375	0.359
		CNMM 866 TUS	CNMM250924-TUS	0.094	1.000	0.375	0.359
		CNMM 868 TUS	CNMM250932-TUS	0.125	1.000	0.375	0.359
Medium to heavy cutting (single side)	**65**	**CNMM 433-65**	**CNMM120412-65**	0.047	0.500	0.188	0.203
Medium to heavy cutting	**SH**	**CNMG 432 SH**	**CNMG120408-SH**	0.031	0.500	0.188	0.203
		CNMG 433 SH	CNMG120412-SH	0.047	0.500	0.188	0.203
		CNMG 434 SH	CNMG120416-SH	0.063	0.500	0.188	0.203
		CNMG 543 SH	**CNMG160612-SH**	0.047	0.625	0.250	0.250
		CNMG 544 SH	CNMG160616-SH	0.063	0.625	0.250	0.250
		CNMG 643 SH	**CNMG190612-SH**	0.047	0.750	0.250	0.312
		CNMG 644 SH	CNMG190616-SH	0.063	0.750	0.250	0.312
	CH	**CNMG 431 CH**	**CNMG120404-CH**	0.016	0.500	0.188	0.203
		CNMG 432 CH	CNMG120408-CH	0.031	0.500	0.188	0.203
		CNMG 433 CH	CNMG120412-CH	0.047	0.500	0.188	0.203
		CNMG 543 CH	**CNMG160612-CH**	0.047	0.625	0.250	0.250
		CNMG 544 CH	CNMG160616-CH	0.063	0.625	0.250	0.250
		CNMG 643 CH	**CNMG190612-CH**	0.047	0.750	0.250	0.312
		CNMG 644 CH	CNMG190616-CH	0.063	0.750	0.250	0.312

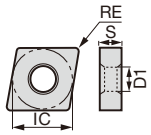
● : Line up
▲ : To be discontinued

● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° with hole

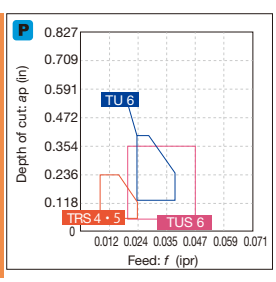
P	Steel	●	●							●ⓒ			●						
M	Stainless												●						
K	Cast iron	●ⓒ	●ⓒ	●ⓒ	●	ⓒ	✣			●ⓒ			●		●	●ⓒ	●		
N	Non-ferrous												●						
S	Superalloy																		
H	Hard material																	●	

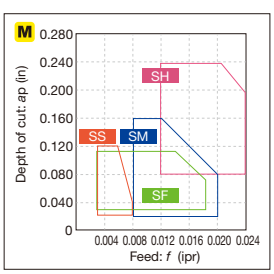


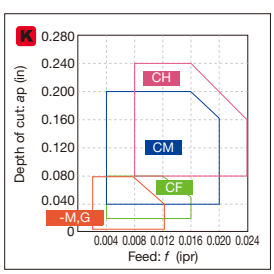
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	Coated T9105	Coated T515	Coated T5105	Coated T5115	Coated T5125	Cermet NS520	Uncoated TH10	Ceramic TZ120	Ceramic FX105	Ceramic LX21	Ceramic LX11	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	-	CNMA 331E	CNMA090404E			●										0.016	0.375	0.188	0.150
		CNMA 332E	CNMA090408E			●										0.031	0.375	0.188	0.150
		CNMA 333E	CNMA090412E			●										0.047	0.375	0.188	0.150
		CNMA 334E	CNMA090416E			●										0.063	0.375	0.188	0.150
		CNMA 431	CNMA120404				●	●	●		●					0.016	0.500	0.188	0.203
		CNMA 432	CNMA120408	●	▲	●	●	●	●	●	●		●			0.031	0.500	0.188	0.203
		CNMA 433	CNMA120412	●	▲	●	●	●	●		●		●			0.047	0.500	0.188	0.203
		CNMA 434	CNMA120416	●	▲		●	●	●		●		●			0.063	0.500	0.188	0.203
		CNMA 542	CNMA160608				●	●	●							0.031	0.625	0.250	0.250
		CNMA 543	CNMA160612			●	●	●	●							0.047	0.625	0.250	0.250
		CNMA 544	CNMA160616			●	●	●	●							0.063	0.625	0.250	0.250
		CNMA 643	CNMA190612			●	●	●	●							0.047	0.750	0.250	0.312
		CNMA 644	CNMA190616			●	●	●	●							0.063	0.750	0.250	0.312
	Wiper	CNMA 432 W	CNMA120408W										●			0.031	0.500	0.188	0.203
		CNMA 433 W	CNMA120412W										●			0.047	0.500	0.188	0.203
		CNMA 434 W	CNMA120416W										●			0.063	0.500	0.188	0.203
	-	CNGA 431	CNGA120404											●	●	0.016	0.500	0.188	0.203
		CNGA 432	CNGA120408							●		●	●	●	●	0.031	0.500	0.188	0.203
		CNGA 433	CNGA120412										●	●	●	0.047	0.500	0.188	0.203
		CNGA 434	CNGA120416										●		●	0.063	0.500	0.188	0.203
		CNGA 435	CNGA120420												●	0.078	0.500	0.188	0.203

● : Line up
▲ : To be discontinued

Chip control range







*-M,G: Without chipbreaker

Reference pages: External toolholder → C020 - Internal toolholder → D028 -
J-Series toolholder → G057 TungCap → K008 -

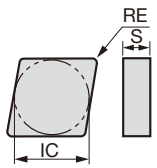
Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CN

Rhombic, 80° without hole

P	Steel	●◐ ● ●◐
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloy	
H	Hard material	●



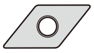
Application	Chipbreaker	Designation Inch	Designation Metric	Ceramic FX105	LX21	LX11	CX710	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	-	**CNGD 453**	**CNGD120712**	●				0.047	0.500	0.313	-
		CNGD 454	CNGD120716	●				0.063	0.500	0.313	-
	-	**CNMN 432**	**CNMN120408**	●				0.031	0.500	0.187	-
		CNMN 433	CNMN120412	●				0.047	0.500	0.187	-
	-	**CNGN 431**	**CNGN120404**			●		0.016	0.500	0.187	-
		CNGN 432	CNGN120408	●		●		0.031	0.500	0.187	-
		CNGN 433	CNGN120412	●		●	●	0.047	0.500	0.187	-
		CNGN 434	CNGN120416	●	●	●		0.063	0.500	0.187	-
		CNGN 435	CNGN120420	●				0.079	0.500	0.187	-
		CNGN 452	**CNGN120708**	●		●		0.031	0.500	0.313	-
		CNGN 453	CNGN120712	●		●		0.047	0.500	0.313	-
		CNGN 454	CNGN120716	●		●		0.063	0.500	0.313	-
		CNGN 455	CNGN120720			●		0.079	0.500	0.313	-

● : Line up

Reference pages: CNGD...: External toolholder → C024

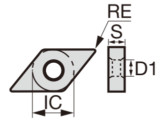
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

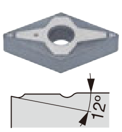
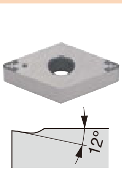
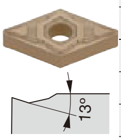
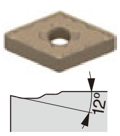
DN



Rhombic, 55° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T515	AH120	AH8015	GH110	GT9530	AT9530	GT720	NS9530	NS520	TH10
P	Steel	●	●◐	◐✠	✠	●	●◐	◐✠	✠		●◐		●	●◐	●◐	●◐	●◐	●◐	●
M	Stainless		●◐								●◐	◐	●						●
K	Cast iron	●◐	●◐			●◐	●◐			●◐	●◐		●	●◐	●◐	●◐	●◐	●◐	●
N	Non-ferrous																		●
S	Superalloy										●◐	◐	●						
H	Hard material																		

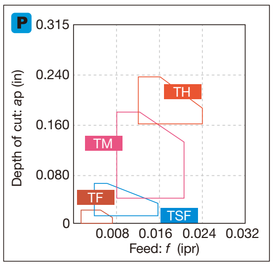


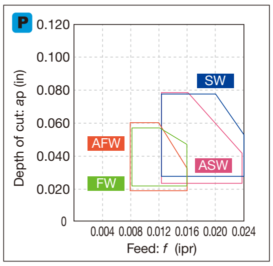
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T515	AH120	AH8015	GH110	Coated cermet GT9530	AT9530	GT720	Cermet NS9530	NS520	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Precision finishing	TF 	DNMG 330.5E TF	DNMG110402E-TF		●	●																0.008	0.375	0.187	0.150
		DNMG 431 TF	DNMG150404-TF																●		●	0.016	0.500	0.187	0.203
		DNMG 432 TF	DNMG150408-TF																●			0.031	0.500	0.187	0.203
	01 	DNGG 330.5-01	DNGG110402-01																●			0.008	0.375	0.187	0.150
		DNGG 331-01	DNGG110404-01																●	●		0.016	0.375	0.187	0.150
		DNGG 332-01	DNGG110408-01															●	●			0.031	0.375	0.187	0.150
		DNGG 430.5-01	DNGG150402-01																●	●	●	0.008	0.500	0.187	0.203
		DNGG 431-01	DNGG150404-01												●				●	●	●	0.016	0.500	0.187	0.203
		DNGG 432-01	DNGG150408-01												●				●	●	●	0.031	0.500	0.187	0.203
Finishing	TSF 	DNMG 330.5E TSF	DNMG110402E-TSF		●	●							●	●								0.008	0.375	0.187	0.150
		DNMG 331E TSF	DNMG110404E-TSF		●	●			▲	▲			●	●		●	●		●			0.016	0.375	0.187	0.150
		DNMG 332E TSF	DNMG110408E-TSF		●	●			▲	▲			●	●		●	●		●			0.031	0.375	0.187	0.150
		DNMG 333E TSF	DNMG110412E-TSF		●	●			▲	▲			●	●		●	●		●			0.047	0.375	0.187	0.150
		DNMG 431 TSF	DNMG150404-TSF	●	●	●	●	▲	▲	▲	▲	●	●	●		●	●		●			0.016	0.500	0.187	0.203
		DNMG 432 TSF	DNMG150408-TSF	●	●	●	●	▲	▲	▲	▲	●	●	●		●	●		●			0.031	0.500	0.187	0.203
		DNMG 433 TSF	DNMG150412-TSF	●	●	●	●	▲	▲	▲	▲	●	●	●								0.047	0.500	0.187	0.203
		DNMG 441 TSF	DNMG150604-TSF		●	●			▲	▲						●	●		●			0.016	0.500	0.250	0.203
		DNMG 442 TSF	DNMG150608-TSF	●	●	●	●	▲	▲	▲	▲					●	●		●			0.031	0.500	0.250	0.203
		DNMG 443 TSF	DNMG150612-TSF	●	●	●	●	▲	▲	▲	▲											0.047	0.500	0.250	0.203
Finishing (wiper)	FW 	DNMG 331E FW	DNMG110404E-FW		●				▲													0.016	0.375	0.187	0.150
		DNMG 332E FW	DNMG110408E-FW		●				▲													0.031	0.375	0.187	0.150
		DNMG 431 FW	DNMG150404-FW		●				▲													0.016	0.500	0.187	0.203
		DNMG 432 FW	DNMG150408-FW		●				▲													0.031	0.500	0.187	0.203
		DNMG 441 FW	DNMG150604-FW		●				▲													0.016	0.500	0.250	0.203
		DNMG 442 FW	DNMG150608-FW		●				▲													0.031	0.500	0.250	0.203
	*Wiper																								

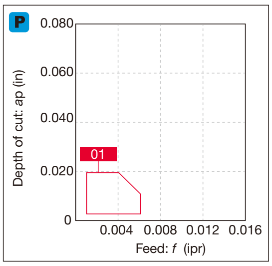
* Please see L034-L038 about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact a Tungaloy sales representative with questions.

● : Line up
▲ : To be discontinued

Chip control range



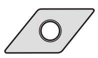




Reference pages: External toolholder → C040 - Internal toolholder → D060 -
J-Series toolholder → G059 TungCap → C048, K012 -

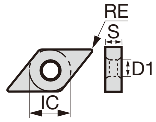
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

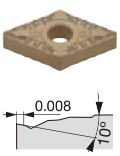
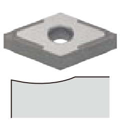
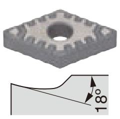
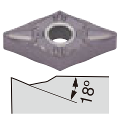
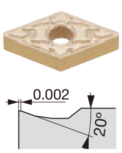
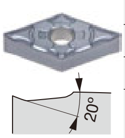
DN



Rhombic, 55°
with hole

		T9215	T9225	T9235	T9115	T9125	T9135	T6120	T6130	AH630	T5105	T5115	AH8005	AH8015	GH330	GT9530	AT9530	NS9530	NS520	TH10
P	Steel	●◐	◐✠	✠	●◐	◐✠	✠	◐	✠	◐✠					●◐	●◐	●◐	●◐	●◐	●
M	Stainless	●◐						●	◐	◐			●	◐	●◐					●
K	Cast iron	●◐			●◐						●	◐			●◐	●◐	●◐	●◐	●◐	●
N	Non-ferrous																			●
S	Superalloy												●	◐						
H	Hard material																			



Application	Chipbreaker	Designation Inch	Designation Metric	T9215 (Coated)	T9225	T9235	T9115	T9125	T9135	T6120	T6130	AH630	T5105	T5115	AH8005	AH8015	GH330	GT9530 (Coated cermet)	AT9530	NS9530 (Cermet)	NS520	TH10 (Uncoated)	RE	IC	S	D1
Finishing	ZF	DNMG 331E ZF	DNMG110404E-ZF	●	●		▲	▲															0.016	0.375	0.187	0.150
		DNMG 431 ZF	DNMG150404-ZF	●	●	●	▲	▲	▲									●	●	●			0.016	0.500	0.187	0.203
		DNMG 432 ZF	DNMG150408-ZF	●	●	●	▲	▲	▲									●	●	●			0.031	0.500	0.187	0.203
		DNMG 433 ZF	DNMG150412-ZF	●	●	●	▲	▲	▲														0.047	0.500	0.187	0.203
		DNMG 441 ZF	DNMG150604-ZF	●	●		▲	▲															0.016	0.500	0.250	0.203
		DNMG 442 ZF	DNMG150608-ZF	●	●	●	▲	▲	▲														0.031	0.500	0.250	0.203
		DNMG 443 ZF	DNMG150612-ZF	●	●		▲	▲															0.047	0.500	0.250	0.203
Finishing	11	DNMG 331-11	DNMG110404-11																	●			0.016	0.375	0.187	0.150
		DNMG 332-11	DNMG110408-11																	●			0.031	0.375	0.187	0.150
		DNMG 431-11	DNMG150404-11														●			●		●	0.016	0.500	0.187	0.203
		DNMG 432-11	DNMG150408-11	●			▲													●			0.031	0.500	0.187	0.203
		DNMG 433-11	DNMG150412-11	●																			0.047	0.500	0.187	0.203
Finishing (for mild steel)	17	DNMG 431-17	DNMG150404-17																	●			0.016	0.500	0.187	0.203
		DNMG 432-17	DNMG150408-17																	●			0.031	0.500	0.187	0.203
Finishing	SF	DNMG 431 SF	DNMG150404-SF							●	●	●											0.016	0.500	0.187	0.203
		DNMG 432 SF	DNMG150408-SF							●	●	●											0.031	0.500	0.187	0.203
		DNMG 441 SF	DNMG150604-SF							●	●	●											0.016	0.500	0.250	0.203
		DNMG 442 SF	DNMG150608-SF							●	●	●											0.031	0.500	0.250	0.203
	CF	DNMG 431 CF	DNMG150404-CF										●	●									0.016	0.500	0.187	0.203
		DNMG 432 CF	DNMG150408-CF										●	●									0.031	0.500	0.187	0.203
		DNMG 433 CF	DNMG150412-CF										●	●									0.047	0.500	0.187	0.203
		DNMG 441 CF	DNMG150604-CF										●	●									0.016	0.500	0.250	0.203
		DNMG 442 CF	DNMG150608-CF										●	●									0.031	0.500	0.250	0.203
		DNMG 443 CF	DNMG150612-CF										●	●									0.047	0.500	0.250	0.203
	HRF	DNMG 431 HRF	DNMG150404-HRF												●	●							0.016	0.500	0.187	0.203
		DNMG 432 HRF	DNMG150408-HRF												●	●							0.031	0.500	0.187	0.203
		DNMG 441 HRF	DNMG150604-HRF												●	●							0.016	0.500	0.250	0.203
		DNMG 442 HRF	DNMG150608-HRF												●	●							0.031	0.500	0.250	0.203

Dimension (inch)

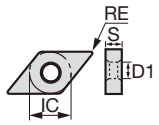
● : Line up
▲ : To be discontinued

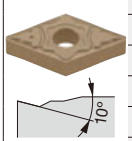
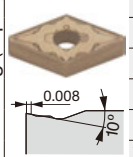
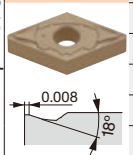
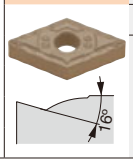
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	GT9530	AT9530	NS9530	NS520
P	Steel	●	◐	◐	✣	✣	●	◐	◐	✣	✣	◐	◐	◐	◐
M	Stainless		◐												
K	Cast iron	◐	◐			◐	◐					◐	◐	◐	◐
N	Non-ferrous														
S	Superalloy														
H	Hard material														

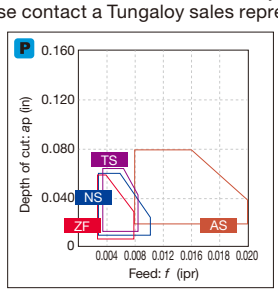


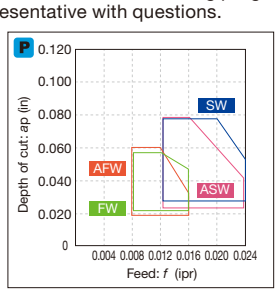
Application	Chipbreaker	Designation Inch	Designation Metric	Coated								Coated cermet		Cermet		Dimension (inch)			
				T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	GT9530	AT9530	NS9530	NS520	RE	IC	S	D1
Finishing	TS	DNMG 332 TS	DNMG110408-TS	●												0.031	0.375	0.187	0.150
		DNMG 431 TS	DNMG150404-TS		●	●	●	▲	▲	▲	▲	●	●		●	●	0.016	0.500	0.187	0.203
		DNMG 432 TS	DNMG150408-TS	●	●	●	●	▲	▲	▲	▲	●	●		●	●	0.031	0.500	0.187	0.203
		DNMG 433 TS	DNMG150412-TS	●	●	●	●	▲	▲	▲	▲						0.047	0.500	0.187	0.203
		DNMG 441 TS	DNMG150604-TS									●	●		●	●	0.016	0.500	0.250	0.203
		DNMG 442 TS	DNMG150608-TS		●	●			▲	▲		●	●		●	●	0.031	0.500	0.250	0.203
		DNMG 443 TS	DNMG150612-TS		●	●			▲	▲							0.047	0.500	0.250	0.203
Finishing to medium cutting (wiper)	SW	DNMG 332E SW	DNMG110408E-SW		●				▲								0.031	0.375	0.187	0.150
		DNMG 333E SW	DNMG110412E-SW		●				▲								0.047	0.375	0.187	0.150
		DNMG 432 SW	DNMG150408-SW		●				▲								0.031	0.500	0.187	0.203
		DNMG 433 SW	DNMG150412-SW		●				▲								0.047	0.500	0.187	0.203
		DNMG 442 SW	DNMG150608-SW		●				▲								0.031	0.500	0.250	0.203
		DNMG 443 SW	DNMG150612-SW		●				▲								0.047	0.500	0.250	0.203
		*Wiper																		
High feed, small depth of cut	AS	DNMG 431 AS	DNMG150404-AS		●		●		▲		▲			●			0.016	0.500	0.187	0.203
		DNMG 432 AS	DNMG150408-AS		●	●	●		▲	▲	▲			●			0.031	0.500	0.187	0.203
		DNMG 433 AS	DNMG150412-AS		●	●	●		▲	▲	▲						0.047	0.500	0.187	0.203
		DNMG 441 AS	DNMG150604-AS		●				▲								0.016	0.500	0.250	0.203
		DNMG 442 AS	DNMG150608-AS		●	●			▲	▲							0.031	0.500	0.250	0.203
		DNMG 443 AS	DNMG150612-AS		●				▲								0.047	0.500	0.250	0.203
Boring (double side)	CB	DNMG 331 CB	DNMG110404-CB									●		●			0.016	0.375	0.187	0.150
		DNMG 332 CB	DNMG110408-CB		●				▲			●		●			0.031	0.375	0.187	0.150
Finishing	NS	DNMG 431 NS	DNMG150404-NS			●				▲				●			0.016	0.500	0.187	0.203
		DNMG 432 NS	DNMG150408-NS	●	●	●		▲	▲	▲				●			0.031	0.500	0.187	0.203

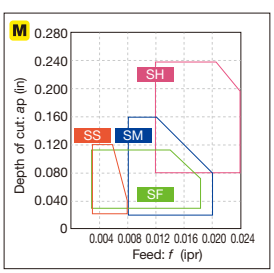
* Please see **L034-L038** about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact a Tungaloy sales representative with questions.

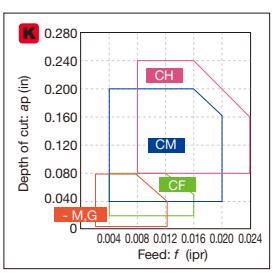
● : Line up
▲ : To be discontinued

Chip control range

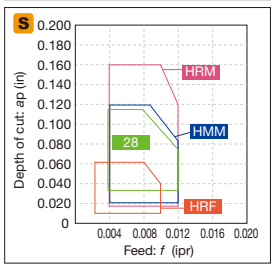








*-M,G: Without chipbreaker

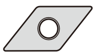


Reference pages: External toolholder → C040 - Internal toolholder → D060 -
J-Series toolholder → G059
TungCap → C048, K012 -

Insert NEGATIVE TYPE

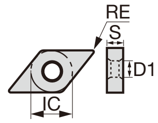
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

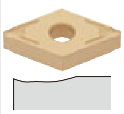
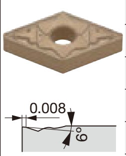
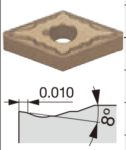
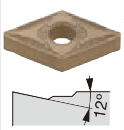
DN



Rhombic, 55° with hole

	Material	T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH645	AH110	AH120	AH8005	AH8015	GH330	GT9530	NS9530	KS20
P	Steel	●	●◐	◐✠	✠	●	●◐	◐✠	✠	◐	✠	◐✠	✠	●	●◐			●◐	●◐	●◐	
M	Stainless		●◐							●	◐	◐	✠	●	●◐	●	◐	●◐			
K	Cast iron	●◐	●◐			●◐	●◐							●	●◐			●◐	●◐	●◐	◐✠
N	Non-ferrous																				◐✠
S	Superalloy													●	●◐	●	◐				◐✠
H	Hard material																				

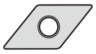


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	Coated T9215	Coated T9225	Coated T9235	Coated T9105	Coated T9115	Coated T9125	Coated T9135	Coated T6120	Coated T6130	Coated AH630	Coated AH645	Coated AH110	Coated AH120	Coated AH8005	Coated AH8015	Coated GH330	Coated cermet GT9530	Cermet NS9530	Uncoated KS20	Dimension (inch) RE	IC	S	D1
Finishing	SS	DNMG 331E SS	DNMG110404E-SS											●	●									0.016	0.375	0.187	0.150
		DNMG 332E SS	DNMG110408E-SS											●	●									0.031	0.375	0.187	0.150
		DNMG 431 SS	DNMG150404-SS									●	●	●	●					●				0.016	0.500	0.187	0.203
		DNMG 432 SS	DNMG150408-SS									●	●	●	●					●			●	0.031	0.500	0.187	0.203
		DNMG 433 SS	DNMG150412-SS									●	●	●	●									0.047	0.500	0.187	0.203
		DNMG 441 SS	DNMG150604-SS									●	●	●	●		●			●				0.016	0.500	0.250	0.203
		DNMG 442 SS	DNMG150608-SS									●	●	●	●		●			●				0.031	0.500	0.250	0.203
		DNMG 443 SS	DNMG150612-SS									●	●	●	●									0.047	0.500	0.250	0.203
Medium cutting	TM	DNMG 331E TM	DNMG110404E-TM		●	●			▲	▲							●		●					0.016	0.375	0.187	0.150
		DNMG 332E TM	DNMG110408E-TM		●	●			▲	▲							●		●					0.031	0.375	0.187	0.150
		DNMG 333E TM	DNMG110412E-TM		●	●			▲	▲							●		●					0.047	0.375	0.187	0.150
		DNMG 331 TM	DNMG110404-TM		●	●	●		▲	▲	▲													0.016	0.375	0.187	0.150
		DNMG 332 TM	DNMG110408-TM		●	●	●		▲	▲	▲													0.031	0.375	0.187	0.150
		DNMG 431 TM	DNMG150404-TM	●	●	●	●	▲	▲	▲	▲					●	●							0.016	0.500	0.187	0.203
		DNMG 432 TM	DNMG150408-TM	●	●	●	●	▲	▲	▲	▲					●	●							0.031	0.500	0.187	0.203
		DNMG 433 TM	DNMG150412-TM	●	●	●	●	▲	▲	▲	▲					●	●							0.047	0.500	0.187	0.203
		DNMG 434 TM	DNMG150416-TM		●	●			▲	▲														0.063	0.500	0.187	0.203
		DNMG 441 TM	DNMG150604-TM	●	●	●	●	▲	▲	▲	▲						●							0.016	0.500	0.250	0.203
		DNMG 442 TM	DNMG150608-TM	●	●	●	●	▲	▲	▲	▲						●							0.031	0.500	0.250	0.203
		DNMG 443 TM	DNMG150612-TM	●	●	●	●	▲	▲	▲	▲						●							0.047	0.500	0.250	0.203
		DNMG 444 TM	DNMG150616-TM	●	●	●	●	▲	▲	▲	▲							●						0.063	0.500	0.250	0.203
Finishing to medium cutting	AM	DNMG 432 AM	DNMG150408-AM		●	●			▲	▲														0.031	0.500	0.187	0.203
		DNMG 433 AM	DNMG150412-AM		●	●			▲	▲														0.047	0.500	0.187	0.203
		DNMG 434 AM	DNMG150416-AM		●	●			▲	▲														0.063	0.500	0.187	0.203
		DNMG 442 AM	DNMG150608-AM		●	●			▲	▲														0.031	0.500	0.250	0.203
		DNMG 443 AM	DNMG150612-AM		●	●			▲	▲														0.047	0.500	0.250	0.203
		DNMG 444 AM	DNMG150616-AM		●	●			▲	▲														0.063	0.500	0.250	0.203
	NM	DNMG 432 NM	DNMG150408-NM		●	●	●		▲	▲	▲										●	●		0.031	0.500	0.187	0.203
		DNMG 433 NM	DNMG150412-NM		●	●	●		▲	▲	▲													0.047	0.500	0.187	0.203
		DNMG 442 NM	DNMG150608-NM																		●	●		0.031	0.500	0.250	0.203

● : Line up
▲ : To be discontinued

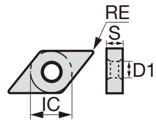
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

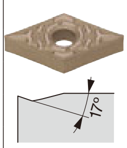
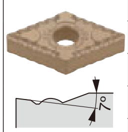
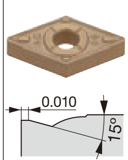
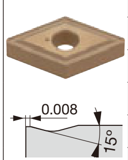
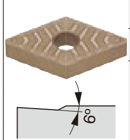
DN



Rhombic, 55° with hole

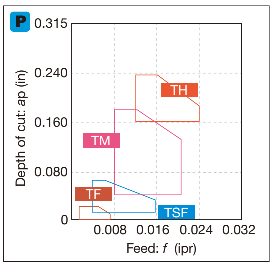
		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T515	T5105	T5115	T5125	AH110	AH120	GT9530	AT9530	NS9530	NS520	TH10
P	Steel	●	●◐	◐✠	✠	●	●◐	◐✠	✠					●	●◐	●◐	●◐	●◐	●◐	●
M	Stainless		●◐											●	●◐					●
K	Cast iron	●◐	●◐			●◐	●◐			●◐	●	◐	✠	●	●◐	●◐	●◐	●◐	●◐	●
N	Non-ferrous																			●
S	Superalloy													●	●◐					
H	Hard material																			

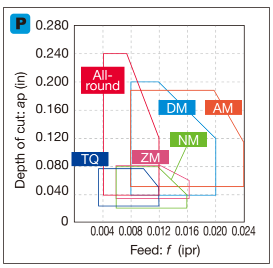


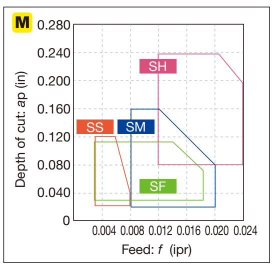
Application	Chipbreaker	Designation Inch	Designation Metric	T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T515	T5105	T5115	T5125	AH110	AH120	GT9530	AT9530	NS9530	NS520	TH10	RE	IC	S	D1
				Coated														Coated cermet		Cermet		Un-coated	Dimension (inch)			
Finishing to medium cutting	TQ	DNMG 431 TQ	DNMG150404-TQ		●	●												●	●	●			0.016	0.500	0.187	0.203
		DNMG 432 TQ	DNMG150408-TQ		●	●												●	●	●			0.031	0.500	0.187	0.203
	 17°																									
	ZM	DNMG 332E ZM	DNMG110408E-ZM		●	●			▲	▲													0.031	0.375	0.187	0.150
		DNMG 432 ZM	DNMG150408-ZM		●	●	●		▲	▲	▲							●		●			0.031	0.500	0.187	0.203
		DNMG 433 ZM	DNMG150412-ZM		●	●	●		▲	▲	▲												0.047	0.500	0.187	0.203
		DNMG 442 ZM	DNMG150608-ZM		●	●	●		▲	▲	▲												0.031	0.500	0.250	0.203
	 7°	DNMG 443 ZM	DNMG150612-ZM		●	●			▲	▲													0.047	0.500	0.250	0.203
Medium cutting	DM	DNMG 432 DM	DNMG150408-DM		●	●	●		▲	▲	▲												0.031	0.500	0.187	0.203
		DNMG 433 DM	DNMG150412-DM	●	●	●	●	▲	▲	▲	▲												0.047	0.500	0.187	0.203
		DNMG 441 DM	DNMG150604-DM		●				▲														0.016	0.500	0.250	0.203
		DNMG 442 DM	DNMG150608-DM		●	●	●		▲	▲	▲												0.031	0.500	0.250	0.203
	0.010	DNMG 443 DM	DNMG150612-DM	●	●	●	●	▲	▲	▲	▲												0.047	0.500	0.250	0.203
	 15°	DNMG 444 DM	DNMG150616-DM	●				▲															0.063	0.500	0.250	0.203
	All-round	DNMG 331	DNMG110404		●	●			▲	▲			●	●	●			●		●			0.016	0.375	0.187	0.150
		DNMG 332	DNMG110408	●	●	●	●	▲	▲	▲	▲		●	●	●			●		●			0.031	0.375	0.187	0.150
		DNMG 431	DNMG150404		●	●	●		▲	▲	▲		●	●	●	●	●	●		●	●	●	0.016	0.500	0.187	0.203
		DNMG 432	DNMG150408	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●	●		●	●	●	0.031	0.500	0.187	0.203
		DNMG 433	DNMG150412	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●			●	●	●	0.047	0.500	0.187	0.203
		DNMG 434	DNMG150416		●	●			▲	▲			●	●	●								0.063	0.500	0.187	0.203
	0.008	DNMG 441	DNMG150604		●	●			▲	▲			●	●	●							●	0.016	0.500	0.250	0.203
	 15°	DNMG 442	DNMG150608	●	●	●	●	▲	▲	▲	▲	●	●	●	●							●	0.031	0.500	0.250	0.203
		DNMG 443	DNMG150612	●	●	●	●	▲	▲	▲	▲	●	●	●	●							●	0.047	0.500	0.250	0.203
		DNMG 444	DNMG150616		●	●			▲	▲													0.063	0.500	0.250	0.203
Finishing to medium cutting	27	DNMG 431-27	DNMG150404-27			●				▲										●			0.016	0.500	0.187	0.203
		DNMG 432-27	DNMG150408-27		●	●			▲	▲										●			0.031	0.500	0.187	0.203
		DNMG 433-27	DNMG150412-27			●				▲													0.047	0.500	0.187	0.203
	 6°																									

● : Line up
▲ : To be discontinued

Chip control range







Reference pages: External toolholder → C040 -
J-Series toolholder → G059
Internal toolholder → D060 -
TungCap → C048, K012 -

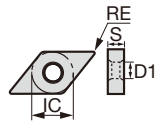
Insert NEGATIVE TYPE

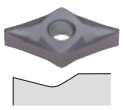
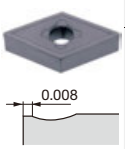
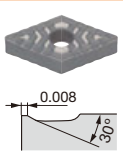
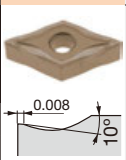
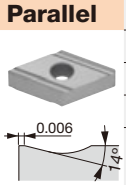
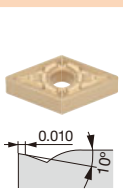
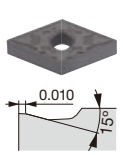
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

		T9215	T9115	T6120	T6130	T515	T5105	T5115	T5125	AH630	AH645	AH8005	AH8015	AH110	AH120	GH330	GT9530	NS9530	TH10
P	Steel	●ɔ	●ɔ	ɔ	✣					ɔ✣	✣			●	●ɔ	●ɔ	●ɔ	●ɔ	●
M	Stainless	●ɔ		●	ɔ					ɔ	✣	●	ɔ	●	●ɔ	●ɔ			●
K	Cast iron	●ɔ	●ɔ			●ɔ	●	ɔ	✣					●	●ɔ	●ɔ	●ɔ	●ɔ	●
N	Non-ferrous																		●
S	Superalloy											●	ɔ	●	●ɔ				
H	Hard material																		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated													Coated cermet	Cer-met	Un-coated	Dimension (inch)			
				T9215	T9115	T6120	T6130	T515	T5105	T5115	T5125	AH630	AH645	AH8005	AH8015	AH110	AH120	GH330	GT9530	NS9530	TH10	RE	IC	S	D1
Medium cutting	**28**	**DNMG 431-28**	**DNMG150404-28**											●	●	●	●					0.016	0.500	0.187	0.203
		DNMG 432-28	DNMG150408-28											●	●	●	●					0.031	0.500	0.187	0.203
		DNMG 441-28	**DNMG150604-28**											●	●							0.016	0.500	0.250	0.203
		DNMG 442-28	DNMG150608-28											●	●							0.031	0.500	0.250	0.203
	33	**DNMG 431-33**	**DNMG150404-33**													●						0.016	0.500	0.187	0.203
		DNMG 432-33	DNMG150408-33													●					●	0.031	0.500	0.187	0.203
	37	**DNMG 431-37**	**DNMG150404-37**																	●		0.016	0.500	0.187	0.203
		DNMG 432-37	DNMG150408-37															●		●		0.031	0.500	0.187	0.203
		DNMG 442-37	**DNMG150608-37**	●	▲																	0.031	0.500	0.250	0.203
	38	**DNMG 433-38**	**DNMG150412-38**	●	▲																	0.047	0.500	0.187	0.203
																									
	Parallel	**DNGG 431 R**	**DNGG150404R**														●	●				0.016	0.500	0.187	0.203
		DNGG 431 L	DNGG150404L														●	●				0.016	0.500	0.187	0.203
		DNGG 432 R	DNGG150408R															●				0.031	0.500	0.187	0.203
		DNGG 432 L	DNGG150408L															●				0.031	0.500	0.187	0.203
	SM	**DNMG 331E SM**	**DNMG110404E-SM**			●	●					●										0.016	0.375	0.187	0.150
		DNMG 332E SM	DNMG110408E-SM			●	●					●										0.031	0.375	0.187	0.150
		DNMG 431 SM	**DNMG150404-SM**			●	●					●	●									0.016	0.500	0.187	0.203
		DNMG 432 SM	DNMG150408-SM			●	●					●	●									0.031	0.500	0.187	0.203
		DNMG 433 SM	DNMG150412-SM			●	●					●	●									0.047	0.500	0.187	0.203
		DNMG 441 SM	**DNMG150604-SM**			●	●					●	●									0.016	0.500	0.250	0.203
		DNMG 442 SM	DNMG150608-SM			●	●					●	●									0.031	0.500	0.250	0.203
		DNMG 443 SM	DNMG150612-SM			●	●					●	●									0.047	0.500	0.250	0.203
Medium cutting	**CM**	**DNMG 431 CM**	**DNMG150404-CM**					●	●	●	●											0.016	0.500	0.187	0.203
		DNMG 432 CM	DNMG150408-CM					●	●	●	●											0.031	0.500	0.187	0.203
		DNMG 433 CM	DNMG150412-CM					●	●	●	●											0.047	0.500	0.187	0.203
		DNMG 441 CM	**DNMG150604-CM**						●	●	●											0.016	0.500	0.250	0.203
		DNMG 442 CM	DNMG150608-CM						●	●	●											0.031	0.500	0.250	0.203
		DNMG 443 CM	DNMG150612-CM						●	●	●											0.047	0.500	0.250	0.203

● : Line up
▲ : To be discontinued

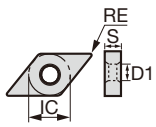
Reference pages: External toolholder → C040 -
J-Series toolholder → G059
Internal toolholder → D060 -
TungCap → C048, K012 -

● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

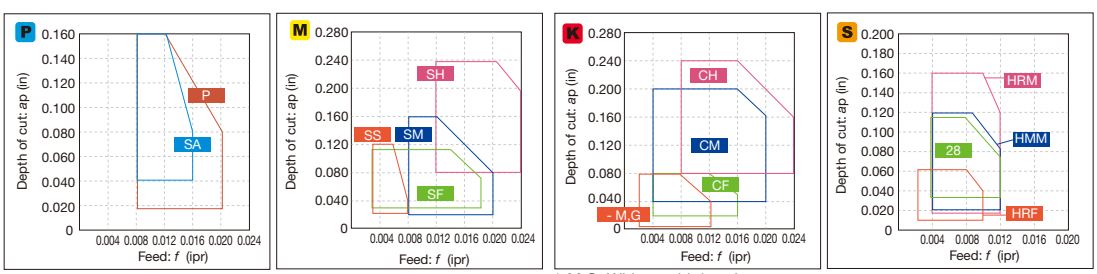
P	Steel	ⓒ✣	✣	ⓒ✣	✣	✣	ⓒ✣	✣	●ⓒ				●	●ⓒ		●ⓒ		●	
M	Stainless					ⓒ	ⓒ	✣	●ⓒ	●	ⓒ		●	●ⓒ				●	
K	Cast iron								●ⓒ				●	●ⓒ		●ⓒ		●	
N	Non-ferrous																	●	
S	Superalloy								●ⓒ	●	ⓒ	ⓒ	●						
H	Hard material																		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9225	T9235	T9125	T9135	T6130	AH630	AH645	AH120	AH8005	AH8015	AH905	GH110	GH330	Cermet NS9530	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Medium cutting	P	DNGG 430.5 R-P	DNGG150402R-P												●			●	0.008	0.500	0.187	0.203
		DNGG 430.5 L-P	DNGG150402L-P												●			●	0.008	0.500	0.187	0.203
		DNGG 431 R-P	DNGG150404R-P												●			●	0.016	0.500	0.187	0.203
		DNGG 431 L-P	DNGG150404L-P												●			●	0.016	0.500	0.187	0.203
		DNGG 432 R-P	DNGG150408R-P															●	0.031	0.500	0.187	0.203
		DNGG 432 L-P	DNGG150408L-P															●	0.031	0.500	0.187	0.203
Finishing to medium cutting	HRM	DNMG 431 HRM	DNMG150404-HRM									●	●						0.016	0.500	0.187	0.203
		DNMG 432 HRM	DNMG150408-HRM									●	●						0.031	0.500	0.187	0.203
		DNMG 433 HRM	DNMG150412-HRM									●	●						0.047	0.500	0.187	0.203
		DNMG 441 HRM	DNMG150604-HRM									●	●						0.016	0.500	0.250	0.203
		DNMG 442 HRM	DNMG150608-HRM									●	●						0.031	0.500	0.250	0.203
		DNMG 443 HRM	DNMG150612-HRM									●	●						0.047	0.500	0.250	0.203
Medium cutting	HMM	DNMG 431 HMM	DNMG150404-HMM											●					0.016	0.500	0.187	0.203
		DNMG 432 HMM	DNMG150408-HMM											●					0.031	0.500	0.187	0.203
		DNMG 433 HMM	DNMG150412-HMM											●					0.047	0.500	0.187	0.203
	SA	DNMG 431 SA	DNMG150404-SA								●								0.016	0.500	0.187	0.203
		DNMG 432 SA	DNMG150408-SA								●								0.031	0.500	0.187	0.203
		DNMG 441 SA	DNMG150604-SA								●								0.016	0.500	0.250	0.203
		DNMG 442 SA	DNMG150608-SA								●								0.031	0.500	0.250	0.203
	S	DNMG 431 R-S	DNMG150404R-S	●	●	▲	▲	●	●	●						●	●		0.016	0.500	0.187	0.203
		DNMG 431 L-S	DNMG150404L-S	●	●	▲	▲	●	●	●						●	●		0.016	0.500	0.187	0.203
		DNMG 432 R-S	DNMG150408R-S	●	●	▲	▲	●	●	●						●	●		0.031	0.500	0.187	0.203
		DNMG 432 L-S	DNMG150408L-S	●	●	▲	▲	●	●	●						●	●		0.031	0.500	0.187	0.203
		DNMG 441 R-S	DNMG150604R-S	●	●	▲	▲	●	●	●									0.016	0.500	0.250	0.203
		DNMG 441 L-S	DNMG150604L-S	●	●	▲	▲	●	●	●						●			0.016	0.500	0.250	0.203
		DNMG 442 R-S	DNMG150608R-S	●	●	▲	▲	●	●	●						●			0.031	0.500	0.250	0.203
		DNMG 442 L-S	DNMG150608L-S	●	●	▲	▲	●	●	●						●			0.031	0.500	0.250	0.203

● : Line up
▲ : To be discontinued

Chip control range



*-M,G: Without chipbreaker

Reference pages: External toolholder → C046 - Internal toolholder → D060 -
J-Series toolholder → G059 TungCap → C048, K012 -

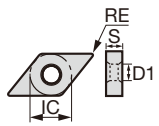
Insert NEGATIVE TYPE

● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

		T9215	T9225	T9235	T9115	T9125	T9135	T6130	AH630	AH645	AH8015	T515	T5105	T5115	T5125	AH120	GT720	NS520	TH10
P	Steel	●ᑕ	ᑕ✣	✣	●ᑕ	ᑕ✣	✣	✣	ᑕ✣	✣						●ᑕ	●ᑕ	●ᑕ	●
M	Stainless	●ᑕ						ᑕ	ᑕ	✣						●ᑕ			●
K	Cast iron	●ᑕ			●ᑕ							●ᑕ	●	ᑕ	✣	●ᑕ	●ᑕ	●ᑕ	●
N	Non-ferrous																		●
S	Superalloy															●ᑕ			
H	Hard material																		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated	Coated cermet	Cermet	Uncoated	Dimension (inch) RE	IC	S	D1
Medium to heavy cutting (single side)	**57**	**DNMM 442-57**	**DNMM150608-57**	● ▲				0.031	0.500	0.250	0.203
		DNMM 443-57	DNMM150612-57	● ▲				0.047	0.500	0.250	0.203
Medium to heavy cutting	**TH**	**DNMG 432 TH**	**DNMG150408-TH**	● ▲				0.031	0.500	0.187	0.203
		DNMG 433 TH	DNMG150412-TH	● ▲				0.047	0.500	0.187	0.203
		DNMG 434 TH	DNMG150416-TH	● ▲				0.063	0.500	0.187	0.203
		DNMG 442 TH	**DNMG150608-TH**	● ▲				0.031	0.500	0.250	0.203
		DNMG 443 TH	DNMG150612-TH	● ▲				0.047	0.500	0.250	0.203
		DNMG 444 TH	DNMG150616-TH	● ▲				0.063	0.500	0.250	0.203
	THS	**DNMG 432 THS**	**DNMG150408-THS**	● ▲				0.031	0.500	0.187	0.203
		DNMG 433 THS	DNMG150412-THS	● ▲				0.047	0.500	0.187	0.203
		DNMG 434 THS	DNMG150416-THS	● ▲				0.063	0.500	0.187	0.203
		DNMG 442 THS	**DNMG150608-THS**	● ▲				0.031	0.500	0.250	0.203
		DNMG 443 THS	DNMG150612-THS	● ▲				0.047	0.500	0.250	0.203
		DNMG 444 THS	DNMG150616-THS	● ▲				0.063	0.500	0.250	0.203
	SH	**DNMG 432 SH**	**DNMG150408-SH**	●				0.031	0.500	0.187	0.203
		DNMG 433 SH	DNMG150412-SH	●				0.047	0.500	0.187	0.203
		DNMG 434 SH	DNMG150416-SH	●				0.063	0.500	0.187	0.203
		DNMG 442 SH	**DNMG150608-SH**	●				0.031	0.500	0.250	0.203
		DNMG 443 SH	DNMG150612-SH	●				0.047	0.500	0.250	0.203
	CH	**DNMG 431 CH**	**DNMG150404-CH**	●				0.016	0.500	0.187	0.203
		DNMG 432 CH	DNMG150408-CH	●				0.031	0.500	0.187	0.203
		DNMG 433 CH	DNMG150412-CH	●				0.047	0.500	0.187	0.203
		DNMG 441 CH	**DNMG150604-CH**	●				0.016	0.500	0.250	0.203
		DNMG 442 CH	DNMG150608-CH	●				0.031	0.500	0.250	0.203
		DNMG 443 CH	DNMG150612-CH	●				0.047	0.500	0.250	0.203
Finishing to medium cutting	**-**	**DNMA 331E**	**DNMA110404E**	●				0.016	0.375	0.187	0.150
		DNMA 332E	DNMA110408E	●				0.031	0.375	0.187	0.150
		DNMA 333E	DNMA110412E	●				0.047	0.375	0.187	0.150
		DNMA 431	**DNMA150404**	●	●	●	●	0.016	0.500	0.187	0.203
		DNMA 432	DNMA150408	●			●	0.031	0.500	0.187	0.203
		DNMA 433	DNMA150412	●				0.047	0.500	0.187	0.203
		DNMA 441	**DNMA150604**	●				0.016	0.500	0.250	0.203
		DNMA 442	DNMA150608	●				0.031	0.500	0.250	0.203
		DNMA 443	DNMA150612	●				0.047	0.500	0.250	0.203

● : Line up
▲ : To be discontinued

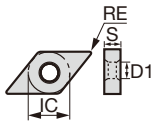
Reference pages: External toolholder → C040 - Internal toolholder → D060 -
J-Series toolholder → G059 TungCap → C048, K012 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DN

Rhombic, 55° with hole

P	Steel	●◐			●			●◐	●										
M	Stainless				●														
K	Cast iron	●◐			●			●◐	●										
N	Non-ferrous				●														
S	Superalloy																		
H	Hard material									●									

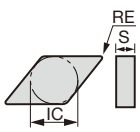


Application	Chipbreaker	Designation Inch	Designation Metric	Cermet NS520	Uncoated TH10	Ceramic FX105	Ceramic LX21	Ceramic LX11	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	-	DNGA 431	DNGA150404	●	●		●	●	0.016	0.500	0.187	0.203
		DNGA 432	DNGA150408	●	●	●	●	●	0.031	0.500	0.187	0.203
		DNGA 433	DNGA150412			●	●	●	0.047	0.500	0.187	0.203
		DNGA 434	DNGA150416			●			0.063	0.500	0.187	0.203
		DNGA 441	DNGA150604					●	0.016	0.500	0.250	0.203
		DNGA 442	DNGA150608					●	0.031	0.500	0.250	0.203
		DNGA 443	DNGA150612					●	0.047	0.500	0.250	0.203
		DNGA 444	DNGA150616					●	0.063	0.500	0.250	0.203
		DNGA 445	DNGA150620					●	0.079	0.500	0.250	0.203

DN

Rhombic, 55° without hole

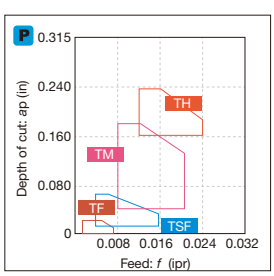
P	Steel																		
M	Stainless																		
K	Cast iron	●◐																	
N	Non-ferrous																		
S	Superalloy																		
H	Hard material		●																

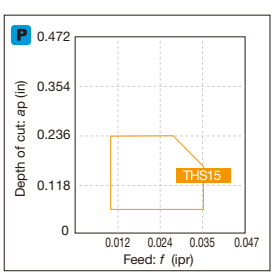


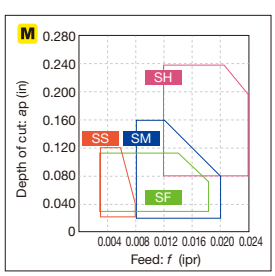
Application	Chipbreaker	Designation Inch	Designation Metric	Ceramic FX105	Ceramic LX11	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	-	DNGD 452	DNGD150708	●		0.031	0.500	0.313	-
		DNGD 453	DNGD150712	●		0.047	0.500	0.313	-
		DNGD 454	DNGD150716	●		0.063	0.500	0.313	-
	-	DNGN 431	DNGN150404		●	0.016	0.500	0.187	-
		DNGN 432	DNGN150408		●	0.031	0.500	0.187	-
		DNGN 433	DNGN150412	●	●	0.047	0.500	0.187	-
		DNGN 434	DNGN150416	●		0.063	0.500	0.187	-
		DNGN 452	DNGN150708		●	0.031	0.500	0.313	-
		DNGN 453	DNGN150712		●	0.047	0.500	0.313	-
		DNGN 454	DNGN150716		●	0.063	0.500	0.313	-
	-	DNMX 454	DNMX150716	●		0.063	0.500	0.313	-

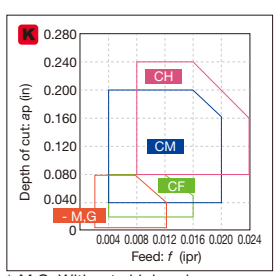
● : Line up

Chip control range









*-M,G: Without chipbreaker

Reference pages: DNGA...: External toolholder → C046 -, Internal toolholder → D060 -, J-Series toolholder → G059, TungCap → C048, K012 -
DNGD...: External toolholder → C0 -

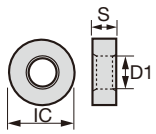
Insert NEGATIVE TYPE

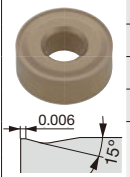
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

RN

Round, with hole

P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣	●◐			●						
M	Stainless		●◐							●◐			●						
K	Cast iron	●◐	●◐			●◐	●◐			●◐			●						
N	Non-ferrous												●						
S	Superalloy									●◐									
H	Hard material																●		

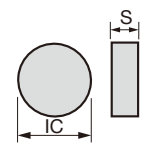


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	AH120	Uncoated TH10	Ceramic LX11	Dimension (inch) RE	IC	S	D1
Heavy cutting	61	RNMG 32-61	RNMG090300-61		●	●			▲	▲					-	0.375	0.125	0.150
		RNMG 43-61	RNMG120400-61	●	●	●	●	▲	▲	▲	▲	●	●		-	0.500	0.187	0.203
		RNMG 54-61	RNMG150600-61		●	●			▲	▲					-	0.625	0.250	0.253
		RNMG 64-61	RNMG190600-61		●	●	●		▲	▲	▲				-	0.750	0.250	0.312
		RNMG 86-61	RNMG250900-61		●	●			▲	▲					-	1.000	0.375	0.363
Finishing to medium cutting	-	RNGA 43	RNGA120400											●	-	0.500	0.187	0.203
																		

RN

Round, without hole

P	Steel																		
M	Stainless																		
K	Cast iron	●◐																	
N	Non-ferrous																		
S	Superalloy			●	●	●													
H	Hard material		●																



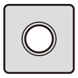
Application	Chipbreaker	Designation Inch	Designation Metric	Ceramic FX105	LX11	TW43	TS200	TS300	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	-	RNGN 43	RNGN120400	●	●				-	0.500	0.187	-
		RNGN 45	RNGN120700	●	●	●			-	0.500	0.313	-
		RNGN 45-E	-				●	●	-	0.500	0.187	-
		RNGN 45-T1	-				●	●	-	0.500	0.187	-
		RNGN 43 T6	-			●			-	0.500	0.187	-

● : Line up
▲ : To be discontinued

Reference pages: RNMG..., RNGA...:External toolholder → C084 -

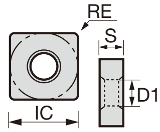
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

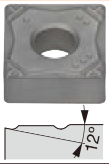
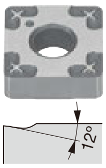
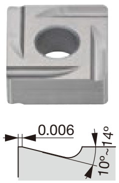
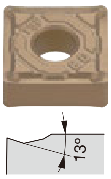
SN



Square, 90° with hole

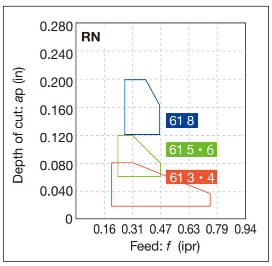
Material		T9215	T9225	T9115	T9125	GT9530	AT9530	NS9530	NS520	X407
P	Steel	●◐	◐✠	●◐	◐✠	●◐	●◐	●◐	●◐	●
M	Stainless	●◐								
K	Cast iron	●◐		●◐		●◐	●◐	●◐	●◐	●
N	Non-ferrous									
S	Superalloy									
H	Hard material									

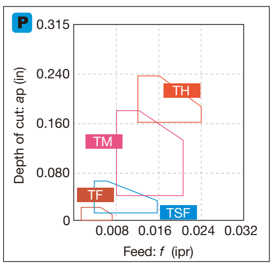


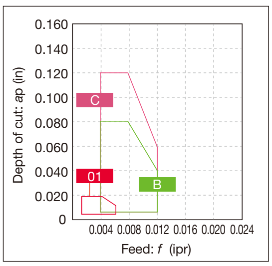
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	Coated cermet GT9530	Coated cermet AT9530	Cermet NS9530	Cermet NS520	Cermet X407	Dimension (inch) RE	IC	S	D1
Precision finishing	TF 	SNMG 431 TF	SNMG120404-TF							●			0.016	0.500	0.187	0.203
		SNMG 432 TF	SNMG120408-TF							●			0.031	0.500	0.187	0.203
	01 	SNGG 320.5-01	SNGG090302-01							●	●		0.008	0.375	0.125	0.150
		SNGG 321-01	SNGG090304-01							●			0.016	0.375	0.125	0.150
		SNGG 322-01	SNGG090308-01							●	●		0.031	0.375	0.125	0.150
		SNGG 430.5-01	SNGG120402-01							●			0.008	0.500	0.187	0.203
		SNGG 431-01	SNGG120404-01							●			0.016	0.500	0.187	0.203
		SNGG 432-01	SNGG120408-01							●	●		0.031	0.500	0.187	0.203
	B ~ D 	SNGG 321 R-B	SNGG090304R-B					●		●		●	0.016	0.375	0.125	0.150
		SNGG 321 L-B	SNGG090304L-B					●		●		●	0.016	0.375	0.125	0.150
		SNGG 322 R-B	SNGG090308R-B							●		●	0.031	0.375	0.125	0.150
		SNGG 322 L-B	SNGG090308L-B							●		●	0.031	0.375	0.125	0.150
		SNGG 431 R-C	SNGG120404R-C					●		●			0.016	0.500	0.187	0.203
		SNGG 431 L-C	SNGG120404L-C					●		●		●	0.016	0.500	0.187	0.203
		SNGG 432 R-C	SNGG120408R-C							●			0.031	0.500	0.187	0.203
		SNGG 432 L-C	SNGG120408L-C							●		●	0.031	0.500	0.187	0.203
		SNGG 432 R-D	SNGG120408R-D							●			0.031	0.500	0.187	0.203
		SNGG 432 L-D	SNGG120408L-D							●			0.031	0.500	0.187	0.203
Finishing	TSF 	SNMG 431 TSF	SNMG120404-TSF	●	●	▲	▲	●	●	●			0.016	0.500	0.187	0.203
		SNMG 432 TSF	SNMG120408-TSF	●	●	▲	▲	●	●	●			0.031	0.500	0.187	0.203
		SNMG 433 TSF	SNMG120412-TSF	●	●	▲	▲	●	●	●			0.047	0.500	0.187	0.203

● : Line up
▲ : To be discontinued

Chip control range







Reference pages: External toolholder → C098 - Internal toolholder → D047 -

A Grade B Insert C Ext. Toolholder D Int. Toolholder E Threading F Grooving G Miniature Tool H Milling Cutter I Endmill J Drilling Tool K Tooling System L User's Guide M Index

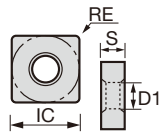
Insert NEGATIVE TYPE

● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

SN

Square, 90° with hole

P	Steel	● ●ⓒ ●ⓒ✠ ✠ ● ●ⓒ ●ⓒ✠ ✠ ⓒ ✠ ●ⓒ ✠
M	Stainless	●ⓒ ⓒ ● ⓒ ● ⓒ ● ⓒ
K	Cast iron	●ⓒ ●ⓒ ●ⓒ ●ⓒ ● ⓒ
N	Non-ferrous	●
S	Superalloy	● ⓒ
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	T5105	T5115	AH8005	AH8015	Coated cermet GT9530	AT9530	Cermet NS9530	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Finishing	**11**	**SNMG 431-11**	**SNMG120404-11**																		●		0.016	0.500	0.187	0.203
		SNMG 432-11	**SNMG120408-11**																		●	●	0.031	0.500	0.187	0.203
Finishing (for mild steel)	**17**	**SNMG 432-17**	**SNMG120408-17**																		●		0.031	0.500	0.187	0.203
Finishing	**SF**	**SNMG 431 SF**	**SNMG120404-SF**									●	●	●									0.016	0.500	0.187	0.203
		SNMG 432 SF	**SNMG120408-SF**									●	●	●									0.031	0.500	0.187	0.203
	CF	**SNMG 432 CF**	**SNMG120408-CF**												●	●							0.031	0.500	0.187	0.203
		SNMG 433 CF	**SNMG120412-CF**												●	●							0.047	0.500	0.187	0.203
	HRF	**SNMG 432 HRF**	**SNMG120408-HRF**														●	●					0.031	0.500	0.187	0.203
		SNMG 433 HRF	**SNMG120412-HRF**														●	●					0.047	0.500	0.187	0.203
Finishing	**TS**	**SNMG 431 TS**	**SNMG120404-TS**		●	●			▲	▲									●	●	●		0.016	0.500	0.187	0.203
		SNMG 432 TS	**SNMG120408-TS**	●	●	●	●	▲	▲	▲	▲								●	●	●		0.031	0.500	0.187	0.203
		SNMG 433 TS	**SNMG120412-TS**		●	●	●		▲	▲	▲												0.047	0.500	0.187	0.203
High feed, small depth of cut	**AS**	**SNMG 431 AS**	**SNMG120404-AS**																		●		0.016	0.500	0.187	0.203
		SNMG 432 AS	**SNMG120408-AS**	●	●			▲	▲												●		0.031	0.500	0.187	0.203

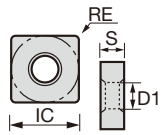
● : Line up
▲ : To be discontinued

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN

Square, 90° with hole

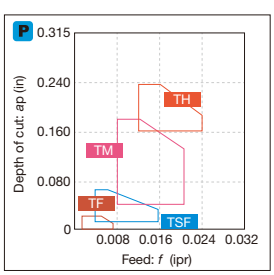
		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH645	AH120	GH330
P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣	◐	✣	◐✣	✣	●◐	●◐
M	Stainless		●◐							●	◐	◐	✣	●◐	●◐
K	Cast iron	●◐	●◐			●◐	●◐							●◐	●◐
N	Non-ferrous														
S	Superalloy													●◐	
H	Hard material														

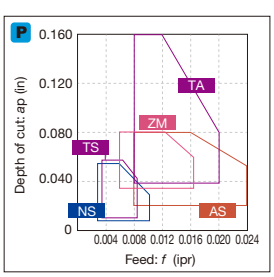


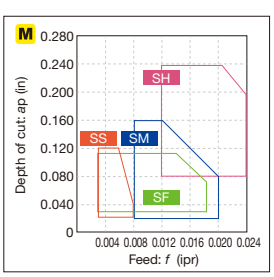
Application	Chipbreaker	Designation Inch	Designation Metric	Coated												Dimension (inch)			
				T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH645	AH120	GH330	RE	IC	S	D1
Finishing	NS	SNMG 432 NS	SNMG120408-NS		●	●			▲	▲								0.031	0.500	0.187	0.203
	SS	SNMG 431 SS	SNMG120404-SS									●	●	●	●		●	0.016	0.500	0.187	0.203
		SNMG 432 SS	SNMG120408-SS									●	●	●	●		●	0.031	0.500	0.187	0.203
		SNMG 433 SS	SNMG120412-SS									●	●	●	●			0.047	0.500	0.187	0.203
Medium cutting	TM	SNMG 321 TM	SNMG090304-TM		●	●	●		▲	▲	▲							0.016	0.375	0.125	0.150
		SNMG 322 TM	SNMG090308-TM		●	●	●		▲	▲	▲							0.031	0.375	0.125	0.150
		SNMG 431 TM	SNMG120404-TM		●	●			▲	▲						●		0.016	0.500	0.187	0.203
		SNMG 432 TM	SNMG120408-TM	●	●	●	●	▲	▲	▲	▲					●		0.031	0.500	0.187	0.203
		SNMG 433 TM	SNMG120412-TM	●	●	●	●	▲	▲	▲	▲					●		0.047	0.500	0.187	0.203
		SNMG 434 TM	SNMG120416-TM		●	●	●		▲	▲	▲							0.063	0.500	0.187	0.203
		SNMG 542 TM	SNMG150608-TM		●				▲									0.031	0.625	0.250	0.250
		SNMG 543 TM	SNMG150612-TM		●				▲							●		0.047	0.625	0.250	0.250
		SNMG 642 TM	SNMG190608-TM		●				▲							●		0.031	0.750	0.250	0.312
		SNMG 643 TM	SNMG190612-TM		●				▲							●		0.047	0.750	0.250	0.312
Medium cutting	TA	SNMG 432 TA	SNMG120408-TA		●	●												0.031	0.500	0.187	0.203
		SNMG 433 TA	SNMG120412-TA		●	●												0.047	0.500	0.187	0.203
Finishing to medium cutting	ZM	SNMG 432 ZM	SNMG120408-ZM		●	●	●		▲	▲	▲							0.031	0.500	0.187	0.203
		SNMG 433 ZM	SNMG120412-ZM		●	●	●		▲	▲	▲							0.047	0.500	0.187	0.203

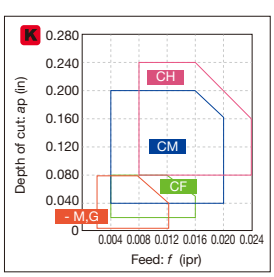
● : Line up
▲ : To be discontinued

Chip control range

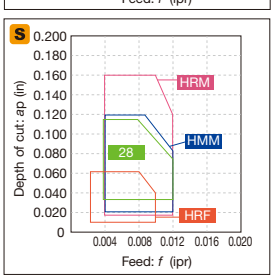








*-M,G: Without chipbreaker

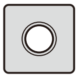


Reference pages: External toolholder → C098 - Internal toolholder → D047 -

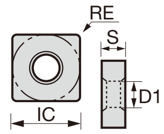
Insert NEGATIVE TYPE

●: Continuous cutting
◐: Light interrupted cutting
✠: Heavy interrupted cutting

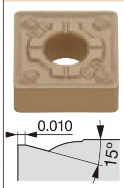
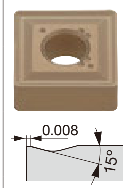
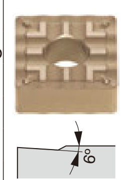
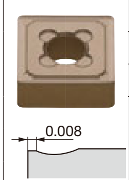
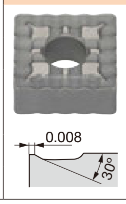
SN



Square, 90° with hole



		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6130	T515	T5105	T5115	T5125	AH110	AH120	AH905	GH330	GT720	NS9530	NS520	TH10
P	Steel	●	●◐	◐✠	✠	●	●◐	◐✠	✠	✠					●	●◐		●◐	●◐	●◐	●◐	●
M	Stainless		●◐							◐					●	●◐		●◐				●
K	Cast iron	●◐	●◐			●◐	●◐				●◐	●	◐	✠	●	●◐		●◐	●◐	●◐	●◐	●
N	Non-ferrous																					●
S	Superalloy														●	●◐	◐					
H	Hard material																					

Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6130	T515	T5105	T5115	T5125	AH110	AH120	AH905	GH330	Coated cermet GT720	Cermet NS9530	NS520	Uncoated TH10	RE	IC	S	D1
Medium cutting	DM	SNMG 432 DM	SNMG120408-DM		●	●			▲	▲															0.031	0.500	0.187	0.203
		SNMG 433 DM	SNMG120412-DM		●	●	●		▲	▲	▲														0.047	0.500	0.187	0.203
	All-round	SNMG 321	SNMG090304		●	●			▲	▲												●		●	0.016	0.375	0.125	0.150
		SNMG 322	SNMG090308		●	●	●		▲	▲	▲											●		●	0.031	0.375	0.125	0.150
		SNMG 431	SNMG120404		●	●	●		▲	▲	▲			●	●	●	●	●				●	●	●	0.016	0.500	0.187	0.203
		SNMG 432	SNMG120408	●	●	●	●	▲	▲	▲	▲		●	●	●	●	●	●	●		●	●	●	●	0.031	0.500	0.187	0.203
		SNMG 433	SNMG120412	●	●	●	●	▲	▲	▲	▲		●	●	●	●	●	●						●	0.047	0.500	0.187	0.203
		SNMG 434	SNMG120416	●	●	●	●	▲	▲	▲	▲			●	●	●									0.063	0.500	0.187	0.203
		SNMG 435	SNMG120420		●	●	●		▲	▲	▲			●	●	●									0.079	0.500	0.187	0.203
		SNMG 543	SNMG150612		●	●	●		▲	▲	▲	●	●												0.047	0.625	0.250	0.250
		SNMG 544	SNMG150616		●	●			▲	▲			●												0.063	0.625	0.250	0.250
		SNMG 643	SNMG190612		●	●	●		▲	▲	▲	●	●	●	●	●		●							0.047	0.750	0.250	0.312
		SNMG 644	SNMG190616		●	●	●		▲	▲	▲		●	●	●	●		●							0.063	0.750	0.250	0.312
		SNMG 856	SNMG250724		●	●	●		▲	▲	▲														0.094	1.000	0.313	0.359
		SNMG 866	SNMG250924						▲	▲	▲	▲						●							0.094	1.000	0.375	0.359
Finishing to medium cutting	27	SNMG 432-27	SNMG120408-27			●				▲												●			0.031	0.500	0.187	0.203
		SNMG 433-27	SNMG120412-27			●				▲															0.047	0.500	0.187	0.203
Medium cutting	33	SNMG 432-33	SNMG120408-33		●	●			▲	▲															0.031	0.500	0.187	0.203
		SNMG 433-33	SNMG120412-33			●				▲															0.047	0.500	0.187	0.203
		SNMG 543-33	SNMG150612-33		●	●			▲	▲															0.047	0.625	0.250	0.250
		SNMG 644-33	SNMG190616-33			●	●			▲	▲														0.063	0.750	0.250	0.312
	37	SNMG 432-37	SNMG120408-37		●				▲											●		●			0.031	0.500	0.187	0.203
		SNMG 433-37	SNMG120412-37		●				▲																0.047	0.500	0.187	0.203

Dimension (inch)

●: Line up
▲: To be discontinued

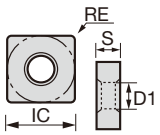
Reference pages: External toolholder → C098 - Internal toolholder → D047 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN

Square, 90°
with hole

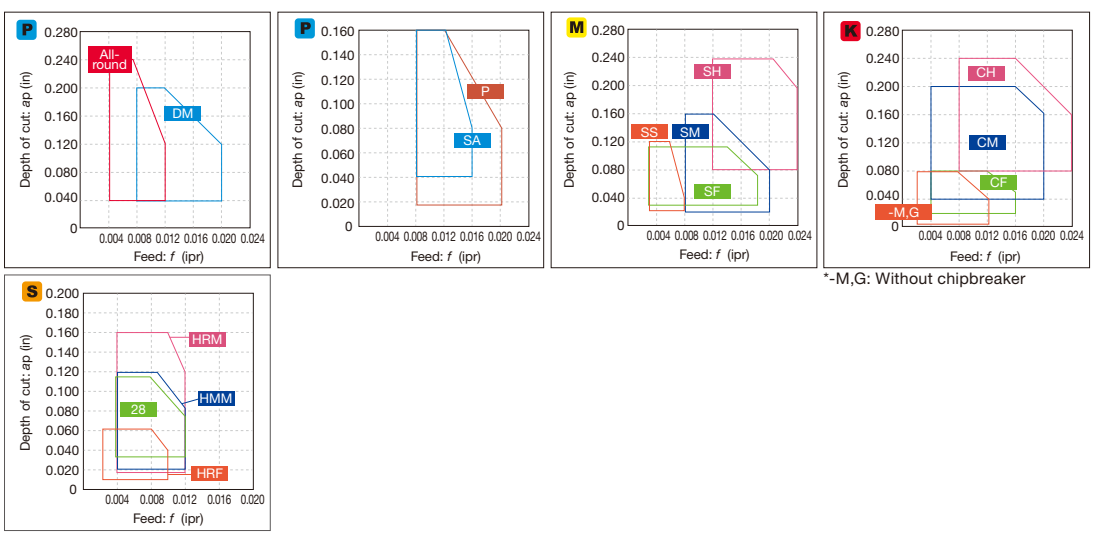
P	Steel	◐	✣	◐✣	✣	●◐							●		●◐	◐		●◐	
M	Stainless	●	◐	◐	✣	●◐					●	◐	●		●◐	◐			
K	Cast iron					●◐	●◐	●	◐	✣			●		●◐	◐		●◐	◐✣
N	Non-ferrous																		◐✣
S	Superalloy					●◐					●	◐	●	◐		●			◐✣
H	Hard material																		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T6120	T6130	AH630	AH645	AH120	T515	T5105	T5115	T5125	AH8005	AH8015	GH110	AH905	GH330	AH725	Uncoated TH10	KS20	Dimension (inch) RE	IC	S	D1
Medium cutting	SM	SNMG 432 SM	SNMG120408-SM	●	●	●	●											●			0.031	0.500	0.187	0.203
		SNMG 433 SM	SNMG120412-SM	●	●	●	●														0.047	0.500	0.187	0.203
		SNMG 866 SM	SNMG250924-SM		●																0.094	1.000	0.375	0.359
	CM	SNMG 432 CM	SNMG120408-CM						●	●	●	●									0.031	0.500	0.187	0.203
		SNMG 433 CM	SNMG120412-CM						●	●	●	●									0.047	0.500	0.187	0.203
	P	SNGG 321 R-P	SNGG090304R-P												●				●		0.016	0.375	0.125	0.150
		SNGG 321 L-P	SNGG090304L-P												●				●		0.016	0.375	0.125	0.150
		SNGG 322 R-P	SNGG090308R-P												●		●		●		0.031	0.375	0.125	0.150
		SNGG 322 L-P	SNGG090308L-P																●		0.031	0.375	0.125	0.150
		SNGG 431 R-P	SNGG120404R-P												●				●		0.016	0.500	0.187	0.203
		SNGG 431 L-P	SNGG120404L-P												●				●		0.016	0.500	0.187	0.203
		SNGG 432 R-P	SNGG120408R-P												●				●		0.031	0.500	0.187	0.203
		SNGG 432 L-P	SNGG120408L-P												●				●		0.031	0.500	0.187	0.203

● : Line up

Chip control range



*-M,G: Without chipbreaker

Reference pages: External toolholder → C098 - Internal toolholder → D047 -

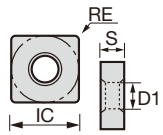
Insert NEGATIVE TYPE

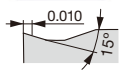
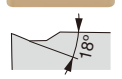
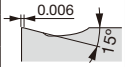
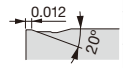
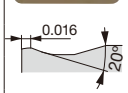
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN

Square, 90° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH8005	AH8015	AH630	AH645	AH120	GH330	AH905	NS9530	KS20
P	Steel	●	●ɔ	ɔ✣	✣	●	●ɔ	ɔ✣	✣	ɔ	✣			ɔ✣	✣	●ɔ	●ɔ		●ɔ	
M	Stainless		●ɔ							●	ɔ	●	ɔ	ɔ	✣	●ɔ	●ɔ			
K	Cast iron	●ɔ	●ɔ			●ɔ	●ɔ									●ɔ	●ɔ		●ɔ	ɔ✣
N	Non-ferrous																			ɔ✣
S	Superalloy											●	ɔ			●ɔ		ɔ		ɔ✣
H	Hard material																			



Application	Chipbreaker	Designation Inch	Designation Metric	Coated															Cer-met	Un-coated	Dimension (inch)			
				T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH8005	AH8015	AH630	AH645	AH120	GH330	AH905	NS9530	KS20	RE	IC	S	D1
Finishing to medium cutting	HRM	SNMG 432 HRM	SNMG120408-HRM											●	●								0.031	0.500	0.187	0.203
		SNMG 433 HRM	SNMG120412-HRM											●	●								0.047	0.500	0.187	0.203
		SNMG 542 HRM	SNMG150608-HRM											●	●								0.031	0.625	0.250	0.250
		SNMG 543 HRM	SNMG150612-HRM											●	●								0.047	0.625	0.250	0.250
		SNMG 643 HRM	SNMG190612-HRM											●	●								0.047	0.750	0.250	0.312
		SNMG 644 HRM	SNMG190616-HRM											●	●								0.063	0.750	0.250	0.312
Medium cutting	HMM	SNMG 432 HMM	SNMG120408-HMM																	●			0.031	0.500	0.187	0.203
		SNMG 433 HMM	SNMG120412-HMM																	●			0.047	0.500	0.187	0.203
Medium cutting	SA	SNMG 431 SA	SNMG120404-SA									●	●			●	●	●					0.016	0.500	0.187	0.203
		SNMG 432 SA	SNMG120408-SA									●	●			●	●	●				●	0.031	0.500	0.187	0.203
		SNMG 433 SA	SNMG120412-SA									●	●			●	●	●					0.047	0.500	0.187	0.203
		SNMG 643 SA	SNMG190612-SA															●				●	0.047	0.750	0.250	0.312
		SNMG 644 SA	SNMG190616-SA															●					0.063	0.750	0.250	0.312
	S	SNMG 431 R-S	SNMG120404R-S			●	●			▲	▲	●				●	●				●		0.016	0.500	0.187	0.203
		SNMG 431 L-S	SNMG120404L-S			●	●			▲	▲	●				●	●				●		0.016	0.500	0.187	0.203
		SNMG 432 R-S	SNMG120408R-S			●	●			▲	▲	●				●	●		●		●		0.031	0.500	0.187	0.203
		SNMG 432 L-S	SNMG120408L-S			●	●			▲	▲	●				●	●		●		●		0.031	0.500	0.187	0.203
																										
Medium to heavy cutting	TH	SNMG 432 TH	SNMG120408-TH		●	●	●		▲	▲	▲							●					0.031	0.500	0.187	0.203
		SNMG 433 TH	SNMG120412-TH		●	●	●		▲	▲	▲							●					0.047	0.500	0.187	0.203
		SNMG 543 TH	SNMG150612-TH	●	●	●		▲	▲	▲								●					0.047	0.625	0.250	0.250
		SNMG 544 TH	SNMG150616-TH	●	●	●		▲	▲	▲								●					0.063	0.625	0.250	0.250
		SNMG 643 TH	SNMG190612-TH	●	●	●	●	▲	▲	▲	▲							●					0.047	0.750	0.250	0.312
		SNMG 644 TH	SNMG190616-TH	●	●	●	●	▲	▲	▲	▲							●					0.063	0.750	0.250	0.312
	THS	SNMG 432 THS	SNMG120408-THS		●	●	●		▲	▲	▲												0.031	0.500	0.187	0.203
		SNMG 433 THS	SNMG120412-THS		●	●	●		▲	▲	▲												0.047	0.500	0.187	0.203
		SNMG 543 THS	SNMG150612-THS		●	●			▲	▲													0.047	0.625	0.250	0.250
		SNMG 544 THS	SNMG150616-THS		●	●			▲	▲													0.063	0.625	0.250	0.250
		SNMG 642 THS	SNMG190608-THS		●	●	●		▲	▲	▲												0.031	0.750	0.250	0.312
		SNMG 643 THS	SNMG190612-THS		●	●	●		▲	▲	▲												0.047	0.750	0.250	0.312
		SNMG 644 THS	SNMG190616-THS		●	●	●		▲	▲	▲												0.063	0.750	0.250	0.312
		SNMG 646 THS	SNMG190624-THS		●	●	●		▲	▲	▲												0.094	0.750	0.250	0.312
		SNMG 854 THS	SNMG250716-THS		●	●	●		▲	▲	▲												0.063	1.000	0.313	0.359
		SNMG 856 THS	SNMG250724-THS		●	●	●		▲	▲	▲												0.094	1.000	0.313	0.359

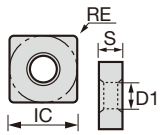
● : Line up
▲ : To be discontinued

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN

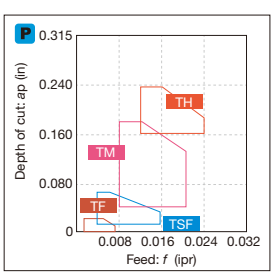
Square, 90° with hole

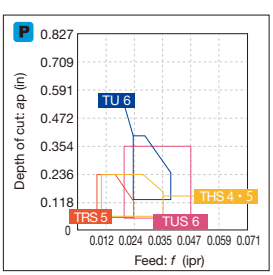
P	Steel	●◐ ◐✣ ✣ ●◐ ◐✣ ✣
M	Stainless	●◐
K	Cast iron	●◐ ●◐
N	Non-ferrous	
S	Superalloy	
H	Hard material	

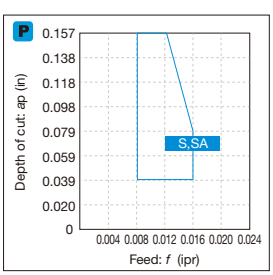


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9235	T9115	T9125	T9135	Dimension (inch) RE	IC	S	D1
Medium to heavy cutting (single side)	TRS	SNMM 543 TRS	SNMM150612-TRS	●	●	●	▲	▲	▲	0.047	0.625	0.250	0.250
		SNMM 544 TRS	SNMM150616-TRS	●	●	●	▲	▲	▲	0.063	0.625	0.250	0.250
		SNMM 644 TRS	SNMM190616-TRS	●	●	●	▲	▲	▲	0.063	0.750	0.250	0.312
		SNMM 646 TRS	SNMM190624-TRS	●	●	●	▲	▲	▲	0.094	0.750	0.250	0.312
		SNMM 866 TRS	SNMM250924-TRS	●	●	●	▲	▲	▲	0.094	1.000	0.375	0.359
Heavy cutting (single side)	TU	SNMM 644 TU	SNMM190616-TU			●			▲	0.063	0.750	0.250	0.312
		SNMM 646 TU	SNMM190624-TU		●	●		▲	▲	0.094	0.750	0.250	0.312
		SNMM 856 TU	SNMM250724-TU		●	●		▲	▲	0.094	1.000	0.313	0.359
		SNMM 866 TU	SNMM250924-TU	●	●		▲	▲		0.094	1.000	0.375	0.359
Heavy cutting (single side)	TUS	SNMM 643 TUS	SNMM190612-TUS	●	●	●	▲	▲	▲	0.047	0.750	0.250	0.312
		SNMM 644 TUS	SNMM190616-TUS	●	●	●	▲	▲	▲	0.063	0.750	0.250	0.312
		SNMM 646 TUS	SNMM190624-TUS	●	●	●	▲	▲	▲	0.094	0.750	0.250	0.312
		SNMM 856 TUS	SNMM250724-TUS	●	●	●	▲	▲	▲	0.094	1.000	0.313	0.359
		SNMM 858 TUS	SNMM250732-TUS	●	●		▲	▲		0.126	1.000	0.313	0.359
		SNMM 866 TUS	SNMM250924-TUS	●	●	●	▲	▲	▲	0.094	1.000	0.375	0.359
		SNMM 868 TUS	SNMM250932-TUS	●	●		▲	▲		0.126	1.000	0.375	0.359
	57	SNMM 432-57	SNMM120408-57	●	●		▲	▲		0.031	0.500	0.188	0.203
		SNMM 544-57	SNMM150616-57		●			▲		0.063	0.625	0.250	0.250
		SNMM 643-57	SNMM190612-57		●			▲		0.047	0.750	0.250	0.312
Medium to heavy cutting (single side)	65	SNMM 643-65	SNMM190612-65		●			▲		0.047	0.750	0.250	0.312
		SNMM 1066-65	SNMM310924-65		●			▲		0.094	1.250	0.375	0.346

Chip control range







● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C098 - Internal toolholder → D047 -

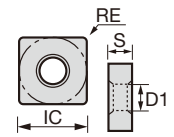
Insert NEGATIVE TYPE

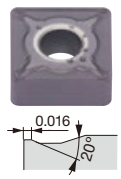
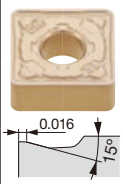
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN

Square, 90° with hole

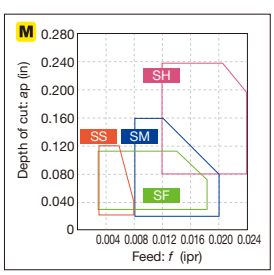
P	Steel	✣	◐✣	✣						●◐		●◐		●						
M	Stainless	◐	◐	✣										●						
K	Cast iron				●◐	●	◐	✣		●◐		●◐		●		●◐	●			
N	Non-ferrous													●						
S	Superalloy																			
H	Hard material																		●	

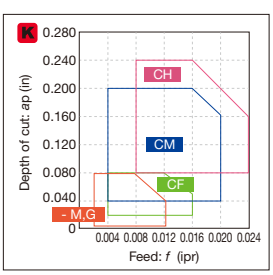


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T6130	Coated AH630	Coated AH645	Coated T515	Coated T5105	Coated T5115	Coated T5125	Coated cermet GT720	Cer-met NS520	Un-coated TH10	Ceramic FX105	Ceramic LX21	Ceramic LX11	Dimension (inch) RE	IC	S	D1
Medium to heavy cutting	SH	SNMG 432 SH	SNMG120408-SH	●	●	●											0.031	0.500	0.187	0.203
		SNMG 433 SH	SNMG120412-SH	●	●	●											0.047	0.500	0.187	0.203
		SNMG 543 SH	SNMG150612-SH	●	●	●											0.047	0.625	0.250	0.250
		SNMG 544 SH	SNMG150616-SH	●	●	●											0.063	0.625	0.250	0.250
		SNMG 643 SH	SNMG190612-SH	●	●	●											0.047	0.750	0.250	0.312
		SNMG 644 SH	SNMG190616-SH	●	●	●											0.063	0.750	0.250	0.312
	CH	SNMG 432 CH	SNMG120408-CH					●	●	●							0.031	0.500	0.187	0.203
		SNMG 433 CH	SNMG120412-CH					●	●	●							0.047	0.500	0.187	0.203
		SNMG 434 CH	SNMG120416-CH					●	●	●							0.063	0.500	0.187	0.203
Finishing to medium cutting	-	SNMA 322	SNMA090308					●					●				0.031	0.375	0.125	0.150
		SNMA 323	SNMA090312						●	●							0.047	0.375	0.125	0.150
		SNMA 431	SNMA120404					●	●	●	●						0.016	0.500	0.187	0.203
		SNMA 432	SNMA120408				●	●	●	●		●	●	●			0.031	0.500	0.187	0.203
		SNMA 433	SNMA120412				●	●	●	●		●	●	●			0.047	0.500	0.187	0.203
		SNMA 434	SNMA120416					●	●	●							0.063	0.500	0.187	0.203
		SNMA 543	SNMA150612					●	●	●							0.047	0.625	0.250	0.250
		SNMA 643	SNMA190612					●	●	●							0.047	0.750	0.250	0.312
	-	SNGA 321	SNGA090304										●				0.016	0.375	0.125	0.150
		SNGA 431	SNGA120404								●		●			●	0.016	0.500	0.187	0.203
		SNGA 432	SNGA120408									●	●	●		●	0.031	0.500	0.187	0.203
		SNGA 433	SNGA120412										●	●	●	●	0.047	0.500	0.187	0.203
		SNGA 434	SNGA120416											●		●	0.063	0.500	0.187	0.203

● : Line up

Chip control range





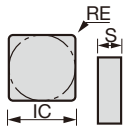
Reference pages: External toolholder → C098 - Internal toolholder → D047 -

● : Continuous cutting
ȼ : Light interrupted cutting
✣ : Heavy interrupted cutting

SN

Square, 90° without hole

P	Steel	●ȼ				●				●ȼ	●		●										
M	Stainless	●ȼ				●																	
K	Cast iron	●ȼ				●				●ȼ	●		●										
N	Non-ferrous					●																	
S	Superalloy	●ȼ																					
H	Hard material												●										



Application	Chipbreaker	Designation Inch	Designation Metric	Coated AH120	Uncoated TH10	Ceramic FX105	Ceramic LX21	Ceramic LX11	Ceramic TZ120	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	-	**SNGD 453**	**SNGD120712**			●				0.047	0.500	0.313	-
		SNGD 45**4**	SNGD1207**16**			●				0.063	0.500	0.313	-
	-	**SNGN 322**	**SNGN090308**				●	●		0.031	0.375	0.125	-
		SNGN 421	**SNGN120304**					●		0.016	0.500	0.125	-
		SNGN 42**3**	SNGN1203**12**					●		0.047	0.500	0.125	-
		SNGN 431	**SNGN120404**					●		0.016		0.187	-
		SNGN 43**2**	SNGN1204**08**		●	●	●	●		0.031	0.375	0.187	-
		SNGN 43**3**	SNGN1204**12**			●	●	●	●	0.047	0.500	0.187	-
		SNGN 43**4**	SNGN1204**16**			●	●	●		0.063	0.500	0.187	-
		SNGN 43**5**	SNGN1204**20**			●	●			0.079	0.500	0.187	-
		SNGN 43**6**	SNGN1204**24**			●				0.094	0.500	0.187	-
		SNGN 452	**SNGN120708**					●	●	0.031	0.500	0.313	-
		SNGN 45**3**	SNGN1207**12**			●		●	●	0.047	0.500	0.313	-
		SNGN 45**4**	SNGN1207**16**			●		●	●	0.063	0.500	0.313	-
		SNGN 45**5**	SNGN1207**20**					●		0.079	0.500	0.313	-
	-	**SNMN 432**	**SNMN120408**		●					0.031	0.500	0.187	-
		SNMN 43**3**	SNMN1204**12**	●						0.047	0.500	0.187	-
		***SNMN 434**	SNMN1204**16**			●				0.063	0.500	0.187	-
	-	**SNGX 454**	**SNGX120716**			●				0.063	0.500	0.313	-

* Chamfer hone 0.008" wide, -25° angle.
Note: Carbide grades have a radius hone.

● : Line up

Reference pages: External toolholder → C098 -
SNGD...: External toolholder → C114 SNMN...: External toolholder → C101 -

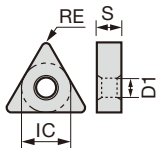
Insert NEGATIVE TYPE

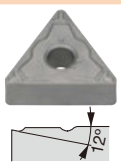
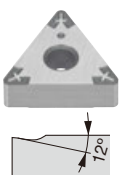
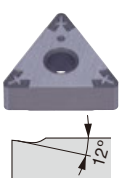
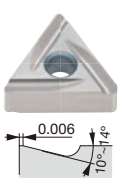
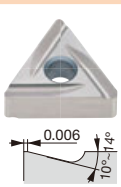
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° with hole

P	Steel	●	◐	◐	✣			◐	◐	✣			◐	◐	●		●						
M	Stainless	●	◐	◐	✣												●						
K	Cast iron	●	◐	✣				◐	◐	✣			◐	◐	●		●						
N	Non-ferrous																●						
S	Superalloy	●																					
H	Hard material																						



Application	Chipbreaker	Designation Inch	Designation Metric	Coated GH110	Coated GH330	Coated SH725	Coated cermet GT9530	Coated cermet GT720	Cermet NS9530	Cermet NS520	Cermet X407	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Precision finishing	TF	TNMG 331 TF	TNMG160404-TF						●	●		●	0.016	0.375	0.187	0.150
		TNMG 332 TF	TNMG160408-TF						●	●			0.031	0.375	0.187	0.150
	01	TNGG 220.5-01	TNGG110302-01						●				0.008	0.250	0.125	0.089
		TNGG 221-01	TNGG110304-01						●				0.016	0.250	0.125	0.089
		TNGG 222-01	TNGG110308-01						●	●			0.031	0.250	0.125	0.089
		TNGG 330.5-01	TNGG160402-01	●					●	●		●	0.008	0.375	0.187	0.150
		TNGG 331-01	TNGG160404-01	●					●	●		●	0.016	0.375	0.187	0.150
		TNGG 332-01	TNGG160408-01	●					●	●			0.031	0.375	0.187	0.150
		TNGG 333-01	TNGG160412-01					●	●				0.047	0.375	0.187	0.150
Precision finishing (sharp edge)	01	TNGG 330.5 F-01	TNGG160402F-01			●							0.008	0.375	0.187	0.150
		TNGG 331 F-01	TNGG160404F-01			●							0.016	0.375	0.187	0.150
		TNGG 332 F-01	TNGG160408F-01			●							0.031	0.375	0.187	0.150
Precision finishing	A, C	TNGG 221 R-A	TNGG110304R-A				●		●				0.016	0.250	0.125	0.089
		TNGG 221 L-A	TNGG110304L-A				●		●				0.016	0.250	0.125	0.089
		TNGG 222 R-A	TNGG110308R-A				●		●				0.031	0.250	0.125	0.089
		TNGG 222 L-A	TNGG110308L-A				●		●				0.031	0.250	0.125	0.089
		TNGG 321 R-C	TNGG160304R-C						●		●		0.016	0.375	0.125	0.150
		TNGG 321 L-C	TNGG160304L-C						●				0.016	0.375	0.125	0.150
		TNGG 322 R-C	TNGG160308R-C						●				0.031	0.375	0.125	0.150
		TNGG 322 L-C	TNGG160308L-C						●				0.031	0.375	0.125	0.150
		TNGG 33V R-C	TNGG160400R-C						●				0.001	0.375	0.187	0.150
		TNGG 33V L-C	TNGG160400L-C						●				0.001	0.375	0.187	0.150
		TNGG 330.5 R-C	TNGG160402R-C				●		●		●	●	0.008	0.375	0.187	0.150
		TNGG 330.5 L-C	TNGG160402L-C				●		●				0.008	0.375	0.187	0.150
		TNGG 331 R-C	TNGG160404R-C	●	●		●		●	●	●	●	0.016	0.375	0.187	0.150
		TNGG 331 L-C	TNGG160404L-C	●	●		●		●		●	●	0.016	0.375	0.187	0.150
		TNGG 332 R-C	TNGG160408R-C	●	●		●		●	●	●	●	0.031	0.375	0.187	0.150
		TNGG 332 L-C	TNGG160408L-C	●	●		●		●		●	●	0.031	0.375	0.187	0.150
	D	TNGG 431 R-D	TNGG220404R-D						●		●		0.016	0.500	0.187	0.203
		TNGG 431 L-D	TNGG220404L-D						●				0.016	0.500	0.187	0.203
		TNGG 432 R-D	TNGG220408R-D						●		●		0.031	0.500	0.187	0.203
		TNGG 432 L-D	TNGG220408L-D						●				0.031	0.500	0.187	0.203

● : Line up

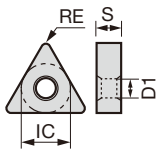
Reference pages: External toolholder → C029 - Internal toolholder → D053 -
J-Series toolholder → G058 -

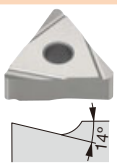
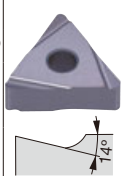
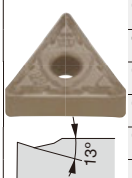
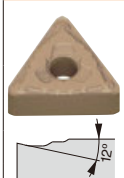
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° with hole

P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣	●◐	●◐	●◐	●◐			●◐		●					
M	Stainless		●◐							●◐	●◐							●					
K	Cast iron	●◐	●◐			●◐	●◐			●◐		●◐	●◐			●◐		●					
N	Non-ferrous																	●					
S	Superalloy									●◐													
H	Hard material																						

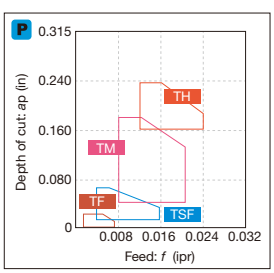


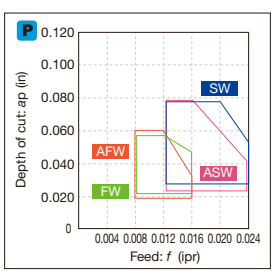
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	AH120	SH725	Coated cermet GT9530	AT9530	Cer-met NS9530	Un-coated TH10	Dimension (inch) RE	IC	S	D1
Precision finishing	W	TNGG 331 R-W	TNGG160404R-W													●	●	0.016	0.375	0.187	0.150
		TNGG 331 L-W	TNGG160404L-W													●	●	0.016	0.375	0.187	0.150
		TNGG 332 R-W	TNGG160408R-W													●		0.031	0.375	0.187	0.150
		TNGG 332 L-W	TNGG160408L-W													●		0.031	0.375	0.187	0.150
Precision finishing (sharp edge)	W	TNGG 330.5 FR-W	TNGG160402FR-W										●					0.008	0.375	0.187	0.150
		TNGG 330.5 FL-W	TNGG160402FL-W										●					0.008	0.375	0.187	0.150
		TNGG 331 FR-W	TNGG160404FR-W										●					0.016	0.375	0.187	0.150
		TNGG 331 FL-W	TNGG160404FL-W										●					0.016	0.375	0.187	0.150
		TNGG 332 FR-W	TNGG160408FR-W										●					0.031	0.375	0.187	0.150
		TNGG 332 FL-W	TNGG160408FL-W										●					0.031	0.375	0.187	0.150
Finishing	TSF	TNMG 231E TSF	TNMG110404E-TSF		●	●			▲	▲				●	●	●		0.016	0.250	0.187	0.089
		TNMG 232E TSF	TNMG110408E-TSF		●	●			▲	▲				●	●	●		0.031	0.250	0.187	0.089
		TNMG 330.5 TSF	TNMG160402-TSF									●		●	●	●		0.008	0.375	0.187	0.150
		TNMG 331 TSF	TNMG160404-TSF		●	●	●		▲	▲	▲	●		●	●	●		0.016	0.375	0.187	0.150
		TNMG 332 TSF	TNMG160408-TSF	●	●	●	●	▲	▲	▲	▲	●		●	●	●		0.031	0.375	0.187	0.150
		TNMG 333 TSF	TNMG160412-TSF		●	●	●		▲	▲	▲			●				0.047	0.375	0.187	0.150
Finishing (wiper)	FW	TNMG 231E FW	TNMG110404E-FW		●				▲									0.016	0.250	0.187	0.089
		TNMG 232E FW	TNMG110408E-FW		●				▲									0.031	0.250	0.187	0.089
		TNMG 331 FW	TNMG160404-FW		●				▲									0.016	0.375	0.187	0.150
		TNMG 332 FW	TNMG160408-FW		●				▲									0.031	0.375	0.187	0.150
		*Wiper																			

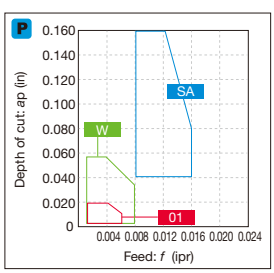
* Please see **L034-L038** about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact a Tungaloy sales representative with questions.

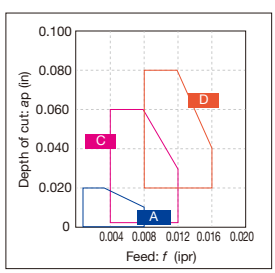
●: Line up
▲: To be discontinued

Chip control range









Reference pages: External toolholder → C029 - Internal toolholder → D053 -
J-Series toolholder → G058 -

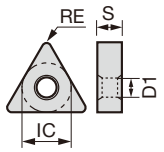
Insert NEGATIVE TYPE

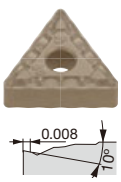
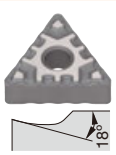
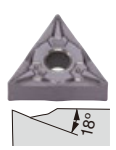
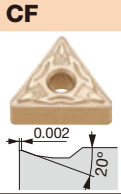
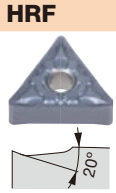
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° with hole

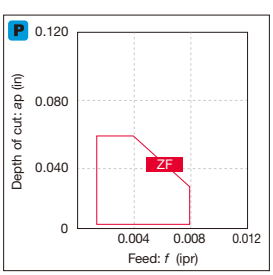
P	Steel	ɔ✣	ɔ✣	✣	●ɔ	ɔ✣	✣	ɔ	✣	ɔ✣					●ɔ	●ɔ	●ɔ	●ɔ	●		
M	Stainless							●	ɔ	ɔ			●	ɔ	●ɔ				●		
K	Cast iron				●ɔ						●	ɔ			●ɔ	●ɔ	●ɔ	●ɔ	●		
N	Non-ferrous																		●		
S	Superalloy												●	ɔ							
H	Hard material																				

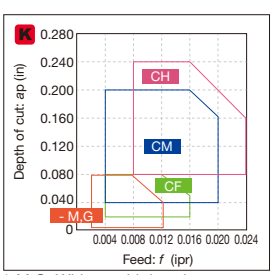


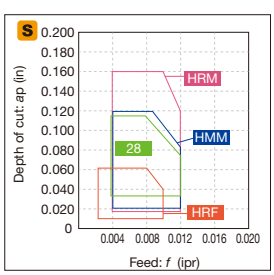
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9235	T9115	T9125	T9135	T6120	T6130	AH630	T5105	T5115	AH8005	AH8015	GH330	Coated cermet GT9530	AT9530	Cer-met NS9530	Un-coated TH10	Dimension (inch) RE	IC	S	D1
Finishing	ZF	TNMG 331 ZF	TNMG160404-ZF	●	●	●	▲	▲	▲									●	●	●		0.016	0.375	0.187	0.150
		TNMG 332 ZF	TNMG160408-ZF	●	●	●	▲	▲	▲									●	●	●		0.031	0.375	0.187	0.150
		TNMG 333 ZF	TNMG160412-ZF		●			▲														0.047	0.375	0.187	0.150
Finishing	11	TNMG 221-11	TNMG110304-11																	●		0.016	0.250	0.125	0.089
		TNMG 222-11	TNMG110308-11																	●		0.031	0.250	0.125	0.089
		TNMG 330.5-11	TNMG160402-11																	●		0.008	0.375	0.187	0.150
		TNMG 331-11	TNMG160404-11														●			●	●	0.016	0.375	0.187	0.150
		TNMG 332-11	TNMG160408-11																	●		0.031	0.375	0.187	0.150
		TNMG 431-11	TNMG220404-11																	●		0.016	0.500	0.187	0.203
		TNMG 432-11	TNMG220408-11																	●		0.031	0.500	0.187	0.203
Finishing (for mild steel)	17	TNMG 331-17	TNMG160404-17		●			▲									●			●		0.016	0.375	0.187	0.150
		TNMG 332-17	TNMG160408-17		●			▲												●		0.031	0.375	0.187	0.150
Finishing	SF	TNMG 331 SF	TNMG160404-SF							●	●	●										0.016	0.375	0.187	0.150
		TNMG 332 SF	TNMG160408-SF							●	●	●										0.031	0.375	0.187	0.150
		TNMG 333 SF	TNMG160412-SF							●	●	●										0.047	0.375	0.187	0.150
	CF	TNMG 331 CF	TNMG160404-CF										●	●								0.016	0.375	0.187	0.150
		TNMG 332 CF	TNMG160408-CF										●	●								0.031	0.375	0.187	0.150
	HRF	TNMG 331 HRF	TNMG160404-HRF												●	●						0.016	0.375	0.187	0.150
		TNMG 332 HRF	TNMG160408-HRF												●	●						0.031	0.375	0.187	0.150

● : Line up
▲ : To be discontinued

Chip control range







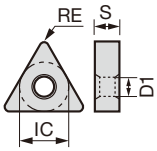
*-M,G: Without chipbreaker

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° with hole

P	Steel	● ◐ ◐✣ ✣ ● ◐ ◐✣ ✣ ◐ ◐ ◐ ◐
M	Stainless	◐ ◐ ◐ ◐
K	Cast iron	◐ ◐ ◐ ◐ ◐ ◐ ◐ ◐
N	Non-ferrous	
S	Superalloy	
H	Hard material	

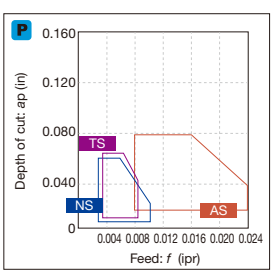


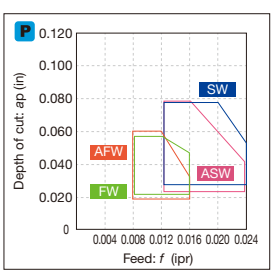
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	Coated cermet GT9530	AT9530	Cermet NS9530	NS520	Dimension (inch) RE	IC	S	D1
Finishing	TS	TNMG 331 TS	TNMG160404-TS		●	●	●		▲	▲	▲	●	●	●	●	0.016	0.375	0.187	0.150
		TNMG 332 TS	TNMG160408-TS	●	●	●	●	▲	▲	▲	▲	●	●	●	●	0.031	0.375	0.187	0.150
		TNMG 333 TS	TNMG160412-TS	●	●	●	●	▲	▲	▲	▲					0.047	0.375	0.187	0.150
Finishing to medium cutting (wiper)	SW	TNMG 232E SW	TNMG110408E-SW		●				▲							0.031	0.250	0.187	0.089
		TNMG 233E SW	TNMG110412E-SW		●				▲							0.047	0.250	0.187	0.089
		TNMG 332 SW	TNMG160408-SW		●				▲							0.031	0.375	0.187	0.150
		TNMG 333 SW	TNMG160412-SW		●				▲							0.047	0.375	0.187	0.150
		*Wiper																	
High feed, small depth of cut	AS	TNMG 331 AS	TNMG160404-AS			●	●			▲	▲			●		0.016	0.375	0.187	0.150
		TNMG 332 AS	TNMG160408-AS	●	●	●	●	▲	▲	▲	▲			●		0.031	0.375	0.187	0.150
		TNMG 333 AS	TNMG160412-AS	●	●	●		▲	▲	▲						0.047	0.375	0.187	0.150
Boring (double side)	CB	TNMG 221 CB	TNMG110304-CB		●				▲					●		0.016	0.250	0.125	0.089
		TNMG 222 CB	TNMG110308-CB		●				▲					●		0.031	0.250	0.125	0.089
Finishing	NS	TNMG 331 NS	TNMG160404-NS		●	●			▲	▲				●		0.016	0.375	0.187	0.150
		TNMG 332 NS	TNMG160408-NS	●	●	●		▲	▲	▲				●		0.031	0.375	0.187	0.150

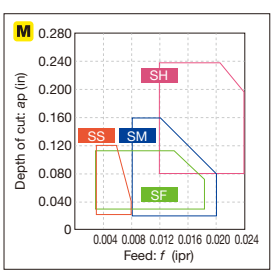
* Please see **L034-L038** about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact a Tungaloy sales representative with questions.

● : Line up
▲ : To be discontinued

Chip control range





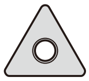


Reference pages: External toolholder → C029 - Internal toolholder → D053 -
J-Series toolholder → G058 -

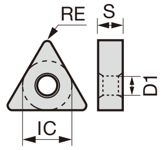
Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

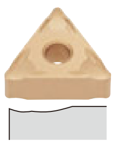
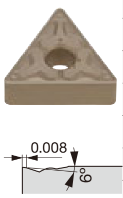
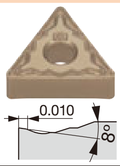
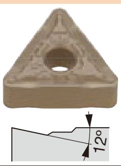
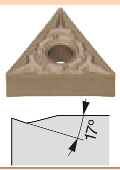
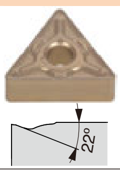
TN



Triangular, 60° with hole



		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH8005	AH630	AH645	AH120	AH725	GH330	GT9530	AT9530	NS9530	KS20
P	Steel	●	●◐	◐✠	✠	●	●◐	◐✠	✠	◐	✠		◐✠	✠	●◐	◐	●◐	●◐	●◐	●◐	
M	Stainless		●◐							●	◐	●	◐	✠	●◐	◐	●◐				
K	Cast iron	●◐	●◐			●◐	●◐								●◐	◐	●◐	●◐	●◐	●◐	◐✠
N	Non-ferrous																				◐✠
S	Superalloy											●			●◐	●					◐✠
H	Hard material																				

Application	Chipbreaker	Designation Inch	Designation Metric	T9205 (Coated)	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH8005	AH630	AH645	AH120	AH725	GH330	GT9530 (Coated cermet)	AT9530	NS9530 (Cermet)	KS20 (Uncoated)	RE	IC	S	D1
Finishing	SS 	TNMG 231E SS	TNMG110404E-SS												●	●								0.016	0.250	0.187	0.089
		TNMG 232E SS	TNMG110408E-SS												●	●								0.031	0.250	0.187	0.089
		TNMG 331 SS	TNMG160404-SS									●	●		●	●	●		●				●	0.016	0.375	0.187	0.150
		TNMG 332 SS	TNMG160408-SS									●	●		●	●	●		●				●	0.031	0.375	0.187	0.150
		TNMG 333 SS	TNMG160412-SS									●	●		●	●			●					0.047	0.375	0.187	0.150
		TNMG 431 SS	TNMG220404-SS									●	●		●	●			●					0.016	0.500	0.187	0.203
		TNMG 432 SS	TNMG220408-SS									●	●		●	●			●					0.031	0.500	0.187	0.203
		TNMG 433 SS	TNMG220412-SS									●	●		●	●								0.047	0.500	0.187	0.203
Medium cutting	TM 	TNMG 221 TM	TNMG110304-TM		●	●	●		▲	▲	▲													0.016	0.250	0.125	0.089
		TNMG 222 TM	TNMG110308-TM		●	●	●		▲	▲	▲													0.031	0.250	0.125	0.089
		TNMG 231E TM	TNMG110404E-TM		●	●			▲	▲														0.016	0.250	0.187	0.089
		TNMG 232E TM	TNMG110408E-TM		●	●			▲	▲														0.031	0.250	0.187	0.089
		TNMG 233E TM	TNMG110412E-TM		●	●			▲	▲														0.047	0.250	0.187	0.089
		TNMG 321 TM	TNMG160304-TM														●							0.016	0.375	0.125	0.150
		TNMG 322 TM	TNMG160308-TM																					0.031	0.375	0.125	0.150
		TNMG 331 TM	TNMG160404-TM		●	●	●		▲	▲	▲						●	●						0.016	0.375	0.187	0.150
		TNMG 332 TM	TNMG160408-TM	●	●	●	●	▲	▲	▲	▲						●	●						0.031	0.375	0.187	0.150
		TNMG 333 TM	TNMG160412-TM	●	●	●	●	▲	▲	▲	▲						●							0.047	0.375	0.187	0.150
		TNMG 334 TM	TNMG160416-TM											●										0.063	0.375	0.187	0.150
		TNMG 431 TM	TNMG220404-TM		●	●			▲	▲							●							0.016	0.500	0.187	0.203
		TNMG 432 TM	TNMG220408-TM	●	●	●	●	▲	▲	▲	▲						●							0.031	0.500	0.187	0.203
		TNMG 433 TM	TNMG220412-TM		●	●	●		▲	▲	▲						●							0.047	0.500	0.187	0.203
		TNMG 434 TM	TNMG220416-TM		●	●			▲	▲														0.063	0.500	0.187	0.203
Finishing to medium cutting	AM 	TNMG 332 AM	TNMG160408-AM		●	●			▲	▲														0.031	0.375	0.187	0.150
		TNMG 333 AM	TNMG160412-AM		●	●			▲	▲														0.047	0.375	0.187	0.150
	NM 	TNMG 332 NM	TNMG160408-NM			●				▲														0.031	0.375	0.187	0.150
		TNMG 333 NM	TNMG160412-NM		●	●			▲	▲														0.047	0.375	0.187	0.150
	TQ 	TNMG 331 TQ	TNMG160404-TQ		●	●														●	●	●		0.016	0.375	0.187	0.150
		TNMG 332 TQ	TNMG160408-TQ		●	●														●	●	●		0.031	0.375	0.187	0.150
Medium cutting	TA 	TNMG 331 TA	TNMG160404-TA		●	●																		0.016	0.375	0.187	0.150
		TNMG 332 TA	TNMG160408-TA		●	●																		0.031	0.375	0.187	0.150
		TNMG 333 TA	TNMG160412-TA		●	●																		0.047	0.375	0.187	0.150

Dimension (inch)

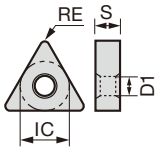
● : Line up
▲ : To be discontinued

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° with hole

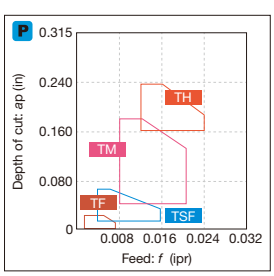
P	Steel	● ●◐✣ ✣ ● ●◐✣ ✣ ✣ ◐✣ ● ●◐●◐●◐●◐●◐●
M	Stainless	●◐ ◐ ●◐ ●◐
K	Cast iron	●◐●◐ ●◐●◐ ●◐ ● ◐ ✣ ● ●◐●◐●◐●◐●◐●
N	Non-ferrous	●
S	Superalloy	● ●◐
H	Hard material	

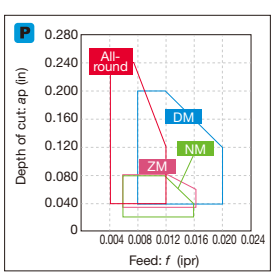


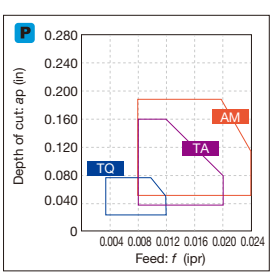
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	AH630	T515	T5105	T5115	T5125	AH110	AH120	Coated cermet GT9530	GT720	Cermet NS9530	NS520	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Finishing to m medium cutting	**ZM**	**TNMG 331 ZM**	**TNMG160404-ZM**		●	●	●		▲	▲	▲								●		●			0.016	0.375	0.187	0.150
		TNMG 332 ZM	TNMG160408-ZM		●	●	●		▲	▲	▲								●		●			0.031	0.375	0.187	0.150
		TNMG 333 ZM	TNMG160412-ZM		●	●	●		▲	▲	▲													0.047	0.375	0.187	0.150
		TNMG 432 ZM	**TNMG220408-ZM**							▲														0.031	0.500	0.187	0.203
		TNMG 433 ZM	TNMG220412-ZM			●				▲														0.047	0.500	0.187	0.203
Medium cutting	**DM**	**TNMG 332 DM**	**TNMG160408-DM**	●	●	●	●	▲	▲	▲	▲													0.031	0.375	0.187	0.150
		TNMG 333 DM	TNMG160412-DM		●	●			▲	▲														0.047	0.375	0.187	0.150
		TNMG 434 DM	**TNMG220416-DM**														●							0.063	0.500	0.187	0.203
	All-round	**TNMG 221**	**TNMG110304**		●	●			▲	▲				●	●	●					●		●	0.016	0.250	0.125	0.089
		TNMG 222	TNMG110308		●	●			▲	▲				●	●	●					●		●	0.031	0.250	0.125	0.089
		TNMG 321	**TNMG160304**																				●	0.016	0.375	0.125	0.150
		TNMG 322	TNMG160308																				●	0.031	0.375	0.125	0.150
		TNMG 331	**TNMG160404**	●	●	●	●	▲	▲	▲	▲		●	●	●	●	●	●			●	●	●	0.016	0.375	0.187	0.150
		TNMG 332	TNMG160408	●	●	●	●	▲	▲	▲	▲		●	●	●	●	●	●		●	●	●	●	0.031	0.375	0.187	0.150
		TNMG 333	TNMG160412	●	●	●	●	▲	▲	▲	▲		●	●	●	●	●	●					●	0.047	0.375	0.187	0.150
		TNMG 334	TNMG160416		●	●	●		▲	▲	▲			●	●	●							●	0.063	0.375	0.187	0.150
		TNMG 335	TNMG160420		●	●	●		▲	▲	▲													0.079	0.375	0.187	0.150
		TNMG 432	**TNMG220408**	●	●	●	●	▲	▲	▲	▲			●	●	●							●	0.031	0.500	0.187	0.203
		TNMG 433	TNMG220412	●	●	●	●	▲	▲	▲	▲	●		●	●	●							●	0.047	0.500	0.187	0.203
		TNMG 434	TNMG220416		●	●			▲	▲		●		●	●	●							●	0.063	0.500	0.187	0.203
		TNMG 542	**TNMG270608**			●				▲								●						0.031	0.625	0.250	0.250
		TNMG 543	TNMG270612			●				▲								●						0.047	0.625	0.250	0.250
		TNMG 544	TNMG270616															●						0.063	0.625	0.250	0.250
Finishing to medium cutting	**27**	**TNMG 331-27**	**TNMG160404-27**		●	●			▲	▲														0.016	0.375	0.187	0.150
		TNMG 332-27	TNMG160408-27		●	●			▲	▲											●			0.031	0.375	0.187	0.150
		TNMG 333-27	TNMG160412-27		●	●			▲	▲														0.047	0.375	0.187	0.150
		TNMG 431-27	**TNMG220404-27**			●				▲														0.016	0.500	0.187	0.203
		TNMG 432-27	TNMG220408-27			●				▲														0.031	0.500	0.187	0.203
		TNMG 433-27	TNMG220412-27			●				▲														0.047	0.500	0.187	0.203

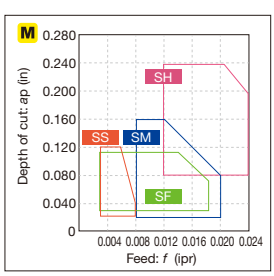
● : Line up
▲ : To be discontinued

Chip control range







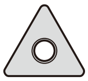


Reference pages: External toolholder → C029 - Internal toolholder → D053 -
J-Series toolholder → G058 -

Insert NEGATIVE TYPE

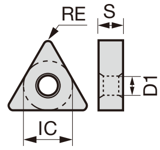
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

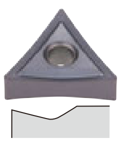
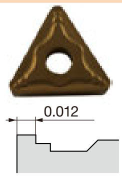
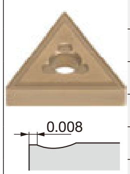
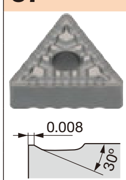
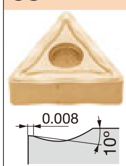
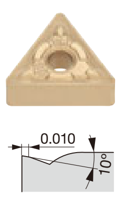
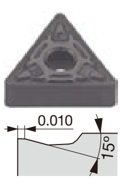
TN



Triangular, 60° with hole

		T9215	T9225	T9235	T9115	T9125	T9135	T6120	T6130	AH630	AH645	AH8005	AH8015	T515	T5105	T5115	T5125	AH110	AH120	AH725	GH330	GT720	NS9530	TH10
P	Steel	●◐	◐✠	✠	●◐	◐✠	✠	◐	✠	◐✠	✠								●◐	◐	●◐	●◐	●◐	●
M	Stainless	●◐						●	◐	◐	✠	●	◐						●◐	◐	●◐			●
K	Cast iron	●◐			●◐									●◐	●	◐	✠		●◐	◐	●◐	●◐	●◐	●
N	Non-ferrous																							●
S	Superalloy											●	◐					●	●◐	●				
H	Hard material																							



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9235	Coated T9115	Coated T9125	Coated T9135	Coated T6120	Coated T6130	Coated AH630	Coated AH645	Coated AH8005	Coated AH8015	Coated T515	Coated T5105	Coated T5115	Coated T5125	Coated AH110	Coated AH120	Coated AH725	Coated GH330	Coated cermet GT720	Cermet NS9530	Uncoated TH10	RE	IC	S	D1
Medium cutting	28	TNMG 331-28	TNMG160404-28											●	●					●	●						0.016	0.375	0.187	0.150
		TNMG 332-28	TNMG160408-28											●	●					●	●						0.031	0.375	0.187	0.150
		TNMG 431-28	TNMG220404-28																	●	●						0.016	0.500	0.187	0.203
		TNMG 432-28	TNMG220408-28																	●	●						0.031	0.500	0.187	0.203
	32	TNMG 666-32	TNMG330924-32								●										●						0.094	0.750	0.375	0.312
																														
	33	TNMG 331-33	TNMG160404-33																							●	0.016	0.375	0.187	0.150
		TNMG 332-33	TNMG160408-33																							●	0.031	0.375	0.187	0.150
		TNMG 334-33	TNMG160416-33		●			▲																			0.063	0.375	0.187	0.150
		TNMG 431-33	TNMG220404-33		●			▲																●			0.016	0.500	0.187	0.203
		TNMG 433-33	TNMG220412-33			●			▲																		0.047	0.500	0.187	0.203
		TNMG 434-33	TNMG220416-33		●			▲																			0.063	0.500	0.187	0.203
	37	TNMG 331-37	TNMG160404-37	●			▲																●		●		0.016	0.375	0.187	0.150
		TNMG 332-37	TNMG160408-37	●			▲																●		●		0.031	0.375	0.187	0.150
	38	TNMG 331-38	TNMG160404-38																				●				0.016	0.375	0.187	0.150
		TNMG 332-38	TNMG160408-38																				●				0.031	0.375	0.187	0.150
	SM	TNMG 231E SM	TNMG110404E-SM							●	●	●															0.016	0.250	0.187	0.089
		TNMG 232E SM	TNMG110408E-SM							●	●	●															0.031	0.250	0.187	0.089
		TNMG 331 SM	TNMG160404-SM							●	●	●	●									●					0.016	0.375	0.187	0.150
		TNMG 332 SM	TNMG160408-SM							●	●	●	●									●					0.031	0.375	0.187	0.150
		TNMG 333 SM	TNMG160412-SM							●	●	●	●														0.047	0.375	0.187	0.150
		TNMG 432 SM	TNMG220408-SM							●	●	●	●														0.031	0.500	0.187	0.203
		TNMG 433 SM	TNMG220412-SM							●	●	●	●														0.047	0.500	0.187	0.203
		TNMG 666 SM	TNMG330924-SM							●	●																0.094	0.750	0.375	0.312
	CM	TNMG 331 CM	TNMG160404-CM													●	●	●	●								0.016	0.375	0.187	0.150
		TNMG 332 CM	TNMG160408-CM													●	●	●	●								0.031	0.375	0.187	0.150
		TNMG 333 CM	TNMG160412-CM													●	●	●	●								0.047	0.375	0.187	0.150
		TNMG 432 CM	TNMG220408-CM														●	●	●								0.031	0.500	0.187	0.203
		TNMG 433 CM	TNMG220412-CM														●	●	●								0.047	0.500	0.187	0.203

Dimension (inch)

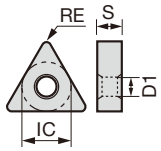
● : Line up
▲ : To be discontinued

● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° with hole

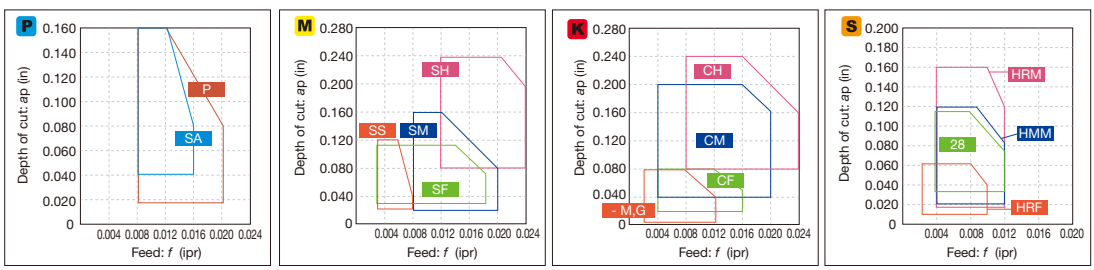
P	Steel	ⓒ	✣	ⓒ✣	✣	●ⓒ				●	●ⓒ	●ⓒ		●ⓒ			●		
M	Stainless	●	ⓒ	ⓒ	✣	●ⓒ	●	ⓒ		●	●ⓒ	●ⓒ					●		
K	Cast iron					●ⓒ				●	●ⓒ			●ⓒ			●	ⓒ✣	
N	Non-ferrous																●	ⓒ✣	
S	Superalloy					●ⓒ	●	ⓒ	ⓒ	●								ⓒ✣	
H	Hard material																		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T6120	T6130	AH630	AH645	AH120	AH8005	AH8015	AH905	GH110	GH330	SH725	Cermet NS9530		Uncoated TH10	KS20	Dimension (inch) RE	IC	S	D1
Medium cutting	P	TNGG 330.5 R-P	TNGG160402R-P									●	●		●		●		0.008	0.375	0.187	0.150
		TNGG 330.5 L-P	TNGG160402L-P									●	●		●		●		0.008	0.375	0.187	0.150
		TNGG 331 R-P	TNGG160404R-P									●	●		●		●		0.016	0.375	0.187	0.150
		TNGG 331 L-P	TNGG160404L-P									●	●		●		●		0.016	0.375	0.187	0.150
		TNGG 332 R-P	TNGG160408R-P									●	●		●		●		0.031	0.375	0.187	0.150
		TNGG 332 L-P	TNGG160408L-P									●	●		●		●		0.031	0.375	0.187	0.150
Medium cutting (sharp edge)	P	TNGG 330.5 FR-P	TNGG160402FR-P											●					0.008	0.375	0.187	0.150
		TNGG 330.5 FL-P	TNGG160402FL-P											●					0.008	0.375	0.187	0.150
		TNGG 331 FR-P	TNGG160404FR-P											●					0.016	0.375	0.187	0.150
		TNGG 331 FL-P	TNGG160404FL-P											●					0.016	0.375	0.187	0.150
		TNGG 332 FR-P	TNGG160408FR-P											●					0.031	0.375	0.187	0.150
		TNGG 332 FL-P	TNGG160408FL-P											●					0.031	0.375	0.187	0.150
Finishing to medium cutting	HRM	TNMG 331 HRM	TNMG160404-HRM						●	●									0.016	0.375	0.187	0.150
		TNMG 332 HRM	TNMG160408-HRM						●	●									0.031	0.375	0.187	0.150
		TNMG 333 HRM	TNMG160412-HRM						●	●									0.047	0.375	0.187	0.150
Medium cutting	HMM	TNMG 331 HMM	TNMG160404-HMM								●								0.016	0.375	0.187	0.150
		TNMG 332 HMM	TNMG160408-HMM								●								0.031	0.375	0.187	0.150
		TNMG 333 HMM	TNMG160412-HMM								●								0.047	0.375	0.187	0.150
	SA	TNMG 331 SA	TNMG160404-SA	●	●	●	●	●											0.016	0.375	0.187	0.150
		TNMG 332 SA	TNMG160408-SA	●	●	●	●	●										●	0.031	0.375	0.187	0.150
		TNMG 333 SA	TNMG160412-SA	●	●	●	●	●										●	0.047	0.375	0.187	0.150
		TNMG 432 SA	TNMG220408-SA	●	●	●	●	●					●					●	0.031	0.500	0.187	0.203
		TNMG 433 SA	TNMG220412-SA	●	●	●	●												0.047	0.500	0.187	0.203

● : Line up

Chip control range



*-M,G: Without chipbreaker

Reference pages: External toolholder → C029 - Internal toolholder → D053 -
J-Series toolholder → G058 -

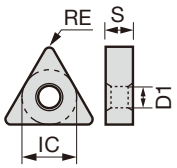
Insert NEGATIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° with hole

P	Steel	●ɔ	ɔ✣	✣	●ɔ	ɔ✣	✣	✣	ɔ✣	✣					●ɔ	ɔ	●ɔ	●ɔ			
M	Stainless	●ɔ						ɔ	ɔ	✣					●ɔ	ɔ	●ɔ				
K	Cast iron	●ɔ			●ɔ						●ɔ	●	ɔ	✣	●ɔ	ɔ	●ɔ	●ɔ			
N	Non-ferrous																				
S	Superalloy														●ɔ	●					
H	Hard material																				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9235	T9115	T9125	T9135	T6130	AH630	AH645	T515	T5105	T5115	T5125	AH120	AH725	GH330	Cer-met NS9530	Dimension (inch) RE	IC	S	D1
Medium cutting	S	TNMG 331 R-S	TNMG160404R-S	●	●	●	▲	▲	▲	●	●	●						●	●	●	0.016	0.375	0.187	0.150
		TNMG 331 L-S	TNMG160404L-S		●	●		▲	▲	●	●	●							●	●	0.016	0.375	0.187	0.150
		TNMG 332 R-S	TNMG160408R-S		●	●		▲	▲	●	●	●						●	●	●	0.031	0.375	0.187	0.150
		TNMG 332 L-S	TNMG160408L-S		●	●		▲	▲	●	●	●							●	●	0.031	0.375	0.187	0.150
		TNMG 431 R-S	TNMG220404R-S		●	●		▲	▲	●	●	●							●	●	0.016	0.500	0.187	0.203
		TNMG 431 L-S	TNMG220404L-S		●	●		▲	▲	●	●	●							●	●	0.016	0.500	0.187	0.203
		TNMG 432 R-S	TNMG220408R-S		●	●		▲	▲	●	●	●							●	●	0.031	0.500	0.187	0.203
		TNMG 432 L-S	TNMG220408L-S		●	●		▲	▲	●	●	●							●	●	0.031	0.500	0.187	0.203
	TH	TNMG 432 TH	TNMG220408-TH	●	●	●	▲	▲	▲								●				0.031	0.500	0.187	0.203
		TNMG 433 TH	TNMG220412-TH	●	●	●	▲	▲	▲								●				0.047	0.500	0.187	0.203
Medium to heavy cutting	THS	TNMG 432 THS	TNMG220408-THS	●	●	●	▲	▲	▲												0.031	0.500	0.187	0.203
		TNMG 433 THS	TNMG220412-THS	●	●	●	▲	▲	▲												0.047	0.500	0.187	0.203
	CH	TNMG 331 CH	TNMG160404-CH										●	●	●	●					0.016	0.375	0.187	0.150
		TNMG 332 CH	TNMG160408-CH										●	●	●	●					0.031	0.375	0.187	0.150
		TNMG 333 CH	TNMG160412-CH										●	●	●	●					0.047	0.375	0.187	0.150
		TNMG 432 CH	TNMG220408-CH											●	●	●					0.031	0.500	0.187	0.203
		TNMG 433 CH	TNMG220412-CH											●	●	●					0.047	0.500	0.187	0.203
		TNMG 434 CH	TNMG220416-CH											●	●	●					0.063	0.500	0.187	0.203
Medium to heavy cutting (single side)	57	TNMM 332-57	TNMM160408-57		●					▲											0.031	0.375	0.187	0.150
		TNMM 432-57	TNMM220408-57		●					▲											0.031	0.500	0.187	0.203
		TNMM 433-57	TNMM220412-57		●					▲											0.047	0.500	0.187	0.203

● : Line up
▲ : To be discontinued

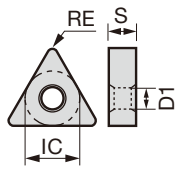
Reference pages: External toolholder → C029 - Internal toolholder → D053 -
J-Series toolholder → G058 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° with hole

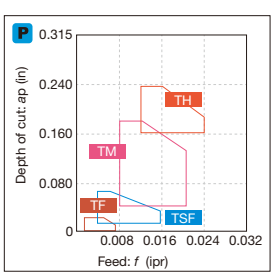
P	Steel					●		◐		●			●	●				
M	Stainless					●							●	●				
K	Cast iron	◐	●	◐	✣	●		◐		●			●	●		◐	●	
N	Non-ferrous												●	●				
S	Superalloy					●												
H	Hard material																●	

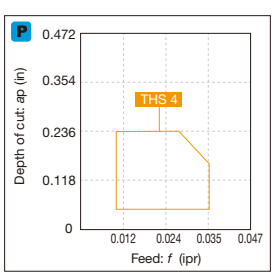


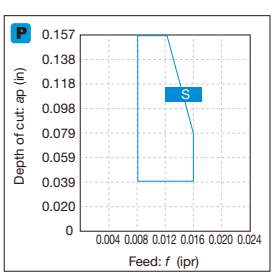
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T515	Coated T5105	Coated T5115	Coated T5125	Coated GH110	Coated cermet GT720	Cermet NS520	Uncoated TH03	Uncoated TH10	Ceramic FX105	Ceramic LX21	Ceramic LX11	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	-	TNMA 231E	TNMA110404E	●												0.016	0.250	0.187	0.089
		TNMA 232E	TNMA110408E	●												0.031	0.250	0.187	0.089
		TNMA 233E	TNMA110412E	●												0.047	0.250	0.187	0.089
		TNMA 331	TNMA160404	●	●	●	●					●				0.016	0.375	0.187	0.150
		TNMA 332	TNMA160408	●	●	●	●		●	●		●	●			0.031	0.375	0.187	0.150
		TNMA 333	TNMA160412	●	●	●	●						●			0.047	0.375	0.187	0.150
		TNMA 334	TNMA160416		●	●	●									0.063	0.375	0.187	0.150
		TNMA 335	TNMA160420		●	●	●									0.079	0.375	0.187	0.150
		TNMA 431	TNMA220404		●	●	●									0.016	0.500	0.187	0.203
		TNMA 432	TNMA220408		●	●	●									0.031	0.500	0.187	0.203
		TNMA 433	TNMA220412		●	●	●									0.047	0.500	0.187	0.203
		TNMA 434	TNMA220416		●	●	●									0.063	0.500	0.187	0.203
	-	TNGA 221	TNGA110304									●				0.016	0.250	0.125	0.089
		TNGA 222	TNGA110308									●				0.031	0.250	0.125	0.089
		TNGA 321	TNGA160304									●				0.016	0.375	0.125	0.150
		TNGA 322	TNGA160308									●				0.031	0.375	0.125	0.150
		TNGA 330.5	TNGA160402												●	0.008	0.375	0.187	0.150
		TNGA 331	TNGA160404					●		●	●	●		●	●	0.016	0.375	0.187	0.150
		TNGA 332	TNGA160408					●		●	●	●	●	●	●	0.031	0.375	0.187	0.150
		TNGA 333	TNGA160412							●		●	●	●	●	0.047	0.375	0.187	0.150
		TNGA 334	TNGA160416									●	●		●	0.063	0.375	0.187	0.150
		TNGA 432	TNGA220408									●				0.031	0.500	0.187	0.203

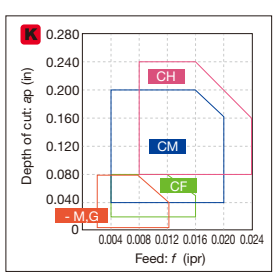
● : Line up

Chip control range









*-M,G: Without chipbreaker

Reference pages: External toolholder → C029 - Internal toolholder → D053 -
J-Series toolholder → G058 -

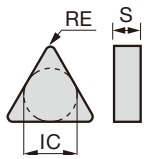
Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TN

Triangular, 60° without hole

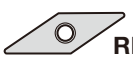
		Uncoated	Ceramic			
		TH10	FX105	LX21	LX11	TZ120
P	Steel	●				
M	Stainless	●				
K	Cast iron	●	◐	●		●
N	Non-ferrous	●				
S	Superalloy					
H	Hard material				●	



Application	Chipbreaker	Designation Inch	Designation Metric	TH10	FX105	LX21	LX11	TZ120	RE	IC	S	D1
Finishing to medium cutting	-	TNGN 222	TNGN110308	●					0.031	0.250	0.125	-
		TNGN 331	TNGN160404			●	●		0.016	0.375	0.187	-
		TNGN 332	TNGN160408	●		●	●		0.031	0.375	0.187	-
		TNGN 333	TNGN160412	●	●	●	●	●	0.047	0.375	0.187	-
		TNGN 334	TNGN160416		●		●		0.063	0.375	0.187	-
		TNGN 335	TNGN160420		●				0.079	0.375	0.187	-
		TNGN 352	TNGN160708				●		0.031	0.375	0.313	-
		TNGN 353	TNGN160712				●		0.047	0.375	0.313	-

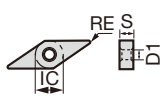
● : Line up

VN



Rhombic, 35° with hole

		Coated	Coated cermet	Cermet		Uncoated
		GH110	GT720	NS9530	NS520	TH10
P	Steel	●	◐	◐	◐	●
M	Stainless	●				●
K	Cast iron	●	◐	◐	◐	●
N	Non-ferrous					●
S	Superalloy	●				
H	Hard material					



Application	Chipbreaker	Designation Inch	Designation Metric	GH110	GT720	NS9530	NS520	TH10	RE	IC	S	D1
Precision finishing	TF	VNMG 331 TF	VNMG160404-TF			●			0.016	0.375	0.187	0.150
		VNMG 332 TF	VNMG160408-TF		●	●			0.031	0.375	0.187	0.150
	01	VNGG 330.5-01	VNGG160402-01	●		●	●	●	0.008	0.375	0.187	0.150
		VNGG 331-01	VNGG160404-01			●	●	●	0.016	0.375	0.187	0.150
		VNGG 332-01	VNGG160408-01			●	●		0.031	0.375	0.187	0.150
Finishing to medium cutting	P	VNGG 331 R-P	VNGG160404R-P					●	0.016	0.375	0.187	0.150
		VNGG 332 R-P	VNGG160408R-P					●	0.031	0.375	0.187	0.150

● : Line up

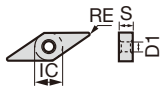
Reference pages: TNGN...: External toolholder → C029 -
VNMG..., VNGG...: External toolholder → C062 -, Internal toolholder → D078 -,
TungCap → K014 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

VN

Rhombic, 35° with hole

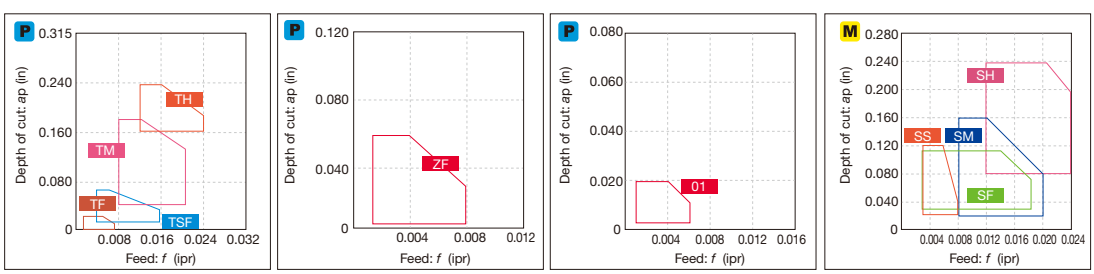
P	Steel	● ●◐ ◐✣ ✣ ● ●◐ ◐✣ ✣ ◐ ✣ ◐✣ ●◐ ●◐ ●◐ ●◐ ●◐ ●
M	Stainless	●◐ ◐ ●◐ ●◐ ●
K	Cast iron	●◐ ●◐ ●◐ ●◐ ●◐ ●◐ ●◐ ●◐ ●◐ ●
N	Non-ferrous	●
S	Superalloy	●◐
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH120	GH330	Coated cermet GT9530	AT9530	Cer-met NS9530	Un-coated TH10	Dimension (inch) RE	IC	S	D1
Finishing	**TSF**	**VNMG 2.330.5E TSF**	**VNMG120402E-TSF**		●	●			▲	▲							●	●	●		0.008	0.281	0.187	0.150
		VNMG 2.331E TSF	VNMG120404E-TSF		●	●			▲	▲							●	●	●		0.016	0.281	0.187	0.150
		VNMG 2.332E TSF	VNMG120408E-TSF		●	●			▲	▲							●	●	●		0.031	0.281	0.187	0.150
		VNMG 330.5 TSF	**VNMG160402-TSF**												●		●	●	●		0.008	0.375	0.187	0.150
		VNMG 331 TSF	VNMG160404-TSF	●	●	●	●	▲	▲	▲	▲				●		●	●	●		0.016	0.375	0.187	0.150
		VNMG 332 TSF	VNMG160408-TSF	●	●	●	●	▲	▲	▲	▲				●		●	●	●		0.031	0.375	0.187	0.150
		VNMG 333 TSF	VNMG160412-TSF	●	●	●	●	▲	▲	▲	▲				●						0.047	0.375	0.187	0.150
	ZF	**VNMG 331 ZF**	**VNMG160404-ZF**		●	●	●		▲	▲	▲						●	●	●		0.016	0.375	0.187	0.150
		VNMG 332 ZF	VNMG160408-ZF		●	●	●		▲	▲	▲						●	●	●		0.031	0.375	0.187	0.150
		VNMG 333 ZF	VNMG160412-ZF		●	●	●		▲	▲	▲										0.047	0.375	0.187	0.150
	11	**VNMG 331-11**	**VNMG160404-11**													●			●	●	0.016	0.375	0.187	0.150
		VNMG 332-11	VNMG160408-11																●		0.031	0.375	0.187	0.150
		VNMG 333-11	VNMG160412-11														●		●		0.047	0.375	0.187	0.150
	SF	**VNMG 331 SF**	**VNMG160404-SF**									●	●	●							0.016	0.375	0.187	0.150
		VNMG 332 SF	VNMG160408-SF									●	●	●							0.031	0.375	0.187	0.150

●: Line up
▲: To be discontinued

Chip control range



Reference pages: External toolholder → C057 - Internal toolholder → D078 -
TungCap → C064 -, K015 -

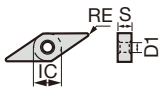
Insert NEGATIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

VN

Rhombic, 35° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH645	T5105	T5115	AH110	AH120	AH8005	AH8015	GH330	GT9530	AT9530	NS9530	NS520
P	Steel	●	●ɔ	ɔ	✣	✣	●	●ɔ	ɔ	✣	●	ɔ	✣	ɔ	✣	✣	✣				●	●ɔ				●ɔ	ɔ	ɔ	ɔ	ɔ	ɔ
M	Stainless		●ɔ							●	ɔ	ɔ	✣			●	●ɔ	●	ɔ	●ɔ										
K	Cast iron	●ɔ	●ɔ			●ɔ	●ɔ							●	ɔ	●	●ɔ			●ɔ	●ɔ	ɔ	ɔ	ɔ	ɔ	ɔ	ɔ	ɔ	ɔ	ɔ
N	Non-ferrous																													
S	Superalloy															●	●ɔ	●	ɔ											
H	Hard material																													



Application	Chipbreaker	Designation Inch	Designation Metric	Coated																	Coated cermet		Cer-met		Dimension (inch)			
				T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH645	T5105	T5115	AH110	AH120	AH8005	AH8015	GH330	GT9530	AT9530	NS9530	NS520	RE	IC	S	D1
Finishing	CF	VNMG 331 CF	VNMG160404-CF													●	●									0.016	0.375	0.187	0.150
		VNMG 332 CF	VNMG160408-CF													●	●									0.031	0.375	0.187	0.150
	HRF	VNMG 331 HRF	VNMG160404-HRF																	●	●					0.016	0.375	0.187	0.150
		VNMG 332 HRF	VNMG160408-HRF																	●	●					0.031	0.375	0.187	0.150
	TS	VNMG 331 TS	VNMG160404-TS		●	●	●		▲	▲	▲												●	●	●	●	0.016	0.375	0.187	0.150
		VNMG 332 TS	VNMG160408-TS		●	●	●		▲	▲	▲												●	●	●	●	0.031	0.375	0.187	0.150
		VNMG 333 TS	VNMG160412-TS		●	●	●		▲	▲	▲																0.047	0.375	0.187	0.150
	SS	VNMG 2.331E SS	VNMG120404E-SS									●	●	●	●												0.016	0.281	0.187	0.150
		VNMG 2.332E SS	VNMG120408E-SS									●	●	●	●												0.031	0.281	0.187	0.150
		VNMG 331 SS	VNMG160404-SS									●	●	●	●				●			●					0.016	0.375	0.187	0.150
		VNMG 332 SS	VNMG160408-SS									●	●	●	●				●			●					0.031	0.375	0.187	0.150
		VNMG 333 SS	VNMG160412-SS									●	●	●	●				●			●					0.047	0.375	0.187	0.150
Medium cutting	TM	VNMG 2.331E TM	VNMG120404E-TM		●	●			▲	▲																	0.016	0.281	0.187	0.150
		VNMG 2.332E TM	VNMG120408E-TM		●	●			▲	▲																	0.031	0.281	0.187	0.150
		VNMG 331 TM	VNMG160404-TM	●	●	●	●	▲	▲	▲	▲	●						●	●								0.016	0.375	0.187	0.150
		VNMG 332 TM	VNMG160408-TM	●	●	●	●	▲	▲	▲	▲	●						●	●								0.031	0.375	0.187	0.150
		VNMG 333 TM	VNMG160412-TM	●	●	●	●	▲	▲	▲	▲							●									0.047	0.375	0.187	0.150
Finishing to medium cutting	TQ	VNMG 331 TQ	VNMG160404-TQ		●	●																	●	●	●		0.016	0.375	0.187	0.150
		VNMG 332 TQ	VNMG160408-TQ		●	●																	●	●	●		0.031	0.375	0.187	0.150
Finishing to medium cutting	ZM	VNMG 332 ZM	VNMG160408-ZM		●	●	●		▲	▲	▲																0.031	0.375	0.187	0.150
		VNMG 333 ZM	VNMG160412-ZM		●	●	●		▲	▲	▲																0.047	0.375	0.187	0.150

● : Line up
▲ : To be discontinued

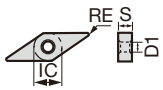
Reference pages: External toolholder → C057 - Internal toolholder → D078 -
TungCap → C064 -, K015 -

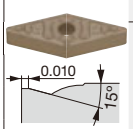
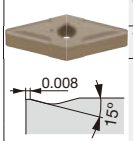
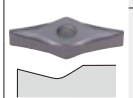
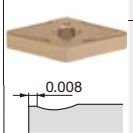
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

VN

Rhombic, 35° with hole

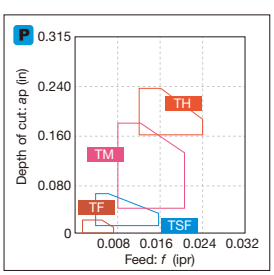
P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣					●	●◐			●◐	●
M	Stainless		●◐											●	●◐	●	◐		●
K	Cast iron	●◐	●◐			●◐	●◐			●◐	●	◐	✣	●	●◐			●◐	●
N	Non-ferrous																		●
S	Superalloy													●	●◐	●	◐		
H	Hard material																		

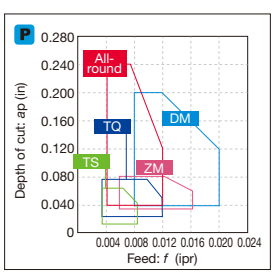


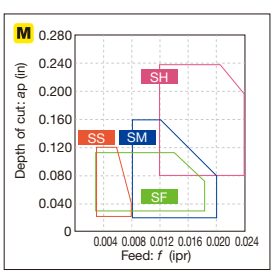
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T515	T5105	T5115	T5125	AH110	AH120	AH8005	AH8015	Cer-met NS9530	Un-coated TH10	Dimension (inch) RE	IC	S	D1
Medium cutting	**DM**	**VNMG 332 DM**	**VNMG160408-DM**	●	●	●	●	▲	▲	▲	▲											0.031	0.375	0.187	0.150
		VNMG 333 DM	**VNMG160412-DM**		●	●	●		▲	▲	▲											0.047	0.375	0.187	0.150
																									
	All-round	**VNMG 331**	**VNMG160404**	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●			●	●	0.016	0.375	0.187	0.150
		VNMG 332	**VNMG160408**	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●			●	●	0.031	0.375	0.187	0.150
		VNMG 333	**VNMG160412**		●	●			▲	▲		●	●	●	●					●		0.047	0.375	0.187	0.150
																									
	28	**VNMG 331-28**	**VNMG160404-28**														●	●	●			0.016	0.375	0.187	0.150
		VNMG 332-28	**VNMG160408-28**														●	●	●			0.031	0.375	0.187	0.150
																									
	33	**VNMG 331-33**	**VNMG160404-33**			●				▲						●					●	0.016	0.375	0.187	0.150
		VNMG 332-33	**VNMG160408-33**		●	●			▲	▲											●	0.031	0.375	0.187	0.150
																									

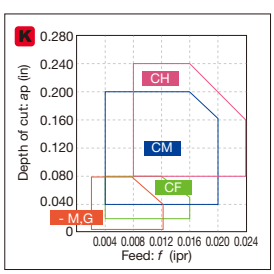
●: Line up
▲: To be discontinued

Chip control range

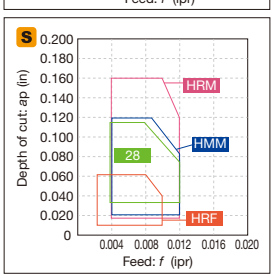








*-M,G: Without chipbreaker



Reference pages: External toolholder → C062 - Internal toolholder → D078 -
TungCap → C064 -, K015 -

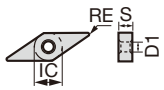
Insert NEGATIVE TYPE

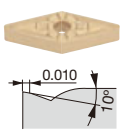
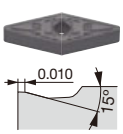
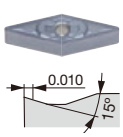
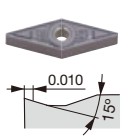
● : Continuous cutting
ɔ : Light interrupted cutting
✠ : Heavy interrupted cutting

VN

Rhombic, 35° with hole

		T6120	T6130	AH630	AH645	T515	T5105	T5115	T5125	AH8005	AH8015	AH905	NS520	TH10	LX11
P	Steel	ɔ	✠	ɔ✠	✠								●ɔ		●
M	Stainless	●	ɔ	ɔ	✠					●	ɔ				●
K	Cast iron					●ɔ	●	ɔ	✠				●ɔ		●
N	Non-ferrous														●
S	Superalloy									●	ɔ	ɔ			
H	Hard material														●



Application	Chipbreaker	Designation Inch	Designation Metric	Coated											Cer-met	Un-coated	Ceramic	Dimension (inch)			
				T6120	T6130	AH630	AH645	T515	T5105	T5115	T5125	AH8005	AH8015	AH905	NS520	TH10	LX11	RE	IC	S	D1
Medium cutting	SM	VNMG 2.331E SM	VNMG120404E-SM	●	●	●	●											0.016	0.281	0.187	0.150
		VNMG 2.332E SM	VNMG120408E-SM	●	●	●	●											0.031	0.281	0.187	0.150
		VNMG 331 SM	VNMG160404-SM	●	●	●	●											0.016	0.375	0.187	0.150
		VNMG 332 SM	VNMG160408-SM	●	●	●	●											0.031	0.375	0.187	0.150
		VNMG 333 SM	VNMG160412-SM	●	●	●	●											0.047	0.375	0.187	0.150
	CM	VNMG 332 CM	VNMG160408-CM					●	●	●	●							0.031	0.375	0.187	0.150
		VNMG 333 CM	VNMG160412-CM						●	●	●							0.047	0.375	0.187	0.150
Finishing to medium cutting	HRM	VNMG 331 HRM	VNMG160404-HRM									●	●					0.016	0.375	0.187	0.150
		VNMG 332 HRM	VNMG160408-HRM									●	●					0.031	0.375	0.187	0.150
		VNMG 333 HRM	VNMG160412-HRM									●	●					0.047	0.375	0.187	0.150
Medium cutting	HMM	VNMG 331 HMM	VNMG160404-HMM											●				0.016	0.375	0.187	0.150
		VNMG 332 HMM	VNMG160408-HMM											●				0.031	0.375	0.187	0.150
		VNMG 333 HMM	VNMG160412-HMM											●				0.047	0.375	0.187	0.150
Finishing to medium cutting	-	VNMA 2.331E	VNMA120404E					●										0.016	0.281	0.187	0.150
		VNMA 2.332E	VNMA120408E					●										0.031	0.281	0.187	0.150
		VNMA 330.5	VNMA160402													●		0.008	0.375	0.187	0.150
		VNMA 331	VNMA160404						●	●	●				●	●		0.016	0.375	0.187	0.150
		VNMA 332	VNMA160408						●	●	●				●	●		0.031	0.375	0.187	0.150
		VNGA 331	VNGA160404														●	0.016	0.375	0.187	0.150
		VNGA 332	VNGA160408														●	0.031	0.375	0.187	0.150

* Please see L034-L038 about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact a Tungaloy sales representative with questions.

● : Line up

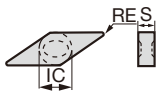
Reference pages: External toolholder → C057 - Internal toolholder → D078 -
TungCap → C064 -, K015 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

VN

Rhombic, 35° without hole

P	Steel	
M	Stainless	
K	Cast iron	●◐
N	Non-ferrous	
S	Superalloy	
H	Hard material	

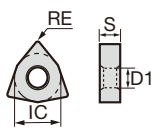


Application	Chipbreaker	Designation Inch	Designation Metric	Ceramic FX105	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	-	VNGD 353	VNGD160712	●	0.047	0.375	0.313	-

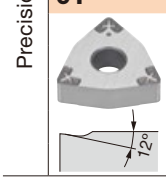
WN

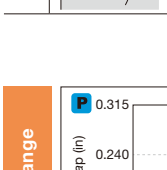
Trigon, 80° with hole

P	Steel	●◐ ●◐●
M	Stainless	
K	Cast iron	●◐ ●◐●
N	Non-ferrous	
S	Superalloy	
H	Hard material	



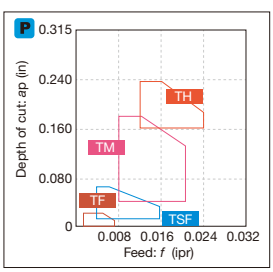
Application	Chipbreaker	Designation Inch	Designation Metric	Coated cermet GT720	Cermet NS9530	Cermet NS520	Dimension (inch) RE	IC	S	D1
Precision finishing	TF	WNMG 431 TF	WNMG080404-TF		●		0.016	0.500	0.187	0.203
		WNMG 432 TF	WNMG080408-TF		●		0.031	0.500	0.187	0.203
	01	WNGG 430.5-01	WNGG080402-01		●	●	0.008	0.500	0.187	0.203
		WNGG 431-01	WNGG080404-01	●	●	●	0.016	0.500	0.187	0.203
		WNGG 432-01	WNGG080408-01	●	●		0.031	0.500	0.187	0.203

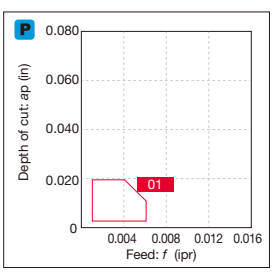


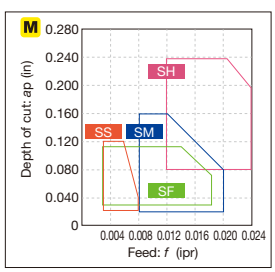


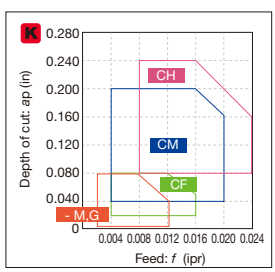
● : Line up

Chip control range

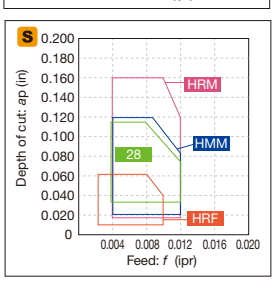








*-M,G: Without chipbreaker



Reference pages: VNGD...: External toolholder → C074
WNMG..., WNGG...:
External toolholder → C037 -, Internal toolholder → D035 -,
TungCap → C038 -, K011 -

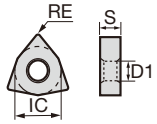
Insert NEGATIVE TYPE

● : Continuous cutting
ȼ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN

Trigon, 80° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T5115	T515	AH120	AH8015	GT9530	AT9530	NS9530
P	Steel	●	●ȼ	●ȼ✣	✣	●	●ȼ	●ȼ✣	✣			●ȼ		●ȼ	●ȼ	●ȼ
M	Stainless		●ȼ									●ȼ	ȼ			
K	Cast iron	●ȼ	●ȼ			●ȼ	●ȼ			●	●ȼ	●ȼ		●ȼ	●ȼ	●ȼ
N	Non-ferrous															
S	Superalloy											●ȼ	ȼ			
H	Hard material															



Application	Chipbreaker	Designation Inch	Designation Metric	T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T5115	T515	AH120	AH8015	GT9530	AT9530	NS9530	RE	IC	S	D1
Finishing	TSF	WNMG 330.5E TSF	WNMG060402E-TSF											●	●				0.008	0.375	0.187	0.150
		WNMG 331E TSF	WNMG060404E-TSF		●	●			▲	▲				●	●	●	●	●	0.016	0.375	0.187	0.150
		WNMG 332E TSF	WNMG060408E-TSF		●	●			▲	▲				●	●	●	●	●	0.031	0.375	0.187	0.150
		WNMG 333E TSF	WNMG060412E-TSF		●	●			▲	▲				●	●	●		●	0.047	0.375	0.187	0.150
		WNMG 331 TSF	WNMG060404-TSF		●	●			▲	▲									0.016	0.375	0.187	0.150
		WNMG 332 TSF	WNMG060408-TSF		●	●			▲	▲									0.031	0.375	0.187	0.150
		WNMG 431 TSF	WNMG080404-TSF		●	●	●		▲	▲	▲		●	●	●	●	●	●	0.016	0.500	0.187	0.203
		WNMG 432 TSF	WNMG080408-TSF		●	●	●		▲	▲	▲		●	●	●	●	●	●	0.031	0.500	0.187	0.203
		WNMG 433 TSF	WNMG080412-TSF	●	●	●	●	▲	▲	▲	▲		●	●	●				0.047	0.500	0.187	0.203
Finishing (wiper)	FW	WNMG 331E FW	WNMG060404E-FW	●	●	●		▲	▲	▲						●		●	0.016	0.375	0.187	0.150
		WNMG 332E FW	WNMG060408E-FW	●	●	●		▲	▲	▲						●		●	0.031	0.375	0.187	0.150
		WNMG 431 FW	WNMG080404-FW		●	●			▲	▲						●		●	0.016	0.500	0.187	0.203
		WNMG 432 FW	WNMG080408-FW	●	●	●		▲	▲	▲						●		●	0.031	0.500	0.187	0.203
		*Wiper																				
	AFW	WNMG 331 AFW	WNMG060404-AFW		●	●			▲	▲								●	0.016	0.375	0.187	0.150
		WNMG 332 AFW	WNMG060408-AFW	●	●	●	●	▲	▲	▲	▲							●	0.031	0.375	0.187	0.150
		WNMG 431 AFW	WNMG080404-AFW		●	●			▲	▲								●	0.016	0.500	0.187	0.203
		WNMG 432 AFW	WNMG080408-AFW	●	●	●	●	▲	▲	▲	▲	●						●	0.031	0.500	0.187	0.203
Finishing	ZF	WNMG 331E ZF	WNMG060404E-ZF		●	●			▲	▲									0.016	0.375	0.187	0.150
		WNMG 331 ZF	WNMG060404-ZF		●	●			▲	▲									0.016	0.375	0.187	0.150
		WNMG 332 ZF	WNMG060408-ZF		●	●			▲	▲									0.031	0.375	0.187	0.150
		WNMG 431 ZF	WNMG080404-ZF		●	●	●		▲	▲	▲					●	●	●	0.016	0.500	0.187	0.203
		WNMG 432 ZF	WNMG080408-ZF		●	●	●		▲	▲	▲					●	●	●	0.031	0.500	0.187	0.203
		WNMG 433 ZF	WNMG080412-ZF		●				▲										0.047	0.500	0.187	0.203
	11	WNMG 431-11	WNMG080404-11															●	0.016	0.500	0.187	0.203
		WNMG 432-11	WNMG080408-11															●	0.031	0.500	0.187	0.203
Finishing (for mild steel)	17	WNMG 431-17	WNMG080404-17															●	0.016	0.500	0.187	0.203
		WNMG 432-17	WNMG080408-17															●	0.031	0.500	0.187	0.203

* Please see **L034-L038** about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact a Tungaloy sales representative with questions.

● : Line up
▲ : To be discontinued

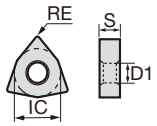
Reference pages: External toolholder → C031 - Internal toolholder → D035 -
TungCap → C038 -, K011 -

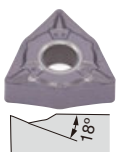
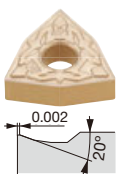
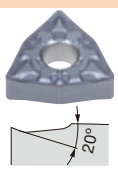
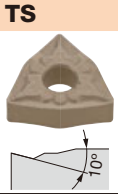
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN

Trigon, 80° with hole

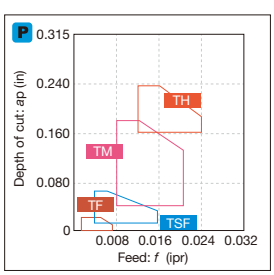
P	Steel	●	●◐	◐✣	✣	●◐	◐✣	✣	◐	✣	◐✣					●◐	●◐	●◐	●◐	
M	Stainless		●◐						●	◐	◐			●	◐					
K	Cast iron	●◐	●◐			●◐						●	◐			●◐	●◐	●◐	●◐	
N	Non-ferrous																			
S	Superalloy													●	◐					
H	Hard material																			

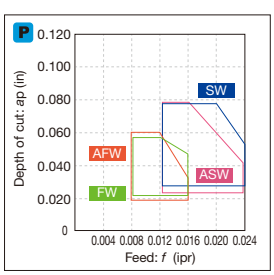


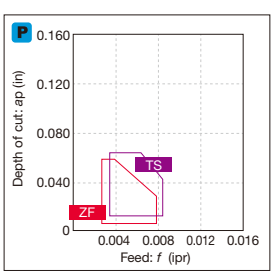
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9115	T9125	T9135	T6120	T6130	AH630	T5105	T5115	AH8005	AH8015	Coated cermet GT9530	AT9530	Cermet NS9530	NS520	Dimension (inch) RE	IC	S	D1
Finishing	**SF**	**WNMG 331 SF**	**WNMG060404-SF**								●	●	●									0.016	0.375	0.187	0.150
		WNMG 332 SF	WNMG060408-SF								●	●	●									0.031	0.375	0.187	0.150
		WNMG 431 SF	**WNMG080404-SF**								●	●	●									0.016	0.500	0.187	0.203
		WNMG 432 SF	WNMG080408-SF								●	●	●									0.031	0.500	0.187	0.203
	CF	**WNMG 431 CF**	**WNMG080404-CF**											●	●							0.016	0.500	0.187	0.203
		WNMG 432 CF	WNMG080408-CF											●	●							0.031	0.500	0.187	0.203
		WNMG 433 CF	WNMG080412-CF											●	●							0.047	0.500	0.187	0.203
	HRF	**WNMG 431 HRF**	**WNMG080404-HRF**													●	●					0.016	0.500	0.187	0.203
		WNMG 432 HRF	WNMG080408-HRF													●	●					0.031	0.500	0.187	0.203
	TS	**WNMG 431 TS**	**WNMG080404-TS**		●	●	●	▲	▲	▲								●	●	●	●	0.016	0.500	0.187	0.203
		WNMG 432 TS	WNMG080408-TS		●	●	●	▲	▲	▲								●	●	●	●	0.031	0.500	0.187	0.203
		WNMG 433 TS	WNMG080412-TS		●	●	●	▲	▲	▲												0.047	0.500	0.187	0.203

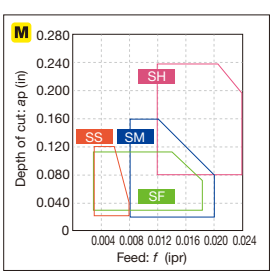
●: Line up
▲: To be discontinued

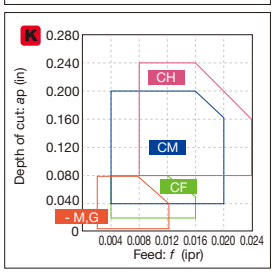
Chip control range

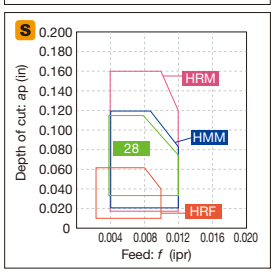












*-M,G: Without chipbreaker

Reference pages: External toolholder → C031 - Internal toolholder → D035 -
TungCap → C038 -, K011 -

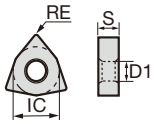
Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN

Trigon, 80° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH645	T515	T5115	GH330	NS9530
P	Steel	●	●◐	◐✣	✣	●	●◐	◐✣	✣	◐	✣	◐✣	✣			●◐	●◐
M	Stainless		●◐							●	◐	◐	✣			●◐	
K	Cast iron	●◐	●◐			●◐	●◐							●◐	◐	●◐	●◐
N	Non-ferrous																
S	Superalloy																
H	Hard material																



Application	Chipbreaker	Designation Inch	Designation Metric	Coated														Cer-met	Dimension (inch)			
				T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH645	T515	T5115	GH330	NS9530	RE	IC	S	D1
Finishing to medium cutting (wiper)	**SW**	**WNMG 332E SW**	**WNMG060408E-SW**	●	●	●		▲	▲	▲							●			0.031	0.375	0.187	0.150
		WNMG 333E SW	WNMG060412E-SW	●	●	●		▲	▲	▲							●			0.047	0.375	0.187	0.150
		WNMG 432 SW	**WNMG080408-SW**	●	●	●		▲	▲	▲						●	●			0.031	0.500	0.187	0.203
		WNMG 433 SW	WNMG080412-SW		●	●			▲	▲						●	●			0.047	0.500	0.187	0.203
		*Wiper																					
	ASW	**WNMG 332 ASW**	**WNMG060408-ASW**	●	●	●		▲	▲	▲										0.031	0.375	0.187	0.150
		WNMG 333 ASW	WNMG060412-ASW	●	●	●	●	▲	▲	▲	▲									0.047	0.375	0.187	0.150
		WNMG 432 ASW	**WNMG080408-ASW**	●	●	●	●	▲	▲	▲	▲									0.031	0.500	0.187	0.203
		WNMG 433 ASW	WNMG080412-ASW	●	●	●	●	▲	▲	▲	▲									0.047	0.500	0.187	0.203
High feed, small depth of cut	**AS**	**WNMG 431 AS**	**WNMG080404-AS**	●				▲											●	0.016	0.500	0.187	0.203
		WNMG 432 AS	WNMG080408-AS	●	●	●	●	▲	▲	▲	▲								●	0.031	0.500	0.187	0.203
		WNMG 433 AS	WNMG080412-AS	●	●	●	●	▲	▲	▲	▲									0.047	0.500	0.187	0.203
Boring (double side)	**CB**	**WNMG 331 CB**	**WNMG060404-CB**			●				▲									●	0.016	0.375	0.187	0.150
		WNMG 332 CB	WNMG060408-CB			●				▲									●	0.031	0.375	0.187	0.150
Finishing	**NS**	**WNMG 431 NS**	**WNMG080404-NS**		●	●			▲	▲									●	0.016	0.500	0.187	0.203
		WNMG 432 NS	WNMG080408-NS		●	●			▲	▲									●	0.031	0.500	0.187	0.203
	SS	**WNMG 331E SS**	**WNMG060404E-SS**											●	●					0.016	0.375	0.187	0.150
		WNMG 332E SS	WNMG060408E-SS											●	●					0.031	0.375	0.187	0.150
		WNMG 333E SS	WNMG060412E-SS											●	●					0.047	0.375	0.187	0.150
		WNMG 431 SS	**WNMG080404-SS**									●	●	●	●			●		0.016	0.500	0.187	0.203
		WNMG 432 SS	WNMG080408-SS									●	●	●	●			●		0.031	0.500	0.187	0.203
		WNMG 433 SS	WNMG080412-SS									●	●	●	●					0.047	0.500	0.187	0.203

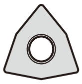
* Please see **L034-L038** about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact a Tungaloy sales representative with questions.

●: Line up
▲: To be discontinued

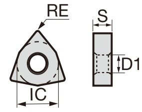
Reference pages: External toolholder → C031 - Internal toolholder → D035 -
TungCap → C038 -, K011 -

● : Continuous cutting
◖ : Light interrupted cutting
✠ : Heavy interrupted cutting

WN



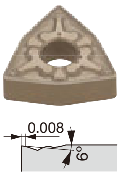
Trigon, 80° with hole



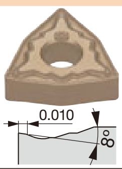
	Material	T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	AH120	AH725	AH8015	T515	GT9530	AT9530	NS9530
P	Steel	●	●◖	◖✠	✠	●	●◖	◖✠	✠	●◖	◖			●◖	●◖	●◖
M	Stainless		●◖							●◖	◖	◖				
K	Cast iron	●◖	●◖			●◖	●◖			●◖	◖		●◖	●◖	●◖	●◖
N	Non-ferrous															
S	Superalloy									●◖	●	◖				
H	Hard material															

Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	AH120	AH725	AH8015	T515	Coated cermet GT9530	AT9530	Cermet NS9530	Dimension (inch) RE	IC	S	D1
Medium cutting	TM	WNMG 331E TM	WNMG060404E-TM		●	●			▲	▲		●		●					0.016	0.375	0.187	0.150
		WNMG 332E TM	WNMG060408E-TM		●	●			▲	▲		●		●					0.031	0.375	0.187	0.150
		WNMG 333E TM	WNMG060412E-TM		●	●			▲	▲		●		●					0.047	0.375	0.187	0.150
		WNMG 331 TM	WNMG060404-TM		●	●	●		▲	▲	▲								0.016	0.375	0.187	0.150
		WNMG 332 TM	WNMG060408-TM	●	●	●	●	▲	▲	▲	▲	●							0.031	0.375	0.187	0.150
		WNMG 431 TM	WNMG080404-TM	●	●	●	●	▲	▲	▲	▲	●	●						0.016	0.500	0.187	0.203
		WNMG 432 TM	WNMG080408-TM	●	●	●	●	▲	▲	▲	▲	●	●	●	●				0.031	0.500	0.187	0.203
		WNMG 433 TM	WNMG080412-TM	●	●	●	●	▲	▲	▲	▲	●		●	●				0.047	0.500	0.187	0.203
		WNMG 434 TM	WNMG080416-TM	●	●	●		▲	▲	▲		●							0.063	0.500	0.187	0.203
Finishing to medium cutting	AM	WNMG 432 AM	WNMG080408-AM		●	●			▲	▲									0.031	0.500	0.187	0.203
		WNMG 433 AM	WNMG080412-AM		●	●			▲	▲									0.047	0.500	0.187	0.203
		WNMG 434 AM	WNMG080416-AM		●	●			▲	▲									0.063	0.500	0.187	0.203
	TQ	WNMG 431 TQ	WNMG080404-TQ		●	●										●	●	●	0.016	0.500	0.187	0.203
		WNMG 432 TQ	WNMG080408-TQ		●	●										●	●	●	0.031	0.500	0.187	0.203
Medium cutting	TA	WNMG 432 TA	WNMG080408-TA		●	●													0.031	0.500	0.187	0.203
		WNMG 433 TA	WNMG080412-TA		●	●													0.047	0.500	0.187	0.203
Finishing to medium cutting	NM	WNMG 333E NM	WNMG060412E-NM			●				▲									0.047	0.375	0.187	0.150
		WNMG 432 NM	WNMG080408-NM	●	●	●		▲	▲	▲									0.031	0.500	0.187	0.203
		WNMG 433 NM	WNMG080412-NM	●	●	●	●	▲	▲	▲	▲								0.047	0.500	0.187	0.203

TM:



AM:



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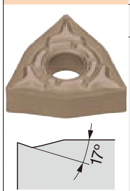

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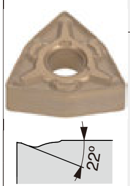
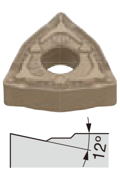
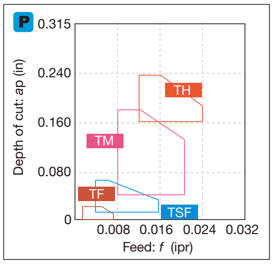


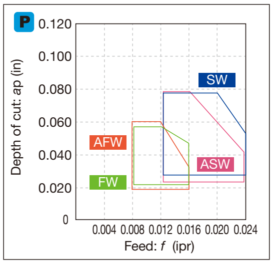
NM:

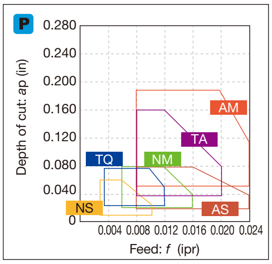


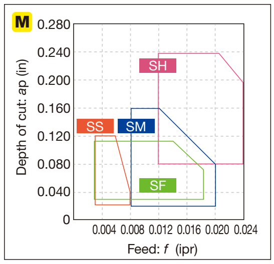
●: Line up
▲ : To be discontinued

Chip control range









Reference pages: External toolholder → C031 - Internal toolholder → D035 - TungCap → C038 -, K011 -

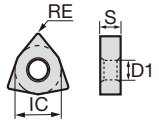
Insert NEGATIVE TYPE

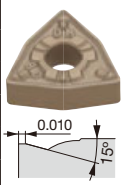
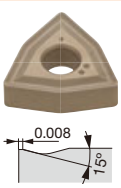
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN

Trigon, 80° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T515	T5105	T5115	T5125	AH110	AH120	GH330	GT720	GT9530	NS9530	NS520	TH10
P	Steel	●	●ɔ	●ɔ	✣	✣	●	●ɔ	●ɔ	✣	✣						●	●ɔ	●ɔ	●ɔ	●
M	Stainless		●ɔ														●	●ɔ	●ɔ		●
K	Cast iron	●ɔ	●ɔ			●ɔ	●ɔ			●ɔ	●	ɔ	✣				●	●ɔ	●ɔ	●ɔ	●
N	Non-ferrous																				●
S	Superalloy													●	●ɔ						
H	Hard material																				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated														Coated cermet		Cer-met		Un-coated	Dimension (inch)			
				T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T515	T5105	T5115	T5125	AH110	AH120	GH330	GT720	GT9530	NS9530	NS520	TH10	RE	IC	S	D1
Finishing to medium cutting	**ZM**	**WNMG 332E ZM**	**WNMG060408E-ZM**		●	●			▲	▲													0.031	0.375	0.187	0.150
		**WNMG 332 ZM**	**WNMG060408-ZM**		●	●	●		▲	▲	▲												0.031	0.375	0.187	0.150
		WNMG 333 ZM	**WNMG060412-ZM**		●	●	●		▲	▲	▲												0.047	0.375	0.187	0.150
		WNMG 432 ZM	**WNMG080408-ZM**		●	●	●		▲	▲	▲									●	●		0.031	0.500	0.187	0.203
		WNMG 433 ZM	**WNMG080412-ZM**		●	●	●		▲	▲	▲												0.047	0.500	0.187	0.203
		WNMG 434 ZM	**WNMG080416-ZM**		●	●			▲	▲													0.063	0.500	0.187	0.203
Medium cutting	**DM**	**WNMG 432 DM**	**WNMG080408-DM**	●	●	●	●	▲	▲	▲	▲													0.031	0.500	0.187	0.203
		**WNMG 433 DM**	**WNMG080412-DM**	●	●	●	●	▲	▲	▲	▲													0.047	0.500	0.187	0.203
	All-round	**WNMG 331**	**WNMG060404**		●	●			▲	▲			●	●	●									0.016	0.375	0.187	0.150
		**WNMG 332**	**WNMG060408**		●	●			▲	▲			●	●	●									0.031	0.375	0.187	0.150
		WNMG 431	**WNMG080404**	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●				●		●	0.016	0.500	0.187	0.203
		WNMG 432	**WNMG080408**	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●				●	●	●	0.031	0.500	0.187	0.203
		WNMG 433	**WNMG080412**	●	●	●	●	▲	▲	▲	▲	●	●	●	●	●	●						●	0.047	0.500	0.187	0.203
		WNMG 434	**WNMG080416**	●	●	●	●	▲	▲	▲	▲	●	●	●	●									0.063	0.500	0.187	0.203
Finishing to medium cutting	**27**	**WNMG 432-27**	**WNMG080408-27**			●				▲														0.031	0.500	0.187	0.203
																											
Medium cutting	**33**	**WNMG 431-33**	**WNMG080404-33**																●					0.016	0.500	0.187	0.203
		**WNMG 432-33**	**WNMG080408-33**					▲															●	0.031	0.500	0.187	0.203
		WNMG 433-33	**WNMG080412-33**																					0.047	0.500	0.187	0.203
	37	**WNMG 431-37**	**WNMG080404-37**																		●			0.016	0.500	0.187	0.203
		**WNMG 432-37**	**WNMG080408-37**		●				▲									●			●			0.031	0.500	0.187	0.203

●: Line up
▲: To be discontinued

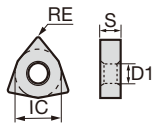
Reference pages: External toolholder → C031 - Internal toolholder → D035 -
TungCap → C038 -, K011 -

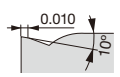
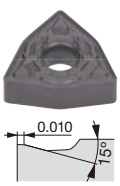
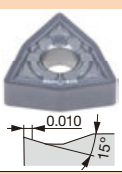
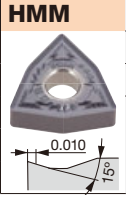
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN

Trigon, 80° with hole

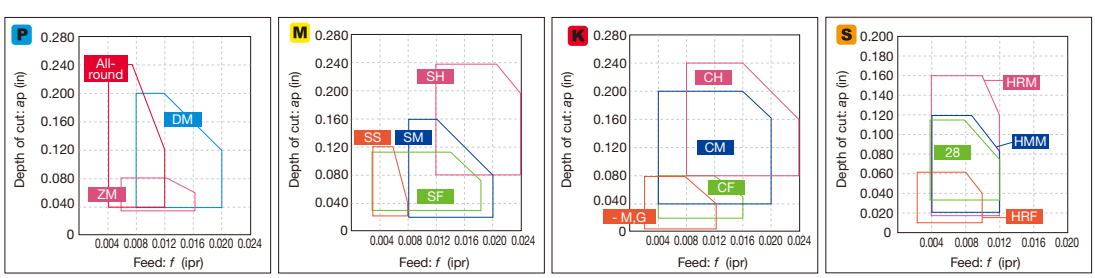
P	Steel	ɔ	✣	●ɔ✣	✣					●ɔ	ɔ								
M	Stainless	●	ɔ	ɔ	✣					●ɔ	ɔ	●	ɔ						
K	Cast iron					●ɔ	●	ɔ	✣	●ɔ	ɔ						●✣		
N	Non-ferrous																●✣		
S	Superalloy									●ɔ	●	●	ɔ	ɔ			●✣		
H	Hard material																		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T6120	T6130	AH630	AH645	T515	T5105	T5115	T5125	AH120	AH725	AH8005	AH8015	AH905	Uncoated KS20	Dimension (inch) RE	IC	S	D1
Medium cutting	**SM**	**WNMG 331E SM**	**WNMG060404E-SM**	●	●	●												0.016	0.375	0.187	0.150
		**WNMG 332E SM**	**WNMG060408E-SM**	●	●	●												0.031	0.375	0.187	0.150
		WNMG 333E SM	**WNMG060412E-SM**	●	●	●												0.047	0.375	0.187	0.150
		WNMG 332 SM	**WNMG060408-SM**										●					0.031	0.375	0.187	0.150
		WNMG 431 SM	**WNMG080404-SM**	●	●	●	●											0.016	0.500	0.187	0.203
		WNMG 432 SM	**WNMG080408-SM**	●	●	●	●						●					0.031	0.500	0.187	0.203
		**WNMG 433 SM**	**WNMG080412-SM**	●	●	●	●						●					0.047	0.500	0.187	0.203
	CM	**WNMG 431 CM**	**WNMG080404-CM**							●								0.016	0.500	0.187	0.203
		**WNMG 432 CM**	**WNMG080408-CM**					●	●	●	●							0.031	0.500	0.187	0.203
		WNMG 433 CM	**WNMG080412-CM**					●	●	●	●							0.047	0.500	0.187	0.203
Finishing to medium cutting	**HRM**	**WNMG 431 HRM**	**WNMG080404-HRM**											●	●			0.016	0.500	0.187	0.203
		**WNMG 432 HRM**	**WNMG080408-HRM**											●	●			0.031	0.500	0.187	0.203
		WNMG 433 HRM	**WNMG080412-HRM**											●	●			0.047	0.500	0.187	0.203
Medium cutting	**HMM**	**WNMG 431 HMM**	**WNMG080404-HMM**													●		0.016	0.500	0.187	0.203
		**WNMG 432 HMM**	**WNMG080408-HMM**													●		0.031	0.500	0.187	0.203
		WNMG 433 HMM	**WNMG080412-HMM**													●		0.047	0.500	0.187	0.203

● : Line up

Chip control range



*-M,G: Without chipbreaker

Reference pages: External toolholder → C031 - Internal toolholder → D035 -
TungCap → C038 -, K011 -

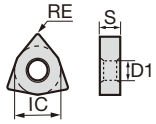
Insert NEGATIVE TYPE

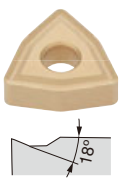
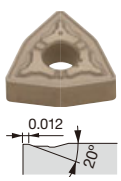
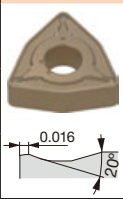
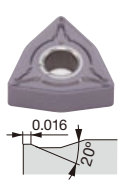
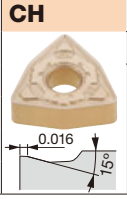
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN

Trigon, 80° with hole

		T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH645	T5105	T5115	T5125	T515	AH120	AH725	AH8015	KS20
P	Steel	●	●ɔ	●ɔ	●ɔ	✣	✣	●	●ɔ	●ɔ	●ɔ	●ɔ	●ɔ	✣	✣	✣	✣	●ɔ	●ɔ	✣	✣
M	Stainless		●ɔ							●	ɔ	ɔ	✣					●ɔ	ɔ	ɔ	
K	Cast iron	●ɔ	●ɔ	●ɔ		●ɔ	●ɔ	●ɔ						●	ɔ	✣	●ɔ	●ɔ	ɔ		●✣
N	Non-ferrous																				●✣
S	Superalloy																	●ɔ	●	ɔ	●✣
H	Hard material																				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated																	Un-coated	Dimension (inch)			
				T9205	T9215	T9225	T9235	T9105	T9115	T9125	T9135	T6120	T6130	AH630	AH645	T5105	T5115	T5125	T515	AH120	AH725	AH8015	KS20	RE	IC	S	D1
Medium cutting	**SA**	**WNMG 432 SA**	**WNMG080408-SA**									●	●	●	●					●	●		●	0.031	0.500	0.187	0.203
		**WNMG 433 SA**	**WNMG080412-SA**									●	●	●	●					●				0.047	0.500	0.187	0.203
Medium to heavy cutting	**TH**	**WNMG 432 TH**	**WNMG080408-TH**	●	●	●	●	▲	▲	▲	▲		●						●	●		●		0.031	0.500	0.187	0.203
		**WNMG 433 TH**	**WNMG080412-TH**	●	●	●	●	▲	▲	▲	▲								●	●		●		0.047	0.500	0.187	0.203
		WNMG 434 TH	**WNMG080416-TH**	●	●	●		▲	▲	▲									●	●		●		0.063	0.500	0.187	0.203
		WNMG 543 TH	**WNMG100612-TH**		●	●			▲	▲														0.047	0.625	0.250	0.250
		WNMG 544 TH	**WNMG100616-TH**		●	●			▲	▲														0.063	0.625	0.250	0.250
	THS	**WNMG 432 THS**	**WNMG080408-THS**	●	●	●	●	▲	▲	▲	▲													0.031	0.500	0.187	0.203
		**WNMG 433 THS**	**WNMG080412-THS**	●	●	●	●	▲	▲	▲	▲													0.047	0.500	0.187	0.203
		WNMG 434 THS	**WNMG080416-THS**		●	●			▲	▲														0.063	0.500	0.187	0.203
		WNMG 543 THS	**WNMG100612-THS**		●	●	●		▲	▲	▲													0.047	0.625	0.250	0.250
		WNMG 544 THS	**WNMG100616-THS**		●	●	●		▲	▲	▲													0.063	0.625	0.250	0.250
	SH	**WNMG 432 SH**	**WNMG080408-SH**										●	●	●									0.031	0.500	0.187	0.203
		**WNMG 433 SH**	**WNMG080412-SH**										●	●	●									0.047	0.500	0.187	0.203
	CH	**WNMG 432 CH**	**WNMG080408-CH**													●	●	●						0.031	0.500	0.187	0.203
		**WNMG 433 CH**	**WNMG080412-CH**													●	●	●						0.047	0.500	0.187	0.203

●: Line up
▲: To be discontinued

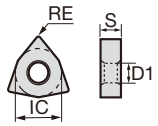
Reference pages: External toolholder → C031 - Internal toolholder → D035 - TungCap → C038 -, K011 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

WN

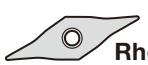
Trigon, 80° with hole

P	Steel					●◐		●◐			●								
M	Stainless					●◐					●								
K	Cast iron	●◐	●	◐	✣	●◐		●◐			●								
N	Non-ferrous										●								
S	Superalloy					●◐													
H	Hard material														●				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T515	Coated T5105	Coated T5115	Coated T5125	Coated AH120	Cermet NS520	Uncoated TH10	Ceramic LX11	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	-	WNMA 331E	WNMA060404E	●								0.016	0.375	0.187	0.150
		WNMA 332E	WNMA060408E	●								0.031	0.375	0.187	0.150
		WNMA 333E	WNMA060412E	●								0.047	0.375	0.187	0.150
		WNMA 334E	WNMA060416E	●								0.063	0.375	0.187	0.150
		WNMA 431	WNMA080404		●	●	●			●		0.016	0.500	0.187	0.203
		WNMA 432	WNMA080408	●	●	●	●		●	●		0.031	0.500	0.187	0.203
		WNMA 433	WNMA080412	●	●	●	●					0.047	0.500	0.187	0.203
		WNMA 434	WNMA080416	●	●	●	●					0.063	0.500	0.187	0.203
		WNGA 431	WNGA080404								●	0.016	0.500	0.187	0.203
		WNGA 432	WNGA080408								●	0.031	0.500	0.187	0.203
		WNGA 433	WNGA080412								●	0.047	0.500	0.187	0.203

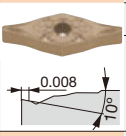
YN

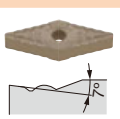


Rhombic, 25° with hole

P	Steel	◐✣	✣	◐✣	✣		●◐			●◐									
M	Stainless																		
K	Cast iron						●◐			●◐									
N	Non-ferrous																		
S	Superalloy																		
H	Hard material																		

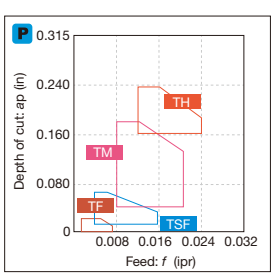
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9225	Coated T9235	Coated T9125	Coated T9135	Coated cermet GT9530	Cermet NS9530	Dimension (inch) RE	IC	S	D1
Finishing	ZF	YNMG 331 ZF	YNMG160404-ZF	●	●	▲	▲	●	●	0.016	0.375	0.187	0.150
		YNMG 332 ZF	YNMG160408-ZF	●	●	▲	▲	●	●	0.031	0.375	0.187	0.150
Finishing to medium cutting	ZM	YNMG 331 ZM	YNMG160404-ZM	●	●	▲	▲	●	●	0.016	0.375	0.187	0.150
		YNMG 332 ZM	YNMG160408-ZM	●	●	▲	▲	●	●	0.031	0.375	0.187	0.150

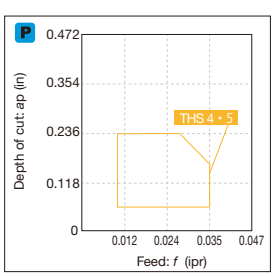


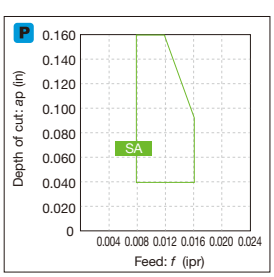


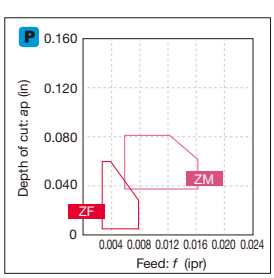
●: Line up
▲: To be discontinued

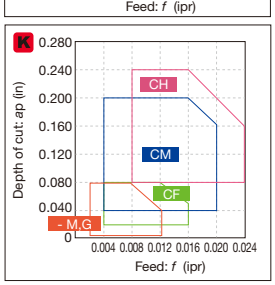
Chip control range

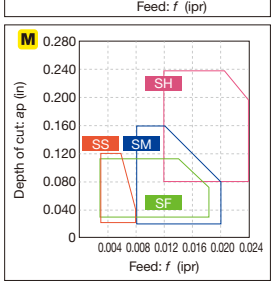












*-M,G: Without chipbreaker

Reference pages: YNMG...: External toolholder → C062 -,
Internal toolholder → D081 -

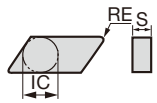
Insert NEGATIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

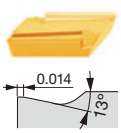
KN

Parallelogram, 55° without hole

P	Steel	●ɔ	
M	Stainless	●ɔ	
K	Cast iron	●ɔ	
N	Non-ferrous		
S	Superalloy		
H	Hard material		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated GH330	Dimension (inch) RE	IC	S	D1
Finishing	S1	-	KNMX160405R-S1	●	0.020	0.375	0.187	-
		-	KNMX160405L-S1	●	0.020	0.375	0.187	-

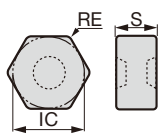


●: Line up

HN

Hexagonal, 120° without hole

P	Steel		
M	Stainless		
K	Cast iron	●ɔ	
N	Non-ferrous		
S	Superalloy		
H	Hard material		



Application	Chipbreaker	Designation Inch	Designation Metric	Ceramic FX105	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	-	HNGD 453	HNGD050712	●	0.047	0.500	0.313	-
		HNGD 454	HNGD050716	●	0.063	0.500	0.313	-

●: Line up

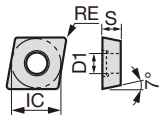
Reference pages: HNGD...: External toolholder → C111

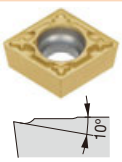
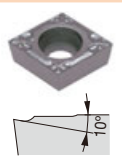
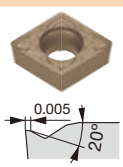
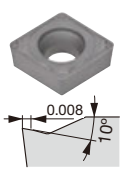
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CC

Rhombic, 80° with hole Positive 7°

P	Steel	●◐ ◐✣ ●◐ ◐✣ ◐ ✣ ◐ ● ◐ ● ◐ ●◐ ●◐ ●◐ ●◐
M	Stainless	●◐ ● ◐ ◐ ◐ ● ◐ ◐
K	Cast iron	●◐ ●◐ ◐ ● ◐ ●◐
N	Non-ferrous	
S	Superalloy	● ● ◐ ●
H	Hard material	

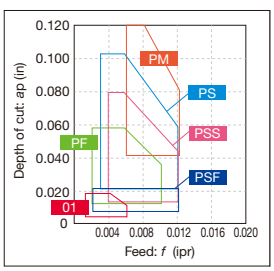


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9115	T9125	T6120	T6130	AH725	AH8005	AH8015	AH110	GH730	SH725	J740	Coated cermet GT9530	Cer-met NS9530	Dimension (inch) RE	IC	S	D1
Precision finishing	01	CCGT 21.50.5-01	CCGT060202-01													●			0.008	0.250	0.094	0.110
		CCGT 32.50.5-01	CCGT09T302-01													●			0.008	0.375	0.156	0.173
Precision finishing (sharp edge)	01	CCGT 21.50.5 F-01	CCGT060202F-01												●				<0.008	0.250	0.094	0.110
		CCGT 21.51 F-01	CCGT060204F-01												●				<0.016	0.250	0.094	0.110
		CCGT 32.50.5 F-01	CCGT09T302F-01												●				<0.008	0.375	0.156	0.173
		CCGT 32.51 F-01	CCGT09T304F-01												●				<0.016	0.375	0.156	0.173
Finishing	PSF	CCMT 21.50.5 PSF	CCMT060202-PSF							●							●	●	0.008	0.250	0.094	0.110
		CCMT 21.51 PSF	CCMT060204-PSF	●	●	▲	▲			●	●	●					●	●	0.016	0.250	0.094	0.110
		CCMT 32.50.5 PSF	CCMT09T302-PSF							●								●	0.008	0.375	0.156	0.173
		CCMT 32.51 PSF	CCMT09T304-PSF	●	●	▲	▲			●	●	●					●	●	0.016	0.375	0.156	0.173
		CCMT 32.52 PSF	CCMT09T308-PSF	●	●	▲	▲			●							●	●	0.031	0.375	0.156	0.173
	PF	CCMT 21.50.5 PF	CCMT060202-PF											●			●	●	0.008	0.250	0.094	0.110
		CCMT 21.51 PF	CCMT060204-PF					●	●				●	●			●	●	0.016	0.250	0.094	0.110
		CCMT 21.52 PF	CCMT060208-PF										●				●	●	0.031	0.250	0.094	0.110
		CCMT 32.50.5 PF	CCMT09T302-PF											●				●	0.008	0.375	0.156	0.173
		CCMT 32.51 PF	CCMT09T304-PF					●	●				●	●			●	●	0.016	0.375	0.156	0.173
		CCMT 32.52 PF	CCMT09T308-PF		●		▲						●				●	●	0.031	0.375	0.156	0.173

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up
▲ : To be discontinued

Chip control range



Reference pages: External toolholder → C026 - Internal toolholder → D020 -
J-Series toolholder → G027 -

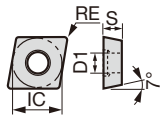
Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CC

Rhombic, 80°
with hole
Positive 7°

		T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH725	AH8005	AH8015	GH730	GT9530	AT9530	NS9530
P	Steel	●◐	◐✣	●◐	◐✣	◐	✣	◐✣	✣	●◐	◐			◐	●◐	●◐	●◐
M	Stainless	●◐				●	◐	◐	✣	●◐	◐	●	◐	◐			
K	Cast iron	●◐		●◐						●◐	◐			◐	●◐	●◐	●◐
N	Non-ferrous																
S	Superalloy									●◐	●	●	◐				
H	Hard material																



Application	Chipbreaker	Designation Inch	Designation Metric	RE	IC	S	D1
Finishing to light cutting	**PSS**	**CCMT 21.51 PSS**	**CCMT060204-PSS**	0.016	0.250	0.094	0.110
		CCMT 21.52 PSS	CCMT060208-PSS	0.031	0.250	0.094	0.110
		CCMT 32.51 PSS	**CCMT09T304-PSS**	0.016	0.375	0.156	0.173
		CCMT 32.52 PSS	CCMT09T308-PSS	0.031	0.375	0.156	0.173
		CCMT 431 PSS	**CCMT120404-PSS**	0.016	0.500	0.187	0.217
		CCMT 432 PSS	CCMT120408-PSS	0.031	0.500	0.187	0.217
		CCMT 433 PSS	CCMT120412-PSS	0.047	0.500	0.187	0.217
Medium cutting (wiper)	**SW**	**CCMT 21.51 SW**	**CCMT060204-SW**	0.016	0.250	0.094	0.110
		CCMT 21.52 SW	CCMT060208-SW	0.031	0.250	0.094	0.110
		CCMT 32.51 SW	**CCMT09T304-SW**	0.016	0.375	0.156	0.173
		CCMT 32.52 SW	CCMT09T308-SW	0.031	0.375	0.156	0.173
		*Wiper					
Finishing to medium cutting	**PS**	**CCMT 21.50.5 PS**	**CCMT060202-PS**	0.008	0.250	0.094	0.110
		CCMT 21.51 PS	CCMT060204-PS	0.016	0.250	0.094	0.110
		CCMT 21.52 PS	CCMT060208-PS	0.031	0.250	0.094	0.110
		CCMT 32.50.5 PS	**CCMT09T302-PS**	0.008	0.375	0.156	0.173
		CCMT 32.51 PS	CCMT09T304-PS	0.016	0.375	0.156	0.173
		CCMT 32.52 PS	CCMT09T308-PS	0.031	0.375	0.156	0.173
		CCMT 431 PS	**CCMT120404-PS**	0.016	0.500	0.187	0.217
		CCMT 432 PS	CCMT120408-PS	0.031	0.500	0.187	0.217
		CCMT 433 PS	CCMT120412-PS	0.047	0.500	0.187	0.217
	TSF	**CCMT 21.51 TSF**	**CCMT060204-TSF**	0.016	0.250	0.094	0.110
		CCMT 21.52 TSF	CCMT060208-TSF	0.031	0.250	0.094	0.110
		CCMT 32.51 TSF	**CCMT09T304-TSF**	0.016	0.375	0.156	0.173
		CCMT 32.52 TSF	CCMT09T308-TSF	0.031	0.375	0.156	0.173
	TM	**CCMT 21.51 TM**	**CCMT060204-TM**	0.016	0.250	0.094	0.110
		CCMT 21.52 TM	CCMT060208-TM	0.031	0.250	0.094	0.110
		CCMT 32.51 TM	**CCMT09T304-TM**	0.016	0.375	0.156	0.173
		CCMT 32.52 TM	CCMT09T308-TM	0.031	0.375	0.156	0.173

* Please see **L034-L038** about the adjustment of the machining program for rounding or taper machining by using SW/FW.
Please contact a Tungaloy sales representative with questions.

● : Line up
▲ : To be discontinued

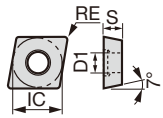
Reference pages: External toolholder → C026 - Internal toolholder → D020 -
J-Series toolholder → G027 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CC

Rhombic, 80°
with hole
Positive 7°

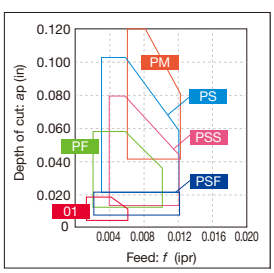
		T9215	T9225	T9115	T9125	T6130	AH120	SH730	NS9530	TH10
P	Steel	●◐	◐✣	●◐	◐✣	✣	●◐	●◐	●◐	●
M	Stainless	●◐				◐	●◐	●◐		●
K	Cast iron	●◐		●◐			●◐		●◐	●
N	Non-ferrous									●
S	Superalloy						●◐	●◐		
H	Hard material									

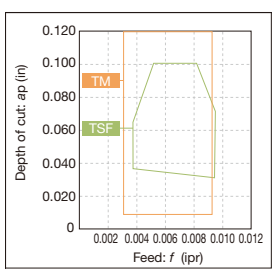


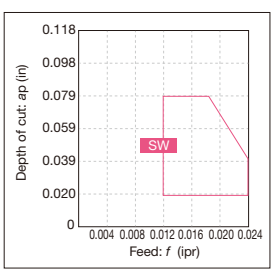
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	Coated T6130	Coated AH120	Coated SH730	Cermet NS9530	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	23	CCMT 21.50.5-23	CCMT060202-23								●		0.008	0.250	0.094	0.110
		CCMT 21.51-23	CCMT060204-23		●		▲				●		0.016	0.250	0.094	0.110
		CCMT 21.52-23	CCMT060208-23		●		▲						0.031	0.250	0.094	0.110
		CCMT 32.51-23	CCMT09T304-23		●		▲				●		0.016	0.375	0.156	0.173
		CCMT 32.52-23	CCMT09T308-23		●		▲				●		0.031	0.375	0.156	0.173
Medium cutting	24	CCMT 21.50.5-24	CCMT060202-24		●		▲				●		0.008	0.250	0.094	0.110
		CCMT 21.51-24	CCMT060204-24	●	●	▲	▲	●	●		●		0.016	0.250	0.094	0.110
		CCMT 21.52-24	CCMT060208-24	●	●	▲	▲	●	●		●		0.031	0.250	0.094	0.110
		CCMT 32.50.5-24	CCMT09T302-24		●		▲				●		0.008	0.375	0.156	0.173
		CCMT 32.51-24	CCMT09T304-24	●	●	▲	▲	●	●		●		0.016	0.375	0.156	0.173
		CCMT 32.52-24	CCMT09T308-24	●	●	▲	▲	●	●		●		0.031	0.375	0.156	0.173
		CCMT 432-24	CCMT120408-24	●	●	▲	▲	●	●		●		0.031	0.500	0.187	0.217
Finishing	W08	CCGT 4.51.8V R-W08	CCGT03X100R-W08							●		●	0.001	0.141	0.055	0.075
		CCGT 4.51.8V L-W08	CCGT03X100L-W08							●		●	0.001	0.141	0.055	0.075
		CCGT 4.51.80 R-W08	CCGT03X101R-W08							●		●	0.004	0.141	0.055	0.075
		CCGT 4.51.80 L-W08	CCGT03X101L-W08							●		●	0.004	0.141	0.055	0.075
		CCGT 4.51.80.5 R-W08	CCGT03X102R-W08							●		●	0.008	0.141	0.055	0.075
		CCGT 4.51.80.5 L-W08	CCGT03X102L-W08							●		●	0.008	0.141	0.055	0.075
		CCGT 4.51.81 R-W08	CCGT03X104R-W08							●		●	0.016	0.141	0.055	0.075
		CCGT 4.51.81 L-W08	CCGT03X104L-W08							●		●	0.016	0.141	0.055	0.075
		CCGT 5.52.2V R-W08	CCGT04T100R-W08							●		●	0.001	0.172	0.070	0.091
		CCGT 5.52.2V L-W08	CCGT04T100L-W08							●		●	0.001	0.172	0.070	0.091
		CCGT 5.52.20 R-W08	CCGT04T101R-W08							●		●	0.004	0.172	0.070	0.091
		CCGT 5.52.20 L-W08	CCGT04T101L-W08							●		●	0.004	0.172	0.070	0.091
		CCGT 5.52.20.5 R-W08	CCGT04T102R-W08							●		●	0.008	0.172	0.070	0.091
		CCGT 5.52.20.5 L-W08	CCGT04T102L-W08							●		●	0.008	0.172	0.070	0.091
		CCGT 5.52.21 R-W08	CCGT04T104R-W08							●		●	0.016	0.172	0.070	0.091
		CCGT 5.52.21 L-W08	CCGT04T104L-W08							●		●	0.016	0.172	0.070	0.091

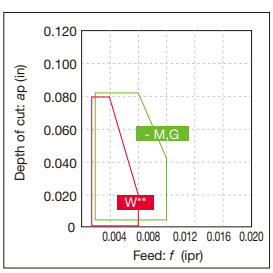
● : Line up
▲ : To be discontinued

Chip control range









*-M,G: Without chipbreaker

Reference pages: External toolholder → C026 - Internal toolholder → D020 -
J-Series toolholder → G027 -

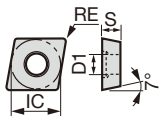
Insert POSITIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

CC

Rhombic, 80°
with hole
Positive 7°

		T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	T515	T5115	AH110	AH120	AH725	GH110	GH330	GH730	SH725	GT9530	NS9530	TH10	UX30
P	Steel	●ɔ	●ɔ	✣	●ɔ	ɔ	✣	ɔ	✣			●	●ɔ	ɔ	●	●ɔ	ɔ	●ɔ	●ɔ	●ɔ	●	ɔ
M	Stainless	●ɔ				●	ɔ	ɔ	✣			●	●ɔ	ɔ	●	●ɔ	ɔ	●ɔ			●	ɔ
K	Cast iron	●ɔ		●ɔ						●ɔ	ɔ	●	●ɔ	ɔ	●	●ɔ	ɔ		●ɔ	●ɔ	●	
N	Non-ferrous																				●	
S	Superalloy											●	●ɔ	●	●							
H	Hard material																					



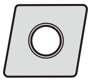
Application	Chipbreaker	Designation Inch	Designation Metric	Coated															Coated cermet	Cer-met	Un-coated		Dimension (inch)			
				T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	T515	T5115	AH110	AH120	AH725	GH110	GH330	GH730	SH725	GT9530	NS9530	TH10	UX30	RE	IC	S	D1
Finishing (sharp edge)	**W08**	CCGT 4.51.8V FL-W08	CCGT03X100FL-W08																	●					0.001	0.141	0.055	0.075
		CCGT 4.51.8V FR-W08	CCGT03X100FR-W08																	●					0.001	0.141	0.055	0.075
		CCGT 4.51.80 FL-W08	CCGT03X101FL-W08																	●					0.004	0.141	0.055	0.075
		CCGT 4.51.80 FR-W08	CCGT03X101FR-W08																	●					0.004	0.141	0.055	0.075
		CCGT 4.51.80.5 FL-W08	CCGT03X102FL-W08																	●					0.008	0.141	0.055	0.075
		CCGT 4.51.80.5 FR-W08	CCGT03X102FR-W08																	●					0.008	0.141	0.055	0.075
		CCGT 4.51.81 FL-W08	CCGT03X104FL-W08																	●					0.016	0.141	0.055	0.075
		CCGT 4.51.81 FR-W08	CCGT03X104FR-W08																	●					0.016	0.141	0.055	0.075
		CCGT 5.52.2V FL-W08	CCGT04T100FL-W08																	●					0.001	0.172	0.070	0.091
		CCGT 5.52.2V FR-W08	CCGT04T100FR-W08																	●					0.001	0.172	0.070	0.091
		CCGT 5.52.20 FL-W08	CCGT04T101FL-W08																	●					0.004	0.172	0.070	0.091
		CCGT 5.52.20 FR-W08	CCGT04T101FR-W08																	●					0.004	0.172	0.070	0.091
		CCGT 5.52.20.5 FL-W08	CCGT04T102FL-W08																	●					0.008	0.172	0.070	0.091
		CCGT 5.52.20.5 FR-W08	CCGT04T102FR-W08																	●					0.008	0.172	0.070	0.091
		CCGT 5.52.21 FL-W08	CCGT04T104FL-W08																	●					0.016	0.172	0.070	0.091
		CCGT 5.52.21 FR-W08	CCGT04T104FR-W08																	●					0.016	0.172	0.070	0.091
Finishing	**W15**	CCGT 21.5V R-W15	CCGT060200R-W15																				●		0.001	0.250	0.094	0.110
		CCGT 21.5V L-W15	CCGT060200L-W15																			●	●		0.001	0.250	0.094	0.110
		CCGT 21.50.5 R-W15	CCGT060202R-W15																			●	●		0.008	0.250	0.094	0.110
		CCGT 21.50.5 L-W15	CCGT060202L-W15																		●	●	●		0.008	0.250	0.094	0.110
		CCGT 21.51 R-W15	CCGT060204R-W15															●				●	●		0.016	0.250	0.094	0.110
		CCGT 21.51 L-W15	CCGT060204L-W15														●	●			●	●	●	●	0.016	0.250	0.094	0.110
	W20	CCGT 32.50.5 R-W20	CCGT09T302R-W20																			●	●		0.008	0.375	0.156	0.173
		CCGT 32.50.5 L-W20	CCGT09T302L-W20																		●	●	●		0.008	0.375	0.156	0.173
		CCGT 32.51 R-W20	CCGT09T304R-W20																			●			0.016	0.375	0.156	0.173
		CCGT 32.51 L-W20	CCGT09T304L-W20														●	●			●	●	●		0.016	0.375	0.156	0.173
		CCGT 32.52 R-W20	CCGT09T308R-W20																			●			0.031	0.375	0.156	0.173
		CCGT 32.52 L-W20	CCGT09T308L-W20																		●	●			0.031	0.375	0.156	0.173
Medium cutting	**PM**	CCMT 21.51 PM	CCMT060204-PM	●	●	▲	▲	●	●	●	●			●	●	●			●		●	●			0.016	0.250	0.094	0.110
		CCMT 21.52 PM	CCMT060208-PM	●	●	▲	▲	●	●	●	●			●	●	●			●		●	●			0.031	0.250	0.094	0.110
		CCMT 32.51 PM	CCMT09T304-PM	●	●	▲	▲	●	●	●	●			●	●	●			●		●	●			0.016	0.375	0.156	0.173
		CCMT 32.52 PM	CCMT09T308-PM	●	●	▲	▲	●	●	●	●			●	●	●			●		●	●			0.031	0.375	0.156	0.173
		CCMT 32.53 PM	CCMT09T312-PM	●	●	▲	▲	●	●	●	●					●									0.047	0.375	0.156	0.173
		CCMT 432 PM	CCMT120408-PM					●	●	●	●					●									0.031	0.500	0.187	0.217
		CCMT 433 PM	CCMT12412-PM					●	●	●	●					●									0.047	0.500	0.187	0.217
Finishing to medium cutting	**CM**	CCMT 21.51 CM	CCMT060204-CM									●	●												0.016	0.250	0.094	0.110
		CCMT 21.52 CM	CCMT060208-CM									●	●												0.031	0.250	0.094	0.110
		CCMT 32.51 CM	CCMT09T304-CM									●	●												0.016	0.375	0.156	0.173
		CCMT 32.52 CM	CCMT09T308-CM									●	●												0.031	0.375	0.156	0.173
		CCMT 32.53 CM	CCMT09T312-CM										●												0.047	0.375	0.156	0.173
		CCMT 431 CM	CCMT120404-CM										●												0.016	0.500	0.187	0.217
		CCMT 432 CM	CCMT120408-CM										●												0.031	0.500	0.187	0.217

● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C026 - Internal toolholder → D020 -
J-Series toolholder → G027 -

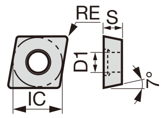
● : Continuous cutting
◖ : Light interrupted cutting
✤ : Heavy interrupted cutting

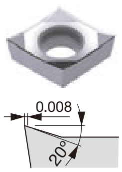
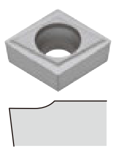
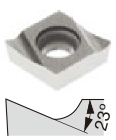
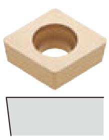
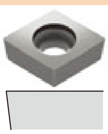
CC



Rhombic, 80° with hole Positive 7°

		T5115	GH110	SH725	NS9530	TH10	KS05F
P	Steel		●	●◖	●◖	●	
M	Stainless		●	●◖		●	
K	Cast iron	◖	●		●◖	●	●
N	Non-ferrous					●	●
S	Superalloy		●				●
H	Hard material						

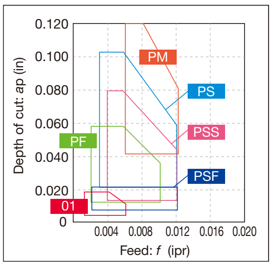


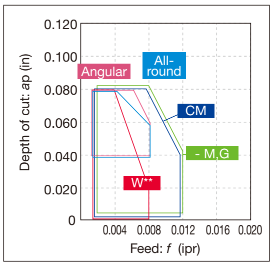
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T5115	Coated GH110	Coated SH725	Cermet NS9530	Uncoated TH10	Uncoated KS05F	RE	IC	S	D1
Finishing to medium cutting	**AL**	CCGT 21.50 AL	CCGT060201-AL			●			●	0.004	0.250	0.094	0.110
		CCGT 21.50.5 AL	CCGT060202-AL			●			●	0.008	0.250	0.094	0.110
		CCGT 21.51 AL	CCGT060204-AL						●	0.016	0.250	0.094	0.110
		CCGT 32.50 AL	CCGT09T301-AL						●	0.004	0.375	0.156	0.173
		CCGT 32.50.5 AL	CCGT09T302-AL			●			●	0.008	0.375	0.156	0.173
		CCGT 32.51 AL	CCGT09T304-AL			●			●	0.016	0.375	0.156	0.173
		CCGT 32.52 AL	CCGT09T308-AL						●	0.031	0.375	0.156	0.173
		CCGT 430.5 AL	CCGT120402-AL						●	0.008	0.500	0.187	0.217
		CCGT 431 AL	CCGT120404-AL						●	0.016	0.500	0.187	0.217
		CCGT 432 AL	CCGT120408-AL						●	0.031	0.500	0.187	0.217
	All-round	CCGT 21.50.5	CCGT060202				●			0.008	0.250	0.094	0.110
		CCGT 21.51	CCGT060204				●			0.016	0.250	0.094	0.110
		CCGT 32.50.5	CCGT09T302				●			0.008	0.375	0.156	0.173
		CCGT 32.51	CCGT09T304				●			0.016	0.375	0.156	0.173
		CCGT 32.52	CCGT09T308				●			0.031	0.375	0.156	0.173
	Angular	CCGT 21.5V R	CCGT060200R					●		0.001	0.250	0.094	0.110
		CCGT 21.50.5 R	CCGT060202R					●		0.008	0.250	0.094	0.110
		CCGT 21.50.5 L	CCGT060202L					●		0.008	0.250	0.094	0.110
		CCGT 21.51 L	CCGT060204L					●		0.016	0.250	0.094	0.110
		CCGT 32.50.5 R	CCGT09T302R					●		0.008	0.375	0.156	0.173
		CCGT 32.50.5 L	CCGT09T302L					●		0.008	0.375	0.156	0.173
		CCGT 32.51 R	CCGT09T304R					●		0.016	0.375	0.156	0.173
		CCGT 32.51 L	CCGT09T304L					●		0.016	0.375	0.156	0.173
	-	CCMW 21.51	CCMW060204	●						0.016	0.250	0.094	0.110
		CCMW 21.52	CCMW060208	●						0.031	0.250	0.094	0.110
		CCMW 32.51	CCMW09T304	●						0.016	0.375	0.156	0.173
		CCMW 32.52	CCMW09T308	●						0.031	0.375	0.156	0.173
	-	CCGW 21.50.5	CCGW060202					●		0.008	0.250	0.094	0.110
		CCGW 21.51	CCGW060204					●		0.016	0.250	0.094	0.110
		CCGW 32.51	CCGW09T304		●			●		0.016	0.375	0.156	0.173

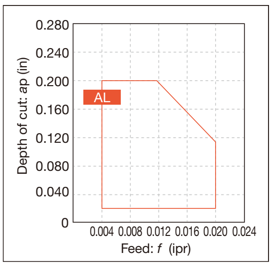
Dimension (inch)

● : Line up

Chip control range







*-M,G: Without chipbreaker

Reference pages: External toolholder → C026 - Internal toolholder → D020 -
J-Series toolholder → G027 -

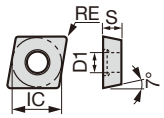
Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CC

Rhombic, 80°
with hole
Positive 7°

P	Steel	◐	●◐	●◐
M	Stainless	◐	●◐	●◐
K	Cast iron	◐		
N	Non-ferrous			
S	Superalloy	●		●◐
H	Hard material			



Application	Chipbreaker	Designation Inch	Designation Metric	Coated AH725	Coated SH725	Coated SH730	Dimension (inch) RE	IC	S	D1
For internal turning on Swiss lathes	JS	CCGT 4.51.80 JS	CCGT03X101-JS			●	<0.0039	0.141	0.055	0.075
		CCGT 4.51.80.5 JS	CCGT03X102-JS			●	<0.008	0.141	0.055	0.075
		CCGT 4.51.81 JS	CCGT03X104-JS			●	<0.016	0.141	0.055	0.075
		CCGT 5.52.20 JS	CCGT04T101-JS			●	<0.0039	0.172	0.070	0.091
		CCGT 5.52.20.5 JS	CCGT04T102-JS			●	<0.008	0.172	0.070	0.091
		CCGT 5.52.21 JS	CCGT04T104-JS			●	<0.016	0.172	0.070	0.091
For internal turning on Swiss lathes (sharp edge)	JS	CCGT 4.51.80 F-JS	CCGT03X101F-JS		●		<0.0039	0.141	0.055	0.075
		CCGT 4.51.80.5 F-JS	CCGT03X102F-JS		●		<0.008	0.141	0.055	0.075
		CCGT 4.51.81 F-JS	CCGT03X104F-JS		●		<0.016	0.141	0.055	0.075
		CCGT 5.52.20 F-JS	CCGT04T101F-JS		●		<0.0039	0.172	0.070	0.091
		CCGT 5.52.20.5 F-JS	CCGT04T102F-JS		●		<0.008	0.172	0.070	0.091
		CCGT 5.52.21 F-JS	CCGT04T104F-JS		●		<0.016	0.172	0.070	0.091
For external turning on Swiss lathes	JS	CCGT 21.50 N-JS	CCGT060201N-JS	●			0.004	0.250	0.094	0.110
		CCGT 21.50.5 N-JS	CCGT060202N-JS	●			0.008	0.250	0.094	0.110
		CCGT 21.51 N-JS	CCGT060204N-JS	●			0.016	0.250	0.094	0.110
		CCGT 32.50 N-JS	CCGT09T301N-JS	●			0.004	0.375	0.156	0.173
		CCGT 32.50.5 N-JS	CCGT09T302N-JS	●			0.008	0.375	0.156	0.173
		CCGT 32.51 N-JS	CCGT09T304N-JS	●			0.016	0.375	0.156	0.173
For external turning on Swiss lathes (sharp edge)	JS	CCGT 21.5V FN-JS	CCGT060200FN-JS		●	●	0.001	0.250	0.094	0.110
		CCGT 21.50 FN-JS	CCGT060201FN-JS		●	●	<0.0039	0.250	0.094	0.110
		CCGT 21.50.5 FN-JS	CCGT060202FN-JS		●	●	<0.008	0.250	0.094	0.110
		CCGT 21.51 FN-JS	CCGT060204FN-JS		●	●	<0.016	0.250	0.094	0.110
		CCGT 32.5V FN-JS	CCGT09T300FN-JS		●	●	0.001	0.375	0.156	0.173
		CCGT 32.50 FN-JS	CCGT09T301FN-JS		●	●	<0.0039	0.375	0.156	0.173
		CCGT 32.50.5 FN-JS	CCGT09T302FN-JS		●	●	<0.008	0.375	0.156	0.173
		CCGT 32.51 FN-JS	CCGT09T304FN-JS		●	●	<0.016	0.375	0.156	0.173

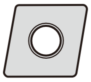
*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

Reference pages: External toolholder → C026 - Internal toolholder → D020 -
J-Series toolholder → G027 -

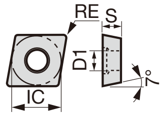
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

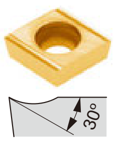
CC



Rhombic, 80°
with hole
Positive 7°

		SH725	J740	NS9530	TH10
P	Steel	●◐	●◐	●◐	●
M	Stainless	●◐	●◐		●
K	Cast iron			●◐	●
N	Non-ferrous				●
S	Superalloy				
H	Hard material				

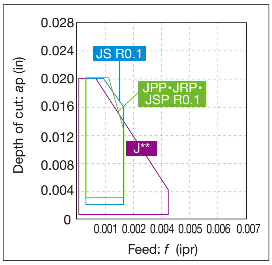


Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH725	Coated J740	Cermet NS9530	Uncoated TH10	RE	IC	S	D1
For external turning on Swiss lathes (sharp edge)	J10	CCGT 21.5V FR-J10	CCGT060200FR-J10	●	●		●	0.001	0.250	0.094	0.110
		CCGT 21.5V FL-J10	CCGT060200FL-J10	●	●		●	0.001	0.250	0.094	0.110
		CCGT 21.50 FR-J10	CCGT060201FR-J10	●	●	●	●	0.004	0.250	0.094	0.110
		CCGT 21.50 FL-J10	CCGT060201FL-J10	●	●		●	0.004	0.250	0.094	0.110
		CCGT 21.50.5 FR-J10	CCGT060202FR-J10	●	●	●	●	0.008	0.250	0.094	0.110
		CCGT 21.50.5 FL-J10	CCGT060202FL-J10	●	●	●	●	0.008	0.250	0.094	0.110
		CCGT 32.5V FR-J10	CCGT09T300FR-J10	●	●		●	0.001	0.375	0.156	0.173
	30°	CCGT 32.5V FL-J10	CCGT09T300FL-J10	●	●		●	0.001	0.375	0.156	0.173
		CCGT 32.50 FR-J10	CCGT09T301FR-J10	●	●		●	0.004	0.375	0.156	0.173
		CCGT 32.50 FL-J10	CCGT09T301FL-J10	●	●		●	0.004	0.375	0.156	0.173
		CCGT 32.50.5 FR-J10	CCGT09T302FR-J10	●	●		●	0.008	0.375	0.156	0.173
		CCGT 32.50.5 FL-J10	CCGT09T302FL-J10	●	●		●	0.008	0.375	0.156	0.173
		CCGT 32.51 FR-J10	CCGT09T304FR-J10	●				0.016	0.375	0.156	0.173

Dimension (inch)

● : Line up

Chip control range



*Chip control range with typical R0.1

Reference pages: External toolholder → C026 - Internal toolholder → D020 -
J-Series toolholder → G027 -

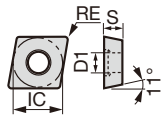
Insert POSITIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

CP

Rhombic, 80°
with hole
Positive 11°

P	Steel	●	●ɔ	●ɔ✣	✣	●ɔ	●ɔ✣	ɔ	✣	ɔ✣	✣	●ɔ	ɔ			ɔ	●ɔ	●ɔ	●ɔ			
M	Stainless		●ɔ					●	ɔ	ɔ	✣	●ɔ	ɔ	●	ɔ	ɔ						
K	Cast iron	●ɔ	●ɔ			●ɔ						●ɔ	ɔ			ɔ	●ɔ	●ɔ	●ɔ			
N	Non-ferrous																					
S	Superalloy											●ɔ	●	●	ɔ							
H	Hard material																					



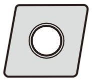
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9205	T9215	T9225	T9235	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH725	AH8005	AH8015	GH730	Coated cermet GT9530	AT9530	Cermet NS9530	Dimension (inch) RE	IC	S	D1
Finishing	PSF	CPMT 21.50.5 PSF	CPMT060202-PSF												●							0.008	0.250	0.094	0.110
		CPMT 21.51 PSF	CPMT060204-PSF		●	●		▲	▲						●							0.016	0.250	0.094	0.110
		CPMT 2.51.50.5 PSF	CPMT080202-PSF												●							0.008	0.313	0.094	0.134
		CPMT 2.51.51 PSF	CPMT080204-PSF		●	●		▲	▲						●							0.016	0.313	0.094	0.134
		CPMT 320.5 PSF	CPMT090302-PSF												●				●		●	0.008	0.375	0.125	0.173
		CPMT 321 PSF	CPMT090304-PSF		●	●		▲	▲						●				●		●	0.016	0.375	0.125	0.173
		CPMT 32.50.5 PSF	CPMT09T302-PSF												●							0.008	0.375	0.156	0.173
		CPMT 32.51 PSF	CPMT09T304-PSF		●	●		▲	▲						●							0.016	0.375	0.156	0.173
	PF	CPMT 320.5 PF	CPMT090302-PF																●		●	0.008	0.375	0.125	0.173
		CPMT 321 PF	CPMT090304-PF																●		●	0.016	0.375	0.125	0.173
Finishing to light cutting	PSS	CPMT 21.51 PSS	CPMT060204-PSS		●	●		▲	▲						●				●		●	0.016	0.250	0.094	0.110
		CPMT 2.51.51 PSS	CPMT080204-PSS		●	●		▲	▲	●	●	●	●		●				●		●	0.016	0.313	0.094	0.134
		CPMT 2.51.52 PSS	CPMT080208-PSS		●	●		▲	▲	●	●	●	●		●				●		●	0.031	0.313	0.094	0.134
		CPMT 321 PSS	CPMT090304-PSS		●	●		▲	▲	●	●	●	●		●				●		●	0.016	0.375	0.125	0.173
		CPMT 322 PSS	CPMT090308-PSS		●	●		▲	▲	●	●	●	●		●				●		●	0.031	0.375	0.125	0.173
		CPMT 32.51 PSS	CPMT09T304-PSS		●	●		▲	▲						●							0.016	0.375	0.156	0.173
		CPMT 32.52 PSS	CPMT09T308-PSS		●	●		▲	▲						●							0.031	0.375	0.156	0.173
Finishing to medium cutting	PS	CPMT 21.50.5 PS	CPMT060202-PS		●	●		▲	▲					●	●	●	●	●			●	0.008	0.250	0.094	0.110
		CPMT 21.51 PS	CPMT060204-PS		●	●		▲	▲					●	●	●	●	●	●	●	●	0.016	0.250	0.094	0.110
		CPMT 2.51.50.5 PS	CPMT080202-PS		●	●		▲	▲	●	●	●	●		●				●	●	●	0.008	0.313	0.094	0.134
		CPMT 2.51.51 PS	CPMT080204-PS		●	●		▲	▲	●	●	●	●		●				●	●	●	0.016	0.313	0.094	0.134
		CPMT 2.51.52 PS	CPMT080208-PS		●	●		▲	▲	●	●	●	●		●				●	●	●	0.031	0.313	0.094	0.134
		CPMT 321 PS	CPMT090304-PS		●	●		▲	▲	●	●	●	●		●				●	●	●	0.016	0.375	0.125	0.173
		CPMT 322 PS	CPMT090308-PS		●	●		▲	▲	●	●	●	●		●				●	●	●	0.031	0.375	0.125	0.173
		CPMT 32.50.5 PS	CPMT09T302-PS		●	●		▲	▲						●	●	●					0.008	0.375	0.156	0.173
		CPMT 32.51 PS	CPMT09T304-PS		●	●		▲	▲						●	●	●				●	0.016	0.375	0.156	0.173
		CPMT 32.52 PS	CPMT09T308-PS		●	●		▲	▲					●	●	●	●					0.031	0.375	0.156	0.173
	TSF	CPMT 32.51 TSF	CPMT09T304-TSF		●	●																0.016	0.375	0.156	0.173
		CPMT 32.52 TSF	CPMT09T308-TSF		●	●																0.031	0.375	0.156	0.173
	TM	CPMT 32.51 TM	CPMT09T304-TM		●	●																0.016	0.375	0.156	0.173
		CPMT 32.52 TM	CPMT09T308-TM		●	●																0.031	0.375	0.156	0.173

Reference pages: Internal toolholder → D025 -

● : Line up
▲ : To be discontinued

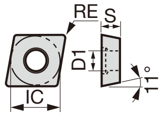
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

CP



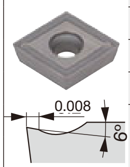
Rhombic, 80°
with hole
Positive 11°

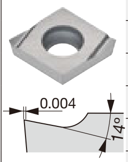
	Material	T9215	T9225	T9115	T9125	NS9530	TH10
P	Steel	●◐	◐✣	●◐	◐✣	●◐	●
M	Stainless	●◐					●
K	Cast iron	●◐		●◐		●◐	●
N	Non-ferrous						●
S	Superalloy						
H	Hard material						

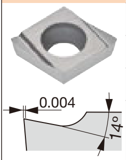


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	Cermet NS9530	Uncoated TH10	RE	IC	S	D1
Medium cutting	24	CPMT 2.51.51-24	CPMT080204-24	●		▲				0.016	0.313	0.094	0.134
		CPMT 2.51.52-24	CPMT080208-24		●		▲			0.031	0.313	0.094	0.134
		CPMT 322-24	CPMT090308-24		●		▲			0.031	0.375	0.125	0.173
		CPMT 432-24	CPMT120408-24					●		0.031	0.500	0.187	0.217
		CPMT 53.52-24	CPMT160508-24		●		▲	●		0.031	0.625	0.219	0.217
		CPMT 53.53-24	CPMT160512-24					●		0.047	0.625	0.219	0.217
Finishing	W15	CPGT 730.5 L-W15	CPGT050202L-W15					●		0.008	0.219	0.094	0.098
		CPGT 731 L-W15	CPGT050204L-W15					●		0.016	0.219	0.094	0.098
		CPGT 2.51.50.5 R-W15	CPGT080202R-W15						●	0.008	0.313	0.094	0.134
		CPGT 2.51.50.5 L-W15	CPGT080202L-W15					●	●	0.008	0.313	0.094	0.134
		CPGT 2.51.51 R-W15	CPGT080204R-W15						●	0.016	0.313	0.094	0.134
		CPGT 2.51.51 L-W15	CPGT080204L-W15					●	●	0.016	0.313	0.094	0.134
	W20	CPGT 320.5 R-W20	CPGT090302R-W20					●	●	0.008	0.375	0.125	0.173
		CPGT 320.5 L-W20	CPGT090302L-W20					●	●	0.008	0.375	0.125	0.173
		CPGT 321 R-W20	CPGT090304R-W20					●	●	0.016	0.375	0.125	0.173
		CPGT 321 L-W20	CPGT090304L-W20					●	●	0.016	0.375	0.125	0.173

Dimension (inch)

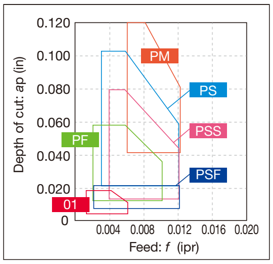


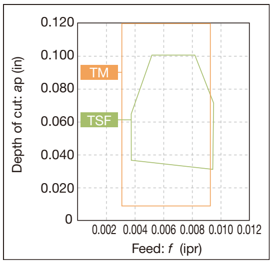


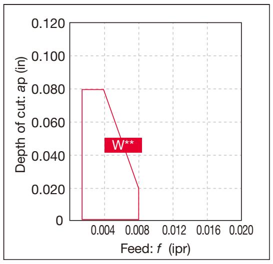


● : Line up
▲ : To be discontinued

Chip control range







Reference pages: Internal toolholder → D025 -

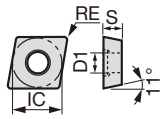
Insert POSITIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

CP

Rhombic, 80°
with hole
Positive 11°

		T9225	T9105	T9125	T6120	T6130	AH630	AH645	T515	T5115	AH725	AH8005	AH8015	AH905	NS9530
P	Steel	ɔ✣	●	ɔ✣	ɔ	✣	ɔ✣	✣			ɔ				●ɔ
M	Stainless				●	ɔ	ɔ	✣			ɔ	●	ɔ		
K	Cast iron		●ɔ						●ɔ	ɔ	ɔ				●ɔ
N	Non-ferrous														
S	Superalloy										●	●	ɔ	ɔ	
H	Hard material														



Application	Chipbreaker	Designation Inch	Designation Metric	RE	IC	S	D1
Medium cutting	**PM**	**CPMT 21.51 PM**	**CPMT060204-PM**	0.016	0.250	0.094	0.110
		CPMT 21.52 PM	CPMT060208-PM	0.031	0.250	0.094	0.110
		CPMT 321 PM	**CPMT090304-PM**	0.016	0.375	0.125	0.173
		CPMT 322 PM	CPMT090308-PM	0.031	0.375	0.125	0.173
Finishing to medium cutting	**CM**	**CPMT 21.51 CM**	**CPMT060204-CM**	0.016	0.250	0.094	0.110
		CPMT 21.52 CM	CPMT060208-CM	0.031	0.250	0.094	0.110
		CPMT 2.51.51 CM	**CPMT080204-CM**	0.016	0.313	0.094	0.134
		CPMT 2.51.52 CM	CPMT080208-CM	0.031	0.313	0.094	0.134
		CPMT 321 CM	**CPMT090304-CM**	0.016	0.375	0.125	0.173
		CPMT 322 CM	CPMT090308-CM	0.031	0.375	0.125	0.173
		CPMT 32.51 CM	**CPMT09T304-CM**	0.016	0.375	0.156	0.173
		CPMT 32.52 CM	CPMT09T308-CM	0.031	0.375	0.156	0.173
		CPMT 32.53 CM	CPMT09T312-CM	0.047	0.375	0.156	0.173
		CPMT 432 CM	**CPMT120408-CM**	0.031	0.500	0.187	0.217
		CPMT 433 CM	CPMT120412-CM	0.047	0.500	0.187	0.217
Medium cutting	**All-round**	**CPMT 432**	**CPMT120408**	0.031	0.500	0.187	0.217
	-	**CPMW 2.51.51**	**CPMW080204**	0.016	0.313	0.094	0.134
		CPMW 2.51.52	CPMW080208	0.031	0.313	0.094	0.134
		CPMW 321	**CPMW090304**	0.016	0.375	0.125	0.173
		CPMW 322	CPMW090308	0.031	0.375	0.125	0.173

● : Line up
▲ : To be discontinued

Reference pages: Internal toolholder → D025 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DC

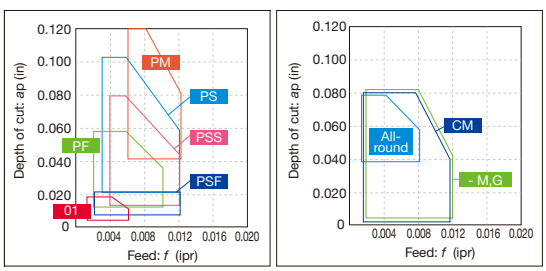
Rhombic, 55° with hole Positive 7°

		Coated											Coated cermet			Cermet	Dimension (inch)			
		T9215	T9225	T9115	T9125	AH725	AH8005	AH8015	AH905	GH730	SH725	J740	GT9530	J9530		NS9530	RE	IC	S	D1
P	Steel	●◐	◐✣	●◐	◐✣	◐				◐	●◐	●◐		●◐	●◐		●◐				
M	Stainless	●◐				◐	●	◐		◐	●◐	●◐									
K	Cast iron	●◐		●◐		◐				◐				●◐	●◐		●◐				
N	Non-ferrous																				
S	Superalloy					●	●	◐	◐												
H	Hard material																				
Precision finishing	01	DCGT 21.50.5-01	DCGT070202-01									●		●			0.008	0.250	0.094	0.110
		DCGT 32.50.5-01	DCGT11T302-01									●					0.008	0.375	0.156	0.173
Precision finishing (sharp edge)	01	DCGT 21.50.5 F-01	DCGT070202F-01								●						<0.008	0.250	0.094	0.110
		DCGT 21.51 F-01	DCGT070204F-01								●						<0.016	0.250	0.094	0.110
		DCGT 32.50.5 F-01	DCGT11T302F-01								●						<0.008	0.375	0.156	0.173
		DCGT 32.51 F-01	DCGT11T304F-01								●						<0.016	0.375	0.156	0.173
Finishing	PSF	DCMT 21.50.5 PSF	DCMT070202-PSF			●							●			●	0.008	0.250	0.094	0.110
		DCMT 21.51 PSF	DCMT070204-PSF	●	●	▲	▲	●					●			●	0.016	0.250	0.094	0.110
		DCMT 32.50.5 PSF	DCMT11T302-PSF					●					●			●	0.008	0.375	0.156	0.173
		DCMT 32.51 PSF	DCMT11T304-PSF	●	●	▲	▲	●	●	●	●		●			●	0.016	0.375	0.156	0.173
		DCMT 32.52 PSF	DCMT11T308-PSF	●	●	▲	▲	●	●	●	●						0.031	0.375	0.156	0.173
	PF	DCMT 21.50.5 PF	DCMT070202-PF							●			●			●	0.008	0.250	0.094	0.110
		DCMT 21.51 PF	DCMT070204-PF							●			●			●	0.016	0.250	0.094	0.110
		DCMT 21.52 PF	DCMT070208-PF										●			●	0.031	0.250	0.094	0.110
		DCMT 32.50.5 PF	DCMT11T302-PF							●			●			●	0.008	0.375	0.156	0.173
		DCMT 32.51 PF	DCMT11T304-PF							●			●			●	0.016	0.375	0.156	0.173
		DCMT 32.52 PF	DCMT11T308-PF										●				0.031	0.375	0.156	0.173

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up
▲ : To be discontinued

Chip control range



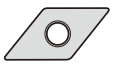
*-M,G: Without chipbreaker

Reference pages: External toolholder → C050 - Internal toolholder → D056 -
J-Series toolholder → G036 -

Insert POSITIVE TYPE

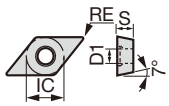
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

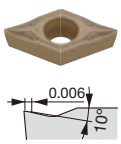
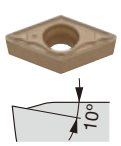
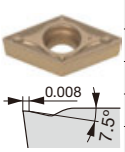
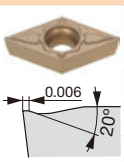
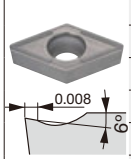
DC



Rhombic, 55° with hole Positive 7°

P	Steel	●◐	◐✣	●◐	◐✣	◐	✣	◐✣	✣	●◐	◐				◐	●◐	●◐	●◐					
M	Stainless	●◐				●	◐	◐	✣	●◐	◐	●	◐		◐								
K	Cast iron	●◐		●◐						●◐	◐				◐	●◐	●◐	●◐					
N	Non-ferrous																						
S	Superalloy									●◐	●	●	◐	◐									
H	Hard material																						



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH725	AH8005	AH8015	AH905	GH730	Coated cermet GT9530	AT9530	Cermet NS9530	Dimension (inch) RE	IC	S	D1
Finishing to light cutting	**PSS**	**DCMT 21.51 PSS**	**DCMT070204-PSS**	●	●	▲	▲	●	●	●	●		●					●		●	0.016	0.250	0.094	0.110
		DCMT 21.52 PSS	DCMT070208-PSS	●	●	▲	▲	●	●	●	●		●					●		●	0.031	0.250	0.094	0.110
		DCMT 32.51 PSS	**DCMT11T304-PSS**	●	●	▲	▲	●	●	●	●		●	●	●	●		●		●	0.016	0.375	0.156	0.173
		DCMT 32.52 PSS	DCMT11T308-PSS	●	●	▲	▲	●	●	●	●		●	●	●	●		●		●	0.031	0.375	0.156	0.173
		DCMT 32.53 PSS	DCMT11T312-PSS	●	●	▲	▲	●	●	●	●		●	●	●	●					0.047	0.375	0.156	0.173
Finishing to medium cutting	**PS**	**DCMT 21.50.5 PS**	**DCMT070202-PS**	●	●	▲	▲	●	●	●	●	●	●	●	●		●	●	●	●	0.008	0.250	0.094	0.110
		DCMT 21.51 PS	DCMT070204-PS	●	●	▲	▲	●	●	●	●	●	●	●	●		●	●	●	●	0.016	0.250	0.094	0.110
		DCMT 21.52 PS	DCMT070208-PS	●	●	▲	▲						●	●	●		●	●	●	●	0.031	0.250	0.094	0.110
		DCMT 32.50.5 PS	**DCMT11T302-PS**	●	●	▲	▲	●	●	●	●	●	●	●	●		●	●	●	●	0.008	0.375	0.156	0.173
		DCMT 32.51 PS	DCMT11T304-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	●	0.016	0.375	0.156	0.173
		DCMT 32.52 PS	DCMT11T308-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	●	0.031	0.375	0.156	0.173
		DCMT 32.53 PS	DCMT11T312-PS	●	●	▲	▲	●	●	●	●		●	●	●	●					0.047	0.375	0.156	0.173
	TSF	**DCMT 21.50.5 TSF**	**DCMT070202-TSF**	●	●																0.008	0.250	0.094	0.110
		DCMT 21.51 TSF	DCMT070204-TSF	●	●																0.016	0.250	0.094	0.110
		DCMT 21.52 TSF	DCMT070208-TSF	●	●																0.031	0.250	0.094	0.110
		DCMT 32.51 TSF	**DCMT11T304-TSF**	●	●																0.016	0.375	0.156	0.173
		DCMT 32.52 TSF	DCMT11T308-TSF	●	●																0.031	0.375	0.156	0.173
	TM	**DCMT 21.50.5 TM**	**DCMT070202-TM**	●	●																0.008	0.250	0.094	0.110
		DCMT 21.51 TM	DCMT070204-TM	●	●																0.016	0.250	0.094	0.110
		DCMT 21.52 TM	DCMT070208-TM	●	●																0.031	0.250	0.094	0.110
		DCMT 32.51 TM	**DCMT11T304-TM**	●	●																0.016	0.375	0.156	0.173
		DCMT 32.52 TM	DCMT11T308-TM	●	●																0.031	0.375	0.156	0.173
	23	**DCMT 21.51-23**	**DCMT070204-23**																	●	0.016	0.250	0.094	0.110
		**DCMT 32.51-23**	**DCMT11T304-23**																	●	0.016	0.375	0.156	0.173
		DCMT 32.52-23	DCMT11T308-23																	●	0.031	0.375	0.156	0.173
Medium cutting	**24**	**DCMT 21.50.5-24**	**DCMT070202-24**																	●	0.008	0.250	0.094	0.110
		DCMT 21.51-24	DCMT070204-24	●	●	▲	▲													●	0.016	0.250	0.094	0.110
		DCMT 21.52-24	DCMT070208-24		●		▲													●	0.031	0.250	0.094	0.110
		DCMT 32.50.5-24	**DCMT11T302-24**		●		▲													●	0.008	0.375	0.156	0.173
		DCMT 32.51-24	DCMT11T304-24	●	●	▲	▲													●	0.016	0.375	0.156	0.173
		DCMT 32.52-24	DCMT11T308-24	●	●	▲	▲		●											●	0.031	0.375	0.156	0.173

● : Line up
▲ : To be discontinued

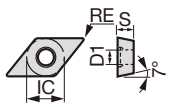
Reference pages: External toolholder → C050 - Internal toolholder → D056 -
J-Series toolholder → G036 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DC

Rhombic, 55° with hole Positive 7°

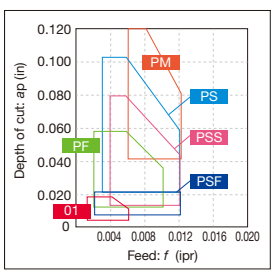
P	Steel	●◐	◐✣	●◐	◐✣	◐	✣	◐✣	✣			●◐	◐	●◐	◐	●◐		●◐	●
M	Stainless	●◐				●	◐	◐	✣			●◐	◐	●◐	◐				●
K	Cast iron	●◐		●◐						●◐	◐	●◐	◐	●◐	◐	●◐		●◐	●
N	Non-ferrous																		●
S	Superalloy											●◐	●						
H	Hard material																		

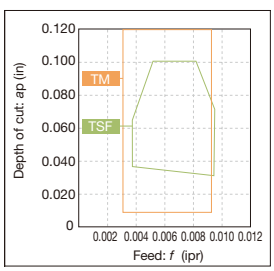


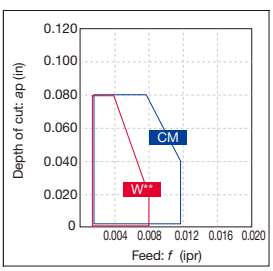
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	T515	T5115	AH120	AH725	GH330	GH730	Coated cermet GT9530	Cermet NS9530	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Finishing	W10	DCGT 21.5V R-W10	DCGT070200R-W10																	●	0.001	0.250	0.094	0.110
		DCGT 21.5V R-W10	DCGT070200L-W10																	●	0.001	0.250	0.094	0.110
		DCGT 21.50.5 R-W10	DCGT070202R-W10																●	●	0.008	0.250	0.094	0.110
		DCGT 21.50.5 L-W10	DCGT070202L-W10															●	●		0.008	0.250	0.094	0.110
		DCGT 21.51 R-W10	DCGT070204R-W10													●			●	●	0.016	0.250	0.094	0.110
		DCGT 21.51 L-W10	DCGT070204L-W10													●		●	●	●	0.016	0.250	0.094	0.110
	W15	DCGT 32.50.5 R-W15	DCGT11T302R-W15																●	●	0.008	0.375	0.156	0.173
		DCGT 32.50.5 L-W15	DCGT11T302L-W15															●	●		0.008	0.375	0.156	0.173
		DCGT 32.51 R-W15	DCGT11T304R-W15																●		0.016	0.375	0.156	0.173
		DCGT 32.51 L-W15	DCGT11T304L-W15													●		●	●	●	0.016	0.375	0.156	0.173
		DCGT 32.52 R-W15	DCGT11T308R-W15																●	●	0.031	0.375	0.156	0.173
		DCGT 32.52 L-W15	DCGT11T308L-W15																●	●	0.031	0.375	0.156	0.173
Medium cutting	PM	DCMT 21.51 PM	DCMT070204-PM	●	●	▲	▲	●	●	●	●			●	●		●	●	●		0.016	0.250	0.094	0.110
		DCMT 21.52 PM	DCMT070208-PM	●	●	▲	▲	●	●	●	●			●	●		●	●	●		0.031	0.250	0.094	0.110
		DCMT 32.51 PM	DCMT11T304-PM	●	●	▲	▲	●	●	●	●			●	●		●	●	●		0.016	0.375	0.156	0.173
		DCMT 32.52 PM	DCMT11T308-PM	●	●	▲	▲	●	●	●	●			●	●		●	●	●		0.031	0.375	0.156	0.173
		DCMT 32.53 PM	DCMT11T312-PM		●		▲	●	●	●	●				●				●		0.047	0.375	0.156	0.173
Finishing to medium cutting	CM	DCMT 21.51 CM	DCMT070204-CM										●								0.016	0.250	0.094	0.110
		DCMT 21.52 CM	DCMT070208-CM										●								0.031	0.250	0.094	0.110
		DCMT 32.51 CM	DCMT11T304-CM									●	●								0.016	0.375	0.156	0.173
		DCMT 32.52 CM	DCMT11T308-CM									●	●								0.031	0.375	0.156	0.173
		DCMT 32.53 CM	DCMT11T312-CM										●								0.047	0.375	0.156	0.173

● : Line up
▲ : To be discontinued

Chip control range







Reference pages: External toolholder → C050 - Internal toolholder → D056 -
J-Series toolholder → G036 -

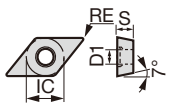
Insert POSITIVE TYPE

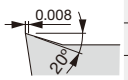
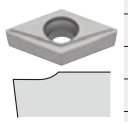
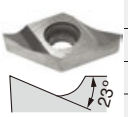
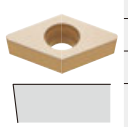
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

DC

Rhombic, 55° with hole Positive 7°

		T9105	T5115	GH110	NS9530	TH10	KS05F
P	Steel	●		●	●ɔ	●	
M	Stainless			●		●	
K	Cast iron	●ɔ	ɔ	●	●ɔ	●	●
N	Non-ferrous					●	●
S	Superalloy			●			●
H	Hard material						



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9105	Coated T5115	Coated GH110	Cermet NS9530	Uncoated TH10	Uncoated KS05F	RE	IC	S	D1
Finishing to medium cutting	**AL**	**DCGT 21.50.5 AL**	**DCGT070202-AL**						●	0.008	0.250	0.094	0.110
		DCGT 21.51 AL	DCGT070204-AL						●	0.016	0.250	0.094	0.110
		DCGT 32.50.5 AL	**DCGT11T302-AL**						●	0.008	0.375	0.156	0.173
		DCGT 32.51 AL	DCGT11T304-AL						●	0.016	0.375	0.156	0.173
		DCGT 32.52 AL	DCGT11T308-AL						●	0.031	0.375	0.156	0.173
	All-round	**DCGT 21.50.5**	**DCGT070202**				●			0.008	0.250	0.094	0.110
		DCGT 21.51	DCGT070204				●			0.016	0.250	0.094	0.110
		**DCGT 32.50.5**	**DCGT11T302**				●			0.008	0.375	0.156	0.173
		DCGT 32.51	DCGT11T304				●			0.016	0.375	0.156	0.173
		DCGT 32.52	DCGT11T308				●			0.031	0.375	0.156	0.173
	Angular	**DCGT 21.50.5 R**	**DCGT070202R**					●		0.008	0.250	0.094	0.110
		DCGT 21.50.5 L	DCGT070202L					●		0.008	0.250	0.094	0.110
		DCGT 21.51 R	DCGT070204R					●		0.016	0.250	0.094	0.110
		DCGT 21.51 L	DCGT070204L					●		0.016	0.250	0.094	0.110
		DCGT 32.50.5 R	**DCGT11T302R**					●		0.008	0.375	0.156	0.173
		DCGT 32.50.5 L	DCGT11T302L					●		0.008	0.375	0.156	0.173
		DCGT 32.51 R	DCGT11T304R					●		0.016	0.375	0.156	0.173
		DCGT 32.51 L	DCGT11T304L					●		0.016	0.375	0.156	0.173
Medium cutting	-	**DCMW 21.51**	**DCMW070204**	▲	●					0.016	0.250	0.094	0.110
		DCMW 21.52	DCMW070208		●					0.031	0.250	0.094	0.110
		**DCMW 32.51**	**DCMW11T304**	▲	●					0.016	0.375	0.156	0.173
		DCMW 32.52	DCMW11T308		●					0.031	0.375	0.156	0.173
	-	**DCGW 21.50.5**	**DCGW070202**					●		0.008	0.250	0.094	0.110
		DCGW 21.51	DCGW070204			●		●		0.016	0.250	0.094	0.110
		**DCGW 32.51**	**DCGW11T304**					●		0.016	0.375	0.156	0.173
		DCGW 32.52	DCGW11T308					●		0.031	0.375	0.156	0.173

● : Line up
▲ : To be discontinued

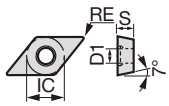
Reference pages: External toolholder → C050 - Internal toolholder → D056 -
J-Series toolholder → G036 -

● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

DC

Rhombic, 55° with hole Positive 7°

P	Steel	ⓒ	●ⓒ	●ⓒ
M	Stainless	ⓒ	●ⓒ	●ⓒ
K	Cast iron	ⓒ		
N	Non-ferrous			
S	Superalloy	●		●ⓒ
H	Hard material			

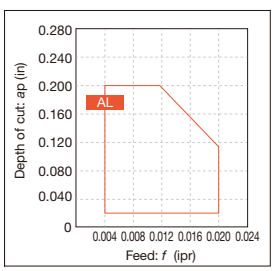


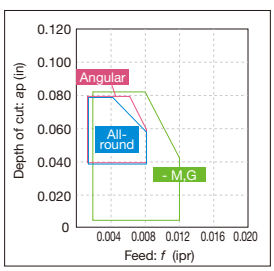
Application	Chipbreaker	Designation Inch	Designation Metric	Coated AH725	Coated SH725	Coated SH730	Dimension (inch) RE	IC	S	D1
For external turning on Swiss lathes (sharp edge)	JS	DCGT 21.5V FN-JS	DCGT070200FN-JS		●	●	0.001	0.250	0.094	0.110
		DCGT 21.50 FN-JS	DCGT070201FN-JS		●	●	<0.004	0.250	0.094	0.110
		DCGT 21.50.5 FN-JS	DCGT070202FN-JS		●	●	<0.008	0.250	0.094	0.110
		DCGT 32.5V FN-JS	DCGT11T300FN-JS		●	●	0.001	0.375	0.156	0.173
		DCGT 32.50 FN-JS	DCGT11T301FN-JS		●	●	<0.004	0.375	0.156	0.173
		DCGT 32.50.5 FN-JS	DCGT11T302FN-JS		●	●	<0.008	0.375	0.156	0.173
		DCGT 32.51 FN-JS	DCGT11T304FN-JS		●	●	<0.016	0.375	0.156	0.173
For external turning on Swiss lathes	JS	DCGT 21.50 N-JS	DCGT070201N-JS	●			0.004	0.250	0.094	0.110
		DCGT 21.50.5 N-JS	DCGT070202N-JS	●			0.008	0.250	0.094	0.110
		DCGT 32.50 N-JS	DCGT11T301N-JS	●			0.004	0.375	0.156	0.173
		DCGT 32.50.5 N-JS	DCGT11T302N-JS	●			0.008	0.375	0.156	0.173
		DCGT 32.51 N-JS	DCGT11T304N-JS	●			0.016	0.375	0.156	0.173
For external turning on Swiss lathes (sharp edge)	JPP	DCET 21.5X MFR-JPP	DCET0702008MFR-JPP		●	●	<0.003	0.250	0.094	0.110
		DCET 21.5X MFL-JPP	DCET0702008MFL-JPP		●	●	<0.003	0.250	0.094	0.110
		DCET 21.50 MFR-JRP	DCET070201MFR-JPP		●	●	<0.004	0.250	0.094	0.110
		DCET 21.50 MFL-JRP	DCET070201MFL-JPP		●	●	<0.004	0.250	0.094	0.110
		DCET 21.50.4 MFR-JRP	DCET070201 8MFR-JPP		●	●	<0.007	0.250	0.094	0.110
		DCET 21.50.4 MFL-JPP	DCET070201 8MFL-JPP		●	●	<0.007	0.250	0.094	0.110
		DCET 21.50.5 MFR-JPP	DCET070202MFR-JPP		●	●	<0.008	0.250	0.094	0.110
		DCET 21.50.5 MFL-JPP	DCET070202MFL-JPP		●	●	<0.008	0.250	0.094	0.110
		DCET 32.5X MFR-JPP	DCET11T3008MFR-JPP		●	●	<0.003	0.375	0.156	0.173
		DCET 32.5X MFL-JPP	DCET11T3008MFL-JPP		●	●	<0.003	0.375	0.156	0.173
		DCET 32.50 MFR-JPP	DCET11T301MFR-JPP		●	●	<0.004	0.375	0.156	0.173
		DCET 32.50 MFL-JPP	DCET11T301MFL-JPP		●	●	<0.004	0.375	0.156	0.173
		DCET 32.50.4 MFR-JPP	DCET11T3018MFR-JPP		●	●	<0.007	0.375	0.156	0.173
		DCET 32.50.4 MFL-JPP	DCET11T3018MFL-JPP		●	●	<0.007	0.375	0.156	0.173
		DCET 32.50.5 MFR-JPP	DCET11T302MFR-JPP		●	●	<0.008	0.375	0.156	0.173
		DCET 32.50.5 MFL-JPP	DCET11T302MFL-JPP		●	●	<0.008	0.375	0.156	0.173

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

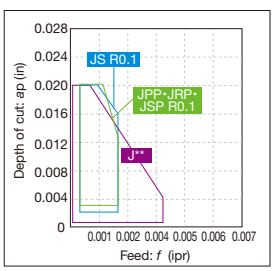
● : Line up

Chip control range





*-M,G: Without chipbreaker



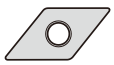
*Chip control range with typical R0.1

Reference pages: External toolholder → C050 - Internal toolholder → D056 -
J-Series toolholder → G036 -

Insert POSITIVE TYPE

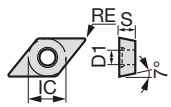
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

DC



Rhombic, 55° with hole Positive 7°

		SH725	SH730	J740	J9530	NS9530	TH10
P	Steel	●◐	●◐	●◐	●◐	●◐	●
M	Stainless	●◐	●◐	●◐			●
K	Cast iron				●◐	●◐	●
N	Non-ferrous						●
S	Superalloy		●◐				
H	Hard material						



Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH725	Coated SH730	Coated J740	Coated cermet J9530	Cermet NS9530	Uncoated TH10	Dimension (inch) RE	IC	S	D1
For external turning on Swiss lathes (sharp edge)	JRP	DCET 21.5X MFR-JRP	DCET0702008MFR-JRP	●	●					<0.003	0.250	0.094	0.110
		DCET 21.5X MFL-JRP	DCET0702008MFL-JRP	●	●					<0.003	0.250	0.094	0.110
		DCET 21.50 MFR-JRP	DCET070201MFR-JRP	●	●					<0.004	0.250	0.094	0.110
		DCET 21.50 MFL-JRP	DCET070201MFL-JRP	●	●					<0.004	0.250	0.094	0.110
		DCET 21.50.4 MFR-JRP	DCET0702018MFR-JRP	●	●					<0.007	0.250	0.094	0.110
		DCET 21.50.4 MFL-JRP	DCET0702018MFL-JRP	●	●					<0.007	0.250	0.094	0.110
		DCET 21.50.5 MFR-JRP	DCET070202MFR-JRP	●	●					<0.008	0.250	0.094	0.110
		DCET 21.50.5 MFL-JRP	DCET070202MFL-JRP	●	●					<0.008	0.250	0.094	0.110
		DCET 32.5X MFR-JRP	DCET11T3008MFR-JRP	●	●					<0.003	0.375	0.156	0.173
		DCET 32.5X MFL-JRP	DCET11T3008MFL-JRP	●	●					<0.003	0.375	0.156	0.173
		DCET 32.50 MFR-JRP	DCET11T301MFR-JRP	●	●					<0.004	0.375	0.156	0.173
		DCET 32.50 MFL-JRP	DCET11T301MFL-JRP	●	●					<0.004	0.375	0.156	0.173
		DCET 32.50.4 MFR-JRP	DCET11T3018MFR-JRP	●	●					<0.007	0.375	0.156	0.173
		DCET 32.50.4 MFL-JRP	DCET11T3018MFL-JRP	●	●					<0.007	0.375	0.156	0.173
		DCET 32.50.5 MFR-JRP	DCET11T302MFR-JRP	●	●					<0.008	0.375	0.156	0.173
		DCET 32.50.5 MFL-JRP	DCET11T302MFL-JRP	●	●					<0.008	0.375	0.156	0.173
	JSP	DCET 21.5X MFN-JSP	DCET0702008MFN-JSP	●	●					<0.003	0.250	0.094	0.110
		DCET 21.50 MFN-JSP	DCET070201MFN-JSP	●	●					<0.004	0.250	0.094	0.110
		DCET 21.50.4 MFN-JSP	DCET0702018MFN-JSP	●	●					<0.007	0.250	0.094	0.110
		DCET 21.50.5 MFN-JSP	DCET070202MFN-JSP	●	●					<0.008	0.250	0.094	0.110
		DCET 32.5X MFN-JSP	DCET11T3008MFN-JSP	●	●					<0.003	0.375	0.156	0.173
		DCET 32.50 MFN-JSP	DCET11T301MFN-JSP	●	●					<0.004	0.375	0.156	0.173
		DCET 32.50.4 MFN-JSP	DCET11T3018MFN-JSP	●	●					<0.007	0.375	0.156	0.173
		DCET 32.50.5 MFN-JSP	DCET11T302MFN-JSP	●	●					<0.008	0.375	0.156	0.173
	J10	DCGT 21.5V FR-J10	DCGT070200FR-J10	●		●			●	0.001	0.250	0.094	0.110
		DCGT 21.5V FL-J10	DCGT070200FL-J10	●		●			●	0.001	0.250	0.094	0.110
		DCGT 21.50 FR-J10	DCGT070201FR-J10	●		●		●	●	0.004	0.250	0.094	0.110
		DCGT 21.50 FL-J10	DCGT070201FL-J10	●		●		●	●	0.004	0.250	0.094	0.110
		DCGT 21.50.5 FR-J10	DCGT070202FR-J10	●		●		●	●	0.008	0.250	0.094	0.110
		DCGT 21.50.5 FL-J10	DCGT070202FL-J10	●		●		●	●	0.008	0.250	0.094	0.110
		DCGT 21.51 FR-J10	DCGT070204FR-J10	●						0.016	0.250	0.094	0.110
		DCGT 21.51 FL-J10	DCGT070204FL-J10	●						0.016	0.250	0.094	0.110
		DCGT 32.5V FR-J10	DCGT11T300FR-J10	●		●			●	0.001	0.375	0.156	0.173
		DCGT 32.5V FL-J10	DCGT11T300FL-J10	●		●			●	0.001	0.375	0.156	0.173
		DCGT 32.50 FR-J10	DCGT11T301FR-J10	●		●		●	●	0.004	0.375	0.156	0.173
		DCGT 32.50 FL-J10	DCGT11T301FL-J10	●		●		●	●	0.004	0.375	0.156	0.173
		DCGT 32.50.5 FR-J10	DCGT11T302FR-J10	●		●		●	●	0.008	0.375	0.156	0.173
		DCGT 32.50.5 FL-J10	DCGT11T302FL-J10	●		●		●	●	0.008	0.375	0.156	0.173
For external turning on Swiss lathes (honed edge)	J10	DCGT 21.50.5 R-J10	DCGT070202R-J10				●			0.008	0.250	0.094	0.110
		DCGT 32.50.5 R-J10	DCGT11T302R-J10				●			0.008	0.375	0.156	0.173

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

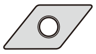
● : Line up

Reference pages: External toolholder → C050 - Internal toolholder → D056 -
J-Series toolholder → G036 -

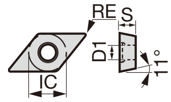
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

Insert POSITIVE TYPE

DP



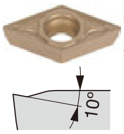
Rhombic, 55°
with hole
Positive 11°



	Material	T9225	T9125	AH8015			NS9530
P	Steel	◐✠	◐✠				●◐
M	Stainless			◐			
K	Cast iron						●◐
N	Non-ferrous						
S	Superalloy			◐			
H	Hard material						

Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9225	Coated T9125	Coated AH8015	Cermet NS9530	RE	IC	S	D1
Finishing to medium cutting	PS	DPMT 21.50.5 PS	DPMT070202-PS	●	▲	●	●	0.008	0.250	0.094	0.110
		DPMT 21.51 PS	DPMT070204-PS	●	▲	●	●	0.016	0.250	0.094	0.110
		DPMT 21.52 PS	DPMT070208-PS	●	▲	●	●	0.031	0.250	0.094	0.110

Dimension (inch)

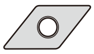


● : Line up
▲ : To be discontinued

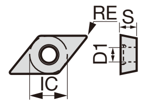
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

Insert POSITIVE TYPE / DOUBLE SIDE

DX



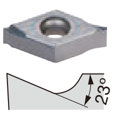
Rhombic, 55°
with hole

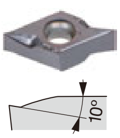


	Material	SH725
P	Steel	●◐
M	Stainless	●◐
K	Cast iron	
N	Non-ferrous	
S	Superalloy	
H	Hard material	

Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH725	RE	IC	S	D1
Finishing (sharp edge)	JRP	DXGU 220MFRE JRP	DXGU070301MFRE-JRP	●	<0.004	0.250	0.125	0.106
		DXGU 220MFLE JRP	DXGU070301MFLE-JRP	●	<0.004	0.250	0.125	0.106
		DXGU 220.5MFRE JRP	DXGU070302MFRE-JRP	●	<0.008	0.250	0.125	0.106
		DXGU 220.5MFLE JRP	DXGU070302MFLE-JRP	●	<0.008	0.250	0.125	0.106
Finishing to medium cutting (sharp edge)	JS	DXGU 220MFR JS	DXGU070301MFR-JS	●	<0.004	0.250	0.125	0.106
		DXGU 220MFL JS	DXGU070301MFL-JS	●	<0.004	0.250	0.125	0.106
		DXGU 220.5MFR JS	DXGU070302MFR-JS	●	<0.008	0.250	0.125	0.106
		DXGU 220.5MFL JS	DXGU070302MFL-JS	●	<0.008	0.250	0.125	0.106
		DXGU 221MFR JS	DXGU070304MFR-JS	●	<0.016	0.250	0.125	0.106
		DXGU 221MFL JS	DXGU070304MFL-JS	●	<0.016	0.250	0.125	0.106

Dimension (inch)

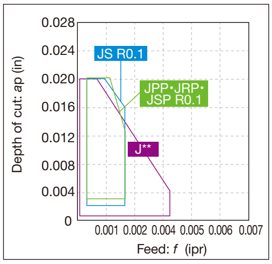


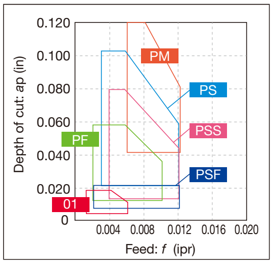


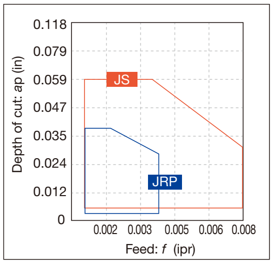
*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

Chip control range







*Chip control range with typical R0.1

Reference pages: DPMT...: Internal toolholder → D059 -
DXGU...: External toolholder → C042 -, Internal toolholder → D042 -

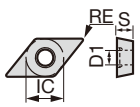
Insert POSITIVE TYPE / DOUBLE SIDE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

DX

Rhombic, 55° with hole

P	Steel	ɔ			●ɔ			●ɔ			●ɔ								
M	Stainless	ɔ	ɔ	●ɔ															
K	Cast iron	ɔ				●ɔ			●ɔ			●							
N	Non-ferrous											●							
S	Superalloy	●	ɔ									●							
H	Hard material																		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated AH725	Coated AH8015	Coated SH725	Coated cermet GT9530	Cermet NS9530	Uncoated KS05F	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting (sharp edge)	JTS	DXGU 220MFR JTS	DXGU070301MFR-JTS			●				<0.004	0.250	0.125	0.106
		DXGU 220MFL JTS	DXGU070301MFL-JTS			●				<0.004	0.250	0.125	0.106
		DXGU 220.5MFR JTS	DXGU070302MFR-JTS			●				<0.008	0.250	0.125	0.106
		DXGU 220.5MFL JTS	DXGU070302MFL-JTS			●				<0.008	0.250	0.125	0.106
Finishing to medium cutting	JTS	DXGU 220MR JTS	DXGU070301MR-JTS	●						<0.004	0.250	0.125	0.106
		DXGU 220ML JTS	DXGU070301ML-JTS	●						<0.004	0.250	0.125	0.106
		DXGU 220.5MR JTS	DXGU070302MR-JTS	●						<0.008	0.250	0.125	0.106
		DXGU 220.5ML JTS	DXGU070302ML-JTS	●						<0.008	0.250	0.125	0.106
Finishing (low cutting force) (sharp edge)	JSS	DXGU 220MFR JSS	DXGU070301MFR-JSS			●				<0.004	0.250	0.125	0.106
		DXGU 220MFL JSS	DXGU070301MFL-JSS			●				<0.004	0.250	0.125	0.106
		DXGU 220.5MFR JSS	DXGU070302MFR-JSS			●				<0.008	0.250	0.125	0.106
		DXGU 220.5MFL JSS	DXGU070302MFL-JSS			●				<0.008	0.250	0.125	0.106
Finishing (low cutting force)	JSS	DXGU 220MR JSS	DXGU070301MR-JSS	●						<0.004	0.250	0.125	0.106
		DXGU 220ML JSS	DXGU070301ML-JSS	●						<0.004	0.250	0.125	0.106
		DXGU 220.5MR JSS	DXGU070302MR-JSS	●						<0.008	0.250	0.125	0.106
		DXGU 220.5ML JSS	DXGU070302ML-JSS	●						<0.008	0.250	0.125	0.106
Finishing to medium cutting	TS	DXGU 220.5R TS	DXGU070302R-TS	●	●		●	●	●	0.008	0.250	0.125	0.106
		DXGU 220.5L TS	DXGU070302L-TS	●	●		●	●	●	0.008	0.250	0.125	0.106
		DXGU 221R TS	DXGU070304R-TS	●	●		●	●	●	0.016	0.250	0.125	0.106
		DXGU 221L TS	DXGU070304L-TS	●	●		●	●	●	0.016	0.250	0.125	0.106
		DXGU 222R TS	DXGU070308R-TS	●	●		●	●	●	0.031	0.250	0.125	0.106
		DXGU 222L TS	DXGU070308L-TS	●	●		●	●	●	0.031	0.250	0.125	0.106
Finishing (low cutting force)	SS	DXGU 220.5R SS	DXGU070302R-SS	●	●		●	●	●	0.008	0.250	0.125	0.106
		DXGU 220.5L SS	DXGU070302L-SS	●	●		●	●	●	0.008	0.250	0.125	0.106
		DXGU 221R SS	DXGU070304R-SS	●	●		●	●	●	0.016	0.250	0.125	0.106
		DXGU 221L SS	DXGU070304L-SS	●	●		●	●	●	0.016	0.250	0.125	0.106

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

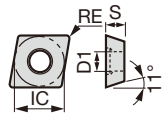
Reference pages: External toolholder → C042 - Internal toolholder → D042 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

EP

Rhombic, 75°
with hole
Positive 11°

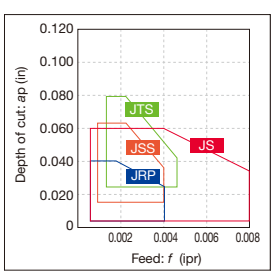
P	Steel	●		◐	●	◐				●	◐			●	◐						
M	Stainless	●		◐	●	◐								●	◐						
K	Cast iron	●								●	◐			●	◐						
N	Non-ferrous													●							
S	Superalloy	●			●	◐															
H	Hard material																				

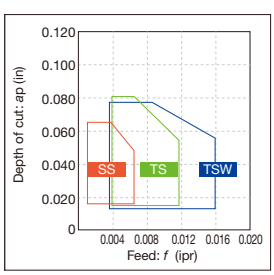


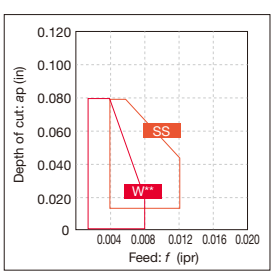
Application	Chipbreaker	Designation Inch	Designation Metric	Coated GH110	Coated SH725	Coated SH730	Coated cermet GT9530	Cermet NS9530	Uncoated TH10	Uncoated UX30	Dimension (inch) RE	IC	S	D1
Finishing	W08	EPGT 4.51.8V R-W08	EPGT03X100R-W08			●			●		0.001	0.141	0.055	0.075
		EPGT 4.51.8V L-W08	EPGT03X100L-W08			●			●		0.001	0.141	0.055	0.075
		EPGT 4.51.80 R-W08	EPGT03X101R-W08			●			●		0.004	0.141	0.055	0.075
		EPGT 4.51.80 L-W08	EPGT03X101L-W08			●			●		0.004	0.141	0.055	0.075
		EPGT 4.51.80.5R-W08	EPGT03X102R-W08			●			●		0.008	0.141	0.055	0.075
		EPGT 4.51.80.5L-W08	EPGT03X102L-W08			●			●		0.008	0.141	0.055	0.075
		EPGT 4.51.81 R-W08	EPGT03X104R-W08			●			●		0.016	0.141	0.055	0.075
		EPGT 4.51.81 L-W08	EPGT03X104L-W08			●			●		0.016	0.141	0.055	0.075
		EPGT 52V R-W08	EPGT040100R-W08			●			●		0.001	0.156	0.063	0.091
		EPGT 52V L-W08	EPGT040100L-W08	●		●		●	●		0.001	0.156	0.063	0.091
		EPGT 520 R-W08	EPGT040101R-W08			●			●		0.004	0.156	0.063	0.091
		EPGT 520 L-W08	EPGT040101L-W08			●			●		0.004	0.156	0.063	0.091
		EPGT 520.5 R-W08	EPGT040102R-W08	●		●		●	●		0.008	0.156	0.063	0.091
		EPGT 520.5 L-W08	EPGT040102L-W08	●		●	●	●	●	●	0.008	0.156	0.063	0.091
		EPGT 521 R-W08	EPGT040104R-W08	●		●		●	●		0.016	0.156	0.063	0.091
		EPGT 521 L-W08	EPGT040104L-W08	●		●	●	●	●	●	0.016	0.156	0.063	0.091
Finishing (sharp edge)	W08	EPGT 4.51.8V FR-W08	EPGT03X100FR-W08		●						0.001	0.141	0.055	0.075
		EPGT 4.51.8V FL-W08	EPGT03X100FL-W08		●						0.001	0.141	0.055	0.075
		EPGT 4.51.80 FR-W08	EPGT03X101FR-W08		●						0.004	0.141	0.055	0.075
		EPGT 4.51.80 FL-W08	EPGT03X101FL-W08		●						0.004	0.141	0.055	0.075
		EPGT 4.51.80.5FR-W08	EPGT03X102FR-W08		●						0.008	0.141	0.055	0.075
		EPGT 4.51.80.5FL-W08	EPGT03X102FL-W08		●						0.008	0.141	0.055	0.075
		EPGT 4.51.81 FR-W08	EPGT03X104FR-W08		●						0.016	0.141	0.055	0.075
		EPGT 4.51.81 FL-W08	EPGT03X104FL-W08		●						0.016	0.141	0.055	0.075
		EPGT 52V FR-W08	EPGT040100FR-W08		●						0.001	0.156	0.063	0.091
		EPGT 52V FL-W08	EPGT040100FL-W08		●						0.001	0.156	0.063	0.091
		EPGT 520 FR-W08	EPGT040101FR-W08		●						0.004	0.156	0.063	0.091
		EPGT 520 FL-W08	EPGT040101FL-W08		●						0.004	0.156	0.063	0.091
		EPGT 520.5 FR-W08	EPGT040102FR-W08		●						0.008	0.156	0.063	0.091
		EPGT 520.5 FL-W08	EPGT040102FL-W08		●						0.008	0.156	0.063	0.091
		EPGT 521 FR-W08	EPGT040104FR-W08		●						0.016	0.156	0.063	0.091
		EPGT 521 FL-W08	EPGT040104FL-W08		●						0.016	0.156	0.063	0.091

● : Line up

Chip control range





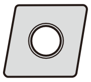


Reference pages: Internal toolholder → D040 -

Insert POSITIVE TYPE

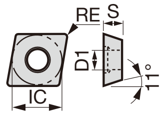
● : Continuous cutting
◐ : Light interrupted cutting
✤ : Heavy interrupted cutting

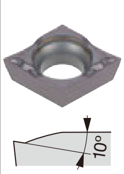
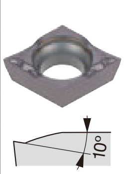
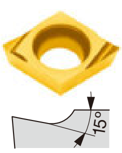
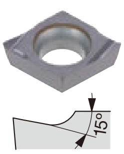
EP



Rhombic, 75°
with hole
Positive 11°

		SH725	SH730	J740
P	Steel	●◐	●◐	●◐
M	Stainless	●◐	●◐	●◐
K	Cast iron			
N	Non-ferrous			
S	Superalloy		●◐	
H	Hard material			



Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH725	Coated SH730	Coated J740	Dimension (inch) RE	IC	S	D1
For internal turning on Swiss lathes	**JS**	EPGT 4.51.80 JS	EPGT03X101-JS		●		<0.004	0.141	0.055	0.075
	 10°	EPGT 4.51.80.5 JS	EPGT03X102-JS		●		<0.008	0.141	0.055	0.075
		EPGT 4.51.81 JS	EPGT03X104-JS		●		<0.016	0.141	0.055	0.075
		EPGT 520 JS	EPGT040101-JS		●		<0.004	0.156	0.063	0.091
		EPGT 520.5 JS	EPGT040102-JS		●		<0.008	0.156	0.063	0.091
		EPGT 521 JS	EPGT040104-JS		●		<0.016	0.156	0.063	0.091
For internal turning on Swiss lathes (sharp edge)	**JS**	EPGT 4.51.80 F-JS	EPGT03X101F-JS	●			<0.004	0.141	0.055	0.075
	 10°	EPGT 4.51.80.5 F-JS	EPGT03X102F-JS	●			<0.008	0.141	0.055	0.075
		EPGT 4.51.81 F-JS	EPGT03X104F-JS	●			<0.016	0.141	0.055	0.075
		EPGT 520 F-JS	EPGT040101F-JS	●			<0.004	0.156	0.063	0.091
		EPGT 520.5 F-JS	EPGT040102F-JS	●			<0.008	0.156	0.063	0.091
		EPGT 521 F-JS	EPGT040104F-JS	●			<0.016	0.156	0.063	0.091
Finishing	**J08**	EPGT 52V L-J08	EPGT040100L-J08		●	●	0.001	0.156	0.063	0.091
	 15°	EPGT 520.5 L-J08	EPGT040102L-J08		●	●	0.008	0.156	0.063	0.091
		EPGT 521 L-J08	EPGT040104L-J08		●	●	0.016	0.156	0.063	0.091
Finishing (sharp edge)	**J08**	EPGT 52V FL-J08	EPGT040100FL-J08	●			0.001	0.156	0.063	0.091
	 15°	EPGT 520.5 FL-J08	EPGT040102FL-J08	●			0.008	0.156	0.063	0.091
		EPGT 521 FL-J08	EPGT040104FL-J08	●			0.016	0.156	0.063	0.091

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

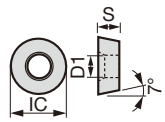
Reference pages: Internal toolholder → D040 -

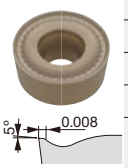
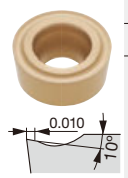
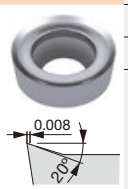
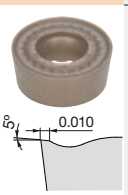
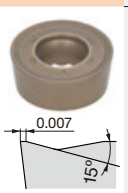
● : Continuous cutting
ć : Light interrupted cutting
✣ : Heavy interrupted cutting

RC

Round, with hole
Positive 7°

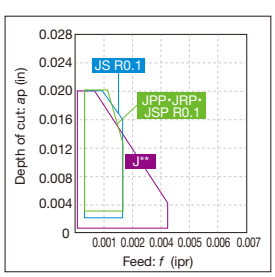
P	Steel	●ć	ć✣	●ć	ć✣		●ć												
M	Stainless	●ć					●ć	●	ć										
K	Cast iron	●ć		●ć		ć	●ć					●							
N	Non-ferrous											●							
S	Superalloy						●ć	●	ć	ć		●							
H	Hard material																		

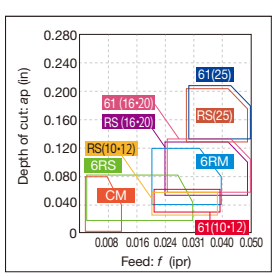


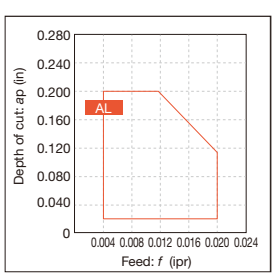
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9115	T9125	T5115	AH120	AH8005	AH8015	AH905	Uncoated KS05F	RE	IC	S	D1
Finishing to medium cutting	**RS**	-	RCMT10T3M0-RS	●	●	▲	▲			●	●	●		-	0.394	0.156	0.173
		-	RCMT1204M0-RS	●	●	▲	▲		●	●	●	●		-	0.472	0.187	0.173
		-	RCMT1606M0-RS	●	●	▲	▲		●					-	0.630	0.250	0.217
		-	RCMT2006M0-RS		●		▲							-	0.787	0.250	0.256
		-	RCMT2507M0-RS		●		▲							-	0.984	0.313	0.299
	CM	-	RCMT0502M0-CM					●						-	0.197	0.094	0.098
		-	RCMT0602M0-CM					●						-	0.236	0.094	0.110
		-	RCMT0803M0-CM					●						-	0.315	0.125	0.134
	AL	-	RCGT0602M0-AL										●	-	0.236	0.094	0.110
		-	RCGT0803M0-AL										●	-	0.315	0.125	0.134
		-	RCGT1003M0-AL										●	-	0.394	0.125	0.173
Finishing (low cutting force)	**6RS**	-	RCMT1204M0-6RS	●	●	▲	▲							-	0.472	0.187	0.173
																	
Medium cutting	**6RM**	-	RCMT1204M0-6RM	●	●	▲	▲							-	0.472	0.187	0.173
																	

● : Line up
▲ : To be discontinued

Chip control range







*Chip control range with typical R0.1

Reference pages: External toolholder → C078 -, C087

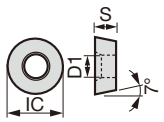
Insert POSITIVE TYPE

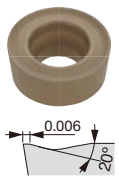
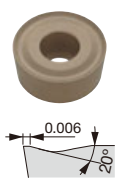
●: Continuous cutting
c: Light interrupted cutting
✣: Heavy interrupted cutting

RC

Round, with hole
Positive 7°

P	Steel	●c	c✣	●c	c✣					●c				●					
M	Stainless	●c				●	c							●					
K	Cast iron	●c		●c						●c				●					
N	Non-ferrous													●					
S	Superalloy					●	c	c											
H	Hard material																		



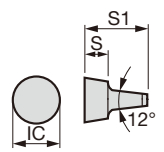
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9115	T9125	AH8005	AH8015	AH905	Cermet NS9530	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Heavy cutting	61	-	RCMT0502M0-61	●	●	▲	▲				●	●	-	0.197	0.094	0.098
		-	RCMT0602M0-61	●	●	▲	▲				●	●	-	0.236	0.094	0.110
		-	RCMT0803M0-61	●	●	▲	▲				●	●	-	0.315	0.125	0.134
	61	-	RCMM1003M0-61	●	●	▲	▲	●	●	●	●	●	-	0.394	0.125	0.142
		-	RCMM1204M0-61	●	●	▲	▲	●	●	●	●	●	-	0.472	0.187	0.165
		-	RCMM1606M0-61	●	●	▲	▲					●	-	0.630	0.250	0.205
		-	RCMM2006M0-61		●		▲					●	-	0.787	0.250	0.256
		-	RCMM2507M0-61		●		▲						-	0.984	0.313	0.283

D1 (in) Designation	0502M0	0602M0	0803M0	1003M0	1204M0	1606M0	2006M0	2507M0
RC*T	0.098	0.110	0.134	0.173	0.173	0.217	0.256	0.299
RCMM	-	-	-	0.142	0.165	0.205	0.256	0.283

RT

Special round insert

P	Steel	●																	
M	Stainless	●																	
K	Cast iron	●	c✣																
N	Non-ferrous	●	c✣																
S	Superalloy		c✣																
H	Hard material																		



Application	Chipbreaker	Designation Inch	Designation Metric	Uncoated TH10	KS20	Dimension (inch) RE	IC	S	S1
Medium cutting	-	-	RT05	●		-	0.197	0.098	0.256
		-	RT06	●	●	-	0.236	0.118	0.303
		-	RT08	●		-	0.315	0.165	0.406

●: Line up
▲: To be discontinued

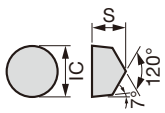
Reference pages: RC...: External toolholder → C078 -

● : Continuous cutting
◐ : Light interrupted cutting
✤ : Heavy interrupted cutting

RC

Round, without hole
Positive 7°

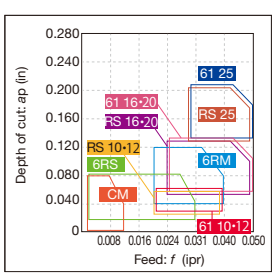
P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloy	
H	Hard material	●



Application	Chipbreaker	Designation Inch	Designation Metric	Ceramic LX11	Dimension (inch) RE	IC	S	D1
Medium cutting	-	-	RCGX090800	●	-	0.375	0.315	-
		-	RCGX120800	●	-	0.500	0.315	-

● : Line up

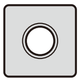
Chip control range



MEMO

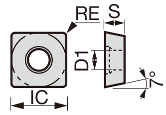
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

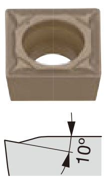
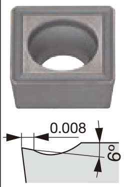
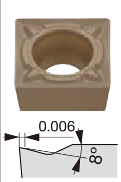
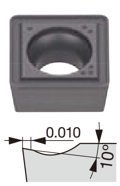
SC



Square, 90° with hole Positive 7°

		T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	T515	T5115	AH120	AH725	GT9530	AT9530	NS9530
P	Steel	●◐	◐✠	●◐	◐✠	◐	✠	◐✠	✠			●◐	◐	●◐	●◐	●◐
M	Stainless	●◐				●	◐	◐	✠			●◐	◐			
K	Cast iron	●◐		●◐						●◐	◐	●◐	◐	●◐	●◐	●◐
N	Non-ferrous															
S	Superalloy											●◐	●			
H	Hard material															

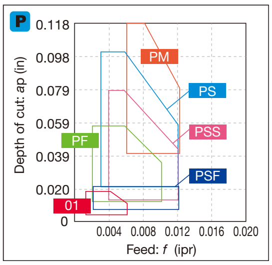


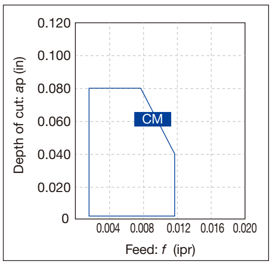
Application	Chipbreaker	Designation Inch	Designation Metric	T9215 (Coated)	T9225 (Coated)	T9115 (Coated)	T9125 (Coated)	T6120 (Coated)	T6130 (Coated)	AH630 (Coated)	AH645 (Coated)	T515 (Coated)	T5115 (Coated)	AH120 (Coated)	AH725 (Coated)	GT9530 (Coated cermet)	AT9530 (Coated cermet)	NS9530 (Cermet)	RE	IC	S	D1
Finishing to medium cutting	PS	SCMT 32.51 PS	SCMT09T304-PS	●	●	▲	▲	●	●	●	●				●	●	●	●	0.016	0.375	0.156	0.173
		SCMT 32.52 PS	SCMT09T308-PS	●	●	▲	▲	●	●	●	●				●	●	●	●	0.031	0.375	0.156	0.173
		SCMT 431 PS	SCMT120404-PS	●	●	▲	▲	●	●	●	●				●			●	0.016	0.500	0.187	0.217
		SCMT 432 PS	SCMT120408-PS	●	●	▲	▲	●	●	●	●				●			●	0.031	0.500	0.187	0.217
	23	SCMT 32.50.5-23	SCMT09T302-23															●	0.008	0.375	0.156	0.173
		SCMT 32.52-23	SCMT09T308-23		●		▲							●					0.031	0.375	0.156	0.173
		SCMT 432-23	SCMT120408-23		●		▲							●	●				0.031	0.500	0.187	0.217
Medium cutting	24	SCMT 21.51-24	SCMT070204-24		●		▲											●	0.016	0.313	0.094	0.134
		SCMT 32.50.5-24	SCMT09T302-24															●	0.008	0.375	0.156	0.173
		SCMT 32.51-24	SCMT09T304-24		●		▲											●	0.016	0.375	0.156	0.173
		SCMT 32.52-24	SCMT09T308-24	●	●	▲	▲											●	0.031	0.375	0.156	0.173
		SCMT 431-24	SCMT120404-24		●		▲											●	0.016	0.500	0.187	0.217
		SCMT 432-24	SCMT120408-24		●		▲							●				●	0.031	0.500	0.187	0.217
	PM	SCMT 32.51 PM	SCMT09T304-PM	●	●	▲	▲	●	●	●	●				●			●	0.016	0.375	0.156	0.173
		SCMT 32.52 PM	SCMT09T308-PM	●	●	▲	▲	●	●	●	●				●			●	0.031	0.375	0.156	0.173
		SCMT 432 PM	SCMT120408-PM	●	●	▲	▲	●	●	●	●				●			●	0.031	0.500	0.187	0.217
		SCMT 433 PM	SCMT120412-PM		●		▲	●	●	●	●				●			●	0.047	0.500	0.187	0.217
Finishing to medium cutting	CM	SCMT 32.51 CM	SCMT09T304-CM									●	●						0.016	0.375	0.156	0.173
		SCMT 32.52 CM	SCMT09T308-CM									●	●						0.031	0.375	0.156	0.173
		SCMT 32.53 CM	SCMT09T312-CM										●						0.047	0.375	0.156	0.173
		SCMT 431 CM	SCMT120404-CM									●	●						0.016	0.500	0.187	0.217
		SCMT 432 CM	SCMT120408-CM									●	●						0.031	0.500	0.187	0.217

Dimension (inch)

● : Line up
▲ : To be discontinued

Chip control range





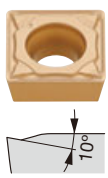
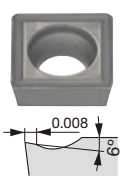
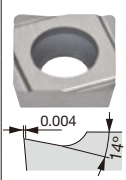
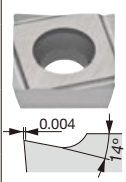
Reference pages: External toolholder → C110 -

Insert POSITIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

SP

Square, 90° with hole Positive 11°

		Coated										Coated cermet		Cermet	Un-coated	Dimension (inch)			
Application	Chipbreaker	Designation Inch	Designation Metric	T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH725	GT9530	AT9530	NS9530	TH10	RE	IC	S	D1
Finishing to medium cutting	**PS**	**SPMT 321 PS**	**SPMT090304-PS**	●	●	▲	▲	●	●	●	●		●	●	●	●		0.016	0.375	0.125	0.173
		**SPMT 322 PS**	**SPMT090308-PS**	●	●	▲	▲	●	●	●	●		●	●	●	●		0.031	0.375	0.125	0.173
		SPMT 431 PS	**SPMT120404-PS**	●	●	▲	▲	●	●	●	●		●					0.016	0.500	0.187	0.217
		SPMT 432 PS	**SPMT120408-PS**	●	●	▲	▲	●	●	●	●		●					0.031	0.500	0.187	0.217
	23	**SPMT 321 23**	**SPMT090304-23**		●		▲									●		0.016	0.375	0.125	0.173
		**SPMT 322-23**	**SPMT090308-23**		●		▲									●		0.031	0.375	0.125	0.173
Medium cutting	**24**	**SPMT 321-24**	**SPMT090304-24**		●		▲									●		0.016	0.375	0.125	0.173
		**SPMT 322-24**	**SPMT090308-24**		●		▲					●				●		0.031	0.375	0.125	0.173
		SPMT 431-24	**SPMT120404-24**													●		0.016	0.500	0.187	0.217
		SPMT 432-24	**SPMT120408-24**									●				●		0.031	0.500	0.187	0.217
Finishing	**W15**	**SPGT 320.5 L-W15**	**SPGT090302L-W15**													●		0.008	0.375	0.125	0.173
		**SPGT 321 L-W15**	**SPGT090304L-W15**													●	●	0.016	0.375	0.125	0.173
		SPGT 322 R-W15	**SPGT090308R-W15**														●	0.031	0.375	3.18	0.173
		SPGT 322 L-W15	**SPGT090308L-W15**													●	●	0.031	0.375	3.18	0.173
	W20	**SPGT 431 L-W20**	**SPGT120404L-W20**													●		0.016	0.500	0.187	0.217
																					

● : Line up
▲ : To be discontinued

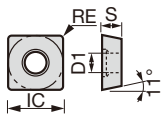
Reference pages: Internal toolholder → D045 -

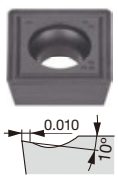
● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

SP

Square, 90°
with hole
Positive 11°

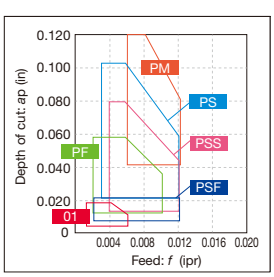
P	Steel	●ⓒ ●
M	Stainless	●
K	Cast iron	●ⓒ ⓒ ●ⓒ ●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	

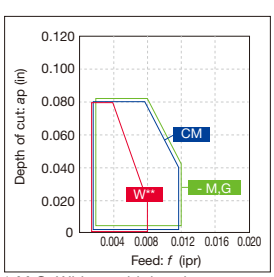


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T515	Coated T5115	Cermet NS9530	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	CM	SPMT 321 CM	SPMT090304-CM		●			0.016	0.375	0.125	0.173
		SPMT 322 CM	SPMT090308-CM		●			0.031	0.375	0.125	0.173
		SPMT 431 CM	SPMT120404-CM	●	●			0.016	0.500	0.187	0.217
		SPMT 432 CM	SPMT120408-CM	●	●			0.031	0.500	0.187	0.217
	-	SPGM 321 L	SPGM090304L			●		0.016	0.375	0.125	0.173
	(Tungaloy standard hole specification)	SPGM 421 L	SPGM120304L			●		0.016	0.500	0.125	0.217
		SPGM 422 L	SPGM120308L			●		0.031	0.500	0.125	0.217
	-	SPMW 321	SPMW090304		●			0.016	0.375	0.125	0.173
		SPMW 322	SPMW090308		●			0.031	0.375	0.125	0.173
		SPMW 431	SPMW120404		●			0.016	0.500	0.187	0.217
		SPMW 432	SPMW120408		●			0.031	0.500	0.187	0.217
	-	SPGW 320.5	SPGW090302				●	0.008	0.375	0.125	0.173
		SPGW 321	SPGW090304				●	0.016	0.375	0.125	0.173
		SPGW 431	SPGW120404				●	0.016	0.500	0.187	0.217
	-	SPGA 321	SPGA090304			●		0.016	0.375	0.125	0.173
	(Tungaloy standard hole specification)										
											

● : Line up

Chip control range





*-M,G: Without chipbreaker

Reference pages: Internal toolholder → D045 -

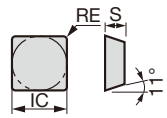
Insert POSITIVE TYPE

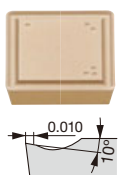
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

SP

Square, 90° without hole Positive 11°

		Coated					Cermet		Uncoated		Ceramic
		T9225	T9125	T5115	T3130	AH120	NS9530		TH10	UX30	LX11
P	Steel	◐✣	◐✣		●◐	●◐	●◐		●	●	
M	Stainless				●◐	●◐			●	●	
K	Cast iron			◐	●◐	●◐	●◐		●		
N	Non-ferrous								●		
S	Superalloy					●◐					
H	Hard material										●



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9225	Coated T9125	Coated T5115	Coated T3130	Coated AH120	Cermet NS9530	Uncoated TH10	Uncoated UX30	Ceramic LX11	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	23	SPMR 321-23	SPMR090304-23						●				0.016	0.375	0.125	-
		SPMR 322-23	SPMR090308-23	●	▲				●				0.031	0.375	0.125	-
		SPMR 421-23	SPMR120304-23	●	▲				●				0.016	0.500	0.125	-
		SPMR 422-23	SPMR120308-23	●	▲				●				0.031	0.500	0.125	-
	CM	SPMR 321 CM	SPMR090304-CM			●							0.016	0.375	0.125	-
		SPMR 322 CM	SPMR090308-CM			●							0.031	0.375	0.125	-
		SPMR 421 CM	SPMR120304-CM			●							0.016	0.500	0.125	-
		SPMR 422 CM	SPMR120308-CM			●							0.031	0.500	0.125	-
		SPMR 423 CM	SPMR120312-CM			●							0.047	0.500	0.125	-
	-	SPGR 321 L	SPGR090304L						●				0.016	0.375	0.125	-
																
	-	SPGN 321	SPGN090304							●		●	0.016	0.375	0.125	-
		SPGN 322	SPGN090308							●		●	0.031	0.375	0.125	-
		SPGN 421	SPGN120304							●		●	0.016	0.500	0.125	-
		SPGN 422	SPGN120308					●		●		●	0.031	0.500	0.125	-
		SPGN 423	SPGN120312						●			●	0.047	0.500	0.125	-
		SPGN 432	SPGN120408							●			0.031	0.500	0.187	-
	-	SPMN 321	SPMN090304			●							0.016	0.375	0.125	-
		SPMN 322	SPMN090308			●							0.031	0.375	0.125	-
		SPMN 421	SPMN120304			●							0.016	0.500	0.125	-
		SPMN 422	SPMN120308			●	●		●	●	●		0.031	0.500	0.125	-
		SPMN 423	SPMN120312			●				●	●		0.047	0.500	0.125	-
		SPMN 432	SPMN120408			●		●		●	●		0.031	0.500	0.187	-
		SPMN 433	SPMN120412			●							0.047	0.500	0.187	-
		SPMN 633	SPMN190412				●			●			0.047	0.750	0.187	-

● : Line up
▲ : To be discontinued

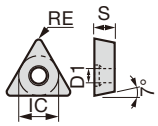
Reference pages: Internal toolholder → D045 -

● : Continuous cutting
ⓒ : Light interrupted cutting
✣ : Heavy interrupted cutting

TC

Triangular, 60°
with hole
Positive 7°

P	Steel	●ⓒ	ⓒ✣	●ⓒ	ⓒ✣	ⓒ	●ⓒ	●ⓒ		●ⓒ			●ⓒ	●ⓒ			●		
M	Stainless	●ⓒ				ⓒ	●ⓒ	●ⓒ									●		
K	Cast iron	●ⓒ		●ⓒ		ⓒ				●ⓒ			●ⓒ	●ⓒ			●		
N	Non-ferrous																●		
S	Superalloy					●													
H	Hard material																		

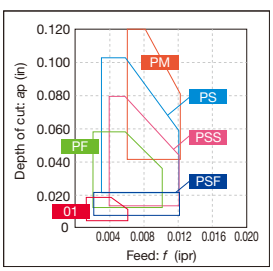


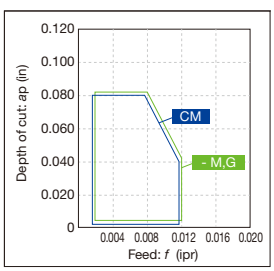
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9115	T9125	AH725	SH725	J740	Coated cermet GT9530	Cermet NS9530	NS520	Un-coated TH10	Dimension (inch) RE	IC	S	D1
Precision finishing	01	TCGT 731-01	TCGT090204-01										●	●	0.016	0.219	0.094	0.098
		TCGT 21.50.5-01	TCGT110202-01							●					0.008	0.250	0.094	0.110
		TCGT 21.51-01	TCGT110204-01								●	●	●	●	0.016	0.250	0.094	0.110
		TCGT 21.52-01	TCGT110208-01									●			0.031	0.250	0.094	0.110
		TCGT 32.51-01	TCGT16T304-01											●	0.016	0.375	0.156	0.173
		TCGT 32.52-01	TCGT16T308-01										●	●	0.031	0.375	0.156	0.173
Precision finishing (sharp edge)	01	TCGT 21.50.5 F-01	TCGT110202F-01						●						<0.008	0.250	0.094	0.110
		TCGT 21.51 F-01	TCGT110204F-01						●						<0.016	0.250	0.094	0.110
Finishing	PSF	TCMT 730.5 PSF	TCMT090202-PSF					●							0.008	0.219	0.094	0.098
		TCMT 731 PSF	TCMT090204-PSF	●	●	▲	▲	●							0.016	0.219	0.094	0.098
		TCMT 21.50.5 PSF	TCMT110202-PSF					●							0.008	0.250	0.094	0.110
		TCMT 21.51 PSF	TCMT110204-PSF	●	●	▲	▲	●							0.016	0.250	0.094	0.110
		TCMT 220.5 PSF	TCMT110302-PSF					●							0.008	0.250	0.125	0.110
		TCMT 221 PSF	TCMT110304-PSF	●	●	▲	▲	●							0.016	0.250	0.125	0.110
		TCMT 32.51 PSF	TCMT16T304-PSF	●	●	▲	▲	●							0.016	0.375	0.156	0.173
Finishing to light cutting	PSS	TCMT 731 PSS	TCMT090204-PSS	●	●	▲	▲	●							0.016	0.219	0.094	0.098
		TCMT 732 PSS	TCMT090208-PSS	●	●	▲	▲	●							0.031	0.219	0.094	0.098
		TCMT 21.51 PSS	TCMT110204-PSS	●	●	▲	▲	●							0.016	0.250	0.094	0.110
		TCMT 21.52 PSS	TCMT110208-PSS	●	●	▲	▲	●							0.031	0.250	0.094	0.110
		TCMT 221 PSS	TCMT110304-PSS	●	●	▲	▲	●							0.016	0.250	0.125	0.110
		TCMT 222 PSS	TCMT110308-PSS	●	●	▲	▲	●							0.031	0.250	0.125	0.110
		TCMT 32.51 PSS	TCMT16T304-PSS	●	●	▲	▲	●							0.016	0.375	0.156	0.173
		TCMT 32.52 PSS	TCMT16T308-PSS	●	●	▲	▲	●							0.031	0.375	0.156	0.173
		TCMT 32.53 PSS	TCMT16T312-PSS	●	●	▲	▲	●							0.047	0.375	0.156	0.173

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up
▲ : To be discontinued

Chip control range





*-M,G: Without chipbreaker

Reference pages: External toolholder → C080 - Internal toolholder → D049
J-Series toolholder → G051 -

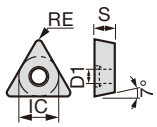
Insert POSITIVE TYPE

● : Continuous cutting
ɕ : Light interrupted cutting
✣ : Heavy interrupted cutting

TC

Triangular, 60° with hole Positive 7°

P	Steel	●ɕ	ɕ✣	●ɕ	ɕ✣	ɕ	✣	ɕ✣	✣	ɕ	ɕ	●ɕ	●ɕ			●ɕ		●			
M	Stainless	●ɕ				●	ɕ	ɕ	✣	ɕ	ɕ							●			
K	Cast iron	●ɕ		●ɕ						ɕ	ɕ	●ɕ	●ɕ			●ɕ		●			
N	Non-ferrous																	●			
S	Superalloy									●											
H	Hard material																				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	AH725	GH730	Coated cermet GT9530	AT9530	Cermet NS9530	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	PS	TCMT 731 PS	TCMT090204-PS									●						0.016	0.219	0.094	0.098
		TCMT 732 PS	TCMT090208-PS									●						0.031	0.219	0.094	0.098
		TCMT 21.50.5 PS	TCMT110202-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●		0.008	0.250	0.094	0.110
		TCMT 21.51 PS	TCMT110204-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●		0.016	0.250	0.094	0.110
		TCMT 21.52 PS	TCMT110208-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●		0.031	0.250	0.094	0.110
		TCMT 220.5 PS	TCMT110302-PS	●	●	▲	▲	●	●	●	●							0.008	0.250	0.125	0.110
		TCMT 221 PS	TCMT110304-PS	●	●	▲	▲	●	●	●	●							0.016	0.250	0.125	0.110
		TCMT 222 PS	TCMT110308-PS	●	●	▲	▲	●	●	●	●							0.031	0.250	0.125	0.110
		TCMT 32.50.5 PS	TCMT16T302-PS	●	●	▲	▲	●	●	●	●	●				●		0.008	0.375	0.156	0.173
		TCMT 32.51 PS	TCMT16T304-PS	●	●	▲	▲	●	●	●	●	●				●		0.016	0.375	0.156	0.173
		TCMT 32.52 PS	TCMT16T308-PS	●	●	▲	▲	●	●	●	●	●						0.031	0.375	0.156	0.173
	TSF	TCMT 21.51 TSF	TCMT110204-TSF	●	●													0.016	0.250	0.094	0.110
		TCMT 21.52 TSF	TCMT110208-TSF	●	●													0.031	0.250	0.094	0.110
		TCMT 32.51 TSF	TCMT16T304-TSF	●	●													0.016	0.375	0.156	0.173
		TCMT 32.52 TSF	TCMT16T308-TSF	●	●													0.031	0.375	0.156	0.173
	TM	TCMT 21.51 TM	TCMT110204-TM	●	●													0.016	0.250	0.094	0.110
		TCMT 21.52 TM	TCMT110208-TM	●	●													0.031	0.250	0.094	0.110
		TCMT 32.51 TM	TCMT16T304-TM	●	●													0.016	0.375	0.156	0.173
		TCMT 32.52 TM	TCMT16T308-TM	●	●													0.031	0.375	0.156	0.173
	23	TCMT 731-23	TCMT090204-23		●		▲									●		0.016	0.219	0.094	0.098
		TCMT 21.51-23	TCMT110204-23													●		0.016	0.250	0.094	0.110
		TCMT 32.51-23	TCMT16T304-23													●		0.016	0.375	0.156	0.173
		TCMT 32.52-23	TCMT16T308-23		●		▲											0.031	0.375	0.156	0.173
Medium cutting	24	TCMT 730.5-24	TCMT090202-24													●		0.008	0.219	0.094	0.098
		TCMT 731-24	TCMT090204-24	●	●	▲	▲									●		0.016	0.219	0.094	0.098
		TCMT 21.50.5-24	TCMT110202-24													●		0.008	0.250	0.094	0.110
		TCMT 21.51-24	TCMT110204-24	●	●	▲	▲									●		0.016	0.250	0.094	0.110
		TCMT 21.52-24	TCMT110208-24		●		▲											0.031	0.250	0.094	0.110
		TCMT 32.51-24	TCMT16T304-24	●	●	▲	▲									●		0.016	0.375	0.156	0.173
		TCMT 32.52-24	TCMT16T308-24	●	●	▲	▲					●						0.031	0.375	0.156	0.173
Finishing	W15	TCGT 32.50.5 L-W15	TCGT16T302L-W15														●	0.008	0.375	0.156	0.173
		TCGT 32.51 L-W15	TCGT16T304L-W15													●	●	0.016	0.375	0.156	0.173
		TCGT 32.52 L-W15	TCGT16T308L-W15														●	0.031	0.375	0.156	0.173

Reference pages: External toolholder → C080 - Internal toolholder → D049
J-Series toolholder → G051 -

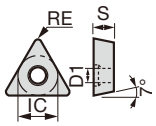
● : Line up
▲ : To be discontinued

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TC

Triangular, 60° with hole Positive 7°

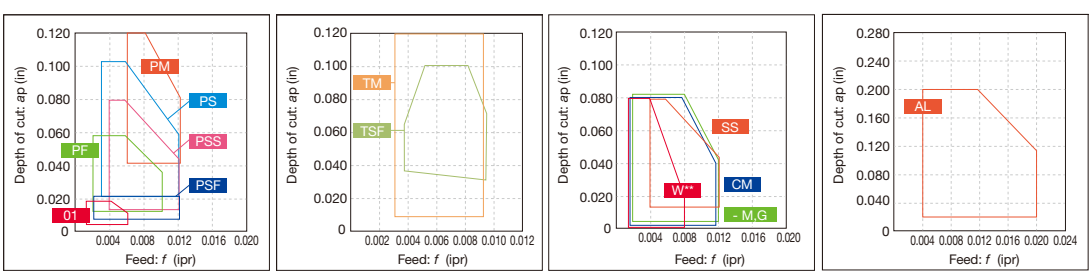
P	Steel	●◐	◐✣	●◐	◐✣	◐	✣	◐✣	✣		●◐	◐			●◐					
M	Stainless	●◐				●	◐	◐	✣			◐								
K	Cast iron	●◐		●◐						●◐	●◐	◐			●◐		●			
N	Non-ferrous																●			
S	Superalloy											●					●			
H	Hard material																			



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	T515	T5115	AH725	Cer-met NS9530	Uncoated KS05F	Dimension (inch) RE	IC	S	D1
Medium cutting	PM	TCMT 21.50.5 PM	TCMT110202-PM					●	●	●	●			●			0.008	0.250	0.094	0.110
		TCMT 21.51 PM	TCMT110204-PM	●	●	▲	▲	●	●	●	●			●	●		0.016	0.250	0.094	0.110
		TCMT 21.52 PM	TCMT110208-PM	●	●	▲	▲	●	●	●	●			●	●		0.031	0.250	0.094	0.110
		TCMT 220.5 PM	TCMT110302-PM					●	●	●	●						0.008	0.250	0.125	0.110
		TCMT 221 PM	TCMT110304-PM					●	●	●	●						0.016	0.250	0.125	0.110
		TCMT 222 PM	TCMT110308-PM					●	●	●	●						0.031	0.250	0.125	0.110
		TCMT 32.51 PM	TCMT16T304-PM	●	●	▲	▲	●	●	●	●			●	●		0.016	0.375	0.156	0.173
		TCMT 32.52 PM	TCMT16T308-PM	●	●	▲	▲	●	●	●	●			●	●		0.031	0.375	0.156	0.173
		TCMT 32.53 PM	TCMT16T312-PM	●	●	▲	▲	●	●	●	●			●			0.047	0.375	0.156	0.173
Finishing to medium cutting	CM	TCMT 731 CM	TCMT090204-CM										●				0.016	0.219	0.094	0.098
		TCMT 732 CM	TCMT090208-CM										●				0.031	0.219	0.094	0.098
		TCMT 21.51 CM	TCMT110204-CM										●				0.016	0.250	0.094	0.110
		TCMT 21.52 CM	TCMT110208-CM										●				0.031	0.250	0.094	0.110
		TCMT 221 CM	TCMT110304-CM										●				0.016	0.250	0.125	0.110
		TCMT 222 CM	TCMT110308-CM										●				0.031	0.250	0.125	0.110
		TCM T32.51 CM	TCMT16T304-CM									●	●				0.016	0.375	0.156	0.173
		TCMT 32.52 CM	TCMT16T308-CM									●	●				0.031	0.375	0.156	0.173
		TCMT 32.53 CM	TCMT16T312-CM									●	●				0.047	0.375	0.156	0.173
	SS	TCGT 21.50.5 SS	TCGT110202-SS												●		0.008	0.250	0.094	0.110
		TCGT 21.51 SS	TCGT110204-SS												●		0.016	0.250	0.094	0.110
		TCGT 21.52 SS	TCGT110208-SS												●		0.031	0.250	0.094	0.110
		TCGT 32.51 SS	TCGT16T304-SS												●		0.016	0.375	0.156	0.173
	AL	TCGT 21.50.5 AL	TCGT110202-AL													●	0.008	0.250	0.094	0.110
		TCGT 21.51 AL	TCGT110204-AL													●	0.016	0.250	0.094	0.110
		TCGT 32.50.5 AL	TCGT16T302-AL													●	0.008	0.375	0.156	0.173
		TCGT 32.51 AL	TCGT16T304-AL													●	0.016	0.375	0.156	0.173
		TCGT 32.52 AL	TCGT16T308-AL													●	0.031	0.375	0.156	0.173

● : Line up
▲ : To be discontinued

Chip control range



*-M,G: Without chipbreaker

Reference pages: External toolholder → C080 - Internal toolholder → D049
J-Series toolholder → G051 -

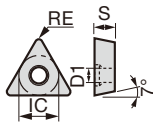
Insert POSITIVE TYPE

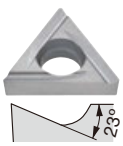
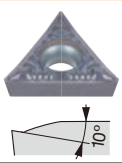
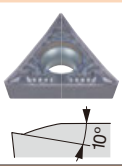
● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

TC

Triangular, 60° with hole Positive 7°

P	Steel	◐	●◐	●◐	●◐					●◐				●									
M	Stainless	◐	●◐	●◐	●◐									●									
K	Cast iron	◐								●◐				●									
N	Non-ferrous													●									
S	Superalloy	●		●◐																			
H	Hard material																						



Application	Chipbreaker	Designation Inch	Designation Metric	Coated AH725	Coated SH725	Coated SH730	Coated J740	Cermet NS9530	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Finishing	-	TCGT 620.5 R	TCGT080102R					●	●	0.008	0.187	0.063	0.106
													
For external turning on Swiss lathes (sharp edge)	JS	TCGT 21.5V FN-JS	TCGT110200FN-JS		●	●				0.001	0.250	0.094	0.110
		TCGT 21.50 FN-JS	TCGT110201FN-JS		●	●				<0.004	0.250	0.094	0.110
		TCGT 21.50.5 FN-JS	TCGT110202FN-JS		●	●				<0.008	0.250	0.094	0.110
		TCGT 21.51 FN-JS	TCGT110204FN-JS		●	●				<0.016	0.250	0.094	0.110
													
For external turning on Swiss lathes (honed edge)	JS	TCGT 21.50 N-JS	TCGT110201N-JS	●						0.004	0.250	0.094	0.110
		TCGT 21.50.5 N-JS	TCGT110202N-JS	●						0.008	0.250	0.094	0.110
		TCGT 21.51 N-JS	TCGT110204N-JS	●						0.016	0.250	0.094	0.110
													
For external turning on Swiss lathes (sharp edge)	J08	TCGT 63V FR-J08	TCGT080200FR-J08		●		●		●	0.001	0.187	0.094	0.091
		TCGT 63V FL-J08	TCGT080200FL-J08		●		●		●	0.001	0.187	0.094	0.091
		TCGT 630 FR-J08	TCGT080201FR-J08		●		●		●	0.004	0.187	0.094	0.091
		TCGT 630 FL-J08	TCGT080201FL-J08		●		●		●	0.004	0.187	0.094	0.091
		TCGT 630.5 FR-J08	TCGT080202FR-J08		●		●		●	0.008	0.187	0.094	0.091
		TCGT 630.5 FL-J08	TCGT080202FL-J08		●		●		●	0.008	0.187	0.094	0.091
		TCGT 631 FR-J08	TCGT080204FR-J08		●					0.016	0.187	0.094	0.091
													

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

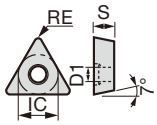
Reference pages: J-Series toolholder → G051

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TC

Triangular, 60° with hole Positive 7°

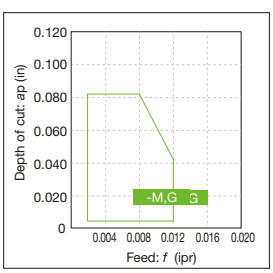
P	Steel	●◐	●◐				●◐				●◐				●				
M	Stainless	●◐	●◐												●				
K	Cast iron						●◐				●◐				●				
N	Non-ferrous														●				
S	Superalloy																		
H	Hard material																		



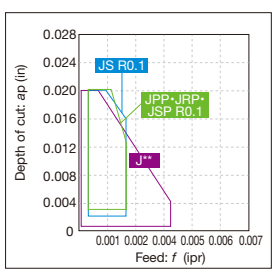
Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH725	Coated J740	Coated cermet J9530	Cermet NS9530	Uncoated TH10	Dimension (inch) RE	IC	S	D1
For external turning on Swiss lathes (sharp edge)	J10	TCGT 21.5V FR-J10	TCGT110200FR-J10	●	●			●	0.001	0.250	0.094	0.110
		TCGT 21.5V FL-J10	TCGT110200FL-J10	●	●			●	0.001	0.250	0.094	0.110
		TCGT 21.50 FR-J10	TCGT110201FR-J10	●	●			●	0.004	0.250	0.094	0.110
		TCGT 21.50 FL-J10	TCGT110201FL-J10	●	●			●	0.004	0.250	0.094	0.110
		TCGT 21.50.5 FR-J10	TCGT110202FR-J10	●	●		●	●	0.008	0.250	0.094	0.110
		TCGT 21.50.5 FL-J10	TCGT110202FL-J10	●	●		●	●	0.008	0.250	0.094	0.110
		TCGT 21.51 FR-J10	TCGT110204FR-J10	●					0.016	0.250	0.094	0.110
		TCGT 22V FR-J10	TCGT110300FR-J10	●	●			●	0.001	0.250	0.125	0.110
		TCGT 22V FL-J10	TCGT110300FL-J10	●	●			●	0.001	0.250	0.125	0.110
		TCGT 220 FR-J10	TCGT110301FR-J10	●	●			●	0.004	0.250	0.125	0.110
		TCGT 220 FL-J10	TCGT110301FL-J10	●	●			●	0.004	0.250	0.125	0.110
		TCGT 220.5 FR-J10	TCGT110302FR-J10	●	●		●	●	0.008	0.250	0.125	0.110
		TCGT 220.5 FL-J10	TCGT110302FL-J10	●	●		●	●	0.008	0.250	0.125	0.110
For external turning on Swiss lathes (honed edge)	J10	TCGT 220.5 R-J10	TCGT110302R-J10			●			0.008	0.250	0.125	0.110
		TCGT 220.5 L-J10	TCGT110302L-J10			●			0.008	0.250	0.125	0.110

● : Line up

Chip control range



*-M,G: Without chipbreaker



*Chip control range with typical R0.1

Reference pages: Internal toolholder → D049 J-Series toolholder → G051

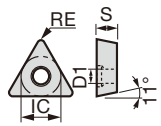
Insert POSITIVE TYPE

●: Continuous cutting
c: Light interrupted cutting
✣: Heavy interrupted cutting

TP

Triangular, 60° with hole Positive 11°

P	Steel	●c	c✣	●c	c✣	c	c			●c	●c			●c	●c			●				
M	Stainless	●c				c	c											●				
K	Cast iron	●c		●c		c	c			●c	●c			●c	●c			●				
N	Non-ferrous																	●				
S	Superalloy					●																
H	Hard material																					



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9115	T9125	AH725	GH730	Coated cermet GT9530	GT720	Cermet NS9530	NS520	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Precision finishing	01	TPGT 730.5-01	TPGT090202-01							●		●			0.008	0.219	0.094	0.098
		TPGT 731-01	TPGT090204-01							●		●	●	●	0.016	0.219	0.094	0.098
		TPGT 21.50.5-01	TPGT110202-01							●		●			0.008	0.250	0.094	0.110
		TPGT 21.51-01	TPGT110204-01							●		●	●	●	0.016	0.250	0.094	0.110
		TPGT 21.52-01	TPGT110208-01									●			0.031	0.250	0.094	0.110
		TPGT 2.520.5-01	TPGT130302-01								●	●			0.008	0.313	0.125	0.134
		TPGT 2.521-01	TPGT130304-01							●		●	●	●	0.016	0.313	0.125	0.134
		TPGT 2.522-01	TPGT130308-01									●	●		0.031	0.313	0.125	0.134
		TPGT 32.51-01	TPGT16T304-01							●		●	●	●	0.016	0.375	0.156	0.173
		TPGT 32.52-01	TPGT16T308-01								●	●	●		0.031	0.375	0.156	0.173
Finishing	PSF	TPMT 730.5 PSF	TPMT090202-PSF					●				●			0.008	0.219	0.094	0.098
		TPMT 731 PSF	TPMT090204-PSF	●	●	▲	▲	●		●		●			0.016	0.219	0.094	0.098
		TPMT 21.50.5 PSF	TPMT110202-PSF					●		●		●			0.008	0.250	0.094	0.110
		TPMT 21.51 PSF	TPMT110204-PSF	●	●	▲	▲	●		●		●			0.016	0.250	0.094	0.110
		TPMT 220.5 PSF	TPMT110302-PSF					●				●			0.008	0.250	0.125	0.134
		TPMT 221 PSF	TPMT110304-PSF	●	●	▲	▲	●		●		●			0.016	0.250	0.125	0.134
		TPMT 2.521 PSF	TPMT130304-PSF	●	●	▲	▲	●							0.016	0.313	0.125	0.134
		TPMT 32.51 PSF	TPMT16T304-PSF	●	●	▲	▲	●							0.016	0.375	0.156	0.173
	PF	TPMT 21.51 PF	TPMT110204-PF						●	●		●			0.016	0.250	0.094	0.110
		TPMT 21.52 PF	TPMT110208-PF							●		●			0.031	0.250	0.094	0.110
		TPMT 220.5 PF	TPMT110302-PF						●			●			0.008	0.250	0.125	0.134
		TPMT 221 PF	TPMT110304-PF						●	●		●			0.016	0.250	0.125	0.134
		TPMT 2.521 PF	TPMT130304-PF							●		●			0.016	0.313	0.125	0.134
		TPMT 2.522 PF	TPMT130308-PF									●			0.031	0.313	0.125	0.134
		TPMT 32.51 PF	TPMT16T304-PF							●		●			0.016	0.375	0.156	0.173

●: Line up
▲: To be discontinued

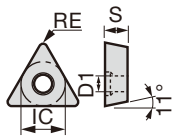
Reference pages: Mounting hole specification → B149
Internal toolholder → D050 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

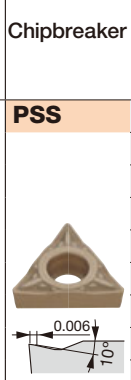
TP

Triangular, 60° with hole Positive 11°

P	Steel	●◐	◐✣	●◐	◐✣	◐	✣	◐✣	✣	●◐	◐	◐	●◐	●◐				●◐			
M	Stainless	●◐				●	◐	◐	✣	●◐	◐	◐									
K	Cast iron	●◐		●◐						●◐	◐	◐	●◐	●◐				●◐			
N	Non-ferrous																				
S	Superalloy									●◐	●										
H	Hard material																				

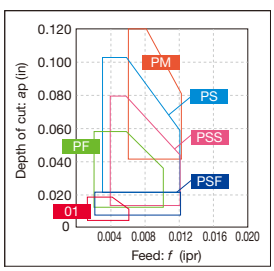


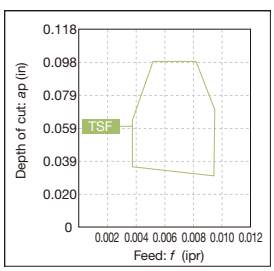
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH725	GH730	Coated cermet GT9530	AT9530	Cermet NS9530	Dimension (inch) RE	IC	S	D1
Finishing to light cutting	**PSS**	**TPMT 731 PSS**	**TPMT090204-PSS**	●	●	▲	▲	●	●	●	●		●		●		●	0.016	0.219	0.094	0.098
		TPMT 732 PSS	TPMT090208-PSS	●	●	▲	▲	●	●	●	●		●		●		●	0.031	0.219	0.094	0.098
		TPMT 21.51 PSS	**TPMT110204-PSS**	●	●	▲	▲	●	●	●	●		●		●		●	0.016	0.250	0.094	0.110
		TPMT 21.52 PSS	TPMT110208-PSS	●	●	▲	▲	●	●	●	●		●		●		●	0.031	0.250	0.094	0.110
		TPMT 221 PSS	**TPMT110304-PSS**	●	●	▲	▲	●	●	●	●		●					0.016	0.250	0.125	0.134
		TPMT 222 PSS	TPMT110308-PSS	●	●	▲	▲	●	●	●	●		●					0.031	0.250	0.125	0.134
		TPMT 2.521 PSS	**TPMT130304-PSS**	●	●	▲	▲	●	●	●	●		●					0.016	0.313	0.125	0.134
		TPMT 2.522 PSS	TPMT130308-PSS	●	●	▲	▲	●	●	●	●		●		●		●	0.031	0.313	0.125	0.134
		TPMT 32.51 PSS	**TPMT16T304-PSS**	●	●	▲	▲	●	●	●	●		●		●		●	0.016	0.375	0.156	0.173
		TPMT 32.52 PSS	TPMT16T308-PSS	●	●	▲	▲	●	●	●	●		●		●		●	0.031	0.375	0.156	0.173
Finishing to medium cutting	**PS**	**TPMT 730.5 PS**	**TPMT090202-PS**	●	●	▲	▲	●	●	●	●		●	●	●	●	●	0.008	0.219	0.094	0.098
		TPMT 731 PS	TPMT090204-PS	●	●	▲	▲	●	●	●	●		●	●	●	●	●	0.016	0.219	0.094	0.098
		TPMT 732 PS	TPMT090208-PS	●	●	▲	▲	●	●	●	●		●	●	●	●	●	0.031	0.219	0.094	0.098
		TPMT 21.50.5 PS	**TPMT110202-PS**	●	●	▲	▲	●	●	●	●		●	●	●	●	●	0.008	0.250	0.094	0.110
		TPMT 21.51 PS	TPMT110204-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	0.016	0.250	0.094	0.110
		TPMT 21.52 PS	TPMT110208-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	0.031	0.250	0.094	0.110
		TPMT 221 PS	**TPMT110304-PS**	●	●	▲	▲	●	●	●	●		●	●	●	●	●	0.016	0.250	0.125	0.134
		TPMT 222 PS	TPMT110308-PS	●	●	▲	▲	●	●	●	●		●	●	●	●	●	0.031	0.250	0.125	0.134
		TPMT 2.520.5 PS	**TPMT130302-PS**	●	●	▲	▲						●		●	●	●	0.008	0.313	0.125	0.134
		TPMT 2.521 PS	TPMT130304-PS	●	●	▲	▲	●	●	●	●		●		●	●	●	0.016	0.313	0.125	0.134
		TPMT 2.522 PS	TPMT130308-PS	●	●	▲	▲	●	●	●	●		●		●	●	●	0.031	0.313	0.125	0.134
		TPMT 32.51 PS	**TPMT16T304-PS**	●	●	▲	▲	●	●	●	●		●		●	●	●	0.016	0.375	0.156	0.173
		TPMT 32.52 PS	TPMT16T308-PS	●	●	▲	▲	●	●	●	●		●		●	●	●	0.031	0.375	0.156	0.173
	TSF	**TPMT 21.51 TSF**	**TPMT110204-TSF**	●	●													0.016	0.250	0.094	0.110
		TPMT 21.52 TSF	TPMT110208-TSF	●	●													0.031	0.250	0.094	0.110
		TPMT 221 TSF	**TPMT110304-TSF**	●	●													0.016	0.250	0.125	0.134
		TPMT 222 TSF	TPMT110308-TSF	●	●													0.031	0.250	0.125	0.134
		TPMT 32.51 TSF	**TPMT16T304-TSF**	●	●													0.016	0.375	0.156	0.173
		TPMT 32.52 TSF	TPMT16T308-TSF	●	●													0.031	0.375	0.156	0.173



● : Line up
▲ : To be discontinued

Chip control range





Reference pages: Mounting hole specification → B149
Internal toolholder → D050 -

Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP

Triangular, 60° with hole Positive 11°

		Coated						Coated cermet			Cermet			Uncoated		Dimension (inch)			
		T9215	T9225	T9125	GH110	SH725	SH730	GT9530			NS9530			TH10	UX30	RE	IC	S	D1
P	Steel	◐✣	●◐	◐✣	●	●◐	●◐	●◐						●	◐				
M	Stainless		●◐		●	●◐	●◐							●	◐				
K	Cast iron		●◐		●			●◐			●◐			●					
N	Non-ferrous													●					
S	Superalloy				●		●◐												
H	Hard material																		

Application	Chipbreaker	Designation Inch	Designation Metric																	
Finishing to medium cutting	TM	TPMT 21.51 TM	TPMT110204-TM	●	●												0.016	0.250	0.094	0.110
		TPMT 21.52 TM	TPMT110208-TM	●	●												0.031	0.250	0.094	0.110
		TPMT 221 TM	TPMT110304-TM	●	●												0.016	0.250	0.125	0.134
		TPMT 222 TM	TPMT110308-TM	●	●												0.031	0.250	0.125	0.134
		TPMT 32.51 TM	TPMT16T304-TM	●	●												0.016	0.375	0.156	0.173
		TPMT 32.52 TM	TPMT16T308-TM	●	●												0.031	0.375	0.156	0.173
	23	TPMT 730.5-23	TPMT090202-23											●			0.008	0.219	0.094	0.098
		TPMT 731-23	TPMT090204-23		●	▲								●			0.016	0.219	0.094	0.098
		TPMT 21.51-23	TPMT110204-23		●	▲								●			0.016	0.250	0.094	0.110
		TPMT 2.521-23	TPMT130304-23		●	▲								●			0.016	0.313	0.125	0.134
		TPMT 2.522-23	TPMT130308-23		●	▲								●			0.031	0.313	0.125	0.134
		TPMT 32.51-23	TPMT16T304-23											●			0.016	0.375	0.156	0.173
		TPMT 32.52-23	TPMT16T308-23		●	▲								●			0.031	0.375	0.156	0.173
Medium cutting	24	TPMT 731-24	TPMT090204-24		●	▲								●			0.016	0.219	0.094	0.098
		TPMT 21.51-24	TPMT110204-24		●	▲								●			0.016	0.250	0.094	0.110
		TPMT 21.52-24	TPMT110208-24											●			0.031	0.250	0.094	0.110
		TPMT 2.521-24	TPMT130304-24		●	▲								●			0.016	0.313	0.125	0.134
		TPMT 2.522-24	TPMT130308-24		●	▲								●			0.031	0.313	0.125	0.134
		TPMT 32.51-24	TPMT16T304-24		●	▲								●			0.016	0.375	0.156	0.173
		TPMT 32.52-24	TPMT16T308-24		●	▲								●			0.031	0.375	0.156	0.173
Finishing	W08	TPGT 5.52V R-W08	TPGT070100R-W08					●							●		0.001	0.172	0.063	0.102
		TPGT 5.52V L-W08	TPGT070100L-W08					●							●		0.001	0.172	0.063	0.102
		TPGT 5.520 R-W08	TPGT070101R-W08					●							●		0.004	0.172	0.063	0.102
		TPGT 5.520 L-W08	TPGT070101L-W08					●							●		0.004	0.172	0.063	0.102
		TPGT 5.520.5 R-W08	TPGT070102R-W08					●							●		0.008	0.172	0.063	0.102
		TPGT 5.520.5 L-W08	TPGT070102L-W08					●							●		0.008	0.172	0.063	0.102
		TPGT 5.521 R-W08	TPGT070104R-W08					●							●		0.016	0.172	0.063	0.102
		TPGT 5.521 L-W08	TPGT070104L-W08					●							●		0.016	0.172	0.063	0.102
		TPGT 63V L-W08	TPGT080200L-W08								●			●			0.001	0.187	0.094	0.091
		TPGT 630.5 L-W08	TPGT080202L-W08				●				●			●		●	0.008	0.187	0.094	0.091
		TPGT 631 L-W08	TPGT080204L-W08				●				●			●		●	0.016	0.187	0.094	0.091
Finishing (sharp edge)	W08	TPGT 5.52V FL-W08	TPGT070100FR-W08					●									0.001	0.172	0.063	0.102
		TPGT 5.52V FR-W08	TPGT070100FL-W08					●									0.001	0.172	0.063	0.102
		TPGT 5.520 FR-W08	TPGT070101FR-W08					●									0.004	0.172	0.063	0.102
		TPGT 5.520 FL-W08	TPGT070101FL-W08					●									0.004	0.172	0.063	0.102
		TPGT 5.520.5 FR-W08	TPGT070102FR-W08					●									0.008	0.172	0.063	0.102
		TPGT 5.520.5 FL-W08	TPGT070102FL-W08					●									0.008	0.172	0.063	0.102
		TPGT 5.521 FR-W08	TPGT070104FR-W08					●									0.016	0.172	0.063	0.102
		TPGT 5.521 FL-W08	TPGT070104FL-W08					●									0.016	0.172	0.063	0.102

● : Line up
▲ : To be discontinued

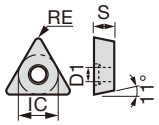
Reference pages: Mounting hole specification → B149
Internal toolholder → D050 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP

Triangular, 60° with hole Positive 11°

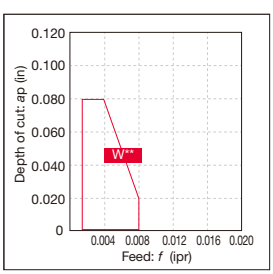
P	Steel	● ●◐ ◐
M	Stainless	● ●◐ ◐
K	Cast iron	● ●◐ ◐
N	Non-ferrous	● ◐
S	Superalloy	●
H	Hard material	

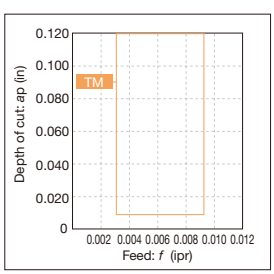


Application	Chipbreaker	Designation Inch	Designation Metric	Coated GH110	Coated GH330	Coated cermet GT9530	Cermet NS9530	Uncoated TH10	Uncoated UX30	Dimension (inch) RE	IC	S	D1
Finishing	W10	TPGH 630.5 L-W10	TPGH080202L-W10			●	●			0.008	0.187	0.094	0.091
		TPGH 631 L-W10	TPGH080204L-W10			●	●			0.016	0.187	0.094	0.091
		TPGH 731 L-W10	TPGH090204L-W10			●	●			0.016	0.219	0.094	0.118
	W13	TPGH 21.51 L-W13	TPGH110204L-W13			●	●			0.016	0.250	0.094	0.134
		TPGH 220.5 L-W13	TPGH110302L-W13			●	●			0.008	0.250	0.125	0.134
		TPGH 221 L-W13	TPGH110304L-W13			●	●			0.016	0.250	0.125	0.134
	W15	TPGT 730.5 R-W15	TPGT090202R-W15				●			0.008	0.219	0.094	0.098
		TPGT 730.5 L-W15	TPGT090202L-W15			●	●	●		0.008	0.219	0.094	0.098
		TPGT 731 R-W15	TPGT090204R-W15				●			0.016	0.219	0.094	0.098
		TPGT 731 L-W15	TPGT090204L-W15	●	●	●	●	●	●	0.016	0.219	0.094	0.098
		TPGT 21.50.5 R-W15	TPGT110202R-W15				●			0.008	0.250	0.094	0.110
		TPGT 21.50.5 L-W15	TPGT110202L-W15			●	●	●		0.008	0.250	0.094	0.110
		TPGT 21.51 L-W15	TPGT110204L-W15	●	●	●	●	●	●	0.016	0.250	0.094	0.110
		TPGT 21.52 R-W15	TPGT110208R-W15				●			0.031	0.250	0.094	0.110
		TPGT 21.52 L-W15	TPGT110208L-W15						●	0.031	0.250	0.094	0.110
		TPGT 220.5 L-W15	TPGT110302L-W15				●			0.008	0.250	0.125	0.134
		TPGT 221 R-W15	TPGT110304R-W15				●			0.016	0.250	0.125	0.134
		TPGT 221 L-W15	TPGT110304L-W15				●			0.016	0.250	0.125	0.134
		TPGT 222 L-W15	TPGT110308L-W15				●			0.031	0.250	0.125	0.134
		TPGT 2.520.5 R-W15	TPGT130302R-W15				●			0.008	0.313	0.125	0.134
		TPGT 2.520.5 L-W15	TPGT130302L-W15			●	●	●		0.008	0.313	0.125	0.134
		TPGT 2.521 R-W15	TPGT130304R-W15	●			●			0.016	0.313	0.125	0.134
		TPGT 2.521 L-W15	TPGT130304L-W15	●	●	●	●	●	●	0.016	0.313	0.125	0.134
		TPGT 2.522 L-W15	TPGT130308L-W15				●	●		0.031	0.313	0.125	0.134
		TPGT 32.50.5 R-W15	TPGT16T302R-W15				●			0.008	0.375	0.156	0.173
		TPGT 32.50.5 L-W15	TPGT16T302L-W15			●	●	●		0.008	0.375	0.156	0.173
		TPGT 32.51 R-W15	TPGT16T304R-W15				●	●		0.016	0.375	0.156	0.173
		TPGT 32.51 L-W15	TPGT16T304L-W15	●	●	●	●	●	●	0.016	0.375	0.156	0.173
		TPGT 32.52 L-W15	TPGT16T308L-W15				●	●	●	0.031	0.375	0.156	0.173

● : Line up

Chip control range





Reference pages: Mounting hole specification → B149
Internal toolholder → D050 -

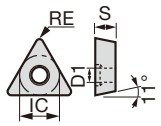
Insert POSITIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP

Triangular, 60° with hole Positive 11°

P	Steel	●ɔ	ɔ✣	●ɔ	ɔ✣	ɔ	✣	ɔ✣	✣			●ɔ	ɔ	●ɔ	ɔ	●ɔ		●ɔ					
M	Stainless	●ɔ				●	ɔ	ɔ	✣			●ɔ	ɔ	●ɔ	ɔ								
K	Cast iron	●ɔ		●ɔ						●ɔ	ɔ	●ɔ	ɔ	●ɔ	ɔ	●ɔ		●ɔ					
N	Non-ferrous																						
S	Superalloy											●ɔ	●										
H	Hard material																						



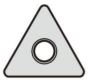
Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	T515	T5115	AH120	AH725	GH330	GH730	Coated cermet GT9530	Cer-met NS9530	Dimension (inch) RE	IC	S	D1
Medium cutting	PM	TPMT 731 PM	TPMT090204-PM					●	●	●	●				●					0.016	0.219	0.094	0.098
		TPMT 732 PM	TPMT090208-PM					●	●	●	●				●					0.031	0.219	0.094	0.098
		TPMT 21.51 PM	TPMT110204-PM	●	●	▲	▲	●	●	●	●				●		●	●	●	0.016	0.250	0.094	0.110
		TPMT 21.52 PM	TPMT110208-PM	●	●	▲	▲	●	●	●	●			●	●		●			0.031	0.250	0.094	0.110
		TPMT 221 PM	TPMT110304-PM	●	●	▲	▲	●	●	●	●				●		●	●	●	0.016	0.250	0.125	0.134
		TPMT 222 PM	TPMT110308-PM	●	●	▲	▲	●	●	●	●				●		●			0.031	0.250	0.125	0.134
		TPMT 2.521 PM	TPMT130304-PM		●		▲	●	●	●	●				●				●	0.016	0.313	0.125	0.134
		TPMT 2.522 PM	TPMT130308-PM		●		▲	●	●	●	●				●			●	●	0.031	0.313	0.125	0.134
		TPMT 32.51 PM	TPMT16T304-PM		●		▲	●	●	●	●				●				●	0.016	0.375	0.156	0.173
		TPMT 32.52 PM	TPMT16T308-PM		●		▲	●	●	●	●				●					0.031	0.375	0.156	0.173
		TPMT 32.53 PM	TPMT16T312-PM		●		▲	●	●	●	●				●					0.047	0.375	0.156	0.173
Finishing to medium cutting	CM	TPMT 731 CM	TPMT090204-CM										●							0.016	0.219	0.094	0.098
		TPMT 732 CM	TPMT090208-CM										●							0.031	0.219	0.094	0.098
		TPMT 21.51 CM	TPMT110204-CM										●							0.016	0.250	0.094	0.110
		TPMT 21.52 CM	TPMT110208-CM										●							0.031	0.250	0.094	0.110
		TPMT 221 CM	TPMT110304-CM										●							0.016	0.250	0.125	0.134
		TPMT 222 CM	TPMT110308-CM										●							0.031	0.250	0.125	0.134
		TPMT 2.521 CM	TPMT130304-CM										●							0.016	0.313	0.125	0.134
		TPMT 2.522 CM	TPMT130308-CM										●							0.031	0.313	0.125	0.134
		TPMT 32.51 CM	TPMT16T304-CM									●	●							0.016	0.375	0.156	0.173
		TPMT 32.52 CM	TPMT16T308-CM									●	●							0.031	0.375	0.156	0.173
		TPMT 32.53 CM	TPMT16T312-CM									●	●							0.047	0.375	0.156	0.173
	SS	TPGT 21.50.5 SS	TPGT110202-SS																●	0.008	0.250	0.094	0.110
		TPGT 21.51 SS	TPGT110204-SS													●			●	0.016	0.250	0.094	0.110
		TPGT 2.520.5 SS	TPGT130302-SS																●	0.008	0.313	0.125	0.134
		TPGT 2.521 SS	TPGT130304-SS													●			●	0.016	0.313	0.125	0.134
		TPGT 32.51 SS	TPGT16T304-SS													●			●	0.016	0.375	0.156	0.173
	H11	TPGH 220.5 L-H11	TPGH110302L-H11															●	●	0.008	0.250	0.125	0.134
		TPGH 221 L-H11	TPGH110304L-H11															●	●	0.016	0.250	0.125	0.134

● : Line up
▲ : To be discontinued

Reference pages: Mounting hole specification → B149
Internal toolholder → D050 -

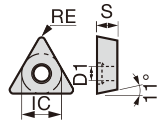
● : Continuous cutting
◖ : Light interrupted cutting
✣ : Heavy interrupted cutting

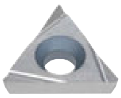
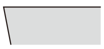
TP



Triangular, 60°
with hole
Positive 11°

		T5115	NS9530	TH10	UX30
P	Steel		●◖	●	◖
M	Stainless			●	◖
K	Cast iron	◖	●◖	●	
N	Non-ferrous			●	
S	Superalloy				
H	Hard material				

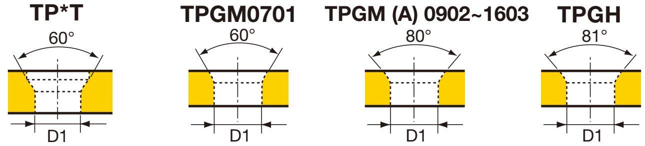


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T5115	Cermet NS9530	Uncoated TH10	Uncoated UX30	RE	IC	S	D1
Finishing to medium cutting	-	TPGM 5.520.5 R	TPGM070102R		●			0.008	0.172	0.063	0.106
		TPGM 5.520.5 L	TPGM070102L		●	●		0.008	0.172	0.063	0.106
		TPGM 5.521 R	TPGM070104R		●			0.016	0.172	0.063	0.106
		TPGM 5.521 L	TPGM070104L		●	●		0.016	0.172	0.063	0.106
		TPGM 730.5 R	TPGM090202R		●			0.008	0.219	0.094	0.126
		TPGM 730.5 L	TPGM090202L		●			0.008	0.219	0.094	0.126
		TPGM 731 L	TPGM090204L		●			0.016	0.219	0.094	0.126
	(Tungaloy standard hole specification) ISO non-compliant	TPGM 21.50.5 R	TPGM110202R		●			0.008	0.250	0.094	0.118
		TPGM 21.50.5 L	TPGM110202L		●		●	0.008	0.250	0.094	0.118
		TPGM 21.51 R	TPGM110204R		●			0.016	0.250	0.094	0.118
		TPGM 21.51 L	TPGM110204L		●		●	0.016	0.250	0.094	0.118
		TPGM 220.5 R	TPGM110302R		●			0.008	0.250	0.125	0.118
	TPGM...R/L	TPGM 220.5 L	TPGM110302L		●			0.008	0.250	0.125	0.118
		TPGM 220.5 L-2	TPGM110302L-2			●		0.008	0.250	0.125	0.118
		TPGM 221 R	TPGM110304R		●			0.016	0.250	0.125	0.118
		TPGM 221 L	TPGM110304L		●		●	0.016	0.250	0.125	0.118
		TPGM 221 L-2	TPGM110304L-2			●		0.016	0.250	0.125	0.118
		TPGM 320.5 L	TPGM160302L		●			0.008	0.375	0.125	0.157
		TPGM 321 R	TPGM160304R		●			0.016	0.375	0.125	0.157
		TPGM 321 L	TPGM160304L		●		●	0.016	0.375	0.125	0.157
		TPGM 321 L-2	TPGM160304L-2			●		0.016	0.375	0.125	0.157
	-	TPMW 21.51	TPMW110204	●				0.016	0.250	0.094	0.110
		TPMW 21.52	TPMW110208	●				0.031	0.250	0.094	0.110
		TPMW 2.521	TPMW130304	●				0.016	0.313	0.125	0.134
		TPMW 2.522	TPMW130308	●				0.031	0.313	0.125	0.134
		TPMW 32.51	TPMW16T304	●				0.016	0.375	0.156	0.173
		TPMW 32.52	TPMW16T308	●				0.031	0.375	0.156	0.173

Dimension (inch)

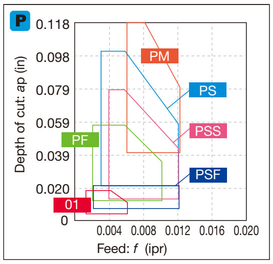
● : Line up

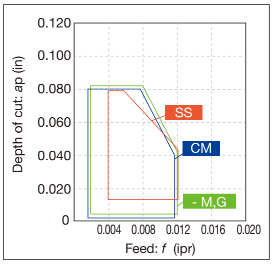
Mounting hole specification



D1 (in)	0701**	0802**	0902**	1102**	1103**	1303**	1603**	16T3**
TP*T(W)	-	0.091	0.098	0.110	0.134	0.134	-	0.173
TPGM(A)	0.106	-	0.126	0.118	0.118	-	0.157	-
TPGH	-	0.091	0.118	0.134	0.134	-	0.177	-

Chip control range





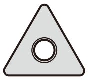
*-M,G: Without chipbreaker

Reference pages: Internal toolholder → D050 -

Insert POSITIVE TYPE

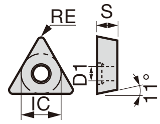
● : Continuous cutting
◐ : Light interrupted cutting
✤ : Heavy interrupted cutting

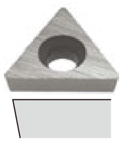
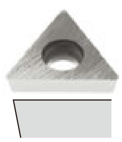
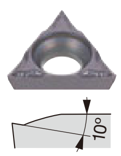
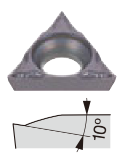
TP



Triangular, 60°
with hole
Positive 11°

Material	GH110	SH725	SH730	NS9530	TH10
P Steel	●	●◐	●◐	●◐	●
M Stainless	●	●◐	●◐		●
K Cast iron	●			●◐	●
N Non-ferrous					●
S Superalloy	●		●◐		
H Hard material					



Application	Chipbreaker	Designation Inch	Designation Metric	Coated GH110	Coated SH725	Coated SH730	Cermet NS9530	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	- (Tungaloy standard hole specification) ISO non-compliant 	TPGA 731	TPGA090204					●	0.016	0.219	0.094	0.126
		TPGA 21.50.5	TPGA110202				●	●	0.008	0.250	0.094	0.118
		TPGA 21.51	TPGA110204					●	0.016	0.250	0.094	0.118
		TPGA 220.5	TPGA110302				●	●	0.008	0.250	0.125	0.118
		TPGA 221	TPGA110304					●	0.016	0.250	0.125	0.118
		TPGA 321	TPGA160304				●	●	0.016	0.375	0.125	0.157
		TPGA 322	TPGA160308					●	0.031	0.375	0.125	0.157
	- 	TPGW 730.5	TPGW090202					●	0.008	0.219	0.094	0.098
		TPGW 731	TPGW090204					●	0.016	0.219	0.094	0.098
		TPGW 21.50.5	TPGW110202					●	0.008	0.250	0.094	0.110
		TPGW 21.51	TPGW110204	●				●	0.016	0.250	0.094	0.110
		TPGW 221	TPGW110304					●	0.016	0.250	0.125	0.134
		TPGW 2.521	TPGW130304					●	0.016	0.313	0.125	0.134
		TPGW 32.51	TPGW16T304	●				●	0.016	0.375	0.156	0.173
		TPGW 32.52	TPGW16T308					●	0.031	0.375	0.156	0.173
For internal turning on Swiss lathes	JS 	TPGT 5.520 JS	TPGT070101-JS			●			<0.004	0.172	0.063	0.102
		TPGT 5.520.5 JS	TPGT070102-JS			●			<0.008	0.172	0.063	0.102
		TPGT 5.521 JS	TPGT070104-JS			●			<0.016	0.172	0.063	0.102
For internal turning on Swiss lathes (sharp edge)	JS 	TPGT 5.520 F-JS	TPGT070101F-JS		●				<0.004	0.172	0.063	0.102
		TPGT 5.520.5 F-JS	TPGT070102F-JS		●				<0.008	0.172	0.063	0.102
		TPGT 5.521 F-JS	TPGT070104F-JS		●				<0.016	0.172	0.063	0.102

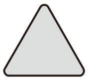
*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

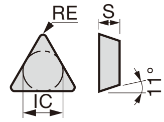
Reference pages: Internal toolholder → D050 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

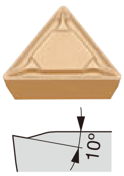
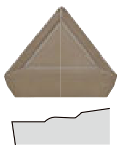
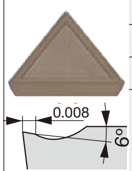
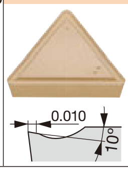
TP



Triangular, 60°
without hole
Positive 11°



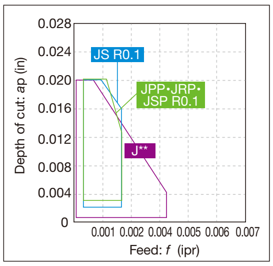
		T9215	T9225	T9115	T9125	T5115	AH725	NS9530	TH10
P	Steel	●◐	◐✣	●◐	◐✣		◐	●◐	●
M	Stainless	●◐					◐		●
K	Cast iron	●◐		●◐		◐	◐	●◐	●
N	Non-ferrous								●
S	Superalloy						●		
H	Hard material								

Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	Coated T9225	Coated T9115	Coated T9125	Coated T5115	Coated AH725	Cermet NS9530	Uncoated TH10	RE	IC	S	D1
Finishing to medium cutting	PS 	TPMR 221 PS	TPMR110304-PS		●		▲					0.016	0.250	0.125	-
		TPMR 222 PS	TPMR110308-PS		●		▲					0.031	0.250	0.125	-
		TPMR 321 PS	TPMR160304-PS		●		▲					0.016	0.375	0.125	-
		TPMR 322 PS	TPMR160308-PS		●		▲					0.031	0.375	0.125	-
	23 	TPMR 221-23	TPMR110304-23	●	●	▲	▲			●		0.016	0.250	0.125	-
		TPMR 222-23	TPMR110308-23		●		▲			●	●	0.031	0.250	0.125	-
		TPMR 321-23	TPMR160304-23	●	●	▲	▲			●	●	0.016	0.375	0.125	-
		TPMR 322-23	TPMR160308-23		●		▲			●		0.031	0.375	0.125	-
Medium cutting	24 	TPMR 221-24	TPMR110304-24		●		▲			●		0.016	0.250	0.125	-
		TPMR 222-24	TPMR110308-24		●		▲			●		0.031	0.250	0.125	-
		TPMR 321-24	TPMR160304-24	●	●	▲	▲		●	●		0.016	0.375	0.125	-
		TPMR 322-24	TPMR160308-24	●	●	▲	▲			●		0.031	0.375	0.125	-
Finishing to medium cutting	CM 	TPMR 221 CM	TPMR110304-CM					●				0.016	0.250	0.125	-
		TPMR 222 CM	TPMR110308-CM					●				0.031	0.250	0.125	-
		TPMR 321 CM	TPMR160304-CM					●				0.016	0.375	0.125	-
		TPMR 322 CM	TPMR160308-CM					●				0.031	0.375	0.125	-
		TPMR 323 CM	TPMR160312-CM					●				0.047	0.375	0.125	-

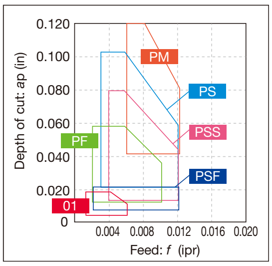
Dimension (inch)

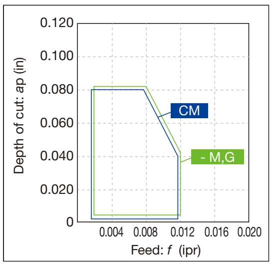
● : Line up
▲ : To be discontinued

Chip control range



*Chip control range with typical R0.1





*-M,G: Without chipbreaker

Reference pages: Internal toolholder → D051 -

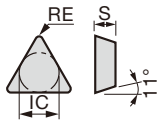
Insert POSITIVE TYPE

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

TP

Triangular, 60° without hole Positive 11°

		T5115	GH110	AH120	T3130	NS9530	NS740	TH10	UX30	LX21	LX11
P	Steel		●	●ɔ	●ɔ	●ɔ	ɔ	●	ɔ		
M	Stainless		●	●ɔ	●ɔ			●	ɔ		
K	Cast iron	ɔ	●	●ɔ	●ɔ	●ɔ	ɔ	●		●	
N	Non-ferrous							●			
S	Superalloy		●	●ɔ							
H	Hard material										●

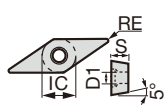


Application	Chipbreaker	Designation Inch	Designation Metric	RE	IC	S	D1
Finishing to medium cutting	-	TPGR 220.5 L	TPGR110302L	0.008	0.250	0.125	-
		TPGR 221 L	TPGR110304L	0.016	0.250	0.125	-
		TPGR 321 R	TPGR160304R	0.016	0.375	0.125	-
		TPGR 321 L	TPGR160304L	0.016	0.375	0.125	-
		TPGR 322 L	TPGR160308L	0.031	0.375	0.125	-
	-	TPMN 221	TPMN110304	0.016	0.250	0.125	-
		TPMN 222	TPMN110308	0.031	0.250	0.125	-
		TPMN 321	TPMN160304	0.016	0.375	0.125	-
		TPMN 322	TPMN160308	0.031	0.375	0.125	-
		TPMN 323	TPMN160312	0.047	0.375	0.125	-
		TPMN 431	TPMN220404	0.016	0.500	0.187	-
		TPMN 432	TPMN220408	0.031	0.500	0.187	-
		TPMN 433	TPMN220412	0.047	0.500	0.187	-
	-	TPGN 220.5	TPGN110302	0.008	0.250	0.125	-
		TPGN 221	TPGN110304	0.016	0.250	0.125	-
		TPGN 222	TPGN110308	0.031	0.250	0.125	-
		TPGN 320.5	TPGN160302	0.008	0.375	0.125	-
		TPGN 321	TPGN160304	0.016	0.375	0.125	-
		TPGN 322	TPGN160308	0.031	0.375	0.125	-
		TPGN 323	TPGN160312	0.047	0.375	0.125	-
		TPGN 431	TPGN220404	0.016	0.500	0.187	-
		TPGN 432	TPGN220408	0.031	0.500	0.187	-
		TPGN 433	TPGN220412	0.047	0.500	0.187	-

VB

Rhombic, 35° with hole Positive 5°

		T9215	T9225	T9115	T9125	AH725	GT9530	NS9530
P	Steel	●ɔ	ɔ✣	●ɔ	ɔ✣	ɔ	●ɔ	●ɔ
M	Stainless	●ɔ				ɔ		
K	Cast iron	●ɔ		●ɔ		ɔ	●ɔ	●ɔ
N	Non-ferrous							
S	Superalloy					●		
H	Hard material							



Application	Chipbreaker	Designation Inch	Designation Metric	RE	IC	S	D1
Finishing	PSF	VBMT 220.5 PSF	VBMT110302-PSF	0.008	0.250	0.125	0.110
		VBMT 221 PSF	VBMT110304-PSF	0.016	0.250	0.125	0.110
		VBMT 330.5 PSF	VBMT160402-PSF	0.008	0.375	0.187	0.173
		VBMT 331 PSF	VBMT160404-PSF	0.016	0.375	0.187	0.173

● : Line up
▲ : To be discontinued

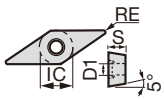
Reference pages: VBMT...: External toolholder → C065
Internal toolholder → D051 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

VB

Rhombic, 35° with hole Positive 5°

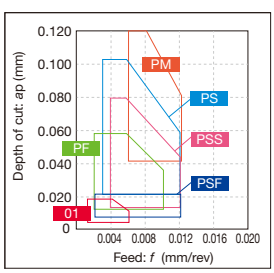
P	Steel	●◐ ◐✣ ●◐ ◐✣ ◐ ✣ ◐✣ ✣ ●◐ ◐ ● ◐ ●◐ ●◐ ●◐
M	Stainless	●◐ ◐ ✣ ◐ ◐ ✣ ●◐ ◐ ● ◐ ●◐
K	Cast iron	●◐ ●◐ ●◐ ◐ ●◐ ◐ ●◐ ◐ ● ◐ ●◐ ●◐ ●◐
N	Non-ferrous	
S	Superalloy	●◐ ● ● ◐
H	Hard material	

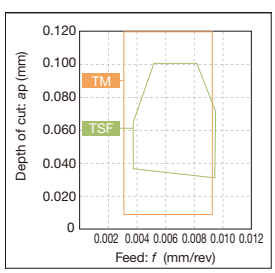


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	T515	T5115	AH120	AH725	AH8005	AH8015	Coated cermet GT9530	AT9530	Cermet NS9530	Dimension (inch) RE	IC	S	D1
Finishing	PF	VBMT 220.5 PF	VBMT110302-PF															●		●	0.008	0.250	0.125	0.110
		VBMT 221 PF	VBMT110304-PF															●		●	0.016	0.250	0.125	0.110
		VBMT 222 PF	VBMT110308-PF															●		●	0.031	0.250	0.125	0.110
		VBMT 331 PF	VBMT160404-PF															●		●	0.016	0.375	0.187	0.173
		VBMT 332 PF	VBMT160408-PF		●		▲											●		●	0.031	0.375	0.187	0.173
Finishing to light cutting	PSS	VBMT 221 PSS	VBMT110304-PSS	●	●	▲	▲	●	●	●	●				●			●		●	0.016	0.250	0.125	0.110
		VBMT 222 PSS	VBMT110308-PSS	●	●	▲	▲	●	●	●	●				●			●		●	0.031	0.250	0.125	0.110
		VBMT 331 PSS	VBMT160404-PSS	●	●	▲	▲	●	●	●	●				●			●		●	0.016	0.375	0.187	0.173
		VBMT 332 PSS	VBMT160408-PSS	●	●	▲	▲	●	●	●	●				●			●		●	0.031	0.375	0.187	0.173
		VBMT 333 PSS	VBMT160412-PSS	●	●	▲	▲								●						0.047	0.375	0.187	0.173
Finishing to medium cutting	PS	VBMT 220.5 PS	VBMT110302-PS	●	●	▲	▲	●	●	●	●				●	●	●	●	●	●	0.008	0.250	0.125	0.110
		VBMT 221 PS	VBMT110304-PS	●	●	▲	▲	●	●	●	●			●	●	●	●	●	●	●	0.016	0.250	0.125	0.110
		VBMT 222 PS	VBMT110308-PS	●	●	▲	▲	●	●	●	●			●	●	●	●	●	●	●	0.031	0.250	0.125	0.110
		VBMT 330.5 PS	VBMT160402-PS	●	●	▲	▲	●	●	●	●				●	●	●	●	●	●	0.008	0.375	0.187	0.173
		VBMT 331 PS	VBMT160404-PS	●	●	▲	▲	●	●	●	●			●	●	●	●	●	●	●	0.016	0.375	0.187	0.173
		VBMT 332 PS	VBMT160408-PS	●	●	▲	▲	●	●	●	●			●	●	●	●	●	●	●	0.031	0.375	0.187	0.173
	TSF	VBMT 220.5 TSF	VBMT110302-TSF	●	●																0.008	0.250	0.125	0.110
		VBMT 221 TSF	VBMT110304-TSF	●	●																0.016	0.250	0.125	0.110
		VBMT 222 TSF	VBMT110308-TSF	●	●																0.031	0.250	0.125	0.110
		VBMT 331 TSF	VBMT160404-TSF	●	●																0.016	0.375	0.187	0.173
		VBMT 332 TSF	VBMT160408-TSF	●	●																0.031	0.375	0.187	0.173
	TM	VBMT 220.5 TM	VBMT110302-TM	●	●																0.008	0.250	0.125	0.110
		VBMT 221 TM	VBMT110304-TM	●	●																0.016	0.250	0.125	0.110
		VBMT 222 TM	VBMT110308-TM	●	●																0.031	0.250	0.125	0.110
		VBMT 331 TM	VBMT160404-TM	●	●																0.016	0.375	0.187	0.173
		VBMT 332 TM	VBMT160408-TM	●	●																0.031	0.375	0.187	0.173

● : Line up
▲ : To be discontinued

Chip control range





Reference pages: External toolholder → C065 Internal toolholder → D043 -
J-Series toolholder → G044 -

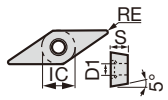
Insert POSITIVE TYPE

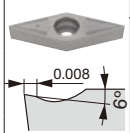
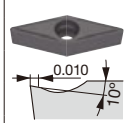
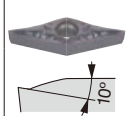
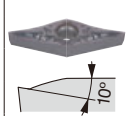
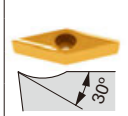
● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

VB

Rhombic, 35° with hole Positive 5°

		T9215	T9225	T9115	T9125	T515	T5115	AH725	SH725	SH730	J740	J9530	NS9530	TH10
P	Steel	●ɔ	ɔ✣	●ɔ	ɔ✣			ɔ	●ɔ	●ɔ	●ɔ		●ɔ	●
M	Stainless	●ɔ						ɔ	●ɔ	●ɔ	●ɔ			●
K	Cast iron	●ɔ		●ɔ		●ɔ	ɔ	ɔ				●ɔ	●ɔ	●
N	Non-ferrous													●
S	Superalloy							●		●ɔ				
H	Hard material													



Application	Chipbreaker	Designation Inch	Designation Metric	Coated										Coated cermet	Cermet	Un-coated	Dimension (inch)			
				T9215	T9225	T9115	T9125	T515	T5115	AH725	SH725	SH730	J740	J9530	NS9530	TH10	RE	IC	S	D1
Medium cutting	24	VBMT 331-24	VBMT160404-24	●	●	▲	▲								●		0.016	0.375	0.187	0.173
		VBMT 332-24	VBMT160408-24	●	●	▲	▲								●		0.031	0.375	0.187	0.173
Finishing to medium cutting	CM	VBMT 221 CM	VBMT110304-CM						●								0.016	0.250	0.125	0.110
		VBMT 222 CM	VBMT110308-CM						●								0.031	0.250	0.125	0.110
		VBMT 331 CM	VBMT160404-CM					●	●								0.016	0.375	0.187	0.173
		VBMT 332 CM	VBMT160408-CM					●	●								0.031	0.375	0.187	0.173
		VBMT 333 CM	VBMT160412-CM					●	●								0.047	0.375	0.187	0.173
For external turning on Swiss lathes (sharp edge)	JS	VBGT 22V FN-JS	VBGT110300FN-JS								●	●					0.001	0.250	0.125	0.110
		VBGT 220 FN-JS	VBGT110301FN-JS								●	●					<0.004	0.250	0.125	0.110
		VBGT 220.5 FN-JS	VBGT110302FN-JS								●	●					<0.003	0.250	0.125	0.110
		VBGT 221 FN-JS	VBGT110304FN-JS								●	●					<0.016	0.250	0.125	0.110
For external turning on Swiss lathes	JS	VBGT 220 N-JS	VBGT110301N-JS							●							0.004	0.250	0.125	0.110
		VBGT 220.5 N-JS	VBGT110302N-JS							●							0.008	0.250	0.125	0.110
		VBGT 221 N-JS	VBGT110304N-JS							●							0.016	0.250	0.125	0.110
For external turning on Swiss lathes (sharp edge)	J10	VBGT 22V FR-J10	VBGT110300FR-J10								●		●			●	0.001	0.250	0.125	0.110
		VBGT 22V FL-J10	VBGT110300FL-J10								●		●			●	0.001	0.250	0.125	0.110
		VBGT 220 FR-J10	VBGT110301FR-J10								●		●		●	●	0.004	0.250	0.125	0.110
		VBGT 220 FL-J10	VBGT110301FL-J10								●		●		●	●	0.004	0.250	0.125	0.110
		VBGT 220.5 FR-J10	VBGT110302FR-J10								●		●		●	●	0.008	0.250	0.125	0.110
		VBGT 220.5 FL-J10	VBGT110302FL-J10								●		●		●	●	0.008	0.250	0.125	0.110
		VBGT 221 FR-J10	VBGT110304FR-J10								●		●		●	●	0.016	0.250	0.125	0.110
		VBGT 221 FL-J10	VBGT110304FL-J10								●		●		●	●	0.016	0.250	0.125	0.110
For external turning on Swiss lathes (honed edge)	J10	VBGT 220.5 R-J10	VBGT110302R-J10											●			0.008	0.250	0.125	0.110
		VBGT 220.5 L-J10	VBGT110302L-J10											●			0.008	0.250	0.125	0.110
		VBGT 221 R-J10	VBGT110304R-J10											●			0.016	0.250	0.125	0.110
		VBGT 221 L-J10	VBGT110304L-J10											●			0.016	0.250	0.125	0.110

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

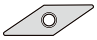
● : Line up
▲ : To be discontinued

Reference pages: External toolholder → C065 Internal toolholder → D043 -
J-Series toolholder → G044 -

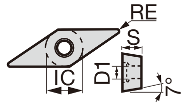
● : Continuous cutting
◖ : Light interrupted cutting
✠ : Heavy interrupted cutting

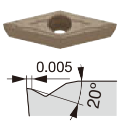
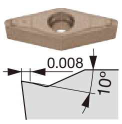
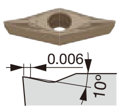
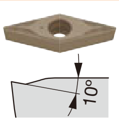
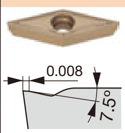
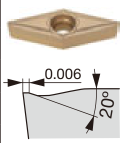
VC

Rhombic, 35° with hole Positive 7°



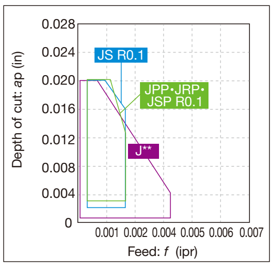
	Grade	T9215	T9225	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH725	AH8005	AH8015	AH905	GT9530	AT9530	NS9530
P	Steel	●◖	◖✠	●◖	◖✠	◖	✠	◖✠	✠	●◖	◖				●◖	●◖	●◖
M	Stainless	●◖				●	◖	◖	✠	●◖	◖	●	◖				
K	Cast iron	●◖		●◖						●◖	◖				●◖	●◖	●◖
N	Non-ferrous																
S	Superalloy									●◖	●	●	◖	◖			
H	Hard material																

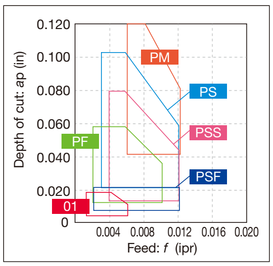


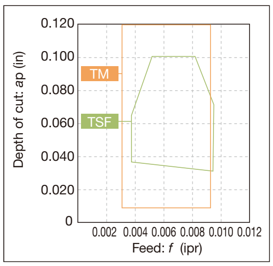
Application	Chipbreaker	Designation Inch	Metric	T9215 (Coated)	T9225	T9115	T9125	T6120	T6130	AH630	AH645	AH120	AH725	AH8005	AH8015	AH905	GT9530 (Coated cermet)	AT9530	NS9530 (Cermet)	RE	IC	S	D1 (Dimension (inch))
Finishing	PSF	VCMT 630.5 PSF	VCMT080202-PSF										●				●		●	0.008	0.187	0.094	0.091
	 0.005, 20°	VCMT 631 PSF	VCMT080204-PSF	●	●	▲	▲						●				●		●	0.016	0.187	0.094	0.091
		VCMT 220.5 PSF	VCMT110302-PSF										●							0.008	0.250	0.125	0.110
		VCMT 221 PSF	VCMT110304-PSF	●	●	▲	▲						●							0.016	0.250	0.125	0.110
		VCMT 331 PSF	VCMT160404-PSF	●	●	▲	▲						●	●	●	●	●		●	0.016	0.375	0.187	0.173
		VCMT 332 PSF	VCMT160408-PSF	●	●	▲	▲						●	●	●	●	●		●	0.031	0.375	0.187	0.173
	PF	VCMT 630.5 PF	VCMT080202-PF														●		●	0.008	0.187	0.094	0.091
	 0.008, 10°	VCMT 631 PF	VCMT080204-PF														●		●	0.016	0.187	0.094	0.091
		VCMT 331 PF	VCMT160404-PF														●		●	0.016	0.375	0.187	0.173
		VCMT 332 PF	VCMT160408-PF														●		●	0.031	0.375	0.187	0.173
Finishing to light cutting	PSS	VCMT 221 PSS	VCMT110304-PSS	●	●	▲	▲	●	●	●	●		●				●		●	0.016	0.250	0.125	0.110
	 0.006, 10°	VCMT 222 PSS	VCMT110308-PSS	●	●	▲	▲	●	●	●	●		●				●		●	0.031	0.250	0.125	0.110
		VCMT 331 PSS	VCMT160404-PSS	●	●	▲	▲	●	●	●	●		●	●	●	●	●		●	0.016	0.375	0.187	0.173
		VCMT 332 PSS	VCMT160408-PSS	●	●	▲	▲	●	●	●	●		●	●	●	●	●		●	0.031	0.375	0.187	0.173
Finishing to medium cutting	PS	VCMT 220.5 PS	VCMT110302-PS	●	●	▲	▲	●	●	●	●		●	●	●		●	●	●	0.008	0.250	0.125	0.110
	 10°	VCMT 221 PS	VCMT110304-PS	●	●	▲	▲	●	●	●	●		●	●	●		●	●	●	0.016	0.250	0.125	0.110
		VCMT 222 PS	VCMT110308-PS	●	●	▲	▲	●	●	●	●		●	●	●		●	●	●	0.031	0.250	0.125	0.110
		VCMT 331 PS	VCMT160404-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	0.016	0.375	0.187	0.173
		VCMT 332 PS	VCMT160408-PS	●	●	▲	▲	●	●	●	●	●	●	●	●	●	●	●	●	0.031	0.375	0.187	0.173
	TSF	VCMT 331 TSF	VCMT160404-TSF	●	●															0.016	0.375	0.187	0.173
	 0.008, 7.5°	VCMT 332 TSF	VCMT160408-TSF	●	●															0.031	0.375	0.187	0.173
	TM	VCMT 331 TM	VCMT160404-TM	●	●															0.016	0.375	0.187	0.173
	 0.006, 20°	VCMT 332 TM	VCMT160408-TM	●	●															0.031	0.375	0.187	0.173

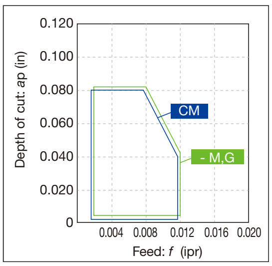
● : Line up
▲ : To be discontinued

Chip control range









*Chip control range with typical R0.1

*-M,G: Without chipbreaker

Reference pages: External toolholder → C068 - Internal toolholder → D044 -

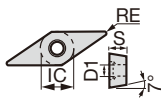
Insert POSITIVE TYPE

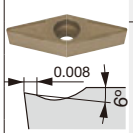
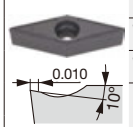
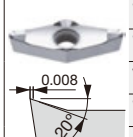
●: Continuous cutting
c: Light interrupted cutting
✣: Heavy interrupted cutting

VC

Rhombic, 35° with hole Positive 7°

P	Steel	●c	c✣	●c	c✣				●	c					●c						
M	Stainless	●c							●	c					●c						
K	Cast iron	●c		●c		●c	c								●c				●		
N	Non-ferrous																		●		
S	Superalloy								●	c	c								●		
H	Hard material																				



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9115	T9125	T515	T5115	AH8005	AH8015	AH905	Cermet NS9530	Uncoated KS05F	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	**24**	**VCMT 331-24**	**VCMT160404-24**	●	●	▲	▲						●		0.016	0.375	0.187	0.173
		VCMT 332-24	VCMT160408-24	●	●	▲	▲						●		0.031	0.375	0.187	0.173
	CM	**VCMT 631 CM**	**VCMT080204-CM**						●						0.016	0.187	0.094	0.091
		**VCMT 331 CM**	**VCMT160404-CM**					●	●						0.016	0.375	0.187	0.173
		VCMT 332 CM	VCMT160408-CM					●	●						0.031	0.375	0.187	0.173
		VCMT 333 CM	VCMT160412-CM						●						0.047	0.375	0.187	0.173
Medium cutting	**All-round**	**VCMT 331**	**VCMT160404**							●	●	●			0.016	0.375	0.187	0.173
		VCMT 332	VCMT160408							●	●	●			0.031	0.375	0.187	0.173
		VCMT 333	VCMT160412							●	●	●			0.047	0.375	0.187	0.173
Finishing to medium cutting	**AL**	**VCGT 331 AL**	**VCGT160404-AL**											●	0.016	0.375	0.187	0.173
		VCGT 332 AL	VCGT160408-AL											●	0.031	0.375	0.187	0.173
		VCGT 333 AL	VCGT160412-AL											●	0.047	0.375	0.187	0.173
		VCGT 43.55 AL	**VCGT220520-AL**											●	0.079	0.500	0.219	0.217
		VCGT 43.57.5 AL	VCGT220530-AL											●	0.118	0.500	0.219	0.217

●: Line up
▲: To be discontinued

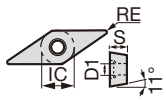
Reference pages: VC*T...: External toolholder → C068 - Internal toolholder → D044 -

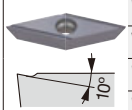
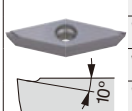
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

VP

Rhombic, 35°
with hole
Positive 11°

P	Steel	●◐	●◐
M	Stainless	●◐	●◐
K	Cast iron		
N	Non-ferrous		
S	Superalloy		●◐
H	Hard material		

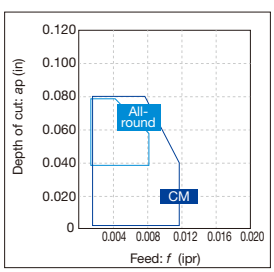


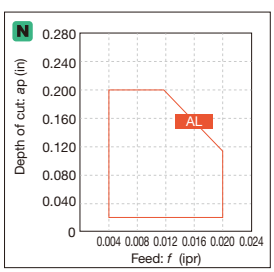
Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH725	Coated SH730	Dimension (inch) RE	IC	S	D1
For external turning on Swiss lathes (sharp edge)	JPP	VPET 63X MFR-JPP	VPET0802008MFR-JPP	●	●	<0.003	0.187	0.094	0.091
		VPET 63X MFL-JPP	VPET0802008MFL-JPP	●	●	<0.003	0.187	0.094	0.091
		VPET 630 MFR-JPP	VPET080201MFR-JPP	●	●	<0.004	0.187	0.094	0.091
		VPET 630 MFL-JPP	VPET080201MFL-JPP	●	●	<0.004	0.187	0.094	0.091
		VPET 630.4 MFR-JPP	VPET0802018MFR-JPP	●	●	<0.007	0.187	0.094	0.091
		VPET 630.4 MFL-JPP	VPET0802018MFL-JPP	●	●	<0.007	0.187	0.094	0.091
		VPET 630.5 MFR-JPP	VPET080202MFR-JPP	●	●	<0.008	0.187	0.094	0.091
		VPET 630.5 MFL-JPP	VPET080202MFL-JPP	●	●	<0.008	0.187	0.094	0.091
		VPET 22X MFR-JPP	VPET1103008MFR-JPP	●	●	<0.003	0.250	0.125	0.110
		VPET 22X MFL-JPP	VPET1103008MFL-JPP	●	●	<0.003	0.250	0.125	0.110
		VPET 220 MFR-JPP	VPET110301MFR-JPP	●	●	<0.004	0.250	0.125	0.110
		VPET 220 MFL-JPP	VPET110301MFL-JPP	●	●	<0.004	0.250	0.125	0.110
		VPET 220.4 MFR-JPP	VPET1103018MFR-JPP	●	●	<0.007	0.250	0.125	0.110
		VPET 220.4 MFL-JPP	VPET1103018MFL-JPP	●	●	<0.007	0.250	0.125	0.110
		VPET 220.5 MFR-JPP	VPET110302MFR-JPP	●	●	<0.008	0.250	0.125	0.110
		VPET 220.5 MFL-JPP	VPET110302MFL-JPP	●	●	<0.008	0.250	0.125	0.110
	JRP	VPET 63X MFR-JRP	VPET0802008MFR-JRP	●	●	<0.003	0.187	0.094	0.091
		VPET 63X MFL-JRP	VPET0802008MFL-JRP	●	●	<0.003	0.187	0.094	0.091
		VPET 630 MFR-JRP	VPET080201MFR-JRP	●	●	<0.004	0.187	0.094	0.091
		VPET 630 MFL-JRP	VPET080201MFL-JRP	●	●	<0.004	0.187	0.094	0.091
		VPET 630.4 MFR-JRP	VPET0802018MFR-JRP	●	●	<0.007	0.187	0.094	0.091
		VPET 630.4 MFL-JRP	VPET0802018MFL-JRP	●	●	<0.007	0.187	0.094	0.091
		VPET 630.5 MFR-JRP	VPET080202MFR-JRP	●	●	<0.008	0.187	0.094	0.091
		VPET 630.5 MFL-JRP	VPET080202MFL-JRP	●	●	<0.008	0.187	0.094	0.091
		VPET 22X MFR-JRP	VPET1103008MFR-JRP	●	●	<0.003	0.250	0.125	0.110
		VPET 22X MFL-JRP	VPET1103008MFL-JRP	●	●	<0.003	0.250	0.125	0.110
		VPET 220 MFR-JRP	VPET110301MFR-JRP	●	●	<0.004	0.250	0.125	0.110
		VPET 220 MFL-JRP	VPET110301MFL-JRP	●	●	<0.004	0.250	0.125	0.110
		VPET 220.4 MFR-JRP	VPET1103018MFR-JRP	●	●	<0.007	0.250	0.125	0.110
		VPET 220.4 MFL-JRP	VPET1103018MFL-JRP	●	●	<0.007	0.250	0.125	0.110
		VPET 220.5 MFR-JRP	VPET110302MFR-JRP	●	●	<0.008	0.250	0.125	0.110
		VPET 220.5 MFL-JRP	VPET110302MFL-JRP	●	●	<0.008	0.250	0.125	0.110

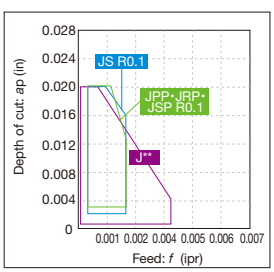
*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

Chip control range







*Chip control range with typical R0.1

Reference pages: VPET...: J-Series toolholder → G030 -

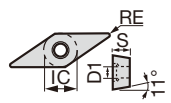
Insert POSITIVE TYPE

● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

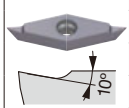
VP

Rhombic, 35° with hole Positive 11°

		SH725	SH730
P	Steel	●ⓒ	●ⓒ
M	Stainless	●ⓒ	●ⓒ
K	Cast iron		
N	Non-ferrous		
S	Superalloy		●ⓒ
H	Hard material		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH725	Coated SH730	Dimension (inch) RE	IC	S	D1
For external turning on Swiss lathes (sharp edge)	JSP	VPET 63X MFN-JSP	VPET0802008MFN-JSP	●	●	<0.003	0.187	0.094	0.091
		VPET 630 MFN-JSP	VPET080201MFN-JSP	●	●	<0.004	0.187	0.094	0.091
		VPET 630.4 MFN-JSP	VPET080218MFN-JSP	●	●	<0.007	0.187	0.094	0.091
		VPET 630.5 MFN-JSP	VPET080202MFN-JSP	●	●	<0.008	0.187	0.094	0.091
		VPET 22X MFN-JSP	VPET1103008MFN-JSP	●	●	<0.003	0.250	0.125	0.110
		VPET 220 MFN-JSP	VPET110301MFN-JSP	●	●	<0.004	0.250	0.125	0.110
		VPET 220.4 MFN-JSP	VPET110318MFN-JSP	●	●	<0.007	0.250	0.125	0.110
		VPET 220.5 MFN-JSP	VPET110302MFN-JSP	●	●	<0.008	0.250	0.125	0.110



*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

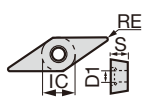
● : Line up

Insert POSITIVE TYPE / DOUBLE SIDE

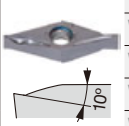
VX

Rhombic, 35° with hole

		SH725
P	Steel	●ⓒ
M	Stainless	●ⓒ
K	Cast iron	
N	Non-ferrous	
S	Superalloy	
H	Hard material	



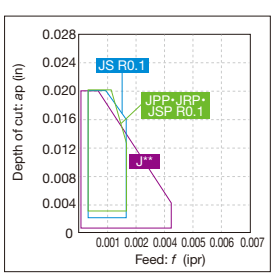
Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH725	Dimension (inch) RE	IC	S	D1
Finishing (sharp edge)	JRP	VXGU 73.50MFRE-JRP	VXGU09T201MFRE-JRP	●	<0.004	0.219	0.109	0.098
		VXGU 73.50MFLE-JRP	VXGU09T201MFLE-JRP	●	<0.004	0.219	0.109	0.098
		VXGU 73.50.5MFRE-JRP	VXGU09T202MFRE-JRP	●	<0.008	0.219	0.109	0.098
		VXGU 73.50.5MFLE-JRP	VXGU09T202MFLE-JRP	●	<0.008	0.219	0.109	0.098
Finishing to medium cutting (sharp edge)	JS	VXGU 73.50MFR-JS	VXGU09T201MFR-JS	●	<0.004	0.219	0.109	0.098
		VXGU 73.50MFL-JS	VXGU09T201MFL-JS	●	<0.004	0.219	0.109	0.098
		VXGU 73.50.5MFR-JS	VXGU09T202MFR-JS	●	<0.008	0.219	0.109	0.098
		VXGU 73.50.5MFL-JS	VXGU09T202MFL-JS	●	<0.008	0.219	0.109	0.098
		VXGU 73.51MFR-JS	VXGU09T204MFR-JS	●	<0.016	0.219	0.109	0.098
		VXGU 73.51MFL-JS	VXGU09T204MFL-JS	●	<0.016	0.219	0.109	0.098

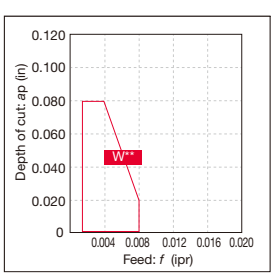


*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

Chip control range





*Chip control range with typical R0.1

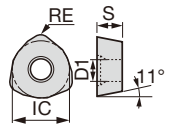
Reference pages: WPMT...: External toolholder → C104
VPET... : J-Series toolholder → G030 -
VXGU...: External toolholder → C059 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

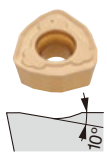
WP

Trigon, 80° with hole Positive 11°

P	Steel	●◐ ◐✣ ●◐ ◐✣ ●◐
M	Stainless	●◐ ●◐
K	Cast iron	●◐ ●◐ ●◐
N	Non-ferrous	
S	Superalloy	●◐
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9215	T9225	T9115	T9125	AH120	Dimension (inch) RE	IC	S	D1
Heavy cutting	ML	-	WPMT090725ZPR-ML	●	●	▲	▲	●	0.098	0.591	0.276	0.217
		-	WPMT090725ZPL-ML	●	●	▲	▲	●	0.098	0.591	0.276	0.217

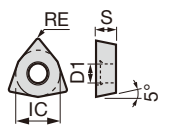


● : Line up
▲ : To be discontinued

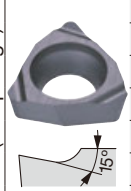
WB

Trigon, 80° with hole Positive 5°

P	Steel	● ●◐ ●◐ ●◐ ◐
M	Stainless	● ●◐ ●◐ ●◐ ◐
K	Cast iron	● ●◐ ●
N	Non-ferrous	●
S	Superalloy	● ●◐
H	Hard material	

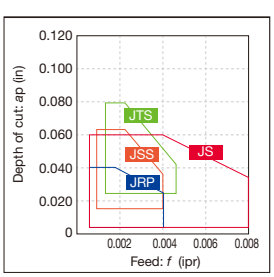


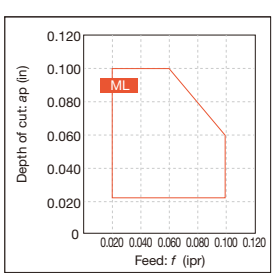
Application	Chipbreaker	Designation Inch	Designation Metric	Coated GH110	SH725	SH730	Cermet NS9530	Uncoated TH10	UX30	Dimension (inch) RE	IC	S	D1
Finishing	W08	WBGT 52V R-W08	WBGT030100R-W08			●				0.001	0.156	0.063	0.091
		WBGT 52V L-W08	WBGT030100L-W08			●	●	●	●	0.001	0.156	0.063	0.091
		WBGT 520 R-W08	WBGT030101R-W08			●				0.004	0.156	0.063	0.091
		WBGT 520 L-W08	WBGT030101L-W08			●		●		0.004	0.156	0.063	0.091
		WBGT 520.5 R-W08	WBGT030102R-W08			●				0.008	0.156	0.063	0.091
		WBGT 520.5 L-W08	WBGT030102L-W08	●		●	●	●	●	0.008	0.156	0.063	0.091
		WBGT 521 R-W08	WBGT030104R-W08			●				0.016	0.156	0.063	0.091
		WBGT 521 L-W08	WBGT030104L-W08	●		●	●	●	●	0.016	0.156	0.063	0.091
Finishing (sharp edge)	W08	WBGT 52V FR-W08	WBGT030100FR-W08		●					0.001	0.156	0.063	0.091
		WBGT 52V FL-W08	WBGT030100FL-W08		●					0.001	0.156	0.063	0.091
		WBGT 520 FR-W08	WBGT030101FR-W08		●					0.004	0.156	0.063	0.091
		WBGT 520 FL-W08	WBGT030101FL-W08		●					0.004	0.156	0.063	0.091
		WBGT 520.5 FR-W08	WBGT030102FR-W08		●					0.008	0.156	0.063	0.091
		WBGT 520.5 FL-W08	WBGT030102FL-W08		●					0.008	0.156	0.063	0.091
		WBGT 521 FR-W08	WBGT030104FR-W08		●					0.016	0.156	0.063	0.091
		WBGT 521 FL-W08	WBGT030104FL-W08		●					0.016	0.156	0.063	0.091



● : Line up

Chip control range



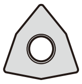


Reference pages: Internal toolholder → D083

Insert POSITIVE TYPE

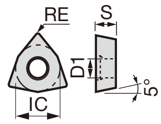
●: Continuous cutting
◐: Light interrupted cutting
✣: Heavy interrupted cutting

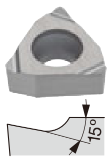
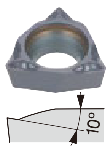
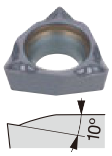
WB



Trigon, 80°
with hole
Positive 5°

		GH110	SH725	SH730	NS9530
P	Steel	●	●◐	●◐	●◐
M	Stainless	●	●◐	●◐	
K	Cast iron	●			●◐
N	Non-ferrous				
S	Superalloy	●		●◐	
H	Hard material				



Application	Chipbreaker	Designation: Inch	Designation: Metric	Coated: GH110	Coated: SH725	Coated: SH730	Cermet: NS9530	Dimension (inch): RE	IC	S	D1
Finishing (sharp edge)	**W11**	WBGT 520.5 L-W11	WBGT060102L-W11	●			●	0.008	0.156	0.063	0.091
		WBGT 521 L-W11	WBGT060104L-W11				●	0.016	0.156	0.063	0.091
		WBGT 630.5 L-W11	WBGT080202L-W11				●	0.008	0.187	0.094	0.091
		WBGT 631 L-W11	WBGT080204L-W11				●	0.016	0.187	0.094	0.091
For internal turning on Swiss lathes	**JS**	WBGT 520 R-JS	WBGT030101R-JS			●		<0.004	0.156	0.063	0.091
		WBGT 520 L-JS	WBGT030101L-JS			●		<0.004	0.156	0.063	0.091
		WBGT 520.5 R-JS	WBGT030102R-JS			●		<0.008	0.156	0.063	0.091
		WBGT 520.5 L-JS	WBGT030102L-JS			●		<0.008	0.156	0.063	0.091
		WBGT 521 R-JS	WBGT030104R-JS			●		<0.016	0.156	0.063	0.091
		WBGT 521 L-JS	WBGT030104L-JS			●		<0.016	0.156	0.063	0.091
For internal turning on Swiss lathes (sharp edge)	**JS**	WBGT 520 FR-JS	WBGT030101FR-JS		●			<0.004	0.156	0.063	0.091
		WBGT 520 FL-JS	WBGT030101FL-JS		●			<0.004	0.156	0.063	0.091
		WBGT 520.5 FR-JS	WBGT030102FR-JS		●			<0.008	0.156	0.063	0.091
		WBGT 520.5 FL-JS	WBGT030102FL-JS		●			<0.008	0.156	0.063	0.091
		WBGT 521 FR-JS	WBGT030104FR-JS		●			<0.016	0.156	0.063	0.091
		WBGT 521 FL-JS	WBGT030104FL-JS		●			<0.016	0.156	0.063	0.091

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

●: Line up

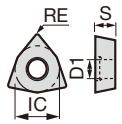
Reference pages: WBGT...: Internal toolholder → D083

● : Continuous cutting
ɔ : Light interrupted cutting
✣ : Heavy interrupted cutting

WX

Trigon, 80° with hole

P	Steel	ɔ	●ɔ
M	Stainless	ɔ	●ɔ
K	Cast iron	ɔ	
N	Non-ferrous		
S	Superalloy	●	
H	Hard material		

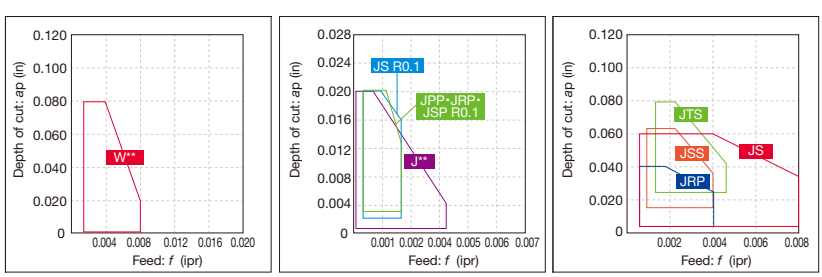


Application	Chipbreaker	Designation Inch	Designation Metric	Coated AH725	Coated SH725	RE	IC	S	D1
Finishing to medium cutting (sharp edge)	JS	WXGU 220MFR JS	WXGU040301MFR-JS		●	<0.004	0.250	0.125	0.106
		WXGU 220MFL JS	WXGU040301MFL-JS		●	<0.004	0.250	0.125	0.106
		WXGU 220.5MFR JS	WXGU040302MFR-JS		●	<0.008	0.250	0.125	0.106
		WXGU 220.5MFL JS	WXGU040302MFL-JS		●	<0.008	0.250	0.125	0.106
		WXGU 221MFR JS	WXGU040304MFR-JS		●	<0.016	0.250	0.125	0.106
		WXGU 221MFL JS	WXGU040304MFL-JS		●	<0.016	0.250	0.125	0.106
	JTS	WXGU 220MFR JTS	WXGU040301MFR-JTS		●	<0.004	0.250	0.125	0.106
		WXGU 220MFL JTS	WXGU040301MFL-JTS		●	<0.004	0.250	0.125	0.106
		WXGU 220.5MFR JTS	WXGU040302MFR-JTS		●	<0.008	0.250	0.125	0.106
		WXGU 220.5MFL JTS	WXGU040302MFL-JTS		●	<0.008	0.250	0.125	0.106
Finishing to medium cutting	JTS	WXGU 220MR JTS	WXGU040301MR-JTS	●		<0.004	0.250	0.125	0.106
		WXGU 220ML JTS	WXGU040301ML-JTS	●		<0.004	0.250	0.125	0.106
		WXGU 220.5MR JTS	WXGU040302MR-JTS	●		<0.008	0.250	0.125	0.106
		WXGU 220.5ML JTS	WXGU040302ML-JTS	●		<0.008	0.250	0.125	0.106

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

Chip control range



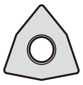
*Chip control range with typical R0.1

Reference pages: WXGU...: External toolholder → C033 -, Internal toolholder → D034

Insert POSITIVE TYPE

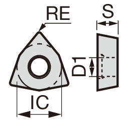
● : Continuous cutting
◖ : Light interrupted cutting
✤ : Heavy interrupted cutting

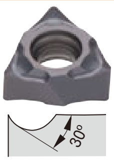
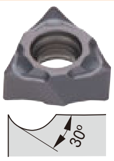
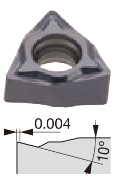
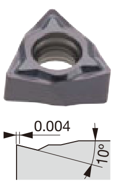
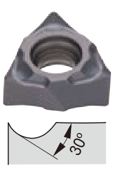
WX



Trigon, 80° with hole

Material	AH725	AH8015	SH725	GT9530	NS9530	KS05F
P Steel	◖	●◖	●◖	●◖	●◖	
M Stainless	◖	●◖	●◖			
K Cast iron	◖			●◖	●◖	●
N Non-ferrous						●
S Superalloy	●					●
H Hard material						

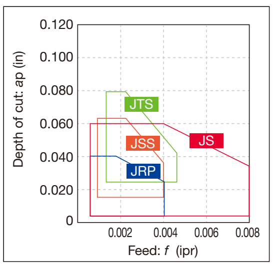


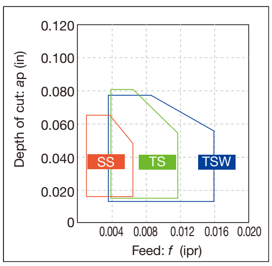
Application	Chipbreaker	Designation Inch	Designation Metric	Coated AH725	Coated AH8015	Coated SH725	Coated cermet GT9530	Cermet NS9530	Uncoated KS05F	Dimension (inch) RE	IC	S	D1
Finishing (low cutting force) (sharp edge)	JSS 	WXGU 220MFR JSS	WXGU040301MFR-JSS			●				<0.004	0.250	0.125	0.106
		WXGU 220MFL JSS	WXGU040301MFL-JSS			●				<0.004	0.250	0.125	0.106
		WXGU 220.5MFR JSS	WXGU040302MFR-JSS			●				<0.008	0.250	0.125	0.106
		WXGU 220.5MFL JSS	WXGU040302MFL-JSS			●				<0.008	0.250	0.125	0.106
Finishing (low cutting force)	JSS 	WXGU 220MR JSS	WXGU040301MR-JSS	●						<0.004	0.250	0.125	0.106
		WXGU 220ML JSS	WXGU040301ML-JSS	●						<0.004	0.250	0.125	0.106
		WXGU 220.5MR JSS	WXGU040302MR-JSS	●						<0.008	0.250	0.125	0.106
		WXGU 220.5ML JSS	WXGU040302ML-JSS	●						<0.008	0.250	0.125	0.106
Finishing to medium cutting	TS 	WXGU 220.5R TS	WXGU040302R-TS	●	●		●	●	●	0.008	0.250	0.125	0.106
		WXGU 220.5L TS	WXGU040302L-TS	●	●		●	●	●	0.008	0.250	0.125	0.106
		WXGU 221R TS	WXGU040304R-TS	●	●		●	●	●	0.016	0.250	0.125	0.106
		WXGU 221L TS	WXGU040304L-TS	●	●		●	●	●	0.016	0.250	0.125	0.106
		WXGU 222R TS	WXGU040308R-TS	●	●		●	●	●	0.031	0.250	0.125	0.106
		WXGU 222L TS	WXGU040308L-TS	●	●		●	●	●	0.031	0.250	0.125	0.106
Finishing (wiper)	TSW 	WXGU 221R TSW	WXGU040304R-TSW	●	●		●	●		0.016	0.250	0.125	0.106
		WXGU 221L TSW	WXGU040304L-TSW	●	●		●	●		0.016	0.250	0.125	0.106
		WXGU 222R TSW	WXGU040308R-TSW	●	●		●	●		0.031	0.250	0.125	0.106
		WXGU 222L TSW	WXGU040308L-TSW	●	●		●	●		0.031	0.250	0.125	0.106
Finishing (low cutting force)	SS 	WXGU 220.5R SS	WXGU040302R-SS	●	●		●	●	●	0.008	0.250	0.125	0.106
		WXGU 220.5L SS	WXGU040302L-SS	●	●		●	●	●	0.008	0.250	0.125	0.106
		WXGU 221R SS	WXGU040304R-SS	●	●		●	●	●	0.016	0.250	0.125	0.106
		WXGU 221L SS	WXGU040304L-SS	●	●		●	●	●	0.016	0.250	0.125	0.106

*Corner radius (RE) with a sign of inequality (<) means minus tolerance.

● : Line up

Chip control range

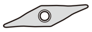




Reference pages: WXGU...: External toolholder → C033 -, Internal toolholder → D034

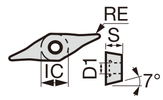
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

YW



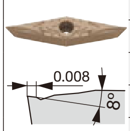
Rhombic, 25°
with hole
Positive 7°

ISO	Material	T9225	T9125	GT9530
P	Steel	◐✣	◐✣	●◐
M	Stainless			
K	Cast iron			●◐
N	Non-ferrous			
S	Superalloy			
H	Hard material			

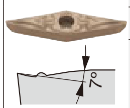


Application	Chipbreaker	Designation Inch	Designation Metric	Coated T9225	Coated T9125	Coated cermet GT9530	Dimension (inch) RE	IC	S	D1
Finishing to medium cutting	ZF	-	YWMT11T202-ZF	●	▲	●	0.008	0.184	0.109	0.091
		-	YWMT11T204-ZF	●	▲	●	0.016	0.184	0.109	0.091
		-	YWMT16T302-ZF	●	▲	●	0.008	0.276	0.156	0.113
		-	YWMT16T304-ZF	●	▲	●	0.016	0.276	0.156	0.113
		-	YWMT16T308-ZF	●	▲	●	0.031	0.276	0.156	0.113
	ZM	-	YWMT11T204-ZM	●	▲	●	0.016	0.184	0.109	0.091
		-	YWMT16T304-ZM	●	▲	●	0.016	0.276	0.156	0.113
		-	YWMT16T308-ZM	●	▲	●	0.031	0.276	0.156	0.113

ZF:



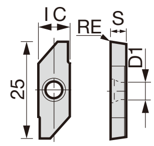
ZM:



JXF

Front turning

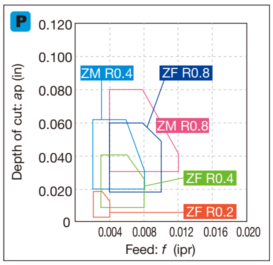
ISO	Material	J740	TH10
P	Steel	●◐	●
M	Stainless	●◐	●
K	Cast iron		●
N	Non-ferrous		●
S	Superalloy		
H	Hard material		



Application	Chipbreaker	Designation Inch	Designation Metric	Coated J740	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Front turning	-	-	JXFR8000F	●	●	0.001	0.315	0.156	0.173
		-	JXFR8010F	●	●	0.004	0.315	0.156	0.173

● : Line up
▲ : To be discontinued

Chip control range



Reference pages: External toolholder → C069, C136 Internal toolholder → D084
JXF...: J-Series toolholder → G056 -

A Grade
B Insert
C Ext. Toolholder
D Int. Toolholder
E Threading
F Grooving
G Miniature Tool
H Milling Cutter
I Endmill
J Drilling Tool
K Tooling System
L User's Guide
M Index

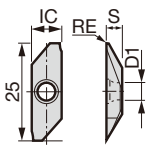
Insert POSITIVE TYPE

●: Continuous cutting
◐: Light interrupted cutting
✣: Heavy interrupted cutting

JXR

Reverse turning

P	Steel	◐	●
M	Stainless	◐	●
K	Cast iron		●
N	Non-ferrous		●
S	Superalloy		
H	Hard material		

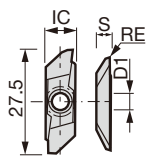


Application	Chipbreaker	Designation Inch	Designation Metric	Coated J740	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Reverse turning	-	-	JXRR8000F	●	●	0.001	0.315	0.156	0.173
		-	JXRR8010F	●	●	0.004	0.315	0.156	0.173

JXB

Back turning

P	Steel	◐	●
M	Stainless	◐	●
K	Cast iron		●
N	Non-ferrous		●
S	Superalloy		
H	Hard material		



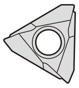
Application	Chipbreaker	Designation Inch	Designation Metric	Coated J740	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Back turning	-	-	JXBR8000F	●	●	0.001	0.315	0.156	0.173
		-	JXBL8000F	●	●	0.001	0.315	0.156	0.173
		-	JXBR8005F	●	●	0.002	0.315	0.156	0.173
		-	JXBL8005F	●	●	0.002	0.315	0.156	0.173
		-	JXBR8005	●		0.002	0.315	0.156	0.173
		-	JXBL8005	●		0.002	0.315	0.156	0.173
		-	JXBR8010F	●	●	0.004	0.315	0.156	0.173
		-	JXBL8010F	●	●	0.004	0.315	0.156	0.173
		-	JXBR8010	●		0.004	0.315	0.156	0.173
		-	JXBL8010	●		0.004	0.315	0.156	0.173
		-	JXBR8015F	●	●	0.006	0.315	0.156	0.173
		-	JXBL8015F	●	●	0.006	0.315	0.156	0.173
		-	JXBR8015	●		0.006	0.315	0.156	0.173
		-	JXBL8015	●		0.006	0.315	0.156	0.173

●: Line up

Reference pages: JXF..., JXR..., JXB...: J-Series toolholder → G056 -

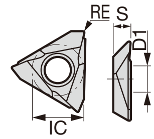
● : Continuous cutting
◐ : Light interrupted cutting
✤ : Heavy interrupted cutting

JTB*



Back turning

		SH725	J740	J9530	NS9530	TH10
P	Steel	●◐	●◐	●◐	●◐	●
M	Stainless	●◐	●◐			●
K	Cast iron			●◐	●◐	●
N	Non-ferrous					●
S	Superalloy					
H	Hard material					

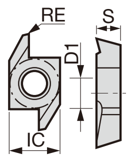


Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH725	Coated J740	Coated cermet J9530	Cermet NS9530	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Back turning	-	-	JTBR3000F	●	●			●	0.001	0.374	0.125	0.173
		-	JTBL3000F	●	●			●	0.001	0.374	0.125	0.173
		-	JTBR3005F	●	●			●	0.002	0.374	0.125	0.173
		-	JTBL3005F	●	●			●	0.002	0.374	0.125	0.173
		-	JTBR3005		●	●			0.002	0.374	0.125	0.173
		-	JTBL3005		●				0.002	0.374	0.125	0.173
		-	JTBR3010F	●	●		●	●	0.004	0.374	0.125	0.173
		-	JTBL3010F	●	●		●	●	0.004	0.374	0.125	0.173
		-	JTBR3010		●	●			0.004	0.374	0.125	0.173
		-	JTBL3010		●				0.004	0.374	0.125	0.173
		-	JTBR3015F	●	●				0.006	0.374	0.125	0.173
		-	JTBL3015F	●					0.006	0.374	0.125	0.173

J10E*

Back turning

		SH725	J740	J9530	NS9530	TH10
P	Steel	●◐	●◐	●◐	●◐	●
M	Stainless	●◐	●◐			●
K	Cast iron			●◐	●◐	●
N	Non-ferrous					●
S	Superalloy					
H	Hard material					



Application	Chipbreaker	Designation Inch	Designation Metric	Coated SH725	Coated J740	Coated cermet J9530	Cermet NS9530	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Back turning	-	-	J10ER005BF	●	●		●	●	0.002	0.250	0.125	0.118
		-	J10EL005BF	●	●			●	0.002	0.250	0.125	0.118
		-	J10ER005B		●	●			0.002	0.250	0.125	0.118
		-	J10EL005B		●				0.002	0.250	0.125	0.118
		-	J10ER010BF	●	●		●	●	0.004	0.250	0.125	0.118
		-	J10EL010BF	●	●			●	0.004	0.250	0.125	0.118
		-	J10ER010B		●	●			0.004	0.250	0.125	0.118
		-	J10EL010B		●				0.004	0.250	0.125	0.118
		-	J10EL015BF	●					0.006	0.250	0.125	0.118
		-	J10ER015BF	●					0.006	0.250	0.125	0.118

● : Line up

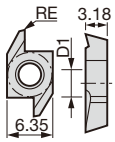
Reference pages: JTB...: J-Series toolholder → G061 J10E...: J-Series toolholder → G064

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

10E*

Back turning

P	Steel	●
M	Stainless	●
K	Cast iron	●
N	Non-ferrous	●
S	Superalloy	
H	Hard material	



Application	Chipbreaker	Designation Inch	Designation Metric	Uncoated TH10	Dimension (inch) RE	IC	S	D1
Back turning	-	-	10ER100B	●	0.001	0.250	0.125	0.118
		-	10EL100B	●	0.001	0.250	0.125	0.118
		-	10ER150B	●	0.001	0.250	0.125	0.118
		-	10EL150B	●	0.001	0.250	0.125	0.118
		-	10ER300	●	-	0.250	0.125	0.118
		-	10EL300	●	-	0.250	0.125	0.118

● : Line up

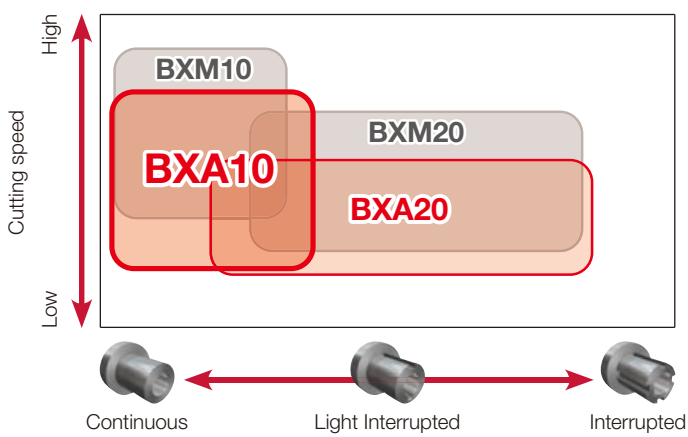
BXA10, BXA20

- Coated CBN grade for hardened steel

Incredible reliability in hardened steel turning

APPLICATION AREA

The best suitable grade can be selected for your application requirements



BXA10
First choice for continuous to light interrupted cuts
For *Vc* = 230 m/min or less

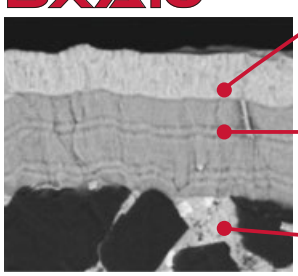
BXA20
First choice for light to heavy interrupted cuts
For *Vc* = 180 m/min or less

BXM10
Complementary grade for continuous to light interrupted cuts
For extremely high cutting speeds of *Vc* = 300 m/min

BXM20
Complementary grade for light to heavy interrupted cuts
For high cutting speeds of *Vc* = 200 m/min

GRADE PROPERTIES

BXA10

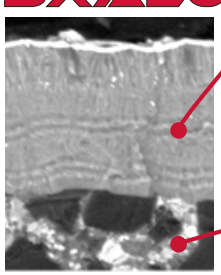


TiCN layer with high thermal stability and wear resistance

TiAlN layer with good adhesion and resistance to delamination and chipping

Dedicated CBN substrate with excellent flank wear and crater wear resistance

BXA20



Extremely thick TiAlN coating (max 3.5x thicker than existing grades) with good adhesion and delamination resistance enhances the grade's wear and fracture resistance

Dedicated CBN substrate with excellent fracture resistance

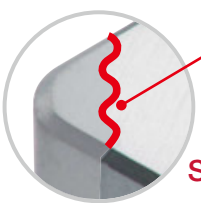
T-CBN SERIES

- WavyJoint

For **high efficiency** hardened steel machining

New brazing technology for increased machining efficiency - “WavyJoint”

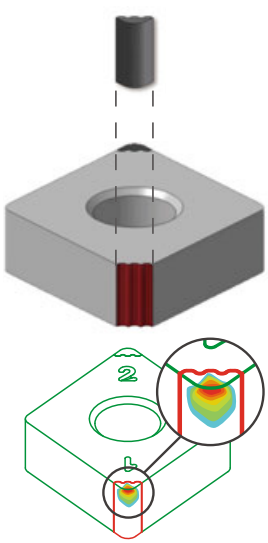
- A maximum depth of cut up to 0.8 mm
  → Reduces the number of passes to increase productivity



The "wavy" contact surface enhances the brazing strength.

Strong joint

WavyJoint BXA20 **Vs.** Standard



CBN tip size:

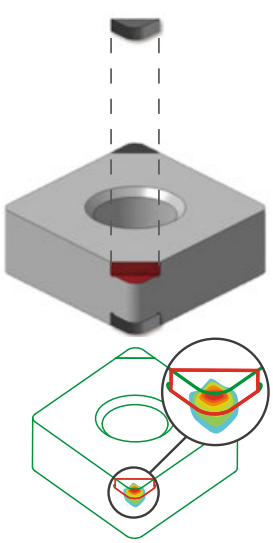
Using the CBN tip in a mass as large as **200%** provides increased thermal conductivity and helps reduce the temperature at the cutting edge

Brazing area:

Increased **160%** for enhanced brazing strength

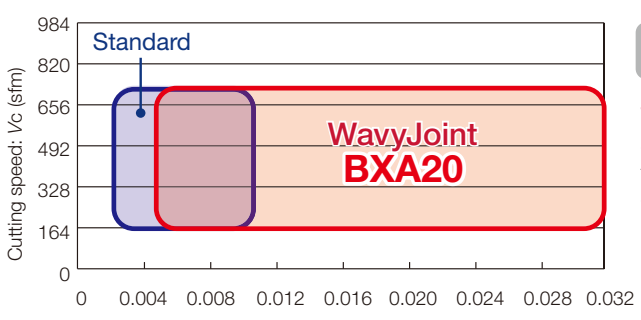
Temperature during machining is concentrated on the CBN tip, reducing temperature issues in the brazing zone.

Workpiece material	: 4140 (60HRC)
Cutting speed	: *Vc* = 492 sfm
Feed	: *fz* = 0.008 ipr
Depth of cut	: *ap* = 0.030"
Coolant	: Dry



APPLICATION AREA

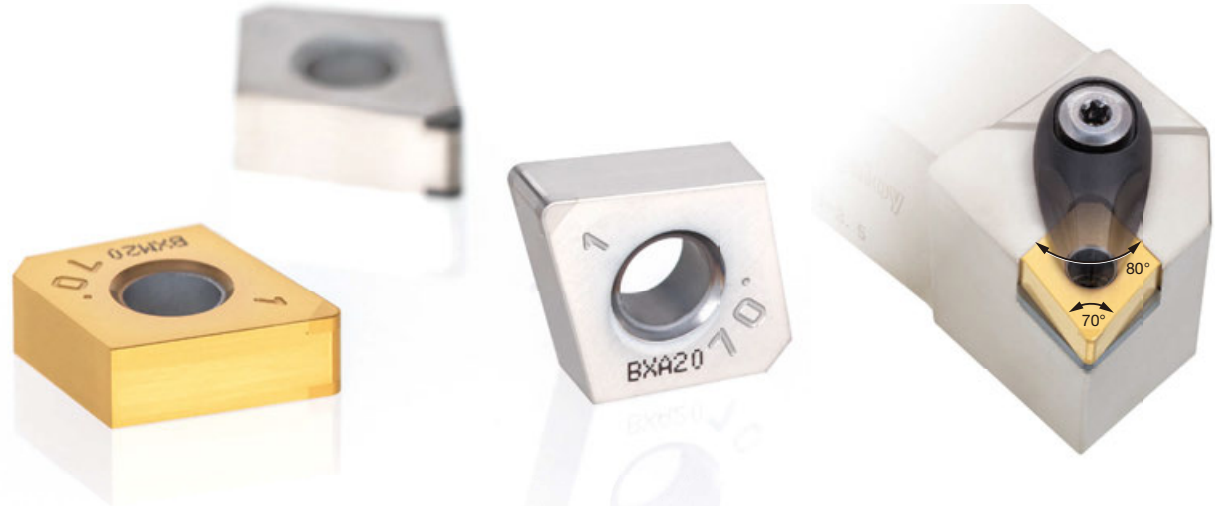
Hard Turning



H

WavyJoint BXA20

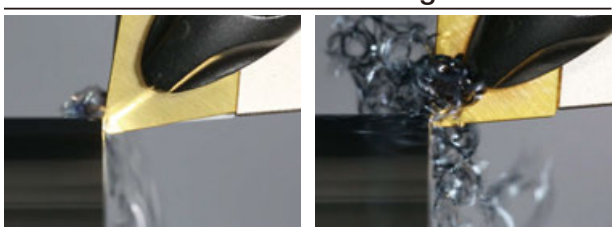
Great performance for continuous to heavy interrupted cutting at low and medium speeds.



For **high efficiency in finishing** hardened steel, cast iron and sintered metals

Chip control in face turning

Continuous cutting



GNGA type
Corner angle: 70°

CNGA type
Corner angle: 80°

Since GNGA type inserts have enough space for chip flow, chip packing doesn't occur, improving surface finish and preventing sudden chipping on cutting edge.
Existing standard toolholders for CNGA1204 can be used.

Interrupted cutting

GNGA type
Corner angle: 70°

CNGA type
Corner angle: 80°

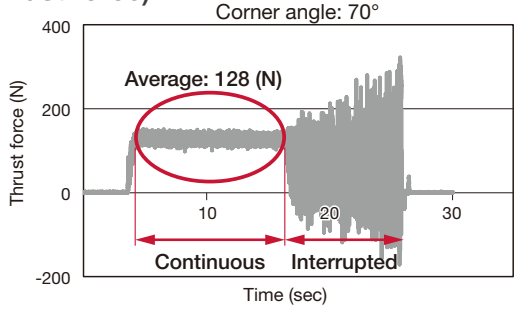
H

Toolholder : ACLNL2525M12-A
Insert : 2QP-GNGA 432 BXM20
2QP-CNGA 432 BXM20
Workpiece material : 4140 (60HRC)
Cutting speed : *Vc* = 492 sfm
Feed : *f* = 0.004 ipr
Depth of cut : *ap* = 0.005"
Machining : Face turning
Coolant : Dry

CUTTING PERFORMANCE

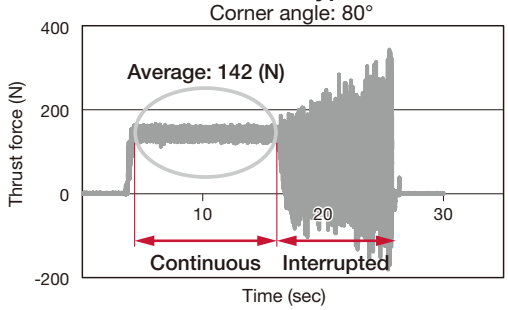
Cutting force
(Thrust force)

GNGA type
Corner angle: 70°



GNGA type has large clearance and reduces cutting force compared to the regular CNGA type.

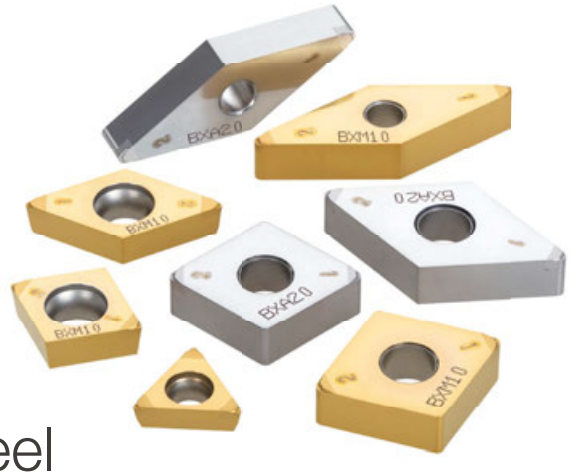
CNGA type
Corner angle: 80°



H

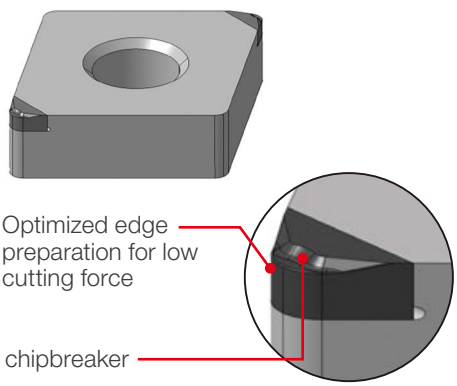
Toolholder : ACLNL2525M12-A
Insert : 2QP-GNGA 432 BXM20
2QP-CNGA 432 BXM20
Workpiece material : 4140 (59HRC)
Cutting speed : *Vc* = 492 sfm
Feed : *f* = 0.006 ipr
Depth of cut : *ap* = 0.005"
Machining : Face turning
Coolant : Dry

HARDBREAKER HP



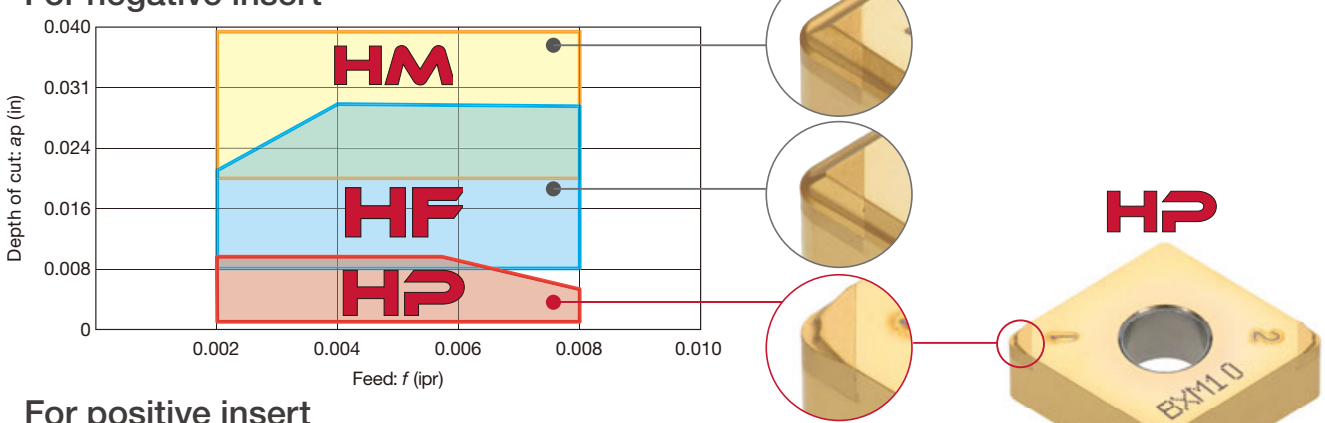
New HP Chipbreaker for Finishing Hardened Steel

1. By separating the chipbreaker from the cutting edge, the cutting force imposed on the cutting edge during machining is significantly reduced, thus providing long tool life.
2. The cutting edge preparation is designed to ensure easy cutting at low cutting forces, while maintaining close tolerances with no deviations.
3. The HP style chipbreaker, combined with built-in wipers, yields excellent surface quality and good chip control.

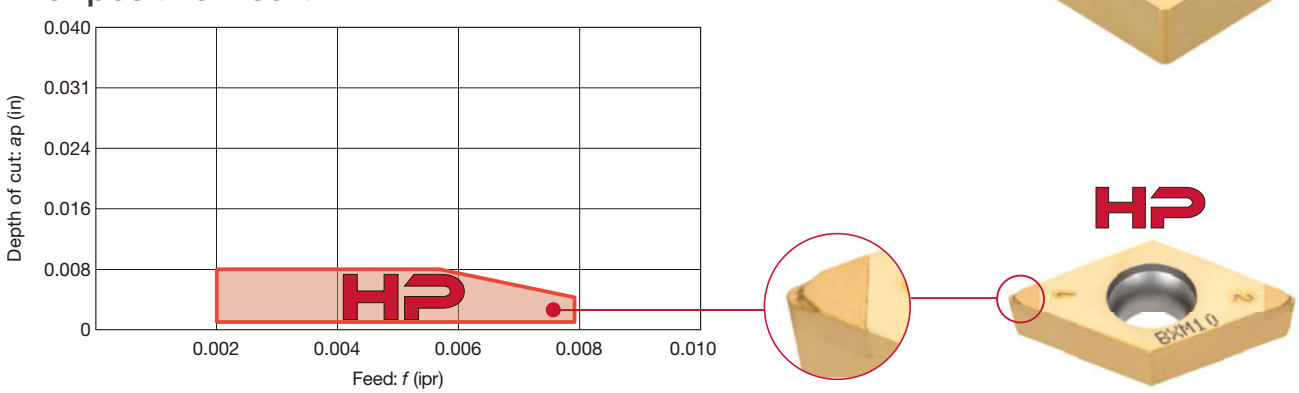


APPLICATION AREA

For negative insert



For positive insert



Designation System for T-CBN (PCBN) Inserts

One-use type

2 QP - CNGA120404 -L

① Number of corners

② Type

QP	One-use inserts
QS	WavyJoint

③ ISO symbol

④ Special feature & chipbreaker

Without	Standard cutting edge	W	With wiper
F	Sharp edge	W□	With wiper
-L	Excellent wear resistance	-HF	With chipbreaker
-LF	Lower cutting force, superior sharpness	-HM	With chipbreaker
-LC	Excellent crater wear resistance	-HP	With chipbreaker
-H	Excellent fracture resistance		

One-use type (10 pieces per package)

T 2 QP - CNGA120408

① "T" means 10 pieces per package.

Regrindable type

TNGA160402 - QBN

① ISO symbol

② CBN inserts

T-CBN (PCBN tipped) grooving inserts

XG R 63 10 S - QBN

① For grooving tool GX-type

② Hand of Insert

L	Left
R	Right

③ Groove width (mm)

10	1.0
15	1.5

④ Corner radius: RE (mm)

S	0.2

⑤ CBN inserts

For TUNGCUT

S G N 200 - 020

① Number of edge

S	Single corner

② Application

G	Grooving

③ For use

N	Non breaker

④ Groove width (mm)

200	2.0

⑤ Corner radius: RE (mm)

020	0.2

Designation System for T-DIA (PCD) Inserts

One-use type

1 QP - TCMT110304

① Number of corners

② Type

QP	One-use inserts

③ ISO symbol

Regrindable type

TPGW110204 - DIA

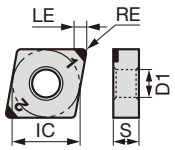
① ISO symbol

② PCD inserts

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA10	BXA20	BX310	BX330	BX360	BX380	BX470	BX480	BX930
P	Steel											
M	Stainless											
K	Cast iron									◐	✠	◐
N	Non-ferrous											
S	Superalloy											
H	Hard material	●	◐	●	◐	●	◐	◐	✠			
	Sintered metal									◐	✠	



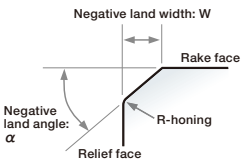
Shape	Designation Inch	Designation Metric	BXM10	BXM20	BXA10	BXA20	BX310	BX330	BX360	BX380	BX470	BX480	BX930	No. of corners	LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper
2QP-CNGA	**2QP-CNGA 430.5**	**2QP-CNGA120402**			●	●								2	0.091	0.008	0.500	0.187	0.203	○						
	2QP-CNGA 431	2QP-CNGA120404	●	●	●	●	●	●	●	●	●	●	●	2	0.091	0.016	0.500	0.187	0.203	○						
	2QP-CNGA 432	2QP-CNGA120408	●	●	●	●	●	●	●	●	●	●	●	2	0.087	0.031	0.500	0.187	0.203	○						
	2QP-CNGA 433	2QP-CNGA120412	●	●	●	●	●	●	●	●	●	●	●	2	0.094	0.047	0.500	0.187	0.203	○						
	2QP-CNGA 434	2QP-CNGA120416			●	●								2	0.130	0.063	0.500	0.187	0.203	○						
	2QP-CNGA 435	2QP-CNGA120420			●	●								2	0.126	0.079	0.500	0.187	0.203	○						
	2QP-CNGA 436	2QP-CNGA120424			●	●								2	0.122	0.094	0.500	0.187	0.203	○						
T2QP-CNGA	**T2QP-CNGA 431**	**T2QP-CNGA120404**							●					2	0.091	0.016	0.500	0.187	0.203	○						
	T2QP-CNGA 432	T2QP-CNGA120408							●					2	0.087	0.031	0.500	0.187	0.203	○						
2QP-CNGAF**	**2QP-CNGA 431-F**	**2QP-CNGA120404F**									●			2	0.091	0.016	0.500	0.187	0.203		○					
	2QP-CNGA 432-F	2QP-CNGA120408F									●			2	0.087	0.031	0.500	0.187	0.203		○					
2QP-CNGA-L**	**2QP-CNGA 430.5-L**	**2QP-CNGA120402-L**			●	●								2	0.091	0.008	0.500	0.187	0.203			○				
	2QP-CNGA 431-L	2QP-CNGA120404-L	●	●	●	●		●						2	0.091	0.016	0.500	0.187	0.203			○				
	2QP-CNGA 432-L	2QP-CNGA120408-L	●	●	●	●		●						2	0.087	0.031	0.500	0.187	0.203			○				
	2QP-CNGA 433-L	2QP-CNGA120412-L	●	●	●	●		●						2	0.094	0.047	0.500	0.187	0.203			○				
2QP-CNGA-LF**	**2QP-CNGA 430.5-LF**	**2QP-CNGA120402-LF**	●		●	●								2	0.091	0.008	0.500	0.187	0.203				○			
	2QP-CNGA 431-LF	2QP-CNGA120404-LF	●		●	●								2	0.091	0.016	0.500	0.187	0.203				○			
	2QP-CNGA 432-LF	2QP-CNGA120408-LF	●		●	●								2	0.087	0.031	0.500	0.187	0.203				○			
	2QP-CNGA 433-LF	2QP-CNGA120412-LF	●		●	●								2	0.094	0.047	0.500	0.187	0.203				○			
2QP-CNGA-LC**	**2QP-CNGA 430.5-LC**	**2QP-CNGA120402-LC**			●	●								2	0.091	0.008	0.500	0.187	0.203					○		
	2QP-CNGA 431-LC	2QP-CNGA120404-LC			●	●								2	0.091	0.016	0.500	0.187	0.203					○		
	2QP-CNGA 432-LC	2QP-CNGA120408-LC			●	●								2	0.087	0.031	0.500	0.187	0.203					○		
	2QP-CNGA 433-LC	2QP-CNGA120412-LC			●	●								2	0.094	0.047	0.500	0.187	0.203					○		
2QP-CNGA-H**	**2QP-CNGA 431-H**	**2QP-CNGA120404-H**		●	●	●			●	●				2	0.091	0.016	0.500	0.187	0.203						○	
	2QP-CNGA 432-H	2QP-CNGA120408-H		●	●	●			●	●				2	0.087	0.031	0.500	0.187	0.203						○	
	2QP-CNGA 433-H	2QP-CNGA120412-H		●	●	●			●	●				2	0.094	0.047	0.500	0.187	0.203						○	
2QP-CNGAWL**	**2QP-CNGA 431-WL**	**2QP-CNGA120404WL**	●	●	●	●								2	0.091	0.016	0.500	0.187	0.203							○
	2QP-CNGA 432-WL	2QP-CNGA120408WL	●	●	●	●								2	0.087	0.031	0.500	0.187	0.203							○
	2QP-CNGA 433-WL	2QP-CNGA120412WL	●	●	●	●								2	0.094	0.047	0.500	0.187	0.203							○
2QP-CNMAW**	**2QP-CNMA 431-W**	**2QP-CNMA120404W**						●						2	0.091	0.016	0.500	0.187	0.203							○
	2QP-CNMA 432-W	2QP-CNMA120408W						●						2	0.087	0.031	0.500	0.187	0.203							○
	2QP-CNMA 433-W	2QP-CNMA120412W						●						2	0.094	0.047	0.500	0.187	0.203							○

*Please see the page **B201** about the toolholders recommended for wiper inserts of the designation with W, WL, and WJ at the end.

● : Line up

Edge preparation specification

	BXM10	BXM20	BXA20	BX310 BXC50	BX330	BX360 BX380	BX470	BX480	BX910 BX930	BXC90
Standard	S01325	S01325	S01325	S01325	S01325	S01325	T01315	S01325	S01315	T02020
Sharp edge	-	-	-	-	-	-	F	-	-	-
-L	S01315	S01315	S01315	-	S01315	-	-	-	-	-
-LF	-	-	S00515	-	-	-	-	-	-	-
-LC	-	-	S00535	-	-	-	-	-	-	-
-H	-	S01835	S01835	-	-	S01335	-	-	-	-
Wiper	S01315	S01315	S01315	-	S01325	-	-	-	-	-



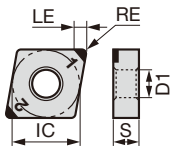
S	0	1	3	2	5
Edge prep. ID	Negative land width W			Negative land angle α	

T ··· Chamfered
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

		BXM10	BXM20	BXA10	BXA20	BXC50	BX360	BXC90
P	Steel							
M	Stainless							
K	Cast iron							◐
N	Non-ferrous							
S	Superalloy							
H	Hard material	●	◐	●	◐	✣	◐	
	Sintered metal							



Shape	Designation Inch	Designation Metric	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper	Chipbreaker
2QP-CNGM-H***	**2QP-CNGM 432-HF**	**2QP-CNGM120408-HF**	2	0.087	0.031	0.500	0.187	0.203								○
	2QP-CNGM 433-HF	2QP-CNGM120412-HF	2	0.094	0.047	0.500	0.187	0.203								○
	2QP-CNGM 432-HM	**2QP-CNGM120408-HM**	2	0.087	0.031	0.500	0.187	0.203								○
	2QP-CNGM 433-HM	2QP-CNGM120412-HM	2	0.094	0.047	0.500	0.187	0.203								○
	2QP-CNGM431-HP	**2QP-CNGM120404-HP**	2	0.091	0.016	0.500	0.187	0.203								○
	2QP-CNGM432-HP	2QP-CNGM120408-HP	2	0.087	0.031	0.500	0.187	0.203								○
	2QP-CNGM433-HP	2QP-CNGM120412-HP	2	0.094	0.047	0.500	0.187	0.203								○
2QP-CNGMWL-HP**	2QP-CNGM432WLHP	2QP-CNGM120408WL-HP	2	0.087	0.031	0.500	0.187	0.203							○	○
4QP-CNGA	**4QP-CNGA 431**	**4QP-CNGA120404**	4	0.091	0.016	0.500	0.187	0.203	○							
	4QP-CNGA 432	4QP-CNGA120408	4	0.087	0.031	0.500	0.187	0.203	○							
	4QP-CNGA 433	4QP-CNGA120412	4	0.094	0.047	0.500	0.187	0.203	○							
4QP-CNMAW**	**4QP-CNMA 431-W**	**4QP-CNMA120404W**	4	0.091	0.016	0.500	0.187	0.203							○	
	4QP-CNMA 432-W	4QP-CNMA12040 8W	4	0.087	0.031	0.500	0.187	0.203							○	
	4QP-CNMA 433-W	4QP-CNMA12041 2W	4	0.094	0.047	0.500	0.187	0.203							○	
4QS-CNGA WavyJoint	**4QS-CNGA 432**	**4QS-CNGA120408**	4	0.059	0.031	0.500	0.187	0.203	○							
	4QS-CNGA 433	4QS-CNGA120412	4	0.067	0.047	0.500	0.187	0.203	○							
4QS-CNGA-H** WavyJoint	**4QS-CNGA432-H**	**4QS-CNGA120408-H**	4	0.059	0.031	0.500	0.187	0.203						○		
	4QS-CNGA433-H	4QS-CNGA12041 2-H	4	0.067	0.047	0.500	0.187	0.203						○		
4QS-CNGG-HM** WavyJoint	**4QS-CNGG432-HM**	**4QS-CNGG120408-HM**	4	0.059	0.031	0.500	0.187	0.203								○
	4QS-CNGG433-HM	4QS-CNGG12041 2-HM	4	0.067	0.047	0.500	0.187	0.203								○
CNGA-QBN**	**CNGA 430.5-QBN**	**CNGA120402-QBN**	1	0.161	0.008	0.500	0.187	0.203	○							
	CNGA 431-QBN	CNGA120404-QBN	1	0.157	0.016	0.500	0.187	0.203	○							
	CNGA 431-QBN	CNGA120408-QBN	1	0.154	0.031	0.500	0.187	0.203	○							
	CNGA 433-QBN	CNGA120412-QBN	1	0.154	0.047	0.500	0.187	0.203	○							
S-CNGN Solid CBN	**S-CNGN 322**	**S-CNGN090308**	4	-	0.031	0.375	0.125	-	○							
	S-CNGN 323	S-CNGN090312	4	-	0.047	0.375	0.125	-	○							
	S-CNGN 432	**S-CNGN120408**	4	-	0.031	0.500	0.187	-	○							
	S-CNGN 433	S-CNGN120412	4	-	0.047	0.500	0.187	-	○							

*Please see the page **B201** about the toolholders recommended for wiper inserts of the designation with W, WL, and WJ at the end.

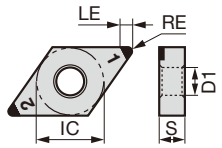
● : Line up

Reference pages: External toolholder → C020 - Internal toolholder → D028 -
J-Series toolholder → G057 TungCap → K008 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA10	BXA20	BX310	BX330	BX360	BX380	BX470	BX480	BX930
P	Steel											
M	Stainless											
K	Cast iron									◐	✠	◐
N	Non-ferrous											
S	Superalloy											
H	Hard material	●	◐	●	◐	●	◐	◐	✠			
	Sintered metal									◐	◐	✠



Shape	Designation Inch	Designation Metric	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper
2QP-DNGA	**2QP-DNGA 331**	**2QP-DNGA110404**	2	0.098	0.016	0.375	0.187	0.150	○						
	2QP-DNGA 332	2QP-DNGA110408	2	0.083	0.031	0.375	0.187	0.150	○						
	2QP-DNGA 333	2QP-DNGA110412	2	0.079	0.047	0.375	0.187	0.150	○						
	2QP-DNGA 430.5	**2QP-DNGA150402**	2	0.106	0.079	0.500	0.187	0.203	○						
	2QP-DNGA 431	2QP-DNGA150404	2	0.098	0.016	0.500	0.187	0.203	○						
	2QP-DNGA 432	2QP-DNGA150408	2	0.083	0.031	0.500	0.187	0.203	○						
	2QP-DNGA 433	2QP-DNGA150412	2	0.079	0.047	0.500	0.187	0.203	○						
	2QP-DNGA 434	2QP-DNGA150416	2	0.134	0.063	0.500	0.187	0.203	○						
	2QP-DNGA 435	2QP-DNGA150420	2	0.118	0.079	0.500	0.187	0.203	○						
	2QP-DNGA 436	2QP-DNGA150424	2	0.102	0.094	0.500	0.187	0.203	○						
	2QP-DNGA 441	**2QP-DNGA150604**	2	0.098	0.016	0.500	0.250	0.203	○						
	2QP-DNGA 442	2QP-DNGA150608	2	0.083	0.031	0.500	0.250	0.203	○						
	2QP-DNGA 443	2QP-DNGA150612	2	0.079	0.047	0.500	0.250	0.203	○						
2QP-DNGA-L**	**2QP-DNGA 430.5-L**	**2QP-DNGA150402-L**	2	0.106	0.079	0.500	0.187	0.203			○				
	2QP-DNGA 431-L	2QP-DNGA150404-L	2	0.098	0.016	0.500	0.187	0.203			○				
	2QP-DNGA 432-L	2QP-DNGA150408-L	2	0.083	0.031	0.500	0.187	0.203			○				
	2QP-DNGA 433-L	2QP-DNGA150412-L	2	0.079	0.047	0.500	0.187	0.203			○				
	2QP-DNGA 441-L	**2QP-DNGA150604-L**	2	0.098	0.016	0.500	0.250	0.203			○				
	2QP-DNGA 442-L	2QP-DNGA150608-L	2	0.083	0.031	0.500	0.250	0.203			○				
	2QP-DNGA 443-L	2QP-DNGA150612-L	2	0.079	0.047	0.500	0.250	0.203			○				
2QP-DNGA-LF**	**2QP-DNGA 430.5-LF**	**2QP-DNGA150402-LF**	2	0.106	0.079	0.500	0.187	0.203				○			
	2QP-DNGA 431-LF	2QP-DNGA150404-LF	2	0.098	0.016	0.500	0.187	0.203				○			
	2QP-DNGA 432-LF	2QP-DNGA150408-LF	2	0.083	0.031	0.500	0.187	0.203				○			
	2QP-DNGA 433-LF	2QP-DNGA150412-LF	2	0.079	0.047	0.500	0.187	0.203				○			
	2QP-DNGA 441-LF	**2QP-DNGA150604-LF**	2	0.098	0.016	0.500	0.250	0.203				○			
	2QP-DNGA 442-LF	2QP-DNGA150608-LF	2	0.083	0.031	0.500	0.250	0.203				○			
	2QP-DNGA 443-LF	2QP-DNGA150612-LF	2	0.079	0.047	0.500	0.250	0.203				○			
2QP-DNGA-LC**	**2QP-DNGA 430.5-LC**	**2QP-DNGA150402-LC**	2	0.106	0.079	0.500	0.187	0.203					○		
	2QP-DNGA 431-LC	2QP-DNGA150404-LC	2	0.098	0.016	0.500	0.187	0.203					○		
	2QP-DNGA 432-LC	2QP-DNGA150408-LC	2	0.083	0.031	0.500	0.187	0.203					○		
	2QP-DNGA 433-LC	2QP-DNGA150412-LC	2	0.079	0.047	0.500	0.187	0.203					○		
	2QP-DNGA 441-LC	**2QP-DNGA150604-LC**	2	0.098	0.016	0.500	0.250	0.203					○		
	2QP-DNGA 442-LC	2QP-DNGA150608-LC	2	0.083	0.031	0.500	0.250	0.203					○		
	2QP-DNGA 443-LC	2QP-DNGA150612-LC	2	0.079	0.047	0.500	0.250	0.203					○		
2QP-DNGA-H**	**2QP-DNGA 431-H**	**2QP-DNGA150404-H**	2	0.098	0.016	0.500	0.187	0.203						○	
	2QP-DNGA 432-H	2QP-DNGA150408-H	2	0.083	0.031	0.500	0.187	0.203						○	
	2QP-DNGA 433-H	2QP-DNGA150412-H	2	0.079	0.047	0.500	0.187	0.203						○	
	2QP-DNGA 441-H	**2QP-DNGA150604-H**	2	0.098	0.016	0.500	0.250	0.203						○	
	2QP-DNGA 442-H	2QP-DNGA150608-H	2	0.083	0.031	0.500	0.250	0.203						○	
	2QP-DNGA 443-H	2QP-DNGA150612-H	2	0.079	0.047	0.500	0.250	0.203						○	
2QP-DNGAWJ**	**2QP-DNGA 431-WJ**	**2QP-DNGA150404WJ**	2	0.091	0.016	0.500	0.187	0.203							○
	2QP-DNGA 432-WJ	2QP-DNGA150408WJ	2	0.083	0.031	0.500	0.187	0.203							○

*Please see the page **B201** about the toolholders recommended for wiper inserts of the designation with W, WL, and WJ at the end.

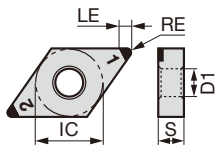
● : Line up

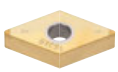
Reference pages: External toolholder → C046 - Internal toolholder → D060 -
J-Series toolholder → G059 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

		BXM10	BXM20	BXA10	BXA20	BXC50	BX360
P	Steel						
M	Stainless						
K	Cast iron						
N	Non-ferrous						
S	Superalloy						
H	Hard material	●	◐	●	◐	✣	◐
	Sintered metal						

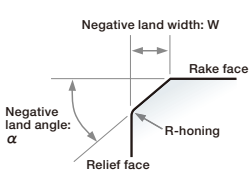


Shape	Designation Inch	Designation Metric	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper	Chipbreaker
2QP-DNGM-H***	**2QP-DNGM 432-HF**	**2QP-DNGM150408-HF**	2	0.083	0.031	0.500	0.187	0.203								○
	2QP-DNGM 433-HF	2QP-DNGM150412-HF	2	0.079	0.047	0.500	0.187	0.203								○
	2QP-DNGM 432-HM	**2QP-DNGM150408-HM**	2	0.083	0.031	0.500	0.187	0.203								○
	2QP-DNGM 433-HM	2QP-DNGM150412-HM	2	0.079	0.047	0.500	0.187	0.203								○
	**2QP-DNGM 431-HP**	**2QP-DNGM150404-HP**	2	0.098	0.016	0.500	0.187	0.203								○
	2QP-DNGM 432-HP	2QP-DNGM150408-HP	2	0.083	0.031	0.500	0.187	0.203								○
	2QP-DNGM 433-HP	2QP-DNGM150412-HP	2	0.079	0.047	0.500	0.187	0.203								○
	2QP-DNGM 442-HP	**2QP-DNGM150608-HP**	2	0.083	0.031	0.500	0.250	0.203								○
4QP-DNGA	**4QP-DNGA 431**	**4QP-DNGA150404**	4	0.098	0.016	0.500	0.187	0.203	○							
	4QP-DNGA 432	4QP-DNGA150408	4	0.083	0.031	0.500	0.187	0.203	○							
	4QP-DNGA 433	4QP-DNGA150412	4	0.079	0.047	0.500	0.187	0.203	○							
4QS-DNGA	**4QS-DNGA 432**	**4QS-DNGA150408**	4	0.063	0.031	0.500	0.187	0.203	○							
WavyJoint	4QS-DNGA 433	4QS-DNGA150412	4	0.063	0.047	0.500	0.187	0.203	○							
																
4QS-DNGA-H**	**4QS-DNGA 432-H**	**4QS-DNGA150408-H**	4	0.063	0.031	0.500	0.187	0.203						○		
WavyJoint	4QS-DNGA 433-H	4QS-DNGA150412-H	4	0.063	0.047	0.500	0.187	0.203						○		
																
4QS-DNGG-HM**	4QS-DNGG 432-HM	4QS-DNGG150408-HM	4	0.063	0.031	0.500	0.187	0.203								○
WavyJoint																
																
DNGA-QBN**	**DNGA 430.5 QBN**	**DNGA150402-QBN**	1	0.169	0.008	0.500	0.187	0.203	○							
	DNGA 431 QBN	DNGA150404-QBN	1	0.161	0.016	0.500	0.187	0.203	○							
	DNGA 432 QBN	DNGA150408-QBN	1	0.150	0.031	0.500	0.187	0.203	○							
	DNGA 433 QBN	DNGA150412-QBN	1	0.134	0.047	0.500	0.187	0.203	○							

● : Line up

Edge preparation specification

	BXM10	BXM20	BXA20	BX310 BXC50	BX330	BX360 BX380	BX470	BX480	BX910 BX930	BXC90
Standard	S01325	S01325	S01325	S01325	S01325	S01325	T01315	S01325	S01315	T02020
Sharp edge	-	-	-	-	-	-	F	-	-	-
-L	S01315	S01315	S01315	-	S01315	-	-	-	-	-
-LF	-	-	S00515	-	-	-	-	-	-	-
-LC	-	-	S00535	-	-	-	-	-	-	-
-H	-	S01835	S01835	-	-	S01335	-	-	-	-
Wiper	S01315	S01315	S01315	-	S01325	-	-	-	-	-



S	0	1	3	2	5
Edge prep. ID	Negative land width W			Negative land angle α	

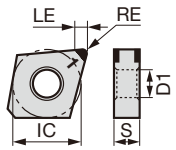
T ··· Chamfered
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

Reference pages: Internal toolholder → D060 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

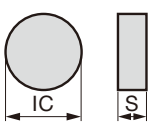
		BXM10	BXM20	BXA10	BXA20	BX360	BX470	BX930
P	Steel							
M	Stainless							
K	Cast iron						◐	◐
N	Non-ferrous							
S	Superalloy							
H	Hard material	●	◐	●	◐	◐		
	Sintered metal						◐	



Shape	Designation Inch	Designation Metric	BXM10	BXM20	BXA10	BXA20	BX360	BX470	BX930	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper	Chipbreaker
2QP-GNGA (Corner angle 70°)	*2QP-GNGA 430.5	2QP-GNGA120402			●	●				2	0.087	0.080	0.500	0.187	0.203	○							
	*2QP-GNGA 431	2QP-GNGA120404		●	●	●	●			2	0.083	0.016	0.500	0.187	0.203	○							
	*2QP-GNGA 432	2QP-GNGA120408		●	●	●	●	●	●	2	0.083	0.031	0.500	0.187	0.203	○							
	*2QP-GNGA 433	2QP-GNGA120412		●	●	●	●	●	●	2	0.087	0.047	0.500	0.187	0.203	○							
2QP-GNGA-L** (Corner angle 70°)	*2QP-GNGA 430.5-L	2QP-GNGA120402-L			●	●				2	0.087	0.080	0.500	0.187	0.203			○					
	*2QP-GNGA 431-L	2QP-GNGA120404-L			●	●				2	0.083	0.016	0.500	0.187	0.203			○					
	*2QP-GNGA 432-L	2QP-GNGA120408-L			●	●				2	0.083	0.031	0.500	0.187	0.203			○					
	*2QP-GNGA 433-L	2QP-GNGA120412-L			●	●				2	0.087	0.047	0.500	0.187	0.203			○					
2QP-GNGA-LF** (Corner angle 70°)	*2QP-GNGA 430.5-LF	2QP-GNGA120402-LF			●	●				2	0.087	0.080	0.500	0.187	0.203				○				
	*2QP-GNGA 431-LF	2QP-GNGA120404-LF			●	●				2	0.083	0.016	0.500	0.187	0.203				○				
	*2QP-GNGA 432-LF	2QP-GNGA120408-LF			●	●				2	0.083	0.031	0.500	0.187	0.203				○				
	*2QP-GNGA 433-LF	2QP-GNGA120412-LF			●	●				2	0.087	0.047	0.500	0.187	0.203				○				
2QP-GNGA-LC** (Corner angle 70°)	*2QP-GNGA 430.5-LC	2QP-GNGA120402-LC			●	●				2	0.087	0.080	0.500	0.187	0.203					○			
	*2QP-GNGA 431-LC	2QP-GNGA120404-LC			●	●				2	0.083	0.016	0.500	0.187	0.203					○			
	*2QP-GNGA 432-LC	2QP-GNGA120408-LC			●	●				2	0.083	0.031	0.500	0.187	0.203					○			
	*2QP-GNGA 433-LC	2QP-GNGA120412-LC			●	●				2	0.087	0.047	0.500	0.187	0.203					○			
2QP-GNGA-H** (Corner angle 70°)	*2QP-GNGA 431-H	2QP-GNGA120404-H			●	●				2	0.083	0.016	0.500	0.187	0.203						○		
	*2QP-GNGA 432-H	2QP-GNGA120408-H			●	●				2	0.083	0.031	0.500	0.187	0.203						○		
	*2QP-GNGA 433-H	2QP-GNGA120412-H			●	●				2	0.087	0.047	0.500	0.187	0.203						○		
2QP-GNGG-HP** (Corner angle 70°)	*2QP-GNGG431-HP	2QP-GNGG120404-HP	●		●	●				2	0.083	0.016	0.500	0.187	0.203								○
	*2QP-GNGG432-HP	2QP-GNGG120408-HP	●		●	●				2	0.083	0.031	0.500	0.187	0.203								○
	*2QP-GNGG433-HP	2QP-GNGG120412-HP	●		●	●				2	0.087	0.047	0.500	0.187	0.203								○

* Tungaloy's standard

		BXC90
P	Steel	
M	Stainless	
K	Cast iron	◐
N	Non-ferrous	
S	Superalloy	
H	Hard material	

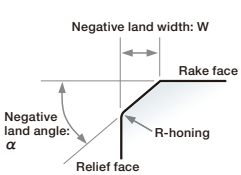


Shape	Designation Inch	Designation Metric	BXC90	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper	Chipbreaker
S-RNGN	S-RNGN 32	S-RNGN090300	●	-	-	-	0.375	0.125	-	○							
	S-RNGN 43	S-RNGN120400	●	-	-	-	0.500	0.187	-	○							

● : Line up

Edge preparation specification

	BXM10	BXM20	BXA20	BX310 BXC50	BX330	BX360 BX380	BX470	BX480	BX910 BX930	BXC90
Standard	S01325	S01325	S01325	S01325	S01325	S01325	T01315	S01325	S01315	T02020
Sharp edge	-	-	-	-	-	-	F	-	-	-
-L	S01315	S01315	S01315	-	S01315	-	-	-	-	-
-LF	-	-	S00515	-	-	-	-	-	-	-
-LC	-	-	S00535	-	-	-	-	-	-	-
-H	-	S01835	S01835	-	-	S01335	-	-	-	-
Wiper	S01315	S01315	S01315	-	S01325	-	-	-	-	-



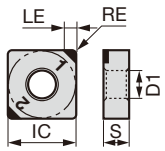
S	0	1	3	2	5
Edge prep. ID	Negative land width W			Negative land angle α	

T ··· Chamfered
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

		BXM20	BXA10	BXA20	BXC50	BX310	BX330	BX360	BX380	BX480	BX910	BX930	BXC90
P	Steel									✣	●	◐●◐	◐
M	Stainless												
K	Cast iron									✣	●	◐●◐	◐
N	Non-ferrous												
S	Superalloy												
H	Hard material	◐●	●	◐●	✣	●	◐●	◐●	✣				
	Sintered metal									◐✣			



Shape	Designation Inch	Designation Metric	No. of corners	LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H
2QP-SNGA	**2QP-SNGA 431**	**2QP-SNGA120404**	2	0.094	0.016	0.500	0.187	0.203	○					
	2QP-SNGA 432	2QP-SNGA120408	2	0.094	0.031	0.500	0.187	0.203	○					
	2QP-SNGA 433	2QP-SNGA120412	2	0.094	0.047	0.500	0.187	0.203	○					
2QP-SNGA-L**	**2QP-SNGA 431-L**	**2QP-SNGA120404-L**	2	0.094	0.016	0.500	0.187	0.203			○			
	2QP-SNGA 432-L	2QP-SNGA120408-L	2	0.094	0.031	0.500	0.187	0.203			○			
	2QP-SNGA 433-L	2QP-SNGA120412-L	2	0.094	0.047	0.500	0.187	0.203			○			
2QP-SNGA-LF**	**2QP-SNGA 432-LF**	**2QP-SNGA120408-LF**	2	0.094	0.031	0.500	0.187	0.203				○		
	2QP-SNGA 433-LF	2QP-SNGA120412-LF	2	0.094	0.047	0.500	0.187	0.203				○		
2QP-SNGA-H**	**2QP-SNGA 431-H**	**2QP-SNGA120404-H**	2	0.094	0.016	0.500	0.187	0.203						○
	2QP-SNGA 432-H	2QP-SNGA120408-H	2	0.094	0.031	0.500	0.187	0.203						○
	2QP-SNGA 433-H	2QP-SNGA120412-H	2	0.094	0.047	0.500	0.187	0.203						○
4QP-SNGA	**4QP-SNGA 431**	**4QP-SNGA120404**	4	0.094	0.016	0.500	0.187	0.203	○					
	4QP-SNGA 432	4QP-SNGA120408	4	0.094	0.031	0.500	0.187	0.203	○					
	4QP-SNGA 433	4QP-SNGA120412	4	0.094	0.047	0.500	0.187	0.203	○					
SNGA-QBN**	**SNGA 430.5 QBN**	**SNGA120402-QBN**	1	0.161	0.008	0.500	0.187	0.203	○					
	SNGA 431 QBN	SNGA120404-QBN	1	0.161	0.016	0.500	0.187	0.203	○					
	SNGA 432 QBN	SNGA120408-QBN	1	0.161	0.031	0.500	0.187	0.203	○					
	SNGA 433 QBN	SNGA120412-QBN	1	0.161	0.047	0.500	0.187	0.203	○					
2QP-SNGN	**2QP-SNGN 322**	**2QP-SNGN090308**	2	0.094	0.031	0.375	0.125	-	○					
	2QP-SNGN 323	2QP-SNGN090312	2	0.094	0.047	0.375	0.125	-	○					
S-SNGN	**S-SNGN 322**	**S-SNGN090308**	8	-	0.031	0.375	0.125	-	○					
Solid CBN	S-SNGN 323	S-SNGN090312	8	-	0.047	0.375	0.125	-	○					
	S-SNGN 422	**S-SNGN120308**	8	-	0.031	0.500	0.125	-	○					
	S-SNGN 423	S-SNGN120312	8	-	0.047	0.500	0.125	-	○					
	S-SNGN 432	**S-SNGN120408**	8	-	0.031	0.500	0.187	-	○					
	S-SNGN 433	S-SNGN120412	8	-	0.047	0.500	0.187	-	○					

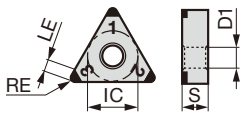
● : Line up

Reference pages: External toolholder → C098 - Internal toolholder → D047 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
ⓒ : Light interrupted cutting
✠ : Heavy interrupted cutting

P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloy
H	Hard material
	Sintered metal



Shape	Designation Inch	Designation Metric	BXM10	BXM20	BXA10	BXA20	BX310	BX330	BX360	BX380	BX470	BX480	BX930	Dimension (inch) No. of corners	LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper	Chipbreaker
3QP-TNGA	3QP-TNGA 330.5	3QP-TNGA160402			●	●								3	0.091	0.080	0.375	0.187	0.150	○								
	3QP-TNGA 331	3QP-TNGA160404	●	●	●	●	●	●	●	●	●	●	●	3	0.087	0.016	0.375	0.187	0.150	○								
	3QP-TNGA 332	3QP-TNGA160408	●	●	●	●	●	●	●	●	●	●	●	3	0.075	0.031	0.375	0.187	0.150	○								
	3QP-TNGA 333	3QP-TNGA160412	●	●	●	●	●	●	●	●	●	●	●	3	0.094	0.047	0.375	0.187	0.150	○								
	3QP-TNGA 334	3QP-TNGA160416			●	●								3	0.130	0.063	0.375	0.187	0.150	○								
	3QP-TNGA 335	3QP-TNGA160420			●	●								3	0.118	0.079	0.375	0.187	0.150	○								
	3QP-TNGA 336	3QP-TNGA160424			●	●								3	0.106	0.094	0.375	0.187	0.150	○								
T3QP-TNGA	T3QP-TNGA 331	T3QP-TNGA160404							●					3	0.087	0.016	0.375	0.187	0.150	○								
	T3QP-TNGA 332	T3QP-TNGA160408							●					3	0.075	0.031	0.375	0.187	0.150	○								
3QP-TNGA**F	3QP-TNGA 331-F	3QP-TNGA160404F									●			3	0.087	0.016	0.375	0.187	0.150		○							
	3QP-TNGA 332-F	3QP-TNGA160408F									●			3	0.075	0.031	0.375	0.187	0.150		○							
3QP-TNGA**-L	3QP-TNGA 330.5-L	3QP-TNGA160402-L			●	●								3	0.091	0.080	0.375	0.187	0.150			○						
	3QP-TNGA 331-L	3QP-TNGA160404-L	●	●	●	●	●							3	0.087	0.016	0.375	0.187	0.150			○						
	3QP-TNGA 332-L	3QP-TNGA160408-L	●	●	●	●	●							3	0.075	0.031	0.375	0.187	0.150			○						
	3QP-TNGA 333-L	3QP-TNGA160412-L	●	●	●	●	●							3	0.094	0.047	0.375	0.187	0.150			○						
3QP-TNGA**-LF	3QP-TNGA 330.5-LF	3QP-TNGA160402-LF			●	●								3	0.091	0.080	0.375	0.187	0.150				○					
	3QP-TNGA 331-LF	3QP-TNGA160404-LF			●	●								3	0.087	0.016	0.375	0.187	0.150				○					
	3QP-TNGA 332-LF	3QP-TNGA160408-LF			●	●								3	0.075	0.031	0.375	0.187	0.150				○					
	3QP-TNGA 333-LF	3QP-TNGA160412-LF			●	●								3	0.094	0.047	0.375	0.187	0.150				○					
3QP-TNGA**-LC	3QP-TNGA 330.5-LC	3QP-TNGA160402-LC			●	●								3	0.091	0.080	0.375	0.187	0.150					○				
	3QP-TNGA 331-LC	3QP-TNGA160404-LC			●	●								3	0.087	0.016	0.375	0.187	0.150					○				
	3QP-TNGA 332-LC	3QP-TNGA160408-LC			●	●								3	0.075	0.031	0.375	0.187	0.150					○				
	3QP-TNGA 333-LC	3QP-TNGA160412-LC			●	●								3	0.094	0.047	0.375	0.187	0.150					○				
3QP-TNGA**-H	3QP-TNGA 331-H	3QP-TNGA160404-H		●	●	●			●	●				3	0.087	0.016	0.375	0.187	0.150						○			
	3QP-TNGA 332-H	3QP-TNGA160408-H		●	●	●			●	●				3	0.075	0.031	0.375	0.187	0.150						○			
	3QP-TNGA 333-H	3QP-TNGA160412-H		●	●	●			●	●				3	0.094	0.047	0.375	0.187	0.150						○			
3QP-TNGA**WG	3QP-TNGA 331-WG	3QP-TNGA160404WG		●	●	●								3	0.094	0.016	0.375	0.187	0.150							○		
	3QP-TNGA 332-WG	3QP-TNGA160408WG	●	●	●	●								3	0.087	0.031	0.375	0.187	0.150							○		
3QP-TNGM**-H*	3QP-TNGM 332-HF	3QP-TNGM160408-HF		●										3	0.075	0.031	0.375	0.187	0.150									○
	3QP-TNGM 333-HF	3QP-TNGM160412-HF		●										3	0.094	0.047	0.375	0.187	0.150									○
	3QP-TNGM 332-HM	3QP-TNGM160408-HM		●										3	0.075	0.031	0.375	0.187	0.150									○
	3QP-TNGM 333-HM	3QP-TNGM160412-HM		●										3	0.094	0.047	0.375	0.187	0.150									○
	3QP-TNGM331-HP	3QP-TNGM160404-HP	●		●	●								3	0.087	0.016	0.375	0.187	0.150									○
	3QP-TNGM332-HP	3QP-TNGM160408-HP	●		●	●								3	0.075	0.031	0.375	0.187	0.150									○
	3QP-TNGM333-HP	3QP-TNGM160412-HP			●	●								3	0.094	0.047	0.375	0.187	0.150									

*T at the beginning of the designation means 10 pieces per package.
Please see the page **B201** about the toolholders recommended for wiper inserts of the designation with WG at the end.

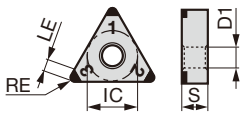
● : Line up

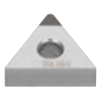
Reference pages: External toolholder → C121 - Internal toolholder → D052 -
J-Series toolholder → G058 - TungCap → K014 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

		BXA20	BXC50	BX360	BXC90
P	Steel				
M	Stainless				
K	Cast iron			●◐	
N	Non-ferrous				
S	Superalloy				
H	Hard material	●◐	✣	●◐	
	Sintered metal				

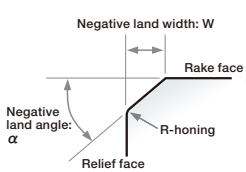


Shape	Designation Inch	Designation Metric	No. of corners	LE	RE	IC	S	D1	Edge prep. Standard	Edge prep. Sharp edge	Edge prep. L	Edge prep. LF	Edge prep. LC	Edge prep. H	Wiper	Chipbreaker
6QP-TNGA	**6QP-TNGA 331**	**6QP-TNGA160404**	6	0.087	0.016	0.375	0.187	0.150	○							
	6QP-TNGA 332	6QP-TNGA160408	6	0.075	0.031	0.375	0.187	0.150	○							
	6QP-TNGA 333	6QP-TNGA160412	6	0.094	0.047	0.375	0.187	0.150	○							
6QS-TNGA	**6QS-TNGA 332**	**6QS-TNGA160408**	6	0.063	0.031	0.375	0.187	0.150	○							
WavyJoint	6QS-TNGA 333	6QS-TNGA160412	6	0.071	0.047	0.375	0.187	0.150	○							
																
6QS-TNGA-H**	**6QS-TNGA 332-H**	**6QS-TNGA160408-H**	6	0.063	0.031	0.375	0.187	0.150						○		
WavyJoint	6QS-TNGA 333-H	6QS-TNGA160412-H	6	0.071	0.047	0.375	0.187	0.150						○		
																
6QS-TNGG-HM**	**6QS-TNGG 332-HM**	**6QS-TNGG160408-HM**	6	0.063	0.031	0.375	0.187	0.150								○
WavyJoint																
																
TNGA-QBN**	**TNGA 330.5 QBN**	**TNGA160402-QBN**	1	0.173	0.008	0.375	0.187	0.150	○							
	TNGA 331 QBN	TNGA160404-QBN	1	0.165	0.016	0.375	0.187	0.150	○							
	TNGA 332 QBN	TNGA160408-QBN	1	0.157	0.031	0.375	0.187	0.150	○							
	TNGA 333 QBN	TNGA160412-QBN	1	0.146	0.047	0.375	0.187	0.150	○							
S-TNGN	**S-TNGN 222**	**S-TNGN110308**	6	-	0.031	0.250	0.125	-	○							
Solid CBN	S-TNGN 223	S-TNGN110312	6	-	0.047	0.250	0.125	-	○							
	**S-TNGN 322**	**S-TNGN160408**	6	-	0.031	0.375	0.187	-	○							
	S-TNGN 333	S-TNGN160412	6	-	0.047	0.375	0.187	-	○							

● : Line up

Edge preparation specification

	BXM10	BXM20	BXA20	BX310 BXC50	BX330	BX360 BX380	BX470	BX480	BX910 BX930	BXC90
Standard	S01325	S01325	S01325	S01325	S01325	S01325	T01315	S01325	S01315	T02020
Sharp edge	-	-	-	-	-	-	F	-	-	-
-L	S01315	S01315	S01315	-	S01315	-	-	-	-	-
-LF	-	-	S00515	-	-	-	-	-	-	-
-LC	-	-	S00535	-	-	-	-	-	-	-
-H	-	S01835	S01835	-	-	S01335	-	-	-	-
Wiper	S01315	S01315	S01315	-	S01325	-	-	-	-	-



S	0	1	3	2	5
Edge prep. ID	Negative land width W			Negative land angle α	

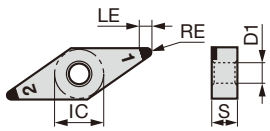
T ··· Chamfered
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

Reference pages: External toolholder → C121 - Internal toolholder → D052 -
J-Series toolholder → G058 - TungCap → K014 -

CBN Insert NEGATIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

		BXM10	BXM20	BXA10	BXA20	BXC50	BX310	BX330	BX360	BX380	BX470	BX480	BX930
P	Steel												
M	Stainless												
K	Cast iron										◐	✣	◐
N	Non-ferrous												
S	Superalloy												
H	Hard material	●	◐	●	◐	✣	●	◐	◐	✣			
	Sintered metal										◐	✣	

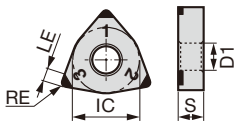


Shape	Designation Inch	Designation Metric	BXM10	BXM20	BXA10	BXA20	BXC50	BX310	BX330	BX360	BX380	BX470	BX480	BX930	No. of corners	LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Chipbreaker
2QP-VNGA	**2QP-VNGA 330.5**	**2QP-VNGA160402**			●	●									2	0.138	0.080	0.375	0.187	0.150	○						
	2QP-VNGA 331	2QP-VNGA160404	●	●	●	●		●	●	●	●	●	●	●	2	0.122	0.016	0.375	0.187	0.150	○						
	2QP-VNGA 332	2QP-VNGA160408	●	●	●	●		●	●	●	●	●	●	●	2	0.087	0.031	0.375	0.187	0.150	○						
	2QP-VNGA 333	2QP-VNGA160412		●	●	●									2	0.118	0.047	0.375	0.187	0.150	○						
2QP-VNGA-L**	**2QP-VNGA 330.5-L**	**2QP-VNGA160402-L**			●	●									2	0.138	0.080	0.375	0.187	0.150			○				
	2QP-VNGA 331-L	2QP-VNGA160404-L	●	●	●	●			●						2	0.122	0.016	0.375	0.187	0.150			○				
	2QP-VNGA 332-L	2QP-VNGA160408-L	●	●	●	●			●						2	0.087	0.031	0.375	0.187	0.150			○				
	2QP-VNGA 333-L	2QP-VNGA160412-L			●	●									2	0.118	0.047	0.375	0.187	0.150			○				
2QP-VNGA-LF**	**2QP-VNGA 330.5-LF**	**2QP-VNGA160402-LF**			●	●									2	0.138	0.080	0.375	0.187	0.150				○			
	2QP-VNGA 331-LF	2QP-VNGA160404-LF			●	●									2	0.122	0.016	0.375	0.187	0.150				○			
	2QP-VNGA 332-LF	2QP-VNGA160408-LF			●	●									2	0.087	0.031	0.375	0.187	0.150				○			
	2QP-VNGA 333-LF	2QP-VNGA160412-LF			●	●									2	0.118	0.047	0.375	0.187	0.150				○			
2QP-VNGA-LC**	**2QP-VNGA 330.5-LC**	**2QP-VNGA160402-LC**			●	●									2	0.138	0.080	0.375	0.187	0.150					○		
	2QP-VNGA 331-LC	2QP-VNGA160404-LC			●	●									2	0.122	0.016	0.375	0.187	0.150					○		
	2QP-VNGA 332-LC	2QP-VNGA160408-LC			●	●									2	0.087	0.031	0.375	0.187	0.150					○		
	2QP-VNGA 333-LC	2QP-VNGA160412-LC			●	●									2	0.118	0.047	0.375	0.187	0.150					○		
2QP-VNGA-H**	**2QP-VNGA 331-H**	**2QP-VNGA160404-H**		●	●	●				●	●				2	0.122	0.016	0.375	0.187	0.150						○	
	2QP-VNGA 332-H	2QP-VNGA160408-H		●	●	●				●	●				2	0.087	0.031	0.375	0.187	0.150						○	
	2QP-VNGA 333-H	2QP-VNGA160412-H			●	●									2	0.118	0.047	0.375	0.187	0.150						○	
2QP-VNGM-H***	**2QP-VNGM 332-HF**	**2QP-VNGM160408-HF**		●											2	0.087	0.031	0.375	0.187	0.150							○
	2QP-VNGM 332-HM	**2QP-VNGM160408-HM**		●											2	0.087	0.031	0.375	0.187	0.150							○
	2QP-VNGM 331-HP	**2QP-VNGM160404-HP**			●	●									2	0.122	0.016	0.375	0.187	0.150							○
	2QP-VNGM 332-HP	2QP-VNGM160408-HP	●		●	●									2	0.087	0.031	0.375	0.187	0.150							○
4QP-VNGA	**4QP-VNGA 331**	**4QP-VNGA160404**					●								4	0.122	0.016	0.375	0.187	0.150	○						
	4QP-VNGA 332	4QP-VNGA160408					●								4	0.087	0.031	0.375	0.187	0.150	○						
4QS-VNGA WavyJoint	**4QS-VNGA 332**	**4QS-VNGA160408**				●									4	0.067	0.031	0.375	0.187	0.150	○						
4QS-VNGA-H** WavyJoint	**4QS-VNGA 332-H**	**4QS-VNGA160408-H**				●									4	0.067	0.031	0.375	0.187	0.150						○	
4QS-VNGG-HM** WavyJoint	**4QS-VNGG 332-HM**	**4QS-VNGG160408-HM**				●									4	0.067	0.031	0.375	0.187	0.150							○

● : Line up

Reference pages: External toolholder → C062 - Internal toolholder → D078 -
TungCap → K015 -

		BXM10	BXM20	BXA10	BXA20	BXC50	BX310	BX330	BX360	BX380	BX480	BX930
P	Steel											
M	Stainless											
K	Cast iron										✣	◐
N	Non-ferrous											
S	Superalloy											
H	Hard material	●	◐	●	◐	✣	●	◐	◐	✣		
	Sintered metal										◐	✣



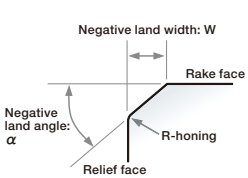
Shape	Designation Inch	Designation Metric	No. of corners	LE	RE	IC	S	D1	Edge prep. Standard	Edge prep. Sharp edge	L	LF	LC	H	Wiper
3QP-WNGA	3QP-WNGA 431	3QP-WNGA080404	3	0.091	0.016	0.500	0.187	0.203	○						
	3QP-WNGA 432	3QP-WNGA080408	3	0.087	0.031	0.500	0.187	0.203	○						
	3QP-WNGA 433	3QP-WNGA080412	3	0.094	0.047	0.500	0.187	0.203	○						
3QP-WNGA-L**	3QP-WNGA 432-L	3QP-WNGA080408-L	3	0.087	0.031	0.500	0.187	0.203			○				
3QP-WNGA-LF**	3QP-WNGA 432-LF	3QP-WNGA080408-LF	3	0.087	0.031	0.500	0.187	0.203				○			
3QP-WNGA-H**	3QP-WNGA 432-H	3QP-WNGA080408-H	3	0.087	0.031	0.500	0.187	0.203						○	
3QP-WNGAWL**	3QP-WNGA 432-WL	3QP-WNGA080408WL	3	0.087	0.031	0.500	0.187	0.203							○
6QP-WNGA	6QP-WNGA 431	6QP-WNGA080404	6	0.091	0.016	0.500	0.187	0.203	○						
	6QP-WNGA 432	6QP-WNGA080408	6	0.087	0.031	0.500	0.187	0.203	○						
6QS-WNGA WavyJoint	6QS-WNGA 432	6QS-WNGA080408	6	0.059	0.031	0.500	0.187	0.203	○						
6QS-WNGA-H** WavyJoint	6QS-WNGA 432-H	6QS-WNGA080408-H	6	0.059	0.031	0.500	0.187	0.203						○	

*Please see the page **B201** about the toolholders recommended for wiper inserts of the designation with WL at the end.

● : Line up

Edge preparation specification

	BXM10	BXM20	BXA20	BX310 BXC50	BX330	BX360 BX380	BX470	BX480	BX910 BX930	BXC90
Standard	S01325	S01325	S01325	S01325	S01325	S01325	T01315	S01325	S01315	T02020
Sharp edge	-	-	-	-	-	-	F	-	-	-
-L	S01315	S01315	S01315	-	S01315	-	-	-	-	-
-LF	-	-	S00515	-	-	-	-	-	-	-
-LC	-	-	S00535	-	-	-	-	-	-	-
-H	-	S01835	S01835	-	-	S01335	-	-	-	-
Wiper	S01315	S01315	S01315	-	S01325	-	-	-	-	-



S	0	1	3	2	5
Edge prep. ID	Negative land width W			Negative land angle α	

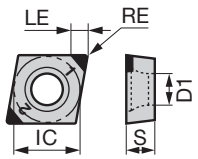
T ··· Chamfered
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

Reference pages: External toolholder → C037 - Internal toolholder → D035 -
TungCap → C038 -, K011 -

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA10	BXA20	BX310	BX330	BX360	BX470	BX480	BX930
P	Steel										
M	Stainless										
K	Cast iron								●◐	✠	●◐
N	Non-ferrous										
S	Superalloy								●◐		
H	Hard material	●	●◐	●	●◐	●	●◐	●◐			
	Sintered metal								●◐	●◐	✠



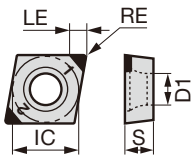
Shape	Designation Inch	Designation Metric	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper	Chipbreaker
2QP-CCGW	**2QP-CCGW 21.50.5**	**2QP-CCGW060202**	2	0.091	0.008	0.250	0.094	0.110	○							
	2QP-CCGW 21.51	2QP-CCGW060204	2	0.091	0.016	0.250	0.094	0.110	○							
	2QP-CCGW 21.52	2QP-CCGW060208	2	0.087	0.031	0.250	0.094	0.110	○							
	2QP-CCGW 32.50.5	**2QP-CCGW09T302**	2	0.091	0.008	0.375	0.156	0.173	○							
	2QP-CCGW 32.51	2QP-CCGW09T304	2	0.091	0.016	0.375	0.156	0.173	○							
	2QP-CCGW 32.52	2QP-CCGW09T308	2	0.087	0.031	0.375	0.156	0.173	○							
2QP-CCGW-L**	**2QP-CCGW 21.50.5-L**	**2QP-CCGW060202-L**	2	0.091	0.008	0.250	0.094	0.110			○					
	2QP-CCGW 21.51-L	2QP-CCGW060204-L	2	0.091	0.016	0.250	0.094	0.110			○					
	2QP-CCGW 21.52-L	2QP-CCGW060208-L	2	0.087	0.031	0.250	0.094	0.110			○					
	2QP-CCGW 32.51-L	**2QP-CCGW09T304-L**	2	0.091	0.016	0.375	0.156	0.173			○					
	2QP-CCGW 32.52-L	2QP-CCGW09T308-L	2	0.087	0.031	0.375	0.156	0.173			○					
2QP-CCGW-LF**	**2QP-CCGW 21.50.5-LF**	**2QP-CCGW060202-LF**	2	0.091	0.008	0.250	0.094	0.110				○				
	2QP-CCGW 21.51-LF	2QP-CCGW060204-LF	2	0.091	0.016	0.250	0.094	0.110				○				
	2QP-CCGW 21.52-LF	2QP-CCGW060208-LF	2	0.087	0.031	0.250	0.094	0.110				○				
	2QP-CCGW 32.50.5-LF	**2QP-CCGW09T302-LF**	2	0.091	0.008	0.375	0.156	0.173				○				
	2QP-CCGW 32.51-LF	2QP-CCGW09T304-LF	2	0.091	0.016	0.375	0.156	0.173				○				
	2QP-CCGW 32.52-LF	2QP-CCGW09T308-LF	2	0.087	0.031	0.375	0.156	0.173				○				
2QP-CCGW-LC**	**2QP-CCGW 21.50.5-LC**	**2QP-CCGW060202-LC**	2	0.091	0.008	0.250	0.094	0.110					○			
	2QP-CCGW 21.51-LC	2QP-CCGW060204-LC	2	0.091	0.016	0.250	0.094	0.110					○			
	2QP-CCGW 21.52-LC	2QP-CCGW060208-LC	2	0.087	0.031	0.250	0.094	0.110					○			
	2QP-CCGW 32.50.5-LC	**2QP-CCGW09T302-LC**	2	0.091	0.008	0.375	0.156	0.173					○			
	2QP-CCGW 32.51-LC	2QP-CCGW09T304-LC	2	0.091	0.016	0.375	0.156	0.173					○			
	2QP-CCGW 32.52-LC	2QP-CCGW09T308-LC	2	0.087	0.031	0.375	0.156	0.173					○			
2QP-CCGW-H**	**2QP-CCGW 32.51-H**	**2QP-CCGW09T304-H**	2	0.091	0.016	0.375	0.156	0.173						○		
	2QP-CCGW 32.52-H	2QP-CCGW09T308-H	2	0.087	0.031	0.375	0.156	0.173						○		
2QP-CCGWWL**	**2QP-CCGW 32.51-WL**	**2QP-CCGW09T304WL**	2	0.091	0.016	0.375	0.156	0.173							○	
	2QP-CCGW 32.52-WL	2QP-CCGW09T308WL	2	0.087	0.031	0.375	0.156	0.173							○	
2QP-CCGT-HP**	**2QP-CCGT21.51-HP**	**2QP-CCGT060204-HP**	2	0.091	0.016	0.250	0.094	0.110								○
	2QP-CCGT32.51-HP	**2QP-CCGT09T304-HP**	2	0.091	0.016	0.375	0.156	0.173								○
	2QP-CCGT32.52-HP	2QP-CCGT09T308-HP	2	0.087	0.031	0.375	0.156	0.173								○
2QP-CCGTWL-HP**	**2QP-CCGT32.51WL-HP**	**2QP-CCGT09T304WL-HP**	2	0.091	0.016	0.375	0.156	0.173							○	○
	2QP-CCGT32.52WL-HP	2QP-CCGT09T308WL-HP	2	0.087	0.031	0.375	0.156	0.173							○	○

● : Line up

Reference pages: External toolholder → C026 - Internal toolholder → D020 -
J-Series toolholder → G027 -

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

		BXM10	BXM20	BXA10	BXA20	BX310	BX330	BX360	BX470	BX480	BX930
P	Steel										
M	Stainless										
K	Cast iron								◐	✣	◐
N	Non-ferrous										
S	Superalloy										
H	Hard material	●	◐	●	◐	●	◐	◐			
	Sintered metal								◐	◐	✣



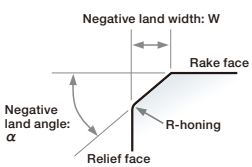
Shape	Designation Inch	Designation Metric	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper	Chipbreaker
2QP-CCMW	**2QP-CCMW 21.50.5**	**2QP-CCMW060202**	2	0.091	0.008	0.250	0.094	0.110	○							
	2QP-CCMW 21.5**1**	2QP-CCMW0602**04**	2	0.091	0.016	0.250	0.094	0.110	○							
	2QP-CCMW 32.51	**2QP-CCMW09T304**	2	0.091	0.016	0.375	0.156	0.173	○							
	2QP-CCMW 32.5**2**	2QP-CCMW09T3**08**	2	0.087	0.031	0.375	0.156	0.173	○							
Q-CCMW	**Q-CCMW 21.51**	**Q-CCMW060204**	1	0.098	0.016	0.250	0.094	0.110	○							
	Q-CCMW **32.51**	Q-CCMW**09T304**	1	0.098	0.016	0.375	0.156	0.173	○							
1QP-CCGW	**1QP-CCGW 4.51.80.5**	**1QP-CCGW03X102**	1	0.055	0.008	0.141	0.055	0.075								
	1QP-CCGW 4.51.8**1**	1QP-CCGW03X1**04**	1	0.051	0.016	0.141	0.055	0.075								
	1QP-CCGW 5.52.20.5	**1QP-CCGW04T102**	1	0.075	0.008	0.172	0.070	0.091								
	1QP-CCGW 5.52.2**1**	1QP-CCGW04T1**04**	1	0.071	0.016	0.172	0.070	0.091								
2QP-CPGW	**2QP-CPGW 2.51.50.5**	**2QP-CPGW080202**	2	0.091	0.080	0.313	0.094	0.134	○							
	2QP-CPGW 2.51.5**1**	2QP-CPGW0802**04**	2	0.091	0.016	0.313	0.094	0.134	○							
	2QP-CPGW 2.51.5**2**	2QP-CPGW0802**08**	2	0.087	0.031	0.313	0.094	0.134	○							
	2QP-CPGW 320.5	**2QP-CPGW090302**	2	0.091	0.080	0.313	0.094	0.134	○							
	2QP-CPGW 32**1**	2QP-CPGW0903**04**	2	0.091	0.016	0.375	0.125	0.173	○							
	2QP-CPGW 32**2**	2QP-CPGW0903**08**	2	0.087	0.031	0.375	0.125	0.173	○							
									○							
CPGA-QBN**	**CPGA 31.51 QBN**	**CPGA090204-QBN**	1	0.157	0.016	0.375	0.094	0.157	○							
	CPGA 31.5**2 QBN**	CPGA0902**08-QBN**	1	0.150	0.031	0.375	0.094	0.157	○							

Q-CCMW: 2 pieces per package

● : Line up

Edge preparation specification

	BXM10 BXM20	BXA20	BX310 BX330 BX360 BX480 BX930	BX470	BX910
Standard	S01325	S01325	S00515	T01315	S01315
Sharp edge	-	-	-	F	-
-L	-	S01315	-	-	-
-LF	-	S00515	-	-	-
-LC	-	S00535	-	-	-
-H	-	S01835	-	-	-
Wiper	-	S01315	-	-	-



S	0	1	3	2	5
Edge prep. ID	Negative land width W			Negative land angle α	

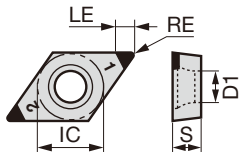
T ··· Chamfered
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

Reference pages: External toolholder → C026 - Internal toolholder → D020 -
J-Series toolholder → G027 -

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA10	BXA20	BX310	BX330	BX360	BX470	BX480	BX930
P	Steel										
M	Stainless										
K	Cast iron								●◐	✠	●◐
N	Non-ferrous										
S	Superalloy										
H	Hard material	●	●◐	●	●◐	●	●◐	●◐			
	Sintered metal								●◐	◐	✠



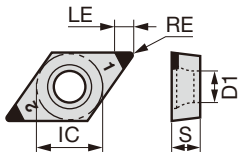
Shape	Designation Inch	Designation Metric	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper	Chipbreaker
2QP-DCGW	**2QP-DCGW 21.50**	2QP-DCGW070202	2	0.106	0.008	0.250	0.094	0.110	○							
	2QP-DCGW 21.51	2QP-DCGW070204	2	0.098	0.016	0.250	0.094	0.110	○							
	2QP-DCGW 21.52	2QP-DCGW070208	2	0.083	0.031	0.250	0.094	0.110	○							
	2QP-DCGW 32.50.2	2QP-DCGW11T301	2	0.110	0.004	0.375	0.156	0.173	○							
	2QP-DCGW 32.50.5	2QP-DCGW11T302	2	0.106	0.008	0.375	0.156	0.173	○							
	2QP-DCGW 32.51	2QP-DCGW11T304	2	0.098	0.016	0.375	0.156	0.173	○							
	2QP-DCGW 32.52	2QP-DCGW11T308	2	0.083	0.031	0.375	0.156	0.173	○							
2QP-DCGW-L**	**2QP-DCGW 21.50.5-L**	2QP-DCGW070202-L	2	0..106	0.008	0.250	0.094	0.110			○					
	2QP-DCGW 21.51-L	2QP-DCGW070204-L	2	0.098	0.016	0.250	0.094	0.110			○					
	2QP-DCGW 21.52-L	2QP-DCGW070208-L	2	0.083	0.031	0.250	0.094	0.110			○					
	2QP-DCGW 32.50.5-L	2QP-DCGW11T302-L	2	0..106	0.008	0.375	0.156	0.173			○					
	2QP-DCGW 32.51-L	2QP-DCGW11T304-L	2	0.098	0.016	0.375	0.156	0.173			○					
	2QP-DCGW 32.52-L	2QP-DCGW11T308-L	2	0.083	0.031	0.375	0.156	0.173			○					
2QP-DCGW-LF**	**2QP-DCGW 21.50.5-LF**	2QP-DCGW070202-LF	2	0..106	0.008	0.250	0.094	0.110				○				
	2QP-DCGW 21.51-LF	2QP-DCGW070204-LF	2	0.098	0.016	0.250	0.094	0.110				○				
	2QP-DCGW 21.52-LF	2QP-DCGW070208-LF	2	0.083	0.031	0.250	0.094	0.110				○				
	2QP-DCGW 32.50.5-LF	2QP-DCGW11T302-LF	2	0..106	0.008	0.375	0.156	0.173				○				
	2QP-DCGW 32.51-LF	2QP-DCGW11T304-LF	2	0.098	0.016	0.375	0.156	0.173				○				
	2QP-DCGW 32.52-LF	2QP-DCGW11T308-LF	2	0.083	0.031	0.375	0.156	0.173				○				
2QP-DCGW-LC**	**2QP-DCGW 21.50.5-LC**	2QP-DCGW070202-LC	2	0..106	0.008	0.250	0.094	0.110					○			
	2QP-DCGW 21.51-LC	2QP-DCGW070204-LC	2	0.098	0.016	0.250	0.094	0.110					○			
	2QP-DCGW 21.52-LC	2QP-DCGW070208-LC	2	0.083	0.031	0.250	0.094	0.110					○			
	2QP-DCGW 32.50.5-LC	2QP-DCGW11T302-LC	2	0..106	0.008	0.375	0.156	0.173					○			
	2QP-DCGW 32.51-LC	2QP-DCGW11T304-LC	2	0.098	0.016	0.375	0.156	0.173					○			
	2QP-DCGW 32.52-LC	2QP-DCGW11T308-LC	2	0.083	0.031	0.375	0.156	0.173					○			
2QP-DCGW-H**	**2QP-DCGW 32.51-H**	2QP-DCGW11T304-H	2	0.098	0.016	0.375	0.156	0.173						○		
	2QP-DCGW 32.52-H	2QP-DCGW11T308-H	2	0.083	0.031	0.375	0.156	0.173						○		
2QP-DCGT-HP**	2QP-DCGT21.51-HP	2QP-DCGT070204-HP	2	0.098	0.016	0.250	0.094	0.110								○
	2QP-DCGT32.51-HP	2QP-DCGT11T304-HP	2	0.098	0.016	0.375	0.156	0.173								○
	2QP-DCGT32.52-HP	2QP-DCGT11T308-HP	2	0.083	0.031	0.375	0.156	0.173								○

● : Line up

Reference pages: External toolholder → C050 - Internal toolholder → D056 -
J-Series toolholder → G036 -

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA20	BX310	BX330	BX360	BX470	BX480	BX930
P	Steel									
M	Stainless									
K	Cast iron							●◐	✠	●◐
N	Non-ferrous									
S	Superalloy									
H	Hard material	●	●◐	●◐	●	●◐	●◐			
	Sintered metal							●◐	◐✠	



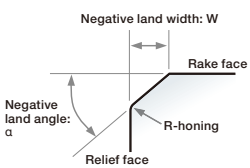
Shape	Designation Inch	Designation Metric	No. of corners	LE	RE	IC	S	D1	Edge prep. Standard	Edge prep. Sharp edge	L	LF	LC	H	Wiper	Chipbreaker
2QP-DCMW	**2QP-DCMW 21.50.5**	**2QP-DCMW070202**	2	0.106	0.008	0.250	0.094	0.110	○							
	2QP-DCMW 21.51	2QP-DCMW070204	2	0.098	0.016	0.250	0.094	0.110	○							
	2QP-DCMW 32.50.5	**2QP-DCMW11T302**	2	0.106	0.008	0.375	0.156	0.173	○							
	2QP-DCMW 32.51	2QP-DCMW11T304	2	0.098	0.016	0.375	0.156	0.173	○							
	2QP-DCMW 32.52	2QP-DCMW11T308	2	0.083	0.031	0.375	0.156	0.173	○							
2QP-DCGWF**	**2QP-DCGW32.50.5F**	**2QP-DCGW11T302F**	2	0.106	0.008	0.375	0.156	0.173		○						
	2QP-DCGW32.51F	2QP-DCGW11T304F	2	0.098	0.016	0.375	0.156	0.173		○						
Q-DCMW	**Q-DCMW 21.51**	**Q-DCMW070204**	1	0.083	0.016	0.250	0.094	0.110	○							
	Q-DCMW 32.51	Q-DCMW11T304	1	0.083	0.016	0.375	0.156	0.173	○							

Q-DCMW: 2 pieces per package

● : Line up

Edge preparation specification

	BXM10 BXM20	BXA20	BX310 BX330 BX360 BX480 BX930	BX470	BX910
Standard	S01325	S01325	S00515	T01315	S01315
Sharp edge	-	-	-	F	-
-L	-	S01315	-	-	-
-LF	-	S00515	-	-	-
-LC	-	S00535	-	-	-
-H	-	S01835	-	-	-
Wiper	-	S01315	-	-	-



S	0	1	3	2	5
Edge prep. ID	Negative land width W			Negative land angle α	

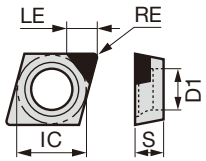
T ··· Chamfered
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

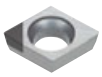
Reference pages: External toolholder → C050 - Internal toolholder → D056 -
J-Series toolholder → G036 -

CBN Insert POSITIVE TYPE

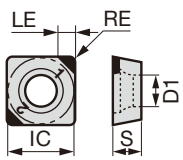
● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

		BX310	BX470
P	Steel		
M	Stainless		
K	Cast iron	●◐	
N	Non-ferrous		
S	Superalloy	●◐	
H	Hard material	●	
	Sintered metal	●◐	



Shape	Designation Inch	Designation Metric	BX310	BX470	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper	Chipbreaker
1QP-EPGW	**1QP-EPGW 4.51.80.5**	**1QP-EPGW03X102**	●	●	1	0.055	0.008	0.141	0.055	0.075								
	1QP-EPGW 4.51.8**1**	1QP-EPGW03X1**04**	●	●	1	0.051	0.016	0.141	0.055	0.075								
	1QP-EPGW 520.5	**1QP-EPGW040102**	●	●	1	0.067	0.008	0.156	0.063	0.091								
	1QP-EPGW 52**1**	1QP-EPGW0401**04**	●	●	1	0.063	0.016	0.156	0.063	0.091								

		BX330	BX360	BX910	BX930
P	Steel				
M	Stainless				
K	Cast iron			✣	●
N	Non-ferrous				
S	Superalloy				
H	Hard material	●	●		
	Sintered metal			◐✣	



Shape	Designation Inch	Designation Metric	BX330	BX360	BX910	BX930	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper	Chipbreaker
2QP-SPGN	**2QP-SPGN 322**	**2QP-SPGN090308**			●		2	0.094	0.031	0.375	0.125	-	○							
	2QP-SPGN 32**3**	2QP-SPGN090**312**			●		2	0.094	0.047	0.375	0.125	-	○							
2QP-SPMN	**2QP-SPMN 321**	**2QP-SPMN090304**	●	●		●	2	0.094	0.016	0.375	0.125	-	○							
	2QP-SPMN 32**2**	2QP-SPMN090**308**	●	●		●	2	0.094	0.031	0.375	0.125	-	○							
Q-SPGN	**Q-SPGN 321**	**Q-SPGN090304**	●				1	0.110	0.016	0.375	0.125	-	○							
	Q-SPGN 32**2**	Q-SPGN090**308**	●				1	0.110	0.031	0.375	0.125	-	○							
SPGN-QBN**	**SPG 321 QBN**	**SPGN090304-QBN**		●			1	0.161	0.016	0.375	0.125	-	○							
	SPG 32**2** QBN	SPGN090**308**-QBN		●			1	0.161	0.031	0.375	0.125	-	○							
	SPG 32**3** QBN	SPGN090**312**-QBN		●			1	0.161	0.047	0.375	0.125	-	○							
	SPG 422 QBN	**SPGN120308-QBN**		●			1	0.161	0.031	0.500	0.125	-	○							
	SPG 42**3** QBN	SPGN120**312**-QBN		●			1	0.161	0.047	0.500	0.125	-	○							
2QP-SPGW	**2QP-SPGW 32.52**	**2QP-SPGW09T308**			●		2	0.094	0.031	0.375	0.156	0.173	○							
	2QP-SPGW 32.5**3**	2QP-SPGW09T3**12**			●		2	0.094	0.047	0.375	0.156	0.173	○							
	2QP-SPGW 432	**2QP-SPGW120408**			●		2	0.094	0.031	0.500	0.187	0.217	○							
	2QP-SPGW 43**3**	2QP-SPGW1204**12**			●		2	0.094	0.047	0.500	0.187	0.217	○							
	2QP-SPGW 43**4**	2QP-SPGW1204**16**			●		2	0.094	0.063	0.500	0.187	0.217	○							

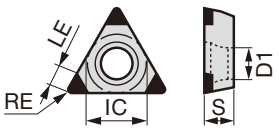
Q-SPGN: 2 pieces per package

● : Line up

Reference pages: Internal toolholder → D040 -

●: Continuous cutting
◐: Light interrupted cutting
✠: Heavy interrupted cutting

		BX330	BX360	BX480	BX910	BX930
P	Steel					
M	Stainless					
K	Cast iron			✠	●	◐●
N	Non-ferrous					
S	Superalloy					
H	Hard material	◐●	◐●			
	Sintered metal			◐✠		



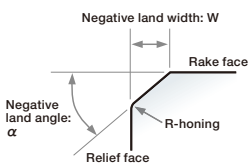
Shape	Designation Inch	Designation Metric	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper	Chipbreaker
3QP-TPGN	**3QP-TPGN22.5**	**3QP-TPGN110302**	3	0.091	0.008	0.250	0.125	-	○							
	3QP-TPGN221	3QP-TPGN110304	3	0.087	0.016	0.250	0.125	-	○							
	3QP-TPGN 222	3QP-TPGN110308	3	0.075	0.031	0.250	0.125	-	○							
	3QP-TPGN 223	3QP-TPGN110312	3	0.094	0.047	0.250	0.125	-	○							
	3QP-TPGN 321	**3QP-TPGN160304**	3	0.087	0.016	0.375	0.125	-	○							
	3QP-TPGN 322	3QP-TPGN160308	3	0.075	0.031	0.375	0.125	-	○							
3QP-TPMN	**3QP-TPMN 220.5**	**3QP-TPMN110302**	3	0.091	0.008	0.250	0.125	-	○							
	3QP-TPMN 221	3QP-TPMN110304	3	0.087	0.016	0.250	0.125	-	○							
	3QP-TPMN 222	3QP-TPMN110308	3	0.075	0.031	0.250	0.125	-	○							
	3QP-TPMN 321	**3QP-TPMN160304**	3	0.087	0.016	0.375	0.125	-	○							
	3QP-TPMN 322	3QP-TPMN160308	3	0.075	0.031	0.375	0.125	-	○							
Q-TPGN	**Q-TPGN221**	**Q-TPGN110304**	1	0.087	0.016	0.250	0.125	-	○							
	Q-TPGN 222	Q-TPGN110308	1	0.079	0.031	0.250	0.125	-	○							
	Q-TPGN 321	**Q-TPGN160304**	1	0.091	0.016	0.375	0.125	-	○							
	Q-TPGN 332	Q-TPGN160308	1	0.079	0.031	0.375	0.125	-	○							
TPGN-QBN**	**TPG 221 QBN**	**TPGN110304-QBN**	1	0.146	0.016	0.250	0.125	-	○							
	TPG 222 QBN	TPGN110308-QBN	1	0.138	0.031	0.250	0.125	-	○							
	TPG 321 QBN	**TPGN160304-QBN**	1	0.165	0.016	0.375	0.125	-	○							
	TPG 322 QBN	TPGN160308-QBN	1	0.157	0.031	0.375	0.125	-	○							
TBGN-QBN**	**TBGN 521 QBN**	**TBGN060104-15-QBN**	3	-	0.016	0.156	0.063	-	○							
	TBGN 522 QBN	TBGN060108-15-QBN	3	-	0.031	0.156	0.063	-	○							

Q-TPGN: 2 pieces per package

●: Line up

Edge preparation specification

	BXM10 BXM20	BXA20	BX310 BX330 BX360 BX480 BX930	BX470	BX910
Standard	S01325	S01325	S00515	T01315	S01315
Sharp edge	-	-	-	F	-
-L	-	S01315	-	-	-
-LF	-	S00515	-	-	-
-LC	-	S00535	-	-	-
-H	-	S01835	-	-	-
Wiper	-	S01315	-	-	-



S	0	1	3	2	5
Edge prep. ID	Negative land width W			Negative land angle α	

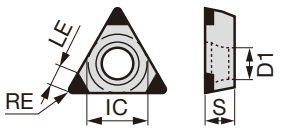
T ··· Chamfered
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

Reference pages: Internal toolholder → D050 -

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA10	BXA20	BX310	BX330	BX360	BX470	BX480	BX910
P	Steel								◐	✠	●
M	Stainless										
K	Cast iron								◐	✠	●
N	Non-ferrous										
S	Superalloy										
H	Hard material	●	◐	●	◐	●	◐	◐			
	Sintered metal								◐	◐	✠



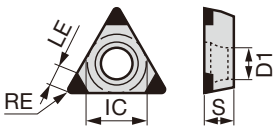
Shape	Designation Inch	Designation Metric	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper	Chipbreaker
3QP-TPGW	3QP-TPGW 630.5	3QP-TPGW080202	3	0.091	0.008	0.187	0.094	0.091	○							
	3QP-TPGW 631	3QP-TPGW080204	3	0.087	0.016	0.187	0.094	0.091	○							
	3QP-TPGW 632	3QP-TPGW080208	3	0.075	0.031	0.187	0.094	0.091	○							
	3QP-TPGW 730.5	3QP-TPGW090202	3	0.091	0.008	0.219	0.094	0.098	○							
	3QP-TPGW 731	3QP-TPGW090204	3	0.087	0.016	0.219	0.094	0.098	○							
	3QP-TPGW 732	3QP-TPGW090208	3	0.075	0.031	0.219	0.094	0.098	○							
	3QP-TPGW 21.50	3QP-TPGW110202	3	0.091	0.008	0.250	0.094	0.110	○							
	3QP-TPGW 21.51	3QP-TPGW110204	3	0.087	0.016	0.250	0.094	0.110	○							
	3QP-TPGW 21.52	3QP-TPGW110208	3	0.075	0.031	0.250	0.094	0.110	○							
	3QP-TPGW 220.5	3QP-TPGW110302	3	0.091	0.008	0.250	0.125	0.134	○							
	3QP-TPGW 221	3QP-TPGW110304	3	0.087	0.016	0.250	0.125	0.134	○							
	3QP-TPGW 222	3QP-TPGW110308	3	0.075	0.031	0.250	0.125	0.134	○							
	3QP-TPGW 2.520.5	3QP-TPGW130302	3	0.091	0.008	0.313	0.125	0.134	○							
	3QP-TPGW 2.521	3QP-TPGW130304	3	0.087	0.016	0.313	0.125	0.134	○							
	3QP-TPGW 2.522	3QP-TPGW130308	3	0.075	0.031	0.313	0.125	0.134	○							
	3QP-TPGW 32.50.5	3QP-TPGW16T302	3	0.091	0.008	0.375	0.156	0.173	○							
	3QP-TPGW 32.51	3QP-TPGW16T304	3	0.087	0.016	0.375	0.156	0.173	○							
	3QP-TPGW 32.52	3QP-TPGW16T308	3	0.075	0.031	0.375	0.156	0.173	○							
	3QP-TPGW 330.5	3QP-TPGW160402	3	0.091	0.008	0.375	0.187	0.173	○							
	3QP-TPGW 331	3QP-TPGW160404	3	0.087	0.016	0.375	0.187	0.173	○							
	3QP-TPGW 332	3QP-TPGW160408	3	0.075	0.031	0.375	0.187	0.173	○							
3QP-TPGW**F	3QP-TPGW 221F	3QP-TPGW110304F	3	0.087	0.016	0.250	0.125	0.134		○						
	3QP-TPGW 222F	3QP-TPGW110308F	3	0.075	0.031	0.250	0.125	0.134		○						
3QP-TPGW**-L	3QP-TPGW 220.5-L	3QP-TPGW110302-L	3	0.091	0.008	0.250	0.125	0.134			○					
	3QP-TPGW 221-L	3QP-TPGW110304-L	3	0.087	0.016	0.250	0.125	0.134			○					
	3QP-TPGW 222-L	3QP-TPGW110308-L	3	0.075	0.031	0.250	0.125	0.134			○					
3QP-TPGW**-LF	3QP-TPGW 220.5-LF	3QP-TPGW110302-LF	3	0.091	0.008	0.250	0.125	0.134				○				
	3QP-TPGW 221-LF	3QP-TPGW110304-LF	3	0.087	0.016	0.250	0.125	0.134				○				
	3QP-TPGW 222-LF	3QP-TPGW110308-LF	3	0.075	0.031	0.250	0.125	0.134				○				
3QP-TPGW**-LC	3QP-TPGW 220.5-LC	3QP-TPGW110302-LC	3	0.091	0.008	0.250	0.125	0.134					○			
	3QP-TPGW 221-LC	3QP-TPGW110304-LC	3	0.087	0.016	0.250	0.125	0.134					○			
	3QP-TPGW 222-LC	3QP-TPGW110308-LC	3	0.075	0.031	0.250	0.125	0.134					○			
3QP-TPGW**-H	3QP-TPGW 221-H	3QP-TPGW110304-H	3	0.087	0.016	0.250	0.125	0.134						○		
	3QP-TPGW 222-H	3QP-TPGW110308-H	3	0.075	0.031	0.250	0.125	0.134						○		
	3QP-TPGW 330.5-H	3QP-TPGW160402-H	3	0.091	0.008	0.375	0.187	0.173						○		
	3QP-TPGW 331-H	3QP-TPGW160404-H	3	0.087	0.016	0.375	0.187	0.173						○		
	3QP-TPGW 332-H	3QP-TPGW160408-H	3	0.075	0.031	0.375	0.187	0.173						○		

● : Line up

Reference pages: Internal toolholder → D050 -

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA10	BXA20	BX310	BX330	BX360	BX930
P	Steel								
M	Stainless								
K	Cast iron								◐
N	Non-ferrous								
S	Superalloy								
H	Hard material	●	◐	●	◐	●	◐	◐	
	Sintered metal								

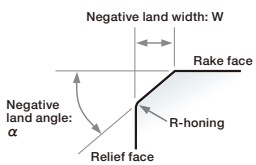


Shape	Designation Inch	Designation Metric	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper	Chipbreaker
3QP-TPGT	**3QP-TPGT221-HP**	**3QP-TPGT110304-HP**	3	0.087	0.016	0.250	0.125	0.134								○
	3QP-TPGT222-HP	3QP-TPGT110308-HP	3	0.075	0.031	0.250	0.125	0.134								○
																
3QP-TPMW	**3QP-TPMW 631**	**3QP-TPMW080204**	3	0.087	0.016	0.187	0.094	0.091	○							
	3QP-TPMW 730.5	**3QP-TPMW090202**	3	0.091	0.008	0.219	0.094	0.098	○							
	3QP-TPMW 731	3QP-TPMW090204	3	0.087	0.016	0.219	0.094	0.098	○							
	3QP-TPMW 21.50.5	**3QP-TPMW110202**	3	0.091	0.008	0.250	0.094	0.110	○							
	3QP-TPMW 21.51	3QP-TPMW110204	3	0.087	0.016	0.250	0.094	0.110	○							
	3QP-TPMW 220.5	**3QP-TPMW110302**	3	0.091	0.008	0.250	0.125	0.134	○							
	3QP-TPMW 221	3QP-TPMW110304	3	0.087	0.016	0.250	0.125	0.134	○							
	3QP-TPMW 222	3QP-TPMW110308	3	0.075	0.031	0.250	0.125	0.134	○							
	3QP-TPMW 2.520.5	**3QP-TPMW130302**	3	0.091	0.008	0.313	0.125	0.134	○							
	3QP-TPMW 2.521	3QP-TPMW130304	3	0.087	0.016	0.313	0.125	0.134	○							
	3QP-TPMW 32.51	**3QP-TPMW16T304**	3	0.087	0.016	0.375	0.156	0.173	○							
	3QP-TPMW 32.52	3QP-TPMW16T308	3	0.075	0.031	0.375	0.156	0.173	○							
	3QP-TPMW 331	**3QP-TPMW160404**	3	0.087	0.016	0.375	0.187	0.173	○							
	3QP-TPMW 332	3QP-TPMW160408	3	0.075	0.031	0.375	0.187	0.173	○							
3QP-TCGW	**3QP-TCGW 730.5**	**3QP-TCGW090202**	3	0.091	0.008	0.219	0.094	0.098	○							
	3QP-TCGW 731	3QP-TCGW090204	3	0.087	0.016	0.219	0.094	0.098	○							
	3QP-TCGW 732	3QP-TCGW090208	3	0.075	0.031	0.219	0.094	0.098	○							
	3QP-TCGW 21.50.5	**3QP-TCGW110202**	3	0.091	0.008	0.250	0.094	0.110	○							
	3QP-TCGW 21.51	3QP-TCGW110204	3	0.087	0.016	0.250	0.094	0.110	○							
	3QP-TCGW 21.52	3QP-TCGW110208	3	0.075	0.031	0.250	0.094	0.110	○							
	3QP-TCGW 32.50.5	**3QP-TCGW16T302**	3	0.091	0.008	0.375	0.156	0.173	○							
	3QP-TCGW 32.51	3QP-TCGW16T304	3	0.087	0.016	0.375	0.156	0.173	○							
	3QP-TCGW 32.52	3QP-TCGW16T308	3	0.075	0.031	0.375	0.156	0.173	○							

● : Line up

Edge preparation specification

	BXM10 BXM20	BXA20	BX310 BX330 BX360 BX480 BX930	BX470	BX910
Standard	S01325	S01325	S00515	T01315	S01315
Sharp edge	-	-	-	F	-
-L	-	S01315	-	-	-
-LF	-	S00515	-	-	-
-LC	-	S00535	-	-	-
-H	-	S01835	-	-	-
Wiper	-	S01315	-	-	-



S	0	1	3	2	5
Edge prep. ID	Negative land width W			Negative land angle α	

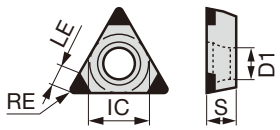
T ··· Chamfered
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

Reference pages: Internal toolholder → D050 -

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

P	Steel		
M	Stainless		
K	Cast iron		
N	Non-ferrous		
S	Superalloy		
H	Hard material	●◐	●◐



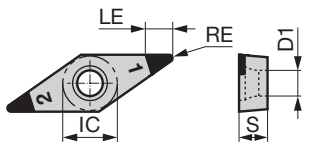
Shape	Designation Inch	Designation Metric	BX330	BX360	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper	Chipbreaker
Q-TPMW	**Q-TPMW 631**	**Q-TPMW080204**	●		1	0.087	0.016	0.187	0.094	0.091	○							
	Q-TPMW 730.5	**Q-TPMW090202**	●		1	0.094	0.008	0.219	0.094	0.098	○							
	Q-TPMW 731	Q-TPMW090204	●		1	0.091	0.016	0.219	0.094	0.098	○							
	Q-TPMW 21.50.5	**Q-TPMW110202**	●		1	0.094	0.008	0.250	0.094	0.110	○							
	Q-TPMW 21.51	Q-TPMW110204	●		1	0.087	0.016	0.250	0.094	0.110	○							
	Q-TPMW 221	**Q-TPMW110304**	●		1	0.087	0.016	0.250	0.125	0.134	○							
	Q-TPMW 222	Q-TPMW110308	●		1	0.079	0.031	0.250	0.125	0.134	○							
	Q-TPMW 2.520.5	**Q-TPMW130302**	●		1	0.094	0.008	0.313	0.125	0.134	○							
	Q-TPMW 2.521	Q-TPMW130304	●		1	0.091	0.016	0.313	0.125	0.134	○							
	Q-TPMW 32.51	**Q-TPMW16T304**	●		1	0.091	0.016	0.375	0.156	0.173	○							
	Q-TPMW 331	**Q-TPMW160404**	●		1	0.091	0.016	0.375	0.187	0.173	○							
	Q-TPMW 332	Q-TPMW160408	●		1	0.079	0.031	0.375	0.187	0.173	○							
TPGW-QBN**	**TPGW 730.5 QBN**	**TPGW090202-QBN**		●	1	0.130	0.008	0.219	0.094	0.098	○							
	TPGW 731 QBN	TPGW090204-QBN		●	1	0.126	0.016	0.219	0.094	0.098	○							
	TPGW 21.50.5 QBN	**TPGW110202-QBN**		●	1	0.154	0.008	0.250	0.094	0.110	○							
	TPGW 21.51 QBN	TPGW110204-QBN		●	1	0.146	0.016	0.250	0.094	0.110	○							
	TPGW 2.520.5 QBN	**TPGW130302-QBN**		●	1	0.154	0.008	0.313	0.125	0.134	○							
	TPGW 2.521 QBN	TPGW130304-QBN		●	1	0.146	0.016	0.313	0.125	0.134	○							
	TPGW 32.50.5 QBN	**TPGW16T302-QBN**		●	1	0.173	0.008	0.375	0.156	0.173	○							
	TPGW 32.51 QBN	TPGW16T304-QBN		●	1	0.165	0.016	0.375	0.156	0.173	○							
	TPGW 32.52 QBN	TPGW16T308-QBN		●	1	0.157	0.031	0.375	0.156	0.173	○							
TPGA-QBN**	**TPGA 730.5 QBN**	**TPGA090202-QBN**		●	1	0.122	0.008	0.219	0.094	0.126	○							
	TPGA 731 QBN	TPGA090204-QBN		●	1	0.114	0.016	0.219	0.094	0.126	○							
	TPGA 21.50.5 QBN	**TPGA110202-QBN**		●	1	0.154	0.008	0.250	0.094	0.118	○							
	TPGA 21.51 QBN	TPGA110204-QBN		●	1	0.146	0.016	0.250	0.094	0.118	○							
	TPGA 220.5 QBN	**TPGA110302-QBN**		●	1	0.154	0.008	0.250	0.125	0.118	○							
	TPGA 221 QBN	TPGA110304-QBN		●	1	0.146	0.016	0.250	0.125	0.118	○							
	TPGA 320.5 QBN	**TPGA160302-QBN**		●	1	0.173	0.008	0.375	0.125	0.157	○							
	TPGA 321 QBN	TPGA160304-QBN		●	1	0.165	0.016	0.375	0.125	0.157	○							
	TPGA 322 QBN	TPGA160308-QBN		●	1	0.157	0.031	0.375	0.125	0.157	○							

Q-TPMW: 2 pieces per package

● : Line up

Reference pages: Internal toolholder → D050 -

		BXM10	BXM20	BXA10	BXA20
P	Steel				
M	Stainless				
K	Cast iron				
N	Non-ferrous				
S	Superalloy				
H	Hard material	●	◐	●	◐
	Sintered metal				

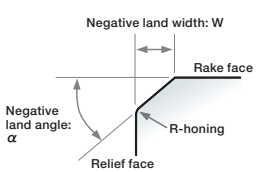


Shape	Designation Inch	Designation Metric	BXM10	BXM20	BXA10	BXA20	No. of corners	LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper	Chipbreaker
2QP-VBGW	2QP-VBGW 21.50.5	2QP-VBGW110202			●	●	2	0.138	0.008	0.250	0.094	0.110	○							
	2QP-VBGW 21.51	2QP-VBGW110204			●	●	2	0.122	0.016	0.250	0.094	0.110	○							
	2QP-VBGW 21.52	2QP-VBGW110208			●	●	2	0.087	0.031	0.250	0.094	0.110	○							
	2QP-VBGW 220.2	2QP-VBGW110301			●	●	2	0.146	0.004	0.250	0.125	0.110	○							
	2QP-VBGW 220.5	2QP-VBGW110302			●	●	2	0.138	0.008	0.250	0.125	0.110	○							
	2QP-VBGW 221	2QP-VBGW110304	●	●	●	●	2	0.122	0.016	0.250	0.125	0.110	○							
	2QP-VBGW 222	2QP-VBGW110308	●	●	●	●	2	0.087	0.031	0.250	0.125	0.110	○							
	2QP-VBGW 330.5	2QP-VBGW160402			●	●	2	0.138	0.008	0.375	0.187	0.173	○							
	2QP-VBGW 331	2QP-VBGW160404	●	●	●	●	2	0.122	0.016	0.375	0.187	0.173	○							
	2QP-VBGW 332	2QP-VBGW160408	●	●	●	●	2	0.087	0.031	0.375	0.187	0.173	○							
	2QP-VBGW 333	2QP-VBGW160412			●	●	2	0.118	0.047	0.375	0.187	0.173	○							
2QP-VBGW**-L	2QP-VBGW 220.5-L	2QP-VBGW110302-L			●	●	2	0.138	0.008	0.250	0.125	0.110			○					
	2QP-VBGW 221-L	2QP-VBGW110304-L			●	●	2	0.122	0.016	0.250	0.125	0.110			○					
	2QP-VBGW 222-L	2QP-VBGW110308-L			●	●	2	0.087	0.031	0.250	0.125	0.110			○					
	2QP-VBGW 330.5-L	2QP-VBGW160402-L			●	●	2	0.138	0.008	0.375	0.187	0.173			○					
	2QP-VBGW 331-L	2QP-VBGW160404-L			●	●	2	0.122	0.016	0.375	0.187	0.173			○					
	2QP-VBGW 332-L	2QP-VBGW160408-L			●	●	2	0.087	0.031	0.375	0.187	0.173			○					
2QP-VBGW**-LF	2QP-VBGW 220.5-LF	2QP-VBGW110302-LF			●	●	2	0.138	0.008	0.250	0.125	0.110				○				
	2QP-VBGW 221-LF	2QP-VBGW110304-LF			●	●	2	0.122	0.016	0.250	0.125	0.110				○				
	2QP-VBGW 222-LF	2QP-VBGW110308-LF			●	●	2	0.087	0.031	0.250	0.125	0.110				○				
	2QP-VBGW 330.5-LF	2QP-VBGW160402-LF			●	●	2	0.138	0.008	0.375	0.187	0.173				○				
	2QP-VBGW 331-LF	2QP-VBGW160404-LF			●	●	2	0.122	0.016	0.375	0.187	0.173				○				
	2QP-VBGW 332-LF	2QP-VBGW160408-LF			●	●	2	0.087	0.031	0.375	0.187	0.173				○				
2QP-VBGW**-LC	2QP-VBGW 220.5-LC	2QP-VBGW110302-LC			●	●	2	0.138	0.008	0.250	0.125	0.110					○			
	2QP-VBGW 221-LC	2QP-VBGW110304-LC			●	●	2	0.122	0.016	0.250	0.125	0.110					○			
	2QP-VBGW 222-LC	2QP-VBGW110308-LC			●	●	2	0.087	0.031	0.250	0.125	0.110					○			
	2QP-VBGW 330.5-LC	2QP-VBGW160402-LC			●	●	2	0.138	0.008	0.375	0.187	0.173					○			
	2QP-VBGW 331-LC	2QP-VBGW160404-LC			●	●	2	0.122	0.016	0.375	0.187	0.173					○			
	2QP-VBGW 332-LC	2QP-VBGW160408-LC			●	●	2	0.087	0.031	0.375	0.187	0.173					○			
2QP-VBGW**-H	2QP-VBGW 331-H	2QP-VBGW160404-H				●	2	0.122	0.016	0.375	0.187	0.173						○		
	2QP-VBGW 332-H	2QP-VBGW160408-H				●	2	0.087	0.031	0.375	0.187	0.173						○		

● : Line up

Edge preparation specification

	BXM10 BXM20	BXA20	BX310 BX330 BX360 BX480 BX930	BX470	BX910
Standard	S01325	S01325	S00515	T01315	S01315
Sharp edge	-	-	-	F	-
-L	-	S01315	-	-	-
-LF	-	S00515	-	-	-
-LC	-	S00535	-	-	-
-H	-	S01835	-	-	-
Wiper	-	S01315	-	-	-



S	0	1	3	2	5
Edge prep. ID	Negative land width W			Negative land angle α	

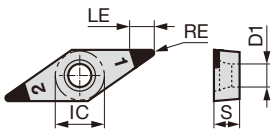
T ··· Chamfered
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

Reference pages: External toolholder → C065 - Internal toolholder → D043 -
J-Series toolholder → G044 - TungCap → K021

CBN Insert POSITIVE TYPE

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

		BXM10	BXM20	BXA10	BXA20	BX310	BX330	BX360	BX930
P	Steel								
M	Stainless								
K	Cast iron								●◐
N	Non-ferrous								
S	Superalloy								
H	Hard material	●	●◐	●	●◐	●	●◐	●◐	
	Sintered metal								

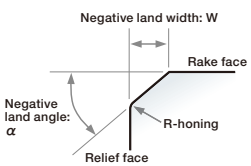


Shape	Designation Inch	Designation Metric	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Standard	Sharp edge	L	LF	LC	H	Wiper	Chipbreaker
2QP-VBGT-HP**	**2QP-VBGT221-HP**	**2QP-VBGT110304-HP**	2	0.118	0.016	0.250	0.125	0.110								○
	2QP-VBGT222-HP	2QP-VBGT110308-HP	2	0.087	0.031	0.250	0.125	0.110								○
	2QP-VBGT331-HP	**2QP-VBGT160404-HP**	2	0.118	0.016	0.375	0.187	0.173								○
	2QP-VBGT332-HP	2QP-VBGT160408-HP	2	0.087	0.031	0.375	0.187	0.173								○
2QP-VBMW	**2QP-VBMW221**	**2QP-VBMW110304**	2	0.122	0.016	0.250	0.125	0.110	○							
	2QP-VBMW222	2QP-VBMW110308	2	0.087	0.031	0.250	0.125	0.110	○							
	2QP-VBMW331	**2QP-VBMW160404**	2	0.122	0.016	0.375	0.187	0.173	○							
	2QP-VBMW332	2QP-VBMW160408	2	0.087	0.031	0.375	0.187	0.173	○							
2QP-VCGW	**2QP-VCGW 630.5**	**2QP-VCGW080202**	2	0.138	0.080	0.187	0.094	0.091	○							
	2QP-VCGW 631	2QP-VCGW080204	2	0.122	0.016	0.187	0.094	0.091	○							
	2QP-VCGW 632	2QP-VCGW080208	2	0.087	0.031	0.187	0.094	0.091	○							
	2QP-VCGW 330.5	**2QP-VCGW160402**	2	0.138	0.080	0.375	0.187	0.173	○							
	2QP-VCGW 331	2QP-VCGW160404	2	0.122	0.016	0.375	0.187	0.173	○							
	2QP-VCGW 332	2QP-VCGW160408	2	0.087	0.031	0.375	0.187	0.173	○							
2QP-VCGW-H**	**2QP-VCGW 330.5-H**	**2QP-VCGW160402-H**	2	0.138	0.080	0.375	0.187	0.173						○		
	2QP-VCGW 331-H	2QP-VCGW160404-H	2	0.122	0.016	0.375	0.187	0.173						○		
	2QP-VCGW 332-H	2QP-VCGW160408-H	2	0.087	0.031	0.375	0.187	0.173						○		
2QP-VCMW	**2QP-VCMW331**	**2QP-VCMW160404**	2	0.122	0.016	0.375	0.187	0.173	○							

● : Line up

Edge preparation specification

	BXM10 BXM20	BXA20	BX310 BX330 BX360 BX480 BX930	BX470	BX910
Standard	S01325	S01325	S00515	T01315	S01315
Sharp edge	-	-	-	F	-
-L	-	S01315	-	-	-
-LF	-	S00515	-	-	-
-LC	-	S00535	-	-	-
-H	-	S01835	-	-	-
Wiper	-	S01315	-	-	-



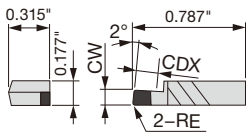
S 0 1 3 2 5

Edge prep. ID: T ··· Chamfered; S ··· Chamfered + R-honing; E ··· R-honing alone; F ··· Sharp edge
Negative land width W
Negative land angle α

Reference pages: External toolholder → C065 - Internal toolholder → D043 -
J-Series toolholder → G044 - TungCap → K016 -

For GX-RE

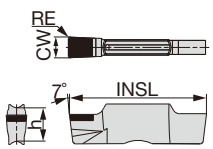
P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloy	
H	Hard material	●◐



Shape	Designation	BX360	Dimension (inch) CW±0.05	RE	CDX
XGR-QBN**	**XGR6310S-QBN**		0.039	0.008	0.059
	XGR6315S-QBN	●	0.059	0.008	0.091
	XGR6320S-QBN	●	0.079	0.008	0.118
	XGR6325S-QBN	●	0.098	0.008	0.150
	XGR6330S-QBN	●	0.118	0.008	0.177
	XGR6335S-QBN	●	0.138	0.008	0.209
	XGR6340S-QBN	●	0.157	0.008	0.236
	XGR6345S-QBN	●	0.177	0.008	0.236

For TungCut

P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloy	
H	Hard material	●◐

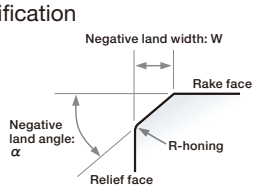


Shape	Designation	BX360	Dimension (inch) Seat size	CW±0.025	RE	INSL	h	Edge prep. Standard	S	H
SGN	**SGN200-020**	●	2	0.079	0.008	0.787	0.197	○		
	SGN300-020	●	3	0.118	0.008	0.787	0.197	○		
	SGN400-020	●	4	0.157	0.008	0.787	0.197	○		
SGN-S**	**SGN200-020-S**	●	2	0.079	0.008	0.787	0.197		○	
	SGN300-020-S	●	3	0.118	0.008	0.787	0.197		○	
	SGN400-020-S	●	4	0.157	0.008	0.787	0.197		○	
	SGN500-020-S	●	5	0.197	0.008	0.984	0.217		○	
SGN-H**	**SGN200-020-H**	●	2	0.079	0.008	0.787	0.197			○
	SGN300-020-H	●	3	0.118	0.008	0.787	0.197			○
	SGN400-020-H	●	4	0.157	0.008	0.787	0.197			○
	SGN500-020-H	●	5	0.197	0.008	0.984	0.217			○

● : Line up

Edge preparation specification

	BX360
Standard	E002
-S	S01325
-H	S01335



S	0	1	3	2	5
Edge prep. ID	Negative land width W			Negative land angle α	

S ··· Chamfered + R-honing
E ··· R-honing alone

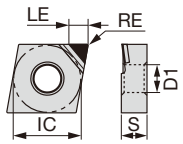
Reference pages: XGR...: Toolholder → F100 - SGN...: Toolholder → F013 -

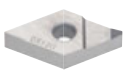
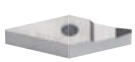
PCD Insert

● : Continuous cutting
ᑕ : Light interrupted cutting
✣ : Heavy interrupted cutting

Negative type with rake

P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	●ᑕ●ᑕ
S	Superalloy	
H	Hard material	



Shape	Designation Inch	Designation Metric	DX110	DX120	Dimension (inch) No. of corners	LE	RE	IC	S	D1	Edge prep. Sharp edge	Rake angle
CNMM-DIA**	**CNMM 430.5 DIA**	**CNMM120402-DIA**		●	1	0.138	0.008	0.500	0.187	0.203	○	○
	**CNMM 431 DIA**	**CNMM120404-DIA**		●	1	0.138	0.016	0.500	0.187	0.203	○	○
	1QP-CNMM 430.5	**1QP-CNMM120402**	●		1	0.110	0.008	0.500	0.187	0.203	○	○
	1QP-CNMM 431	**1QP-CNMM120404**	●		1	0.110	0.016	0.500	0.187	0.203	○	○
DNMM-DIA**	**DNMM 430.5 DIA**	**DNMM150402-DIA**		●	1	0.130	0.008	0.500	0.187	0.203	○	○
	**DNMM 431 DIA**	**DNMM150404-DIA**		●	1	0.122	0.016	0.500	0.187	0.203	○	○
TNMM-DIA**	**TNMM 330.5 DIA**	**TNMM160402-DIA**		●	1	0.130	0.008	0.375	0.187	0.150	○	○
	**TNMM 331 DIA**	**TNMM160404-DIA**		●	1	0.126	0.016	0.375	0.187	0.150	○	○
	1QP-TNMM 330.5	**1QP-TNMM160402**	●		1	0.106	0.008	0.375	0.187	0.150	○	○
	1QP-TNMM 331	**1QP-TNMM160404**	●		1	0.102	0.016	0.375	0.187	0.150	○	○
VNMM-DIA**	**VNMM 330.5 DIA**	**VNMM160402-DIA**		●	1	0.189	0.008	0.375	0.187	0.150	○	○
	**VNMM 331 DIA**	**VNMM160404-DIA**		●	1	0.173	0.016	0.375	0.187	0.150	○	○
	VNMM 332 DIA	**VNMM160408-DIA**		●	1	0.142	0.031	0.375	0.187	0.150	○	○

● : Line up

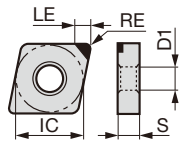
Reference pages: External toolholder → C018 - Internal toolholder → D028 -
J-Series toolholder → G057 - TungCap → K008 -

PCD Insert

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

Negative type

		DX140	DX160
P	Steel	◐	◐
M	Stainless		
K	Cast iron		
N	Non-ferrous	●	●
S	Superalloy		
H	Hard material		



Shape	Designation Inch	Designation Metric	DX140	DX160	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Sharp edge
CNGA-DIA**	**CNGA 431 DIA**	**CNGA120404-DIA**	●		1	0.138	0.016	0.500	0.187	0.203	○
	CNGA 432 DIA	**CNGA120408-DIA**	●		1	0.110	0.031	0.500	0.187	0.203	○
DNGA-DIA**	**DNGA 431 DIA**	**DNGA150404-DIA**	●	●	1	0.122	0.016	0.500	0.187	0.203	○
	DNGA 432 DIA	**DNGA150408-DIA**	●		1	0.110	0.031	0.500	0.187	0.203	○
SNGA-DIA**	**SNGA 431 DIA**	**SNGA120404-DIA**	●		1	0.142	0.016	0.500	0.187	0.203	○
	SNGA 432 DIA	**SNGA120408-DIA**	●		1	0.142	0.031	0.500	0.187	0.203	○
SNGN-DIA**	**SNGN 432 DIA**	**SNGN120408-DIA**	●		1	0.142	0.031	0.500	0.187	-	○
TNGA-DIA**	**TNGA 331 DIA**	**TNGA160404-DIA**	●	●	1	0.126	0.016	0.375	0.187	0.150	○
	TNGA 332 DIA	**TNGA160408-DIA**	●	●	1	0.031	0.031	0.375	0.187	0.150	○

● : Line up

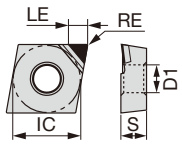
Reference pages: External toolholder → C018 - Internal toolholder → D028 -
J-Series toolholder → G057 - TungCap → K008 -

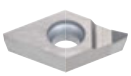
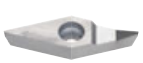
PCD Insert

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

Positive type with rake

P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	●◐●◐
S	Superalloy	
H	Hard material	



Shape	Designation Inch	Designation Metric	DX110	DX120	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Sharp edge	Rake angle
CCMT-DIA**	**CCMT 21.50.5-DIA**	**CCMT060202-DIA**		●	1	0.094	0.008	0.250	0.094	0.110	○	○
	CCMT 21.51-DIA	CCMT060204-DIA		●	1	0.094	0.016	0.250	0.094	0.110	○	○
	CCMT 32.50.5-DIA	**CCMT09T302-DIA**		●	1	0.094	0.008	0.375	0.156	0.173	○	○
	CCMT 32.51-DIA	CCMT09T304-DIA		●	1	0.094	0.016	0.375	0.156	0.173	○	○
	1QP-CCMT 21.51	**1QP-CCMT060204**	●		1	0.094	0.016	0.250	0.094	0.110	○	○
	1QP-CCMT 32.51	1QP-CCMT09T304	●		1	0.094	0.016	0.250	0.156	0.173	○	○
DCMT-DIA**	**DCMT 21.50.5-DIA**	**DCMT070202-DIA**		●	1	0.094	0.008	0.250	0.094	0.110	○	○
	DCMT 21.51-DIA	DCMT070204-DIA		●	1	0.016	0.016	0.250	0.094	0.110	○	○
	DCMT 32.50.5-DIA	**DCMT11T302-DIA**		●	1	0.126	0.008	0.375	0.156	0.173	○	○
	DCMT 32.51-DIA	DCMT11T304-DIA		●	1	0.118	0.016	0.375	0.156	0.173	○	○
TCMT-DIA**	**TCMT 630.5-DIA**	**TCMT080202-DIA**		●	1	0.087	0.008	0.187	0.094	0.106	○	○
	TCMT 631-DIA	TCMT080204-DIA		●	1	0.075	0.016	0.187	0.094	0.106	○	○
	TCMT 21.50.5-DIA	**TCMT110202-DIA**		●	1	0.094	0.008	0.250	0.094	0.110	○	○
	TCMT 21.51-DIA	TCMT110204-DIA		●	1	0.087	0.016	0.250	0.094	0.110	○	○
	TCMT 220.5-DIA	**TCMT110302-DIA**		●	1	0.094	0.008	0.250	0.125	0.110	○	○
	TCMT 221-DIA	TCMT110304-DIA		●	1	0.087	0.016	0.250	0.125	0.110	○	○
	1QP-TCMT 221	**1QP-TCMT110304**	●		1	0.087	0.016	0.250	0.125	0.110	○	○
VCMT-DIA**	**VCMT 330.5-DIA**	**VCMT160402-DIA**		●	1	0.189	0.008	0.375	0.187	0.173	○	○
	VCMT 331-DIA	VCMT160404-DIA		●	1	0.173	0.016	0.375	0.187	0.173	○	○
												

● : Line up

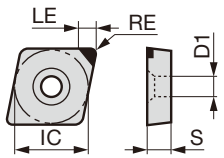
Reference pages: External toolholder → C026 - Internal toolholder → D028 -
J-Series toolholder → G027 - TungCap → K016 -

PCD Insert

● : Continuous cutting
◐ : Light interrupted cutting
✠ : Heavy interrupted cutting

Positive type

		DX120	DX140	DX160
P	Steel	◐	◐	◐
M	Stainless			
K	Cast iron			
N	Non-ferrous	●	●	●
S	Superalloy			
H	Hard material			



Shape	Designation Inch	Designation Metric	DX120	DX140	DX160	No. of corners	Dimension (inch) LE	RE	IC	S	D1	Edge prep. Sharp edge
CCGW-DIA**	**CCGW 21.5V-DIA**	**CCGW060200-DIA**		●		1	0.094	0.002	0.250	0.094	0.110	○
	CCGW 21.5**0.5-DIA**	CCGW060**202-DIA**		●		1	0.094	0.008	0.250	0.094	0.110	○
	CCGW 21.5**1-DIA**	CCGW060**204-DIA**		●		1	0.094	0.016	0.250	0.094	0.110	○
	**CCGW 32.50.5-DIA**	**CCGW09T302-DIA**		●		1	0.138	0.008	0.375	0.156	0.173	○
	CCGW 32.5**1-DIA**	CCGW09T3**04-DIA**		●	●	1	0.138	0.016	0.375	0.156	0.173	○
	CCGW 32.5**2-DIA**	CCGW09T3**08-DIA**		●		1	0.134	0.031	0.375	0.156	0.173	○
CPGA-DIA**	**CPGA080202-DIA**	**CPGA080202-DIA**		●		1	0.094	0.008	0.375	0.094	0.157	○
	CPGA 31.51 **DIA**	CPGA0902**04-DIA**		●		1	0.138	0.016	0.375	0.094	0.157	○
												
DCGW-DIA**	**DCGW 21.5V-DIA**	**DCGW070200-DIA**		●		1	0.094	0.002	0.250	0.094	0.110	○
	DCGW 21.5**0.5-DIA**	DCGW0702**02-DIA**	●	●		1	0.094	0.008	0.250	0.094	0.110	○
	DCGW 21.5**1-DIA**	DCGW0702**04-DIA**		●		1	0.016	0.016	0.250	0.094	0.110	○
	**DCGW 32.50.5-DIA**	**DCGW11T302-DIA**		●		1	0.126	0.008	0.375	0.156	0.173	○
	DCGW 32.5**1-DIA**	DCGW11T3**04-DIA**		●		1	0.118	0.016	0.375	0.156	0.173	○
	DCGW 32.5**2-DIA**	DCGW11T3**08-DIA**		●		1	0.106	0.031	0.375	0.156	0.173	○
EPGW-DIA**	**EPGW 520.5-DIA**	**EPGW040102-DIA**		●		1	0.075	0.008	0.125	0.063	0.091	○
	EPGW 52**1-DIA**	EPGW0401**04-DIA**		●		1	0.075	0.016	0.125	0.063	0.091	○
												
SPGN-DIA**	**SPGN 322-DIA**	**SPGN090308-DIA**		●		1	0.142	0.031	0.375	0.125	-	○
	SPGN 420.5-DIA	**SPGN120302-DIA**		●		1	0.142	0.008	0.500	0.125	-	○
	SPGN 42**1-DIA**	SPGN1203**04-DIA**		●		1	0.142	0.016	0.500	0.125	-	○
	SPGN 42**2-DIA**	SPGN1203**08-DIA**		●	●	1	0.142	0.031	0.500	0.125	-	○

● : Line up

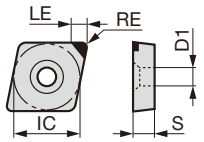
Reference pages: External toolholder → C026 - Internal toolholder → D028 -

PCD Insert

● : Continuous cutting
◐ : Light interrupted cutting
✣ : Heavy interrupted cutting

Positive type

P	Steel		
M	Stainless		
K	Cast iron		
N	Non-ferrous	●◐	●◐
S	Superalloy		
H	Hard material		



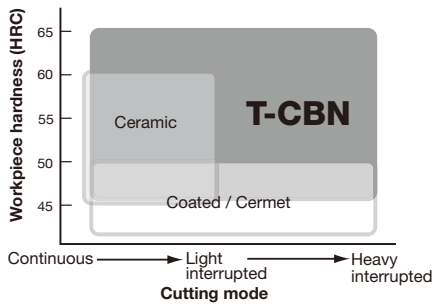
Shape	Designation Inch	Designation Metric	DX120	DX140	Dimension (inch) No. of corners	LE	RE	IC	S	D1	Edge prep. Sharp edge
TPGA-DIA**	**TPGA730.5-DIA**	**TPGA090202-DIA**		●	1	0.094	0.008	0.219	0.094	0.098	○
	TPGA731-DIA	TPGA090204-DIA		●	1	0.087	0.016	0.219	0.094	0.098	○
	TPGA21.50.5-DIA	**TPGA110202-DIA**		●	1	0.094	0.008	0.250	0.094	0.110	○
	TPGA21.51-DIA	TPGA110204-DIA		●	1	0.087	0.016	0.250	0.094	0.110	○
	TPGA220.5-DIA	**TPGA110302-DIA**		●	1	0.094	0.008	0.250	0.125	0.118	○
	TPGA221-DIA	TPGA110304-DIA		●	1	0.087	0.016	0.250	0.125	0.118	○
	TPGA222-DIA	**TPGA110308-DIA**		●	1	0.031	0.031	0.250	0.125	0.118	○
	TPGA320.5-DIA	**TPGA160302-DIA**		●	1	0.130	0.008	0.375	0.125	0.157	○
	TPGA321-DIA	TPGA160304-DIA		●	1	0.126	0.016	0.375	0.125	0.157	○
	TPGA322-DIA	TPGA160308-DIA		●	1	0.031	0.031	0.375	0.125	0.157	○
TPGN-DIA**	**TPGN 731-DIA**	**TPGN090204-DIA**		●	1	0.087	0.016	0.219	0.094	-	○
	TPGN 221-DIA	**TPGN110304-DIA**	●	●	1	0.126	0.016	0.250	0.125	-	○
	TPGN 222-DIA	TPGN110308-DIA		●	1	0.031	0.031	0.250	0.125	-	○
	TPGN 320.5-DIA	**TPGN160302-DIA**		●	1	0.130	0.008	0.375	0.125	-	○
	TPGN 321-DIA	TPGN160304-DIA	●	●	1	0.126	0.016	0.375	0.125	-	○
	TPGN 322-DIA	TPGN160308-DIA		●	1	0.031	0.031	0.375	0.125	-	○
TPGW-DIA**	**TPGW 630.5-DIA**	**TPGW080202-DIA**		●	1	0.094	0.008	0.187	0.094	0.091	○
	TPGW 631-DIA	TPGW080204-DIA		●	1	0.094	0.016	0.187	0.094	0.091	○
	TPGW 730.5-DIA	**TPGW090202-DIA**	●	●	1	0.094	0.008	0.219	0.094	0.098	○
	TPGW 731-DIA	TPGW090204-DIA		●	1	0.087	0.016	0.219	0.094	0.098	○
	TPGW 21.50.5-DIA	**TPGW110202-DIA**	●	●	1	0.094	0.008	0.250	0.094	0.110	○
	TPGW 21.51-DIA	TPGW110204-DIA		●	1	0.087	0.016	0.250	0.094	0.110	○
	TPGW 2.520.5-DIA	**TPGW130302-DIA**	●	●	1	0.130	0.008	0.313	0.125	0.134	○
	TPGW 2.521-DIA	TPGW130304-DIA		●	1	0.126	0.016	0.313	0.125	0.134	○
	TPGW 32.50.5-DIA	**TPGW16T302-DIA**		●	1	0.130	0.008	0.375	0.156	0.173	○
	TPGW 32.51-DIA	TPGW16T304-DIA		●	1	0.126	0.016	0.375	0.156	0.173	○
	TPGW 32.52-DIA	TPGW16T308-DIA		●	1	0.031	0.031	0.375	0.156	0.173	○
VCGW-DIA**	**VCGW 330.5-DIA**	**VCGW160402-DIA**		●	1	0.189	0.008	0.375	0.187	0.173	○
	VCGW 331-DIA	VCGW160404-DIA		●	1	0.173	0.016	0.375	0.187	0.173	○

● : Line up

Reference pages: External toolholder → C075 - Internal toolholder → D050 -

H T-CBN series for hardened steel and hard material

Application area



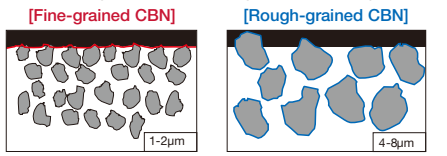
Necessity of PCBN grades

The condition necessary to cut the work

Material is:
Hardness of tool ≥ Hardness of tool X 3

- Hardened steel (60HRC) → 700 Hv
- Cemented carbide → 1600 Hv
- PCBN (BX360) → 3300 Hv

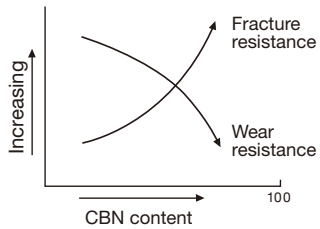
Relation of CBN grain size, surface roughness, and cutting speed



Fine grained PCBN provided with sharp cutting edge.
Good surface roughness

Rough grained PCBN. CBN particles are hold firmly.
Allows high speed machining

Features of CBN grades for machining hardened steel and other hard materials



Fewer CBN content ⇨ Increasing wear resistance
Much CBN content ⇨ Increasing impact resistance

Basic selection of T-CBN grades in machining of hardened steel and hard material

Coated T-CBN grades

BXA10 For continuous and light interrupted cutting

BXA20 For general purpose, less than *Vc* = 591 sfm

BXM10 For high speeds cutting

BXM20 For general purpose, more than *Vc* = 591 sfm

Uncoated T-CBN grades

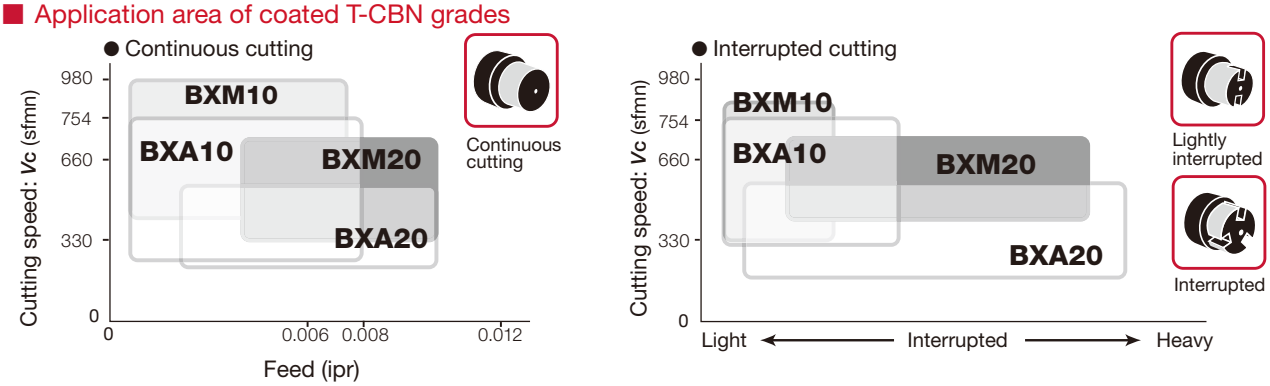
BX310 For high speeds / Priority on wear resistance in continuous cutting

BX330 For medium speeds / Priority on surface quality

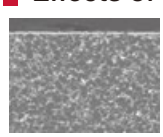
BX360 For low to medium speeds / General purpose grade with excellent fracture resistance

BX380 For low to medium speeds / Priority on fracture resistance in heavy interrupted cutting

Application area of coated T-CBN grades



Effects of Coated T-CBN grades

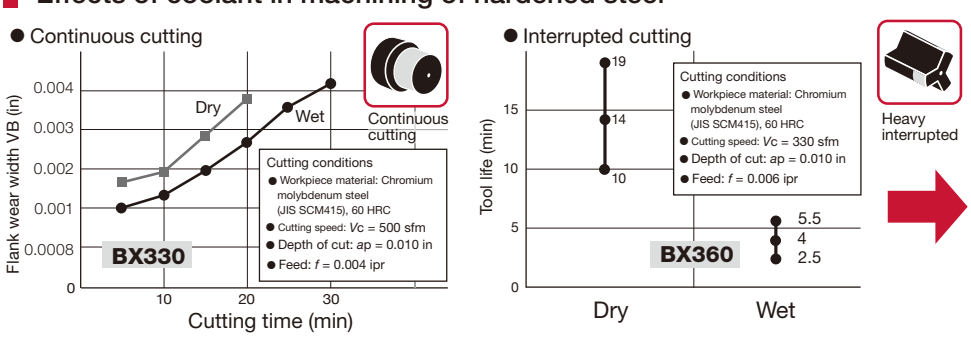


Coated on hard CBN
Hardness:
CBN > Coating layer

- **Protect CBN from oxidation wear**
  Since the coating layer intercepts air, oxidation wear of CBN can be prevented.
- **Peeling of coating layer can be prevented**
  Hard and deformation resistant CBN is excellent substrate material.

→ **Improved resistance to flank wear**

Effects of coolant in machining of hardened steel

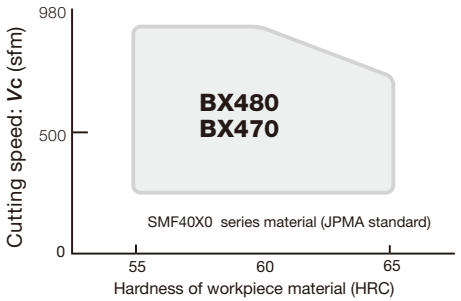


- In continuous cutting, wet cutting is superior to dry cutting in tool life for wear.
- In interrupted cutting, dry cutting is superior to wet cutting in tool life for fracture.

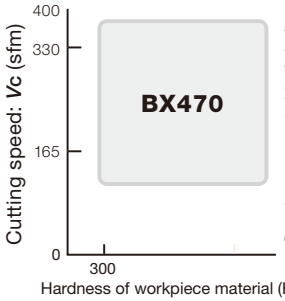
T-CBN series for sintered metal

Application area

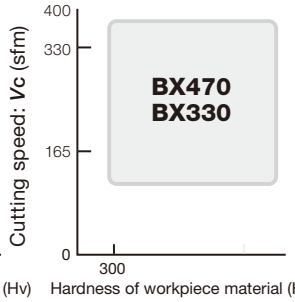
● Ferrous Sintered metal



● Valve seat (Plunge cutting)



● Valve seat (Traverse cutting)

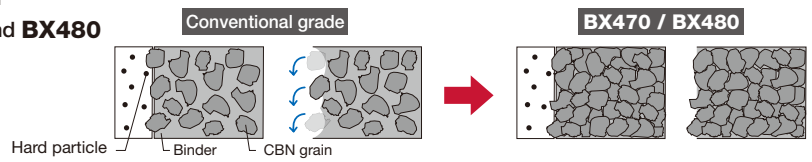


BX470
Priority on burr prevention and surface finish

BX480
Priority on wear resistance and versatility

Features of BX470 and BX480

● Machining of sintered metal with hard particles



Binder phase are selectively worn away by hard particles.
⇨ Wear proceeds with falling-out of CBN grains,

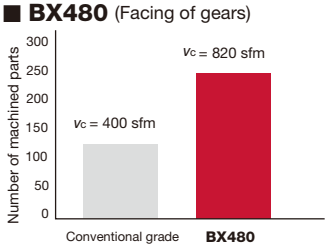
By increasing CBN content, wear of binder layer is suppressed.
⇨ Improved wear resistance

● Features of **BX470** and **BX480**

CBN content: 95 vol%
Hv = 4100 ~ 4300

The world highest CBN content as a commercially available material.

■ BX480 (Facing of gears)

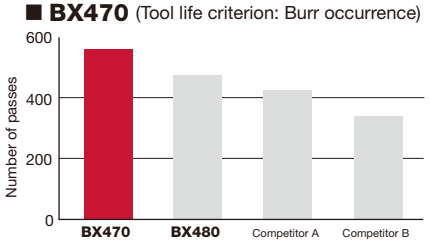


Cutting conditions
- Workpiece material: Sintered metal (> HRA60)
- Insert: DCMW11T308
- Depth of cut: ap = 0.008 ~ 0.020 in
- Feed : f = 0.003 ipr
- Coolant : Water soluble type
- Interrupted cutting

■ BX470/BX480 Tool failure after machining sintered metal

Cutting conditions
- Workpiece material: Sintered metal (> HRA60), Nitriding, Hard particles included
- Cutting speed: Vc = 330 sfm
- Depth of cut: ap = 0.006 in
- Feed: f = 0.004 ipr
- Coolant : Water soluble type
- Interrupted cutting

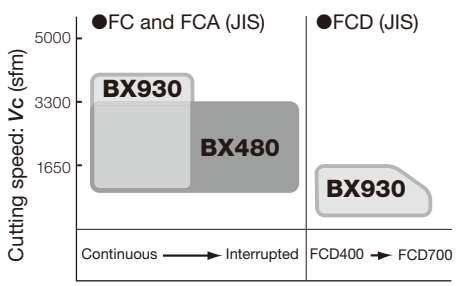
■ BX470 (Tool life criterion: Burr occurrence)



Cutting conditions
- Workpiece material: Ferrous Sintered metal
- Cutting speed: Vc = 330 sfm
- Depth of cut: ap = 0.006 ~ 0.012 in
- Feed: f = 0.003 ~ 0.009 ipr
- Dry and interrupted cutting

K T-CBN series for grey cast iron and ductile cast iron

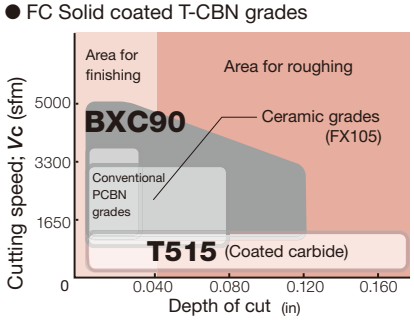
Application area



BX930
- General purpose, first choice grade.
- Dedicated grade for machining ductile Cast iron

BX480
- Suitable for interrupted machining
- Excellent fracture resistance

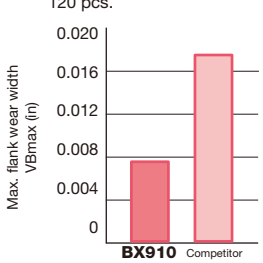
● FC Solid coated T-CBN grades



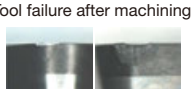
BXC90
- One-piece solid structure
- Applicable for small to large depths of cut

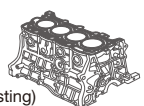
■ Machining of cylinder liners (Machining example of BX910)

●Wear width after machining 120 pcs.



●Tool failure after machining 120 pcs.

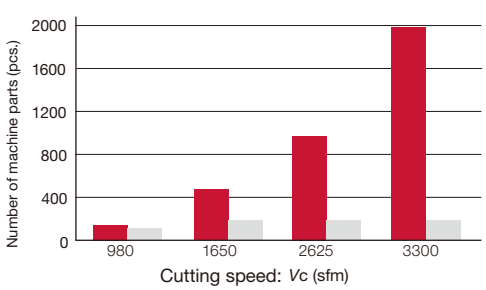




Cutting conditions
- Workpiece material: Cylinder liner (Spin casting) Machining type: Finish boring
- Cutting speed: Vc = 3200 sfm
- Machine: Special purpose machine
- Coolant: Wet

BX910 For machining cylinder liners

■ Tool life comparison in machining of disc brakes



Cutting conditions
- Workpiece material: Disc rotor (JIS FC250)
- Insert: SNGN 120412 BXC90
- Depth of cut: ap = 0.028 in
- Feed: f = 0.014 ipr
- Coolant: Dry
- Tool life criterion: Conditions of finished surface

T-CBN Series

Edge preparation specifications

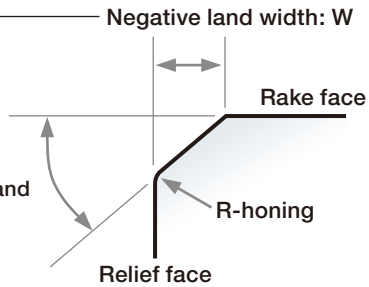
● T-CBN inserts with special edge preparation specifications are made to order. Refer to the following description.

Designation system for edge specifications

Example:
Negative land width: 0.13 mm
Negative land angle: -25°
With R-honing

S	0	1	3	2	5

Shape | Negative land width: W | Negative land angle: α



T ··· Chamfered
S ··· Chamfered + R-honing
E ··· R-honing alone
F ··· Sharp edge

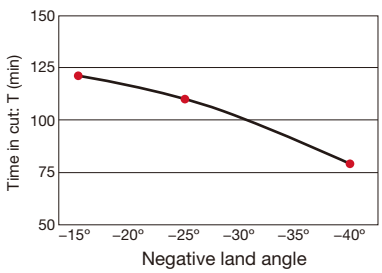
● Symbol

W	Negative land width (mm)
005	0.05
010	0.10
013	0.13
015	0.15
018	0.18

α	Negative land angle
10°	-10°
15°	-15°
20°	-20°
25°	-25°
30°	-30°
35°	-35°
40°	-40°

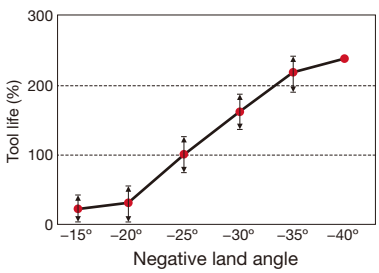
● Edge specification can be selected in combination of items described here.
● Inserts with "R" honing alone are available.

● Relationship between negative land angle and tool life in continuous turning



Cutting conditions
Workpiece material:
Chromium molybdenum steel (JIS SCM415), 60 HRC
Insert: TNGN160404 BX360
Cutting speed: *Vc* = 100 m/min
Feed: *f* = 0.15 mm/rev
Depth of cut: *ap* = 0.25 mm
Coolant: Dry
Tool life criterion: VBmax = 0.15 mm
Edge preparation: -□□°+ R-honing

● Relationship between negative land angle and tool life in interrupted turning



Cutting conditions
Workpiece material:
Chromium molybdenum steel (JIS SCM415), 60 HRC
Insert: TNGN160404 BX360
Cutting speed: *Vc* = 100 m/min
Feed: *f* = 0.15 mm/rev
Depth of cut: *ap* = 0.25 mm
Coolant: Dry
Tool life criterion: Fracture
Edge preparation: -□□°+ R-honing

•For continuous cutting, small negative land angle is favorable to minimize wear.
•For interrupted cutting, large negative land angle is favorable to minimize fracture.

● Standard edge specifications

Grade	BXA10	BXA20	BXM10	BXM20	BXC50	BX310	BX330	BX360	BX380	BX470	BX480	BX910	BX930
Negative insert	S01325	S01325	S01325	S01325	S01325	S01325	S01325	S01325	S01325	T01315	S01325	S01315	S01315
Positive insert	S01325	S01325	S01325	S01325	–	S00515	S00515	S00515	–	T01315	S00515	S01315	S00515

Wiper insert

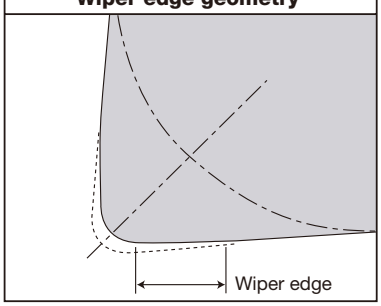
● A finishing edge (wiper edge) is formed at the point of intersection between corner radius and straight cutting edge.

■ Effect of wiper edge

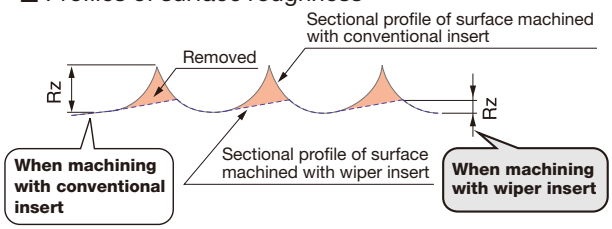
● Doubles the productivity → Reduced machining time
The wiper edge can double the feed rate and moreover does not deteriorate the surface roughness. (Note: Feed rate: *f* < 0.3 mm/rev)

● Superior surface roughness → By integrating roughing and finishing into one process, productivity can be increased.
Compared with conventional inserts only with corner radius, surface roughness can be improved with the wiper edge.

Wiper edge geometry



■ Profiles of surface roughness



■ Recommended toolholders for wiper inserts

	2QP-CNGA1204**WL	3QP-WNGA080408WL	2QP-DNGA1504**WJ	3QP-TNGA1604**WG
End cutting angle	95°		93°	91°
External toolholder	ACLNR/L**12-A	AWLNR/L**08-A	ADJNR/L**15-A	ATGNR/L**16-A ATFNR/L**16-A
	DCLNR/L**12	DWLNR/L**08	DDJNR/L**15	DTGNR/L**16 DTFNR/L**16
Internal toolholder	A**-ACLNR/L12-D...	A**-AWLNR/L08-D...	A**-ADUNR/L15-D...	A**-ATFNR/L16-D...

T-CBN Series

5 edge preparation options covering various hard

Edge preparations turning applications

Negative land angle ⟶ Large

Negative land width ↓ Wide

W (in) \ α	15°	25°	35°
0.002	LF	-	LC
0.005	L	Standard	-
0.007	-	-	H

BXA10 inserts

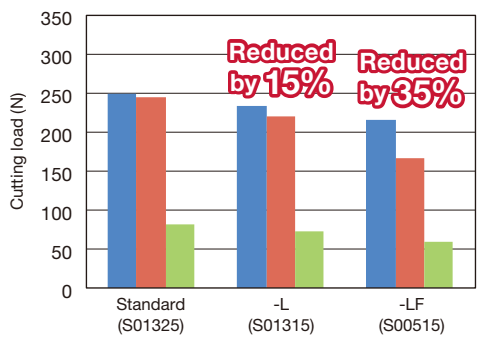
Selections of edge preparations

Allows you to select the most suited types of edge prep for your applications

	Problem	Solution
Standard (S01325)	Generates burrs	-LF (S00515)
	Generates flank wear	-L (S01315)
	Generates crater wear	-LC (S00535)
	Generates fractures	-H (S01835)

Cutting loads

The -L and -LF provide reduced cutting loads over the standard edge prep type

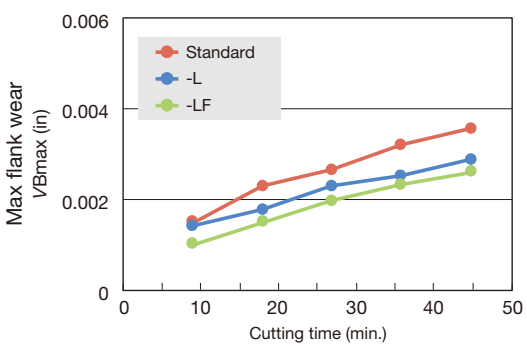


H

Insert : 2QP-CNGA 432
Workpiece material : 4140 (Alloy steel, 60HRC)
Cutting speed : *Vc* = 328 sfm
Feed : *f* = 0.012 ipr
Depth of cut : *ap* = 0.008"
Coolant : Dry

Flank wear

The -L and -LF provide reduced flank wear over the standard edge prep type

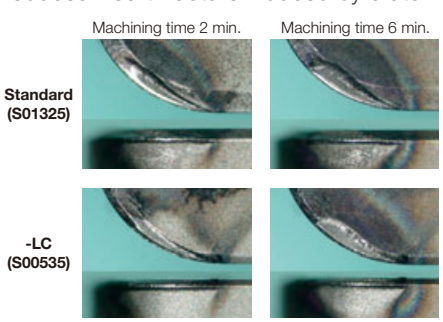


H

Insert : 2QP-CNGA 432
Workpiece material : 4140 (Alloy steel, 60HRC)
Cutting speed : *Vc* = 427 sfm
Feed : *f* = 0.006 ipr
Depth of cut : *ap* = 0.008"
Coolant : Wet

Crater wear

The -LC provides reduced crater wear over the standard edge prep type
Reduces insert fracture induced by crater wear

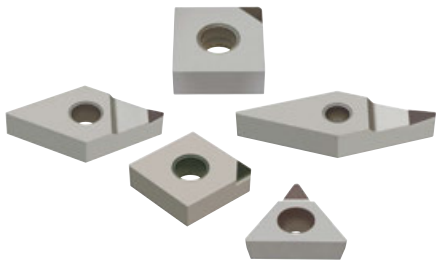


H

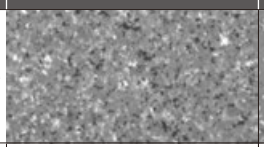
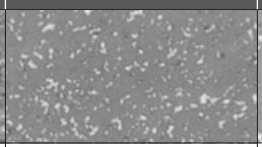
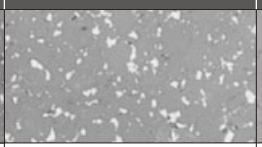
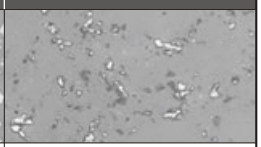
Insert : 2QP-CNGA 432
Workpiece material : 4140 (Alloy steel, 60HRC)
Cutting speed : *Vc* = 656 sfm
Feed : *f* = 0.004 ipr
Depth of cut : *ap* = 0.008"
Coolant : Wet

PCD grade, T-DIA series

Expanded product line allows T-DIA tools to be applied to wider workpiece materials and cutting conditions.

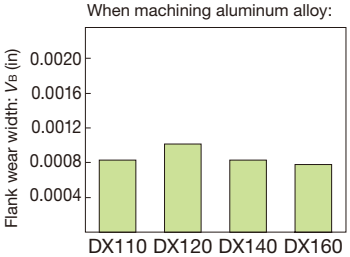


Features and applications (Physical and mechanical properties)

	DX110	DX120	DX140	DX160
Grade				
Property	Super fine grained grade. Excels in surface finish.	Fine grained grade. Excels in surface finish.	General purpose grade	High purity grade for hard materials
Approx. grain size of diamond (μm)	< 1	5	13	28
Hardness (Hv)	8500 →			10000 (Harder)
Wear resistance	→			Higher
Grindability (Cutting edge sharpness)	Better ←			

Cutting performance (Wear resistance)

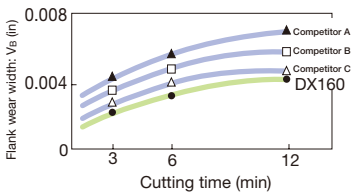
When machining aluminum alloy:



Continuous external turning

- Workpiece material: 10 % Si, aluminum alloy
- Insert: SPGN120308-DIA
- Toolholder: CSBPR2525M4
- Cutting speed: v_c = 1640 sfm
- Feed: f = 0.004 ipr
- Depth of cut: a_p =0.020 in
- Coolant: Dry cutting
- Cutting time: 30 min

When machining FRP:



Face milling

- Workpiece material: Fiber reinforced plastics (FRP)
- Insert: SFCN42ZFN-DIA
- Milling cutter: THF4408RIA
- Cutting speed: v_c = 3090 sfm
- Feed: f = 0.004 ipr
- Depth of cut: a_p = 0.059 in
- Coolant: Dry cutting

Grade selection guide

First choice
Excellent finish
DX110

Suitable for finishing aluminum alloys and copper alloy

Good electrical discharge machinability

High diamond content compared to DX110. Suitable for high-speed machining

Complex shape tools
DX120

High speed machining
DX140

Ideal for machining hard materials
Suited for machining bi-metal (ex.aluminum+cast iron) components

High wear resistance
DX160

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade DX110	DX120	DX140	DX160	Cutting speed v_c (sfm)	Depth of cut a_p (in)	Feed f (ipr)
N	Aluminum alloys (Si < 12 %)	◎	○	○		3300 - 8200	0.002 - 0.080	0.002 - 0.008
	Aluminum alloys (Si ≥ 12 %)	◎	○	○	○	1300 - 2630	0.002 - 0.080	0.002 - 0.008
	Copper, brass	◎	○			1640 - 4920	0.002 - 0.080	0.002 - 0.008
	Phosphor bronze	◎	○	○		980 - 1640	0.002 - 0.080	0.002 - 0.008
	Carbon, graphite		○	○	◎	980 - 1640	0.002 - 0.080	0.002 - 0.008
	FRP		○	○	◎	1640 - 3300	0.002 - 0.020	0.001 - 0.004
	Plastics	◎	○	○		1640 - 3300	0.002 - 0.020	0.00039 - 0.002
	Cemented carbides			○	◎	30 - 65	0.002 - 0.008	0.00039 - 0.002
	Green ceramics			○	◎	330 - 500	0.002 - 0.080	0.001 - 0.004

(Note) ◎ : First choice ○ : Second choice

MEMO

External Toolholder

External Toolholder - Content structure

- Indexable toolholders are listed by cutting edge shape.
- In the same cutting edge shape, the inserts are sorted alphabetically.
  The order of the list: CN** insert → DN** insert → RN** insert → SN** insert → TN** insert → VN** insert → WN** insert
- Toolholders in the catalog are our standard stock items.

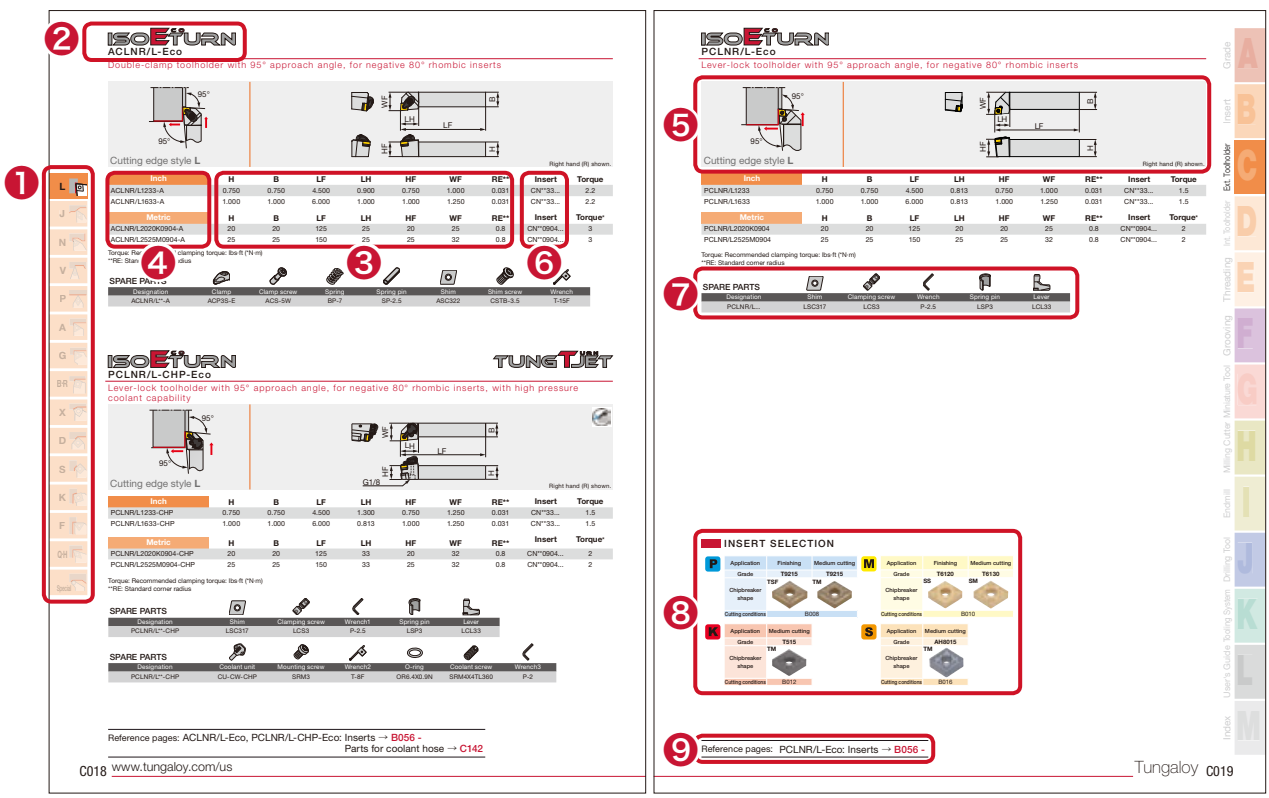
How to use the page

Method① Select the cutting edge shape described at the left end of each page, jump to the page on the left index, and choose a designation you need (❹) in the dimension table (❸). Applicable inserts are shown in (❻) and (❽).

Method② Select the cutting edge on **C003** and check the details on the product page.

Method③ Select the series name of a toolholder on **C003** and check the details on each page.

Method④ Select an item from Quick Guide on **C008-C015**.



❶: Cutting edge shape
❷: Series name of indexable external toolholders
❸: Dimension table
❹: Toolholder designation
e.g. right-hand, 1 inch square shank
→ **ACLN R 16 33-A**

❺: Dimension drawing (conforming to ISO13399)
❻: Applicable insert
❼: Spare parts
❽: Basic selection
❾: Reference pages

When ordering
- Please specify the designation and quantity.
  e.g. **ACLNR164-A ...** 1 (one external toolholder per package)
  * Inserts are not included. Please order those separately.

Main products

L 95° C018
J 93° C040
N 63° C070
V 72.5° C072
P 62.5° C076
A 91° C078
G 91° C084
B·R 75° C096
X 20° C102
D 45° C105
S 45° C111
K 75° C115
F 91° C119
Q·H 45° C125
Special C137

		Inch	Metric
	**TURNTEEN FEED** Innovative tool realizing both high productivity and economy C016, C102	✓	✓
	**ISOECOTURN** Small-sized “Eco” insert series for maximized profits C017	✓	✓
	**MINIFORCE TURN** Economical double-sided inserts with excellent sharpness C033 - C036, C042 - C045, C059 - C061, C137 - C138	✓	✓
	**TURNINGA** Highly rigid clamping system with excellent repeatability C008	✓	✓
	**TUNGTURN JET** Toolholders for high pressure coolant supply C018, C021, C023, C031, C038, C040, C046, C048, C050, C058, C063 - C064, C067, C092, C133, C140 - C141	✓	✓
	**DIMPLEFX** Ceramic insert with dimple for highly efficient cast iron machining C010	✓	✓
	**TURNTEC** Inserts and toolholders for roughing large depths of cut with high productivity C082, C097, C120	✓	
	**Y-PRO SERIES** Inserts with 25° corner angle for profiling C069, C136, C139	✓	✓
	**TURNFEED** Tool series for super high-feed cutting C104	✓	
	**FIXRTURN** Highly productive round insert with 6 indexes C089, C107	✓	✓

Designation system for Toolholders

A,C	Clamp-on
D	Double clamp ("One Double")
E	Eccentric pin lock
M	Multi-clamp
P	Pin-lock
S	Screw-on
T	Taper-lock
W	Wedge-on

1 Clamping system

Symbol	Shape	Offset	Symbol	Shape	Offset	Symbol	Shape	Offset
A	90°	Without	G	91° / 91°	With	R	75°	Without
B	75°	Without	J	93°	With	S	45°	With
C	90°	Without	K	75°	With	V	72.5°	Without
D	45°	Without	L	95° / 95°	With	X*	100°	With
E	60°	Without	N	63°	Without	Y	80°	With
F	91°	Without	P	62.5°	Without			
			Q	45°	With			

*mark: Tungaloy's symbol

3 Cutting edge style

(Example) **A C L N**

2 Insert shape

C	80° Rhombic
D	55° Rhombic
K	55° Parallelogram
R	Round
S	Square
T	Triangular
V	35° Rhombic
W	Trigon

4 Relief angle of insert

C	0°
B	5°
C	7°
D	15°
E	20°
P	11°

ANSI Designation

⑦ Toolholder shank size (in)			
No.	Width	Height	Length
10	0.625	0.625	4.500
12	0.750	0.750	4.500
64	0.750	1.000	8.000
66	0.750	1.250	8.000
16	1.000	1.000	6.000
85	1.000	1.250	6.000
86	1.000	1.500	7.000
20	1.250	1.250	7.000
24	1.500	1.500	7.000
32	2.000	2.000	14.000

⑥ **Pocket style**

S = Single wall pocket construction. full pocket construction when letter position is Vacant

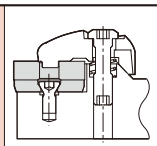
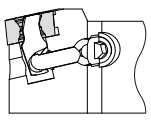
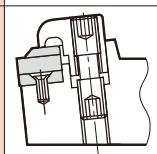
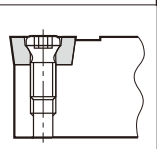
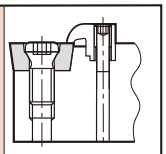
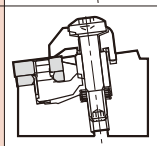
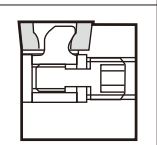
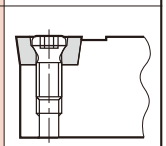
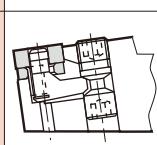
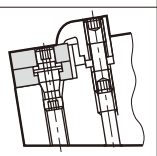
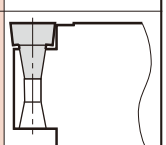
⑤ **Hand of tool**

L	
N	
R	

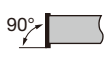
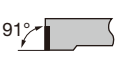
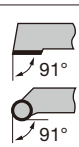
⑨ Insert size I.C.	
Symbol	Inscribed circle (in)
3	0.375
4	0.500
5	0.625
6	0.750

Designation system for Toolholders

❶ Clamping system

A Double Clamping		JP Side lever clamping			
C Clamp-on		JS Screw-on		X Double Clamping	
D One-Double		JT Side clamping		S Screw-on	
P Lever-lock		M Multi clamping		T Taper-lock	

❸ Cutting edge style

Symbol	Shape	Offset	Symbol	Shape	Offset	Symbol	Shape	Offset
A		Without	H		With	P *		Without
			I		Without	Q *		With
			J		With	S		With
B		Without	J2 *		Without	V		Without
C		Without	K		With	U		With
D		Without	L		With	X		With
E		Without	L2 *		Without	Y		With
F		With	N		Without	Z		Without
G		With	N3 *		With	No mark: ISO symbol *mark: Tungaloy's symbol		
			P *		Without			

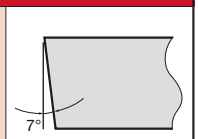
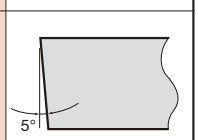
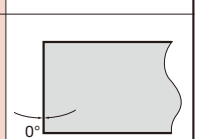
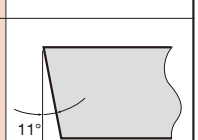
(Example)

❶		❸			
A	W	L	N	R	
P	T	G	N	R	
	❷		❹	❺	

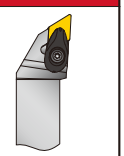
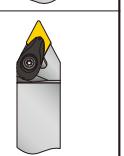
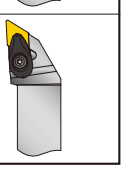
❷ Insert shape

C	80° Rhombic
D	55° Rhombic
K	55° Parallelogram
R	Round
S	Square
T	Triangular
V	35° Rhombic
W	Trigon

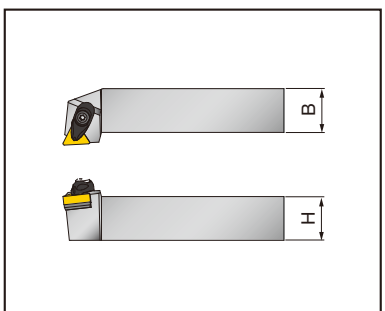
❹ Relief angle of insert

C	
B	
N	
P	

❺ Hand of tool

L	
N	
R	

ISO Designation

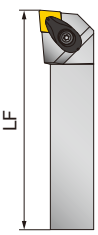


⑥ Height: H (mm) | ⑦ Width: B (mm)

Shank size

F	80
F	85*
H	100
X	120
K	125
M	150
P	170
Q	180
R	200
S	250
T	300
U	350

*MiniForceTurn



⑧ Holder length

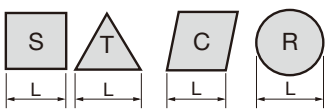
RD	Ceramic insert with dimple
C	M-type for ceramic insert
A	Turning A

⑪ Added symbol

⑥	⑦	⑧			⑪
25	25	M	08	-	A
20	20	K	3		3
			⑨		⑩

⑨ Insert size

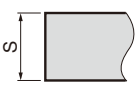
Symbol	Inscribed circle (mm)
3	9.525
4	12.7
5	15.875
6	19.05
8	25.4



In the ISO metric system, edge length of inserts is expressed by L in 2 digits.

⑩ Insert thickness

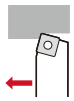
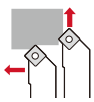
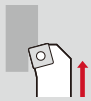
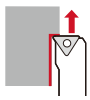
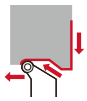
Symbol	Thickness (mm)
2	3.18
3	4.76



External Toolholder - Quick Guide (Negative type)

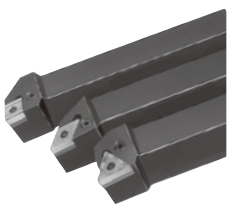
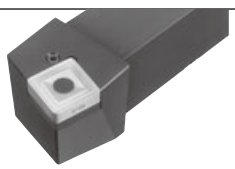
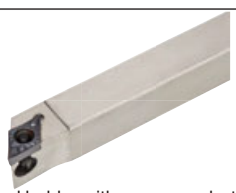
Name	Appearance/Feature	Turning / Facing	External profiling				Turning
		L 95°	J 93°	N 63°	V 72.5°	P 62.5°	G 91°
TURNTEEN FEED Double clamp	 • Economical, 10-cornered insert ensures high machining efficiency • Available in 2 types of holders: HD type for large depths of cut and HF type for high feed turning • Maximum 0.276" (7 mm) depth of cut, or maximum feed 0.079 ipr (2 mm) per rev is attainable!						
TURNINGA Double clamp	 • Improved clamping rigidity realizes excellent repeatability and long tool life. • The enlarged surface of insert pressing provides excellent repeatability. Great performance even with VNMG type (corner angle 35°), which is particularly prone to the displacement of the cutting edge position. *Corner angle 25° and YNMG type also can be used. • The simple structure contributes to cost reduction. Easy operation with one wrench.	80° CN□□ ACLNR/L C018, C020 70° GN□□ ACLNR/L C020 80° WN□□ AWLNR/L C031, C037	55° DN□□ ADJNR/L C040, C046 60° TN□□ ATJNR/L C055 35° VN□□ AVJNR/L C057, C062 25° YNMG AVJNR/L C062		35° VN□□ AVVNN C072, C073 25° YNMG AVVNN C073	55° DN□□ ADPNN C076	60° TN□□ ATGNR/L C091
D One-Double	 • Excellent usability that the clamp and the lever simultaneously hold the insert in tightening. • The tool can be handled from the back side and provides excellent usability even when the tool is placed in the reverse.	80° CN□□ DCLNR/L C025 70° GN□□ DCLNR/L C025 80° WN□□ DWLNR/L C039	55° DN□□ DDJNR/L C049				60° TN□□ DTGNR/L C094

Please see the page C*** for the product details.

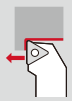
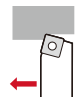
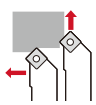
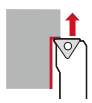
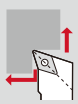
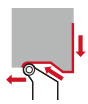
Turning	Turning / Chamfering	External profiling		Turning / Facing Chamfering	Facing		Profiling	External profiling
B·R 75° 	**D 45°** 	**X 22.5°** 	**X 48.5°** 	**S 45°** 	**K 75°** 	**F 91°** 	**Q*1 · H*1 45°** 	**Special** 
		22.5° POMG PPXOR/L-HF **C102**	**48.5°** POMG PPXOR/L-HD **C102**					
90° SN□□ ASBNR/L **C098**	**90°** SN□□ ASDNN **C108**			**90°** SN□□ ASSNR/L **C112**	**90°** SN□□ ASKNR/L **C115**	**60°** TN□□ ATFNR/L **C122**	**55°** DN□□ ADQNR/L **C125, C126** **60°** TN□□ ATQNR/L **C130** **35°** VN□□ AVQNR/L **C131, C132** **25°** YNMG AVQNR/L **C132**	- RN□□ ARGNR/L **C084**
90° SN□□ DSBNR/L **C099**	**90°** SN□□ DSDNN **C109**			**90°** SN□□ DSSNR/L **C115**	**90°** SN□□ DSKNR/L **C118**	**60°** TN□□ DTFNR/L **C124**	**55°** DN□□ DDQNR/L **C128**	- RN□□ DRGNR/L **C086**

*1: Symbol used exclusively by Tungaloy

External Toolholder - Quick Guide (Negative type)

Name	Appearance/Feature	Turning / Facing	External profiling			Turning
		L 95°	J 93°	V 72.5°	P 62.5°	A 91°
DIMPLEFX C Double clamp for dimple ceramic insert	 • Firmly clamp the insert at two locations: drawing by dimple and holding from the top. • Two locations can be clamped simultaneously with one screw. Excellent operability. • The tool can be handled from the back side. Easy to change inserts when mounting those on the back.	80° CN□□ CCLNR/L **C024**		55° DNGD CDNNN **C070**	35° VNGD CVVNN **C074**	
P Lever lock	 • Great repeatability of the cutting edge position with the two-face holding system. Excellent performance on NC lathes and special-purpose machines. • There are many types of geometries available such as rhombus, triangle, square and round. • Economical downsized type is also available.	80° CN□□ PCLNR/L **C018, C019, C021, C022, C023, G057** 80° CN□□ PCL2NR **G057** 70° GN□□ PCLNR/L **C021, C022, C023, G057** 70° GN□□ PCL2NR **G057** 80° CN□□ PCMNN **C140** 80° WN□□ PWLNR/L **C031, C032, C038** 70° GN□□ PCMNN **C140** 60° TN□□ PTL2NR/L **C029**	55° DN□□ PDJNR/L **C040, C041, C046, C047, C048** 60° TN□□ PTJNR/L **C054** 35° VN□□ PVJNR/L **C058, C063, C064** 25° YNMG PVJNR/L **C063, C064**	35° VN□□ PVVNN **C072**	55° DN□□ PDPNN **C077** 55° DN□□ PDMNL **C141**	
H Retract pin	 • Toolholder for super heavy cutting					
JT Back clamp	 • Tool holder with access on both sides to allow for insert changes in set ups with limited clearances such as gang tooling. • Inserts can be clamped with screws from the back side of the tool, providing good usability. • Shank sizes are available in 8, 10, 12, 16 mm.	60° TN□□ JTTLNR/L **C030**				60° TN□□ JTTANR/L **C079**

Please see the page C*** for the product details.

Turning		Turning / Chamfering	Turning / Facing Chamfering	Facing		Profiling	External profiling
G 91°	**B·R 75°**	**D 45°**	**S 45°**	**K 75°**	**F 91°**	**Q*1 · H*1 45°**	**Special**
							
			90° SNGD CSSNR/L **C114** 90° HNGD CHSNR/L **C111**				
60° TN□□ PTGNR/L **C090, C092, C093**	90° SN□□ PSBNR/L **C099** 100° CN□□ PCBNR/L **C096**	90° SN□□ PSDNN **C108**	90° SN□□ PSSNR/L **C113**	90° SN□□ PSKNR/L **C117**	60° TN□□ PTFNR/L **C121, C123** 80° CN□□ PCFNR/L **C119**	55° DN□□ PDQNR/L **C127** 35° VN□□ PVQNR/L **C131, C133** 25° YNMG PVQNR/L **C133**	- RNMG PRGNR/L **C085**
	90° SNMM HSRNR/L **C101**						

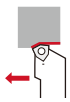
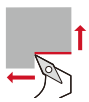
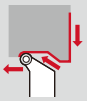
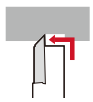
*1: Symbol used exclusively by Tungaloy

External Toolholder - Quick Guide (Positive type)

Name	Appearance/Feature	Turning / Facing	External profiling			Turning
		L 95°	J 93°	N 72.5°	N 62.5°	A 91°
X Double clamp (screw-on)	 • Super high feed machining increases productivity by 8 times. • The insert is secured by double clamping system with clamp + clamp screw. Both the insert and the tool body achieve high rigidity.					
P Lever lock	 • Clamping positive round insert with lever lock leads to good indexing accuracy. • Can be used for external turning, facing, and profiling. High-feed machining is possible. • Insert diameters: ø10, ø12, ø16, ø20, ø25 mm.	80° WXGU JPWL2XR/L C035	55° DXGU JPDJ2XR/L C044 35° VXGU JPVJ2XR/L C060			
J Screw-on	 • Suitable for machining complex small parts on small NC lathes. A great variety of cutting edge geometries. • The screw-on method firmly holds the small positive inserts. The clamp screw is a reliable and durable Torx® screw. • J type is high-precision shank with 4 faces ground.	80° CC□□ JSCLCR/L C026, G029 JSCL2CR/L*2 G027, G028 80° WXGU JSWLXR/L C034 JSWL2XR/L C034, C035, G023, G025 JSWLXR-F C036, G026 35° VP□□ JSVL2PR/L G030	55° DC□□ JSDJCR-F C052, G038 JSDJ2CR/L*2 C050, G036, G037 55° DXGU JSDJXR/L C042 JSDJ2XR/L C042, C043, G031, G033 JSDJXR-F C045, G034 35° VB□□ JSVJBR/L G046 JSVJ2BR/L C066, C067, G044, G045 35° VXGU JSVJXR/L C059 JSVJ2XR/L C059, C060, G040, G041 JSVJXR-F C061, G042	35° VB□□ JSVNBN G049	55° DC□□ JSDNCN G047 55° DC□□ JSDN3CR/L*3 G048	60° TC□□ JSTACR/L C080, G051 35° VB□□ JSVABR/L G052

*2: L2 and J2: without offset *3 

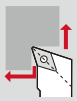
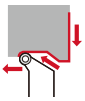
Please see the page C*** for the product details.

	Turning	Turning / Facing	Facing	Profiling	External profiling	Back turning	Front turning Reverse turning
	G 91° 	**X 20°** 	**F 91°** 	**P 117.5°** 	**Special** 		
		80° WPMT XWXPR/L **C104**					
					- RCM□ PRGCR/L **C087** - RCM□ PRDCN **C105**		
	80° CC□□ JSCGCR/L **G053**		**55°** DC□□ JSDFCR/L **G055**	**25°** VP□□ JSVP2PR/L **G050**		JXB JSXBR/L **G067** JTB JSTBR/L **G061** JTB JS□□K-TBL **G061** J10E JSEGR/L **G064**	JX□□ JSXGR/L **G056** **55°** DC□□ JS□□K-SDUCL **G039** **55°** DXGU JS□□□-SDUXL **C137, G035** **35°** VXGU JS□□□-SVUXL **C138, G042**

External Toolholder - Quick Guide (Positive type)

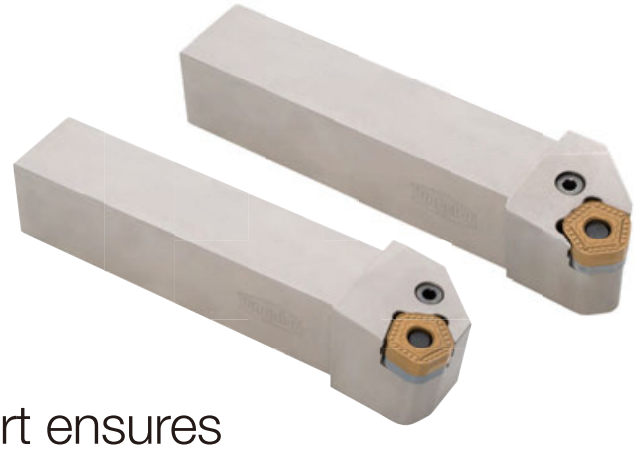
Name	Appearance/Feature	Turning / Facing	External profiling			Turning	Turning / Chamfering
		L 95°	J 93°	V 72.5°	N 62.5°	A 91°	D 45°
S Screw-on	 • Suitable for machining complex small parts on small NC lathes. A great variety of cutting edge geometries. • The screw-on method firmly holds the small positive inserts. The clamp screw is a reliable and durable Torx® screw.	80° CC□□ SCLCR/L C028	55° DC□□ SDJCR/L C053 35° VC□□ SVJCR/L C068 25° YWMT SYJBR/L C069	35° VC□□ SVVCN C075	55° DC□□ SDNCN C071	60° TC□□ STACR/L C081	90° SC□□ SSDCN C110 90° SP□□ SSDPN Tungaloy standard C110
JT Back clamp	 • Tool holder with access on both sides to allow for insert changes in set ups with limited clearances such as gang tooling. • Inserts can be clamped with screws from the back side of the tool, providing good usability. • Shank sizes are available in 0.315", 0.394", 0.472", 0.630" (8, 10, 12, 16 mm).	80° CC□□ JTCL2CR/L C027, G028	55° DC□□ JTDJ2CR/L C051, G036			60° TC□□ JTTACR/L C080, G051	

Please see the page C*** for the product details.

Profiling				External profiling	Back turning	Front turning Reverse turning
Q*1 45° · H*1 17.5°		H 100°	I 76.5°	Special		
						
35° VC□□ SVQCR/L **C134**	55° DC□□ SDQCR/L **C129**	25° YWMT SYHBR/L **C136**	25° YWMT SYIBN **C139**	- RCMT SRACR/L **C078**	Note: JSXBR/L can be used with JXT threading insert.	Note: JSXGR/L can be used with JXG grooving insert.
35° VCG□ SVHCR/L **C135**	25° YWMT SYQBR/L **C136**			- RCMT SRGCR/L **C088, C089**		
				- RCMT SRDCN **C106, C107**		

*1: Symbol used exclusively by Tungaloy

TURNTEN FEED

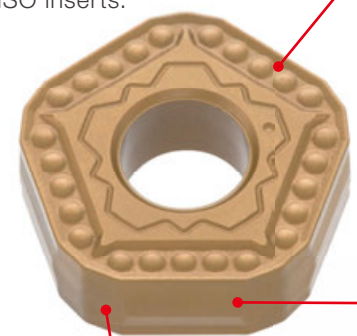


Economical, 10-cornered insert ensures high machining efficiency

- Available in 2 types of holders: HD type for large depths of cut and HF type for high feed turning
- Maximum 0.276" depth of cut, or maximum 0.079" feed per rev is attainable!

Economical 10-cornered, double-sided, M-class insert

Achieves outstanding cost efficiency over standard ISO inserts.

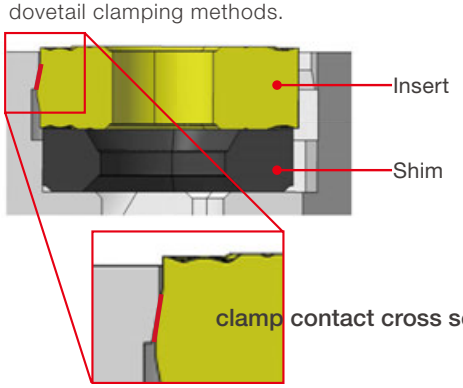


New – MNW style chipbreaker

Features protrusions on the rake face to facilitate smooth chip control, while achieving high crater wear resistance.

Dovetail clamping

Ensures secure insert retention while promoting smooth chip flow thanks to the integration of lever lock and dovetail clamping methods.



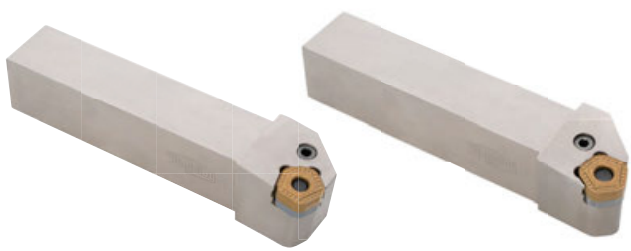
Flat Wiper

Built in the cutting edge to achieve superior machining surface at higher feed rates!

Holder selections

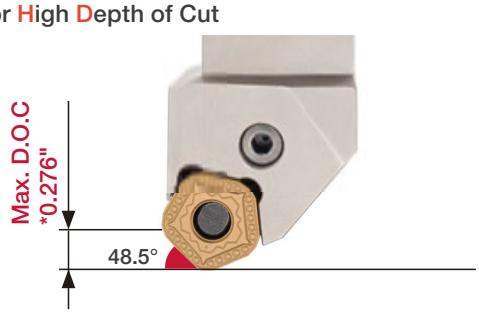
Available in 2 types:
- HD holder for large depths of cut
- HF holder for high feed turning

Inserts are interchangeable between these two holders.

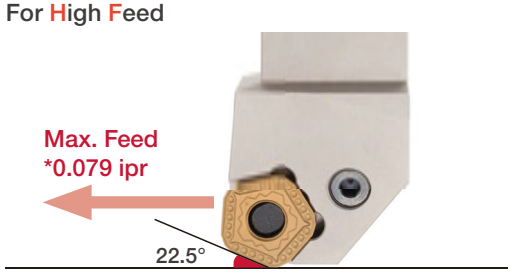


Features of Holders

HD holder
For High Depth of Cut



HF holder
For High Feed



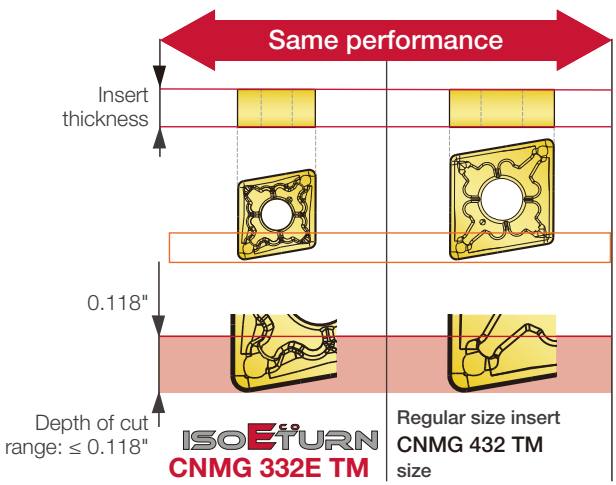
* Insert: POMG130612-MNW

Reference pages: C102

ISO-EcoTurn Small size inserts, for an economical advantage

Uncompromising insert performance

Comparison of ISO-EcoTurn and regular size inserts

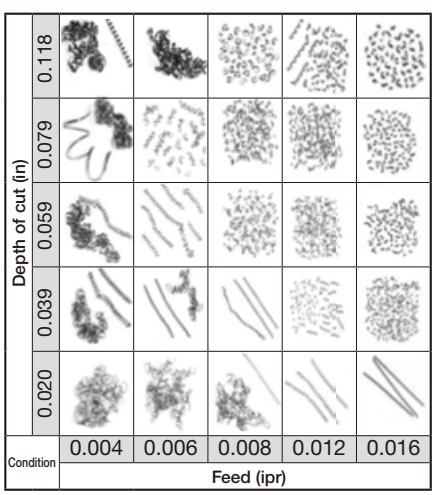


ISO-EcoTurn inserts feature the identical thickness and chipbreaker geometry as Tungaloy's regular size inserts.
These properties provide cutting performance equal to that of the regular size inserts, including chip control at a depth of cut up to 0.118".

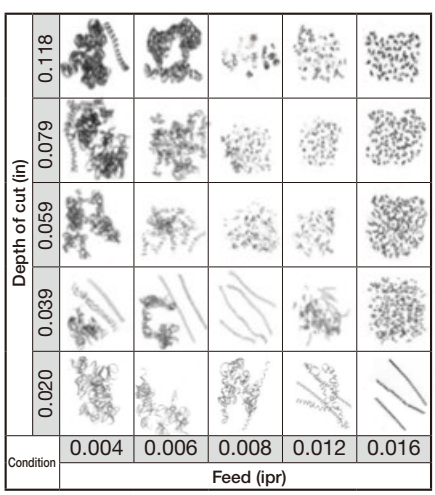
Chip control

ISO-EcoTurn inserts incorporate an identical chipbreaker geometry as regular size inserts providing the same chip removal at a depth of cut up to 0.118".

ISO-EcoTurn
CNMG 332E TM



Regular size
CNMG 432 TM

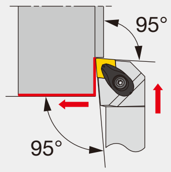


Workpiece : 1045
Cutting speed : *Vc* = 660 sfm
Coolant : Wet

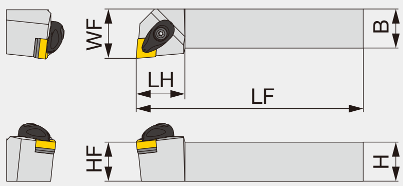
Reference pages: C018 -, C031 -, C040 -, C054, C057 -, C072, C090, C121, C125, C131

ACLNR/L-Eco

Double-clamp toolholder with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style **L**



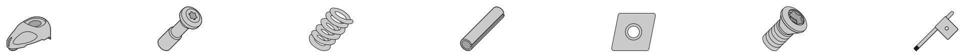
Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ACLNR/L1233-A	0.750	0.750	4.500	0.900	0.750	1.000	0.031	CN**33...	2.2
ACLNR/L1633-A	1.000	1.000	6.000	1.000	1.000	1.250	0.031	CN**33...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ACLNR/L2020K0904-A	20	20	125	25	20	25	0.8	CN**0904...	3
ACLNR/L2525M0904-A	25	25	150	25	25	32	0.8	CN**0904...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

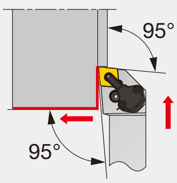


Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ACLNR/L**-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASC322	CSTB-3.5	T-15F

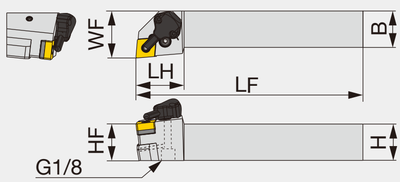
ISOEcoTURN TUNGTJETURN

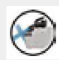
PCLNR/L-CHP-Eco

Lever-lock toolholder with 95° approach angle, for negative 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **L**





Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PCLNR/L1233-CHP	0.750	0.750	4.500	1.300	0.750	1.250	0.031	CN**33...	1.5
PCLNR/L1633-CHP	1.000	1.000	6.000	0.813	1.000	1.250	0.031	CN**33...	1.5

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PCLNR/L2020K0904-CHP	20	20	125	33	20	32	0.8	CN**0904...	2
PCLNR/L2525M0904-CHP	25	25	150	33	25	32	0.8	CN**0904...	2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
PCLNR/L**-CHP	LSC317	LCS3	P-2.5	LSP3	LCL33

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench2	O-ring	Coolant screw	Wrench3
PCLNR/L**-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

Reference pages: ACLNR/L-Eco, PCLNR/L-CHP-Eco: Inserts → B056 -
Parts for coolant hose → C142

L
J
N
V
P
A
G
B-R
X
D
S
K
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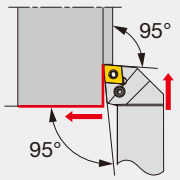
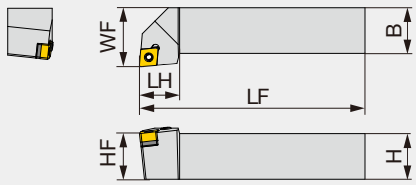
Q-H
Special

Lever-lock toolholder with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PCLNR/L1233	0.750	0.750	4.500	0.813	0.750	1.000	0.031	CN**33...	1.5
PCLNR/L1633	1.000	1.000	6.000	0.813	1.000	1.250	0.031	CN**33...	1.5

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PCLNR/L2020K0904	20	20	125	20	20	25	0.8	CN**0904...	2
PCLNR/L2525M0904	25	25	150	25	25	32	0.8	CN**0904...	2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PCLNR/L...	LSC317	LCS3	P-2.5	LSP3	LCL33

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF 	TM 
Cutting conditions	B008	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SS 	SM 
Cutting conditions	B010	

K

Application	Medium cutting
Grade	T515
Chipbreaker shape	TM 
Cutting conditions	B012

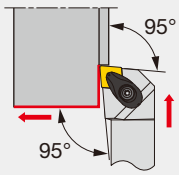
S

Application	Medium cutting
Grade	AH8015
Chipbreaker shape	TM 
Cutting conditions	B016

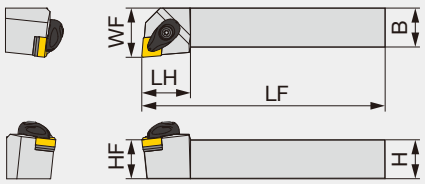
Reference pages: PCLNR/L-Eco: Inserts → B056 -

ACLNR/L

Double-clamp toolholder with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ACLNR/L124-A	0.750	0.750	4.500	1.000	0.750	1.000	0.031	CN**43...	2.2
ACLNR/L164-A	1.000	1.000	6.000	1.250	1.000	1.250	0.031	CN**43...	2.2
ACLNR/L204-A	1.250	1.250	7.000	1.500	1.250	1.500	0.031	CN**43...	2.2
ACLNR/L205-A	1.250	1.250	7.000	1.500	1.250	1.500	0.047	CN**54...	4.7
ACLNR/L245-A	1.500	1.500	8.000	1.500	1.500	1.750	0.047	CN**54...	4.7
ACLNR/L206-A	1.250	1.250	7.000	1.500	1.250	1.500	0.047	CN**64...	4.7
ACLNR/L246-A	1.500	1.500	8.000	1.500	1.500	1.750	0.047	CN**64...	4.7

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ACLNR/L2020H12-A	20	20	120	26	20	25	0.8	CN**1204...	3
ACLNR/L2020K12-A	20	20	125	26	20	25	0.8	CN**1204...	3
ACLNR/L2525K12-A	25	25	125	30	25	32	0.8	CN**1204...	3
ACLNR/L2525M12-A	25	25	150	30	25	32	0.8	CN**1204...	3
ACLNR/L3225P12-A	32	25	170	30	32	32	0.8	CN**1204...	3
ACLNR/L2525M16-A	25	25	150	31	25	32	1.2	CN**1606...	6.4
ACLNR/L3225P16-A	32	25	170	31	32	32	1.2	CN**1606...	6.4
ACLNR/L3232P16-A	32	32	170	31	32	40	1.2	CN**1606...	6.4
ACLNR/L3232P19-A	32	32	170	40	32	40	1.2	CN**1906...	6.4
ACLNR/L4040S19-A	40	40	250	40	40	50	1.2	CN**1906...	6.4

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

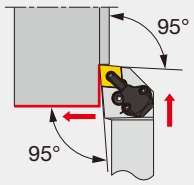
SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench1	Wrench2
ACLNR/L**4-A, ACLNR/L**12-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASC422	CSTB-3.5	T-15F	-
ACLNR/L**5-A, ACLNR/L**16-A	ACP5S	ACS-6W	BP-8.8	SP-2.5	ASC533	CSTB-5	-	KEYV-T20
ACLNR/L**6-A, ACLNR/L**19-A	ACP6S	ACS-6W	BP-8.8	SP-2.5	ASC634	CSTB-5	-	KEYV-T20

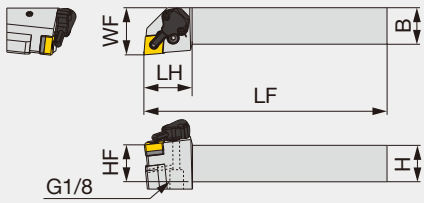
Reference pages: ACLNR/L: Inserts → B056 -, CBN → B172 -, PCD → B194 -

PCLNR/L-CHP

Lever-lock toolholder, for negative 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PCLNR/L124-CHP	0.750	0.750	4.500	1.300	0.750	1.250	0.031	CN**43...	2.2
PCLNR/L164-CHP	1.000	1.000	6.000	1.300	1.000	1.250	0.031	CN**43...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PCLNR/L2020K12-CHP	20	20	125	33	20	32	0.8	CN/GN**1204...	3
PCLNR/L2525M12-CHP	25	25	150	33	25	32	0.8	CN/GN**1204...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
PCLNR/L**-CHP	LSC42	LCS4	P-3	LSP4	LCL4

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench2	O-ring	Coolant screw	Wrench3
PCLNR/L**-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA	with rake T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

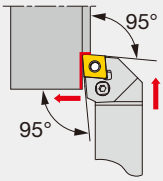
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

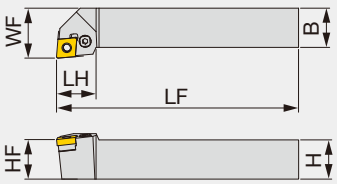
Reference pages: PCLNR/L-CHP: Inserts → B056 -, CBN → B172 -, PCD → B194 -
Parts for coolant hose → C142

PCLNR/L

Lever-lock toolholder with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
PCLNR/L1616H09	16	16	100	20	16	20	0.8	CN**0903...
PCLNR/L2020K09	20	20	125	20	20	25	0.8	CN**0903...
PCLNR/L2525M09	25	25	150	20	25	32	0.8	CN**0903...
PCLNR/L1616	16	16	100	26	16	20	0.8	CN/GN**1204...
PCLNR/L2020	20	20	125	28	20	25	0.8	CN/GN**1204...
PCLNR/L2525M4	25	25	150	28	25	32	0.8	CN/GN**1204...
PCLNR/L3225P4	32	25	170	28	32	32	0.8	CN/GN**1204...
PCLNR/L3232	32	32	170	40	32	40	1.2	CN**1906...
PCLNR/L1616H12E	16	16	100	26	16	20	0.8	CN/GN**1204...
PCLNR/L2020K12E	20	20	125	28	20	25	0.8	CN/GN**1204...
PCLNR/L2525M12E	25	25	150	28	25	32	0.8	CN/GN**1204...
PCLNR/L3225P12E	32	25	170	28	32	32	0.8	CN/GN**1204...
PCLNR/L2525M16E	25	25	150	31	25	25	1.2	CN**1606...
PCLNR/L3225P16E	32	25	150	31	32	32	1.2	CN**1606...
PCLNR3232P16E	32	32	170	31	32	40	1.2	CN**1606...
PCLNR/L3232P19E	32	32	170	40	32	40	1.2	CN**1906...

**RE: Standard corner radius

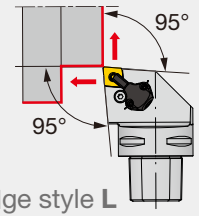
SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PCLNR/L1616H09	ELSC32	LCS3	P-2.5	LSP3L	LCL33
PCLNR/L2020K09	ELSC32	LCS3	P-2.5	LSP3L	LCL33
PCLNR/L2525M09	ELSC32	LCS3	P-2.5	LSP3L	LCL33
PCLNR/L1616	LSC42	LCS4CA	P-3	LSP4	LCL4
PCLNR/L2020	LSC42	LCS4	P-3	LSP4	LCL4
PCLNR/L2525M4	LSC42	LCS4	P-3	LSP4	LCL4
PCLNR/L3225P4	LSC42	LCS4	P-3	LSP4	LCL4
PCLNR/L3232	LSC63	LCS6	P-4	LSP6	LCL6
PCLNR/L1616H12E	ELSC42	LCS4CA	P-3	LSP4S	LCL43S
PCLNR/L2020K12E	ELSC42	LCS4	P-3	LSP4S	LCL43M
PCLNR/L2525M12E	ELSC42	LCS4	P-3	LSP4S	LCL43M
PCLNR/L3225P12E	ELSC42	LCS4	P-3	LSP4S	LCL43M
PCLNR/L2525M16E	ELSC53	LCS5	P-3	LSP6C	LCL54
PCLNR/L3225P16E	ELSC53	LCS5	P-3	LSP6C	LCL54
PCLNR/L3232P16E	ELSC53	LCS5	P-3	LSP6C	LCL54
PCLNR/L3232P19E	ELSC63	LCS6	P-4	LSP6	LCL6

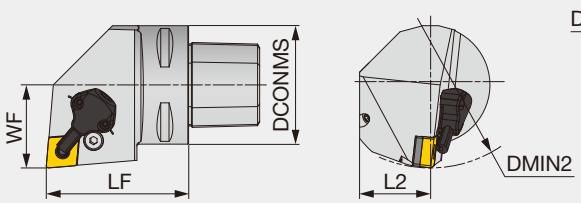
Reference pages: PCLNR/L: Inserts → B056 -, CBN → B172 -, PCD → B194 -

C-PCLNR/L-CHP

Lever-lock toolholder with TungCap connection, for negative 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **L**



Right hand (R) shown.

Inch	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4PCLNR/L27050-0904-CHP	1.575	1.969	0.984	1.063	5.512	4.331	0.031	CN**33...
C4PCLNR/L27050-12-CHP	1.575	1.969	0.984	1.063	5.512	4.331	0.031	CN**43...
C5PCLNR/L35060-12-CHP	1.969	2.362	1.260	1.378	6.496	4.331	0.031	CN**43...
C6PCLNR/L45065-0904-CHP	2.480	2.559	1.614	1.772	7.480	4.921	0.031	CN**33...
C6PCLNR/L45065-12-CHP	2.480	2.559	1.614	1.772	7.480	4.921	0.031	CN**43...

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4PCLNR/L27050-0904-CHP	40	50	25	27	140	110	0.8	CN**0904...
C4PCLNR/L27050-12-CHP	40	50	25	27	140	110	0.8	CN/GN**1204...
C5PCLNR/L35060-12-CHP	50	60	32	35	165	110	0.8	CN/GN**1204...
C6PCLNR/L45065-0904-CHP	63	65	41	45	190	125	0.8	CN**0904...
C6PCLNR/L45065-12-CHP	63	65	41	45	190	125	0.8	CN/GN**1204...

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
C*PCLNR/L**-0904-CHP	LSC317	LCS3	P-2.5	LSP3	LCL33
C*PCLNR**-12-CHP	LSC42	LCS4	P-3	LSP4	LCL4

SPARE PARTS

Designation	Coolant unit	Coolant screw	Wrench 2	Wrench 3
C*PCLNR/L**-0904-CHP	CU-CW-CHP	SRM4X4TL360	T-8F	P-2
C*PCLNR**-12-CHP	CU-CW-CHP	SRM4X4TL360	T-8F	P-2

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA	with rake T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

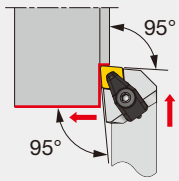
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

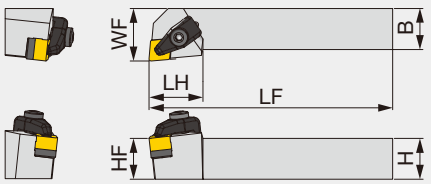
Reference pages: C-PCLNR/L-CHP: Inserts → B056 -, CBN → B172 -, PCD → B194 -
Parts for coolant hose → C142

CCLNR/L-RD

Double-clamp toolholder with 95° approach angle, for negative 80° rhombic ceramic inserts with dimple



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
CCLNR/L16M45-RD	1.000	1.000	6.000	1.300	1.000	1.250	0.047	CNGD45...	3.0

Torque: Recommended clamping torque: lb·ft
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench1	Wrench2
CCLNR/L**-RD	CCP4-A	CCS4-A	CC44-A	BH5-10-A	BP-5-A	P-3	P-4

INSERT SELECTION

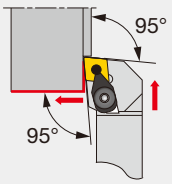
K

Application	Finishing to medium cutting
Grade	FX105
Chipbreaker shape	- 
Cutting conditions	C144

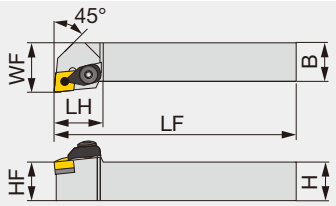
Reference pages: CCLNR/L-RD: Inserts → B066,
Standard cutting conditions → C144

DCLNR/L

"One-Double" toolholder with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
DCLNR/L2020K12	20	20	125	30	20	25	0.8	CN**1204...
DCLNR/L2525M12	25	25	150	30	25	32	0.8	CN**1204...
DCLNR/L3225P12	32	25	170	30	32	32	0.8	CN**1204...

Except for 57-type chipbreaker inserts
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench1	Wrench2
DCLNR/L...	DCPM-43	DLCL43	DPIS43	DLCS43	LSC42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

H

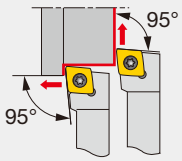
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

Reference pages: DCLNR/L: Inserts → B056 -, CBN → B172 -, PCD → B194 -

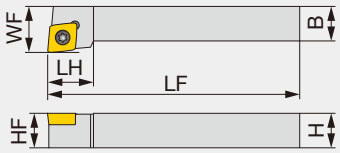
J-SERIES

JSCLCR/L

Screw-on toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSCLCR/L0808H06	8	8	100	12	8	10	0.4	CC**0602...	1.2
JSCLCR/L1010H06	10	10	100	12	10	12	0.4	CC**0602...	1.2
JSCLCR/L1212H09	12	12	100	16	12	16	0.8	CC**09T3...	1.2
JSCLCR/L1616H09	16	16	100	16	16	20	0.8	CC**09T3...	1.2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

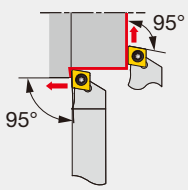
SPARE PARTS

Designation	Clamping screw	Wrench
JSCLCR/L**H06	CSTB-2.5	T-8F
JSCLCR/L**H09	CSTB-4SD	T-8F

J-SERIES

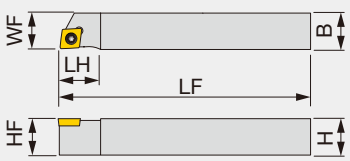
JSCL2CR/L

Screw-on toolholder without offset with 95° approach angle for positive 80° rhombic inserts



Cutting edge style **L2**

Without offset



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSCL2CR/L062	0.375	0.375	5.000	0.400	0.375	0.375	0.016	CC**21.5...	0.89
JSCL2CR/L082	0.500	0.500	5.000	0.400	0.500	0.500	0.016	CC**21.5...	0.89
JSCL2CR/L103	0.625	0.625	5.000	0.680	0.625	0.625	0.031	CC**32.5...	0.89

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSCL2CR/L1010X06	10	10	120	12	10	10	0.2	CC**0602...	1.2
JSCL2CR/L1212F06	12	12	85	12	12	12	0.2	CC**0602...	1.2
JSCL2CR/L1212X06	12	12	120	12	12	12	0.2	CC**0602...	1.2
JSCL2CR/L1212F09	12	12	85	16	12	12	0.2	CC**09T3...	1.2
JSCL2CR/L1212X09	12	12	120	16	12	12	0.2	CC**09T3...	1.2
JSCL2CR/L1616X09	16	16	120	16	16	16	0.2	CC**09T3...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

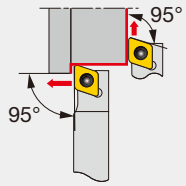
SPARE PARTS

Designation	Clamping screw	Wrench
JSCL2CR/L062, JSCL2CR/L082, JSCL2CR/L**06	CSTB-2.5	T-8F
JSCL2CR/L103, JSCL2CR/L**09	CSTB-4SD	T-8F

Reference pages: JSCLCR/L, JSCL2CR/L: Inserts → B111 -, CBN → B182 -, PCD → B196 -

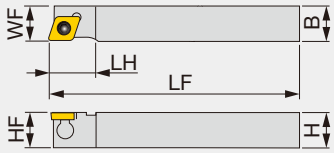
JTCL2CR/L

Back-clamp toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L2**

Without offset



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JTCL2CR/L1010X06	10	10	120	12	10	10	0.2	CC**0602...	0.9
JTCL2CR/L1212F09	12	12	85	16	12	12	0.2	CC**09T3...	1.2
JTCL2CR/L1212X09	12	12	120	16	12	12	0.2	CC**09T3...	1.2
JTCL2CR/L1616X09	16	16	120	16	16	16	0.2	CC**09T3...	1.2
JTCL2CR1616M09	16	16	150	16	16	16	0.8	CC**09T3...	1.2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
JTCL2CR/L**06	JCP-2	JDS-3525	P-2F
JTCL2CR/L**09	JCP-3	JDS-5040	P-2.5F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B020			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	TH10	KS05F
Chipbreaker shape	T-DIA	with rake W20	AL
Cutting conditions	B026		

S

Application	Precision finishing	Finishing to medium cutting
Grade	BX470	AH8005
Chipbreaker shape	T-CBN	PS
Cutting conditions	B028	

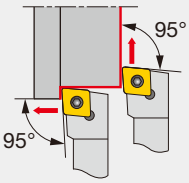
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

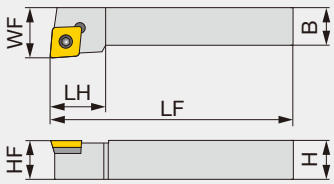
Reference pages: JTCL2CR/L: Inserts → B111 -, CBN → B182 -, PCD → B196 -

SCLCR/L

Screw-on toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert
SCLCR/L 103	0.625	0.625	4.000	0.625	0.625	0.750	0.031	CC**32.5...
SCLCR/L 123	0.750	0.750	4.500	0.625	0.750	0.750	0.031	CC**32.5...
SCLCR/L 163	1.000	1.000	6.000	0.625	1.000	0.750	0.031	CC**32.5...
SCLCR/L 124B	0.750	0.750	4.500	0.625	0.750	0.750	0.031	CC**43...
SCLCR/L 164D	1.000	1.000	6.000	0.750	1.000	0.750	0.031	CC**43...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SCLCR/L1616H09	16	16	100	16	16	20	0.8	CC**09T3...
SCLCR/L2020K12	20	20	125	20	20	25	0.8	CC**1204...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench1	Wrench2
SCLCR/L103, 123, 163 SCLCR/L1616H09	CSTB-3.5L	DTS5-3.5	SSC32	P-3.5	T-15F
SCLCR/L124B, 164D	CSPB-5	DTS6-4	SSC4T3	P-4	T20F
SCLCR/L2020K12	CSTB-4F	DTS6-4	SSC4T3	P-4	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	NS9530	T9215	T9215
Chipbreaker shape	01	PSS	PS	PM
Cutting conditions	B020			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Chipbreaker shape	W**	PSF	PSS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B026		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B028	

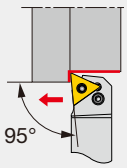
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

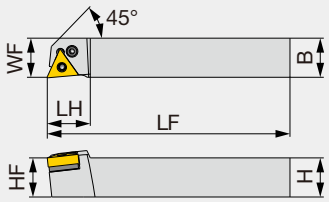
Reference pages: SCLCR/L: Inserts → B111 -, CBN → B182 -, PCD → B196 -

PTL2NR/L

Lever-lock toolholder with 95° approach angle, for negative 60° triangular inserts



Cutting edge style **L2**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PTL2NR/L2020H16	20	20	100	22	20	20	0.4	TN**1604...	2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PTL2NR/L...	LST317 D30	LCS3	P-2.5	LSP3	LCL3

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

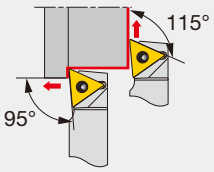
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

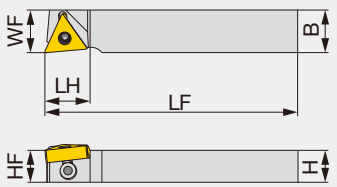
Reference pages: PTL2NR/L: Inserts → B086 -, CBN → B178 -, PCD → B194 -

JTTLNR/L

Back-clamp toolholder with 95° approach angle, for negative 60° triangular inserts



Cutting edge style **L**



Without offset

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JTTLNR/L1216F16	12	16	85	17	12	16	0.4	TN**1604...	1
JTTLNR/L1216X16	12	16	120	17	12	16	0.4	TN**1604...	1
JTTLNR/L1616X16	16	16	120	17	16	16	0.4	TN**1604...	1

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
JTTLNR/L...	JCP-3N	JDS-5040	P-2.5F

INSERT SELECTION

P

Application	Precision finishing
Grade	SH725
Chipbreaker shape	01
Cutting conditions	B008

M

Application	Precision finishing
Grade	SH725
Chipbreaker shape	01
Cutting conditions	B010

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B012

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	T-DIA with rake
Cutting conditions	B014

S

Application	Precision finishing
Grade	BX470
Chipbreaker shape	T-CBN
Cutting conditions	B016

H

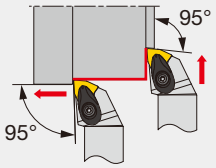
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

Reference pages: JTTLNR/L: Inserts → B086 -, CBN → B178 -, PCD → B194 -

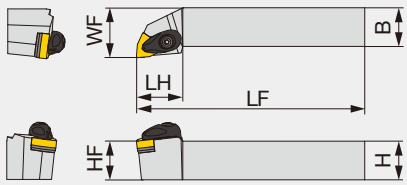
ISOECOTURN

AWLNR/L-Eco

Double-clamp toolholder with 95° approach angle, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Inch		B	LF	LH	HF	WF	RE**	Insert	Torque
AWLNR/L1233-A	0.750	0.750	4.500	1.125	0.750	1.000	0.031	WN**33...	2.21
AWLNR/L1633-A	1.000	1.000	6.000	1.125	1.000	1.250	0.031	WN**33...	2.21

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AWLNR/L2020K0604-A	20	20	125	27	20	25	0.8	WN**0604...	3
AWLNR/L2525M0604-A	25	25	150	27	25	32	0.8	WN**0604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

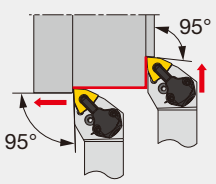
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AWLNR/L**-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASW322	CSTB-3.5	T-15F

TUNGTJET

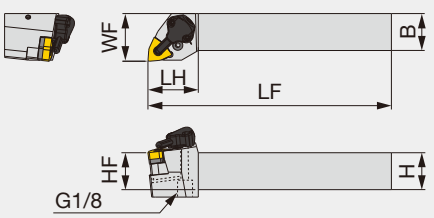
ISOECOTURN

PWLNR/L-CHP

Lever-lock toolholder with 95° approach angle, for negative 80° trigon inserts, with high pressure coolant capability



Cutting edge style **L**



Right hand (R) shown.

Inch		B	LF	LH	HF	WF	RE**	Insert	Torque
PWLNR/L1233-CHP	0.750	0.750	4.500	1.969	0.750	1.250	0.031	WN**33...	1.48
PWLNR/L1633-CHP	1.000	1.000	6.000	1.969	1.000	1.250	0.031	WN**33...	1.48

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PWLNR/L2020K0604-CHP	20	20	125	34	20	32	0.8	WN**0604...	2
PWLNR/L2525M0604-CHP	25	25	150	34	25	32	0.8	WN**0604...	2

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
PWLNR/L**-CHP	LSW312	LCS3	P-2.5	LSP3	LCL3

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench2	O-ring	Coolant screw	Wrench3
PWLNR/L**-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF	TM
Cutting conditions	B008	

M

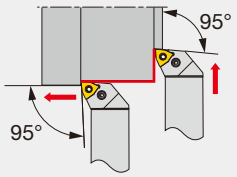
Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SS	SM
Cutting conditions	B010	

K

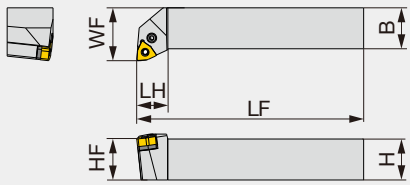
Application	Medium cutting
Grade	T515
Chipbreaker shape	TM
Cutting conditions	B012

Reference pages: AWLNR/L-Eco, PWLNR/L-CHP: Inserts → B102 -
Parts for coolant hose → C142

Lever-lock toolholder with 95° approach angle, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PWLNR/L1233	0.750	0.750	4.500	0.625	0.750	1.000	0.031	WN**33...	1.48
PWLNR/L1633	1.000	1.000	6.000	0.719	1.000	1.250	0.031	WN**33...	1.48

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PWLNR/L2020K0604	20	20	125	15	20	25	0.8	WN**0604...	2
PWLNR/L2525M0604	25	25	150	19	25	32	0.8	WN**0604...	2

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PWLNR/L...	LSW312	LCS3	P-2.5	LSP3	LCL3

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF 	TM 
Cutting conditions	B008	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SS 	SM 
Cutting conditions	B010	

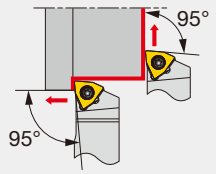
K

Application	Medium cutting
Grade	T515
Chipbreaker shape	TM 
Cutting conditions	B012

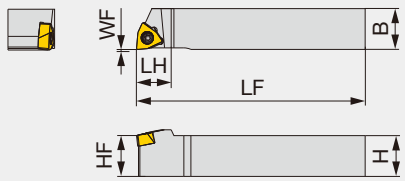
Reference pages: PWLNR/L-Eco: Inserts → B102 -

JSWL2XR/L

Screw-on toolholder with 95° approach angle, for WXGU inserts



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSWL2XR/L062	0.375	0.375	4.750	0.500	0.375	0	0.008	WXGU0403**L/R...	0.66
JSWL2XR/L082	0.500	0.500	4.750	0.500	0.500	0	0.008	WXGU0403**L/R...	0.66
JSWL2XR/L102	0.625	0.625	4.750	0.500	0.625	0	0.008	WXGU0403**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSWL2XR/L1010X04	10	10	120	11	10	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1212F04	12	12	85	11	12	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1212X04	12	12	120	11	12	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1616X04	16	16	120	13	16	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L2020H04	20	20	100	13	20	0	0.2	WXGU0403**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS


Designation	Clamping screw	Wrench
JSWL2XR/L...	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P

Application	Finishing	Medium cutting
Grade	SH725	AH725
Chipbreaker shape	JSS	JTS
Cutting conditions	C143	

M

Application	Finishing	Medium cutting
Grade	SH725	AH725
Chipbreaker shape	JSS	JTS
Cutting conditions	C143	

Small CNC lathes

P

Application	Finishing	Medium cutting
Grade	AH725	AH725
Chipbreaker shape	SS	TS
Cutting conditions	C143	

M

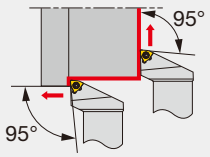
Application	Finishing	Medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	SS	TS
Cutting conditions	C143	

Reference pages: JSWL2XR/L: Inserts → B161 -
Standard cutting conditions → C143

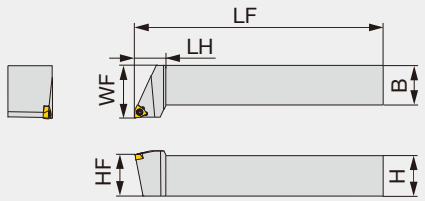
MINIFORCE TURN

JSWLXR/L

Lever-lock toolholder with 95° approach angle, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSWLXR/122	0.750	0.750	4.500	0.625	0.750	1.000	0.008	WXGU0403**L/R...	0.66
JSWLXR/162	1.000	1.000	6.000	0.750	1.000	1.250	0.008	WXGU0403**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSWLXR/L2020K04	20	20	125	15	20	25	0.4	WXGU0403**L/R...	0.9
JSWLXR/L2525M04	25	25	150	19	25	32	0.4	WXGU0403**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

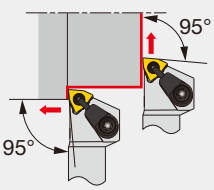
Designation	Clamping screw	Wrench
JSWLXR/L...	SR34-514	T-7F

MINIFORCE TURN

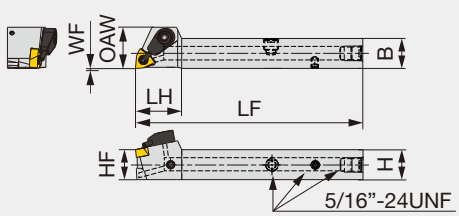
TUNGTJET TURN

JSWL2XR/L-CHP

Screw-on toolholder with 95° approach angle, for WXGU inserts, with high pressure coolant capability



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque
JSWL2XR/L082-CHP	0.500	0.500	3.344	0.750	0.500	0	0.650	0.008	WXGU0403**L/R...	0.66
JSWL2XR082X-CHP	0.500	0.500	4.750	0.728	0.500	0	0.650	0.008	WXGU0403**L	0.66
JSWL2XR102X-CHP	0.625	0.625	4.750	0.728	0.625	0	0.650	0.008	WXGU0403**L	0.66

Metric	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSWL2XR/L1212F04-CHP	12	12	85	18	12	0	16.5	0.2	WXGU0403**L/R...	0.9
JSWL2XR1212X04-CHP(1)	12	12	120	18.5	12	0	16.5	0.2	WXGU0403**L	0.9
JSWL2XR1616X04-CHP(1)	16	16	120	18.5	16	0	16.5	0.2	WXGU0403**L	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).
(1) Compatible to the direct internal coolant supply system without the use of external coolant hose.

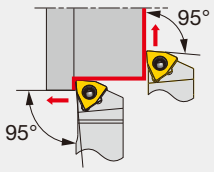
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench
JSWL2XR**-CHP	SR34-514	S-CU-CHP	T-7F

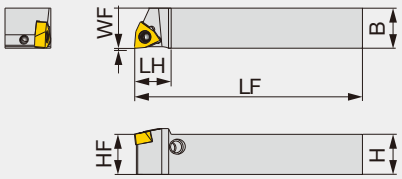
Reference pages: JSWLXR/L, JSWL2XR/L-CHP: Inserts → B161 -
Standard cutting conditions → C143

JPWL2XR/L

Back-clamp toolholder with 95° approach angle, for WXGU inserts



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JPWL2XR/L062	0.375	0.375	4.750	0.500	0.375	0	0.008	WXGU0403**L/R...	0.66
JPWL2XR/L082	0.500	0.500	4.750	0.500	0.500	0	0.008	WXGU0403**L/R...	0.66
JPWL2XR/L102	0.625	0.625	4.750	0.500	0.625	0	0.008	WXGU0403**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JPWL2XR/L1010X04	10	10	120	11	10	0	0.2	WXGU0403**L/R...	0.9
JPWL2XR/L1212F04	12	12	85	11	12	0	0.2	WXGU0403**L/R...	0.9
JPWL2XR/L1212X04	12	12	120	11	12	0	0.2	WXGU0403**L/R...	0.9
JPWL2XR/L1616X04	16	16	120	13	16	0	0.2	WXGU0403**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Lever	Pin	Clamping screw	Wrench
JPWL2XR/L...	SLLV-2	SL-PI-2	SR10400611	HW2.0/5RED

INSERT SELECTION

Swiss lathes

P

Application	Finishing	Medium cutting
Grade	SH725	AH725
Chipbreaker shape	JSS 	JTS 
Cutting conditions	C143	

M

Application	Finishing	Medium cutting
Grade	SH725	AH725
Chipbreaker shape	JSS 	JTS 
Cutting conditions	C143	

Small CNC lathes

P

Application	Finishing	Medium cutting
Grade	AH725	AH725
Chipbreaker shape	SS 	TS 
Cutting conditions	C143	

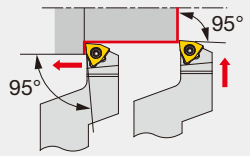
M

Application	Finishing	Medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	SS 	TS 
Cutting conditions	C143	

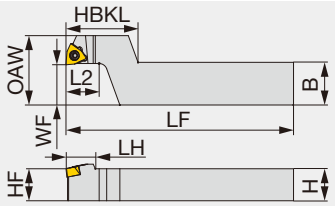
Reference pages: JPWL2XR/L: Inserts → B161 -
Standard cutting conditions → C143

JSWLXR-F

Screw-on stepped-head toolholder with 95° approach angle, for WXGU inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque
JSWLXR082-F10	0.500	0.625	4.750	0.500	1.125	0.750	0.500	0.625	1	0.008	WXGU0403**L...	0.66
JSWLXR102-F10	0.625	0.750	4.750	0.500	1.125	0.750	0.625	0.625	1	0.008	WXGU0403**L...	0.66

Metric	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSWLXR1016X04-F15	10	16	120	12	27	11	10	15	26	0.2	WXGU0403**L...	0.9
JSWLXR1216F04-F15	12	16	85	12	27	11	12	15	26	0.2	WXGU0403**L...	0.9
JSWLXR1216X04-F15	12	16	120	12	27	11	12	15	26	0.2	WXGU0403**L...	0.9
JSWLXR1620X04-F15	16	20	120	12	27	11	16	15	26	0.2	WXGU0403**L...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
JSWLXR**-F10 JSWLXR**-F15	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P

Application	Finishing	Medium cutting
Grade	SH725	AH725
Chipbreaker shape	JSS	JTS
Cutting conditions	C143	

M

Application	Finishing	Medium cutting
Grade	SH725	AH725
Chipbreaker shape	JSS	JTS
Cutting conditions	C143	

Small CNC lathes

P

Application	Finishing	Medium cutting
Grade	AH725	AH725
Chipbreaker shape	SS	TS
Cutting conditions	C143	

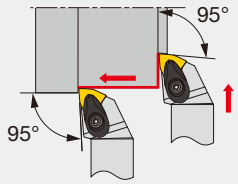
M

Application	Finishing	Medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	SS	TS
Cutting conditions	C143	

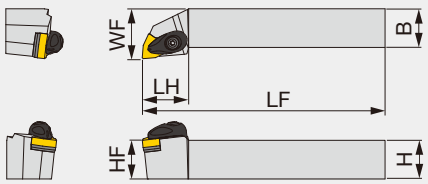
Reference pages: JSWLXR-F: Inserts → B161 -
Standard cutting conditions → C143

AWLNR/L

Double-clamp toolholder with 95° approach angle, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
AWLNR/L123-A	0.750	0.750	4.500	1.125	0.750	1.000	0.031	WN**33...	2.2
AWLNR/L163-A	1.000	1.000	6.000	1.125	1.000	1.250	0.031	WN**33...	2.2
AWLNR/L124-A	0.750	0.750	4.500	1.250	0.750	1.000	0.031	WN**43...	2.2
AWLNR/L164-A	1.000	1.000	6.000	1.250	1.000	1.250	0.031	WN**43...	2.2
AWLNR/L204-A	1.250	1.250	7.000	1.250	1.250	1.500	0.031	WN**43...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AWLNR/L2020H08-A	20	20	100	30	20	25	0.8	WN**0804...	3
AWLNR/L2020K08-A	20	20	125	30	20	25	0.8	WN**0804...	3
AWLNR/L2525K08-A	25	25	125	30	25	32	0.8	WN**0804...	3
AWLNR/L2525M08-A	25	25	150	30	25	32	0.8	WN**0804...	3
AWLNR/L3225P08-A	32	25	170	30	32	32	0.8	WN**0804...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AWLNR/L**3-A	ACP3S	ACS-5W	BP-7	SP-2.5	ASW322	CSTB-3.5	T-15F
AWLNR/L**4-A, 08-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASW422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

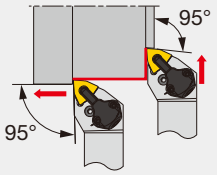
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

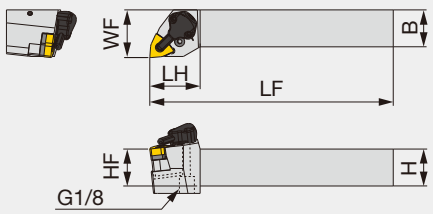
Reference pages: AWLNR/L: Inserts → B101 -, CBN → B181
Parts for coolant hose → C142

TUNGTJET URN
PWLNR/L-CHP

Lever-lock toolholder with 95° approach angle, for negative 80° trigon inserts, with high pressure coolant capability



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PWLNR/L124-CHP	0.750	0.750	4.500	1.969	0.750	1.250	0.031	WN**43...	1.5
PWLNR/L164-CHP	1.000	1.000	6.000	1.969	1.000	1.250	0.031	WN**43...	1.5

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PWLNR/L2020K08-CHP	20	20	125	34	20	32	0.8	WN**0804...	3
PWLNR/L2525M08-CHP	25	25	150	34	25	32	0.8	WN**0804...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

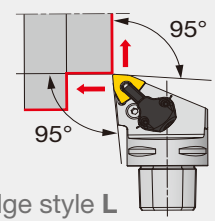
Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
PWLNR/L**4-CHP, PWLNR/L**08-CHP	LSW42	LCS4	P-2.5	LSP4	LCL4

SPARE PARTS

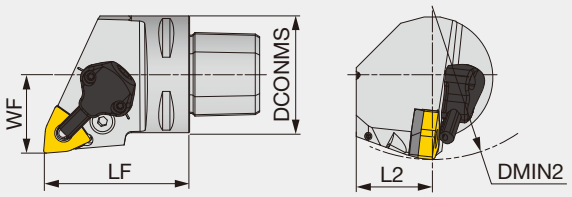
Designation	Coolant unit	Mounting screw	Wrench2	O-ring	Coolant screw	Wrench3
PWLNR/L**4-CHP, PWLNR/L**08-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

TUNGTJET URN
ISOECO TURN TUNGCAP
C-PWLNR/L-CHP

Lever-lock toolholder with TungCap connection, for negative 80° trigon inserts, with high pressure coolant capability



Cutting edge style **L**



Right hand (R) shown.

Inch	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4PWLNR/L27050-0604-CHP	1.575	1.969	0.984	1.063	5.512	4.331	0.031	WN**33...
C4PWLNR/L27050-08-CHP	1.575	1.969	0.984	1.063	5.512	4.331	0.031	WN**43...
C6PWLNR/L45065-08-CHP	2.480	2.559	1.614	1.772	7.480	4.331	0.031	WN**43...

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4PWLNR/L27050-0604-CHP	40	50	25	27	140	110	0.8	WN**0604...
C4PWLNR/L27050-08-CHP	40	50	25	27	140	110	0.8	WN**0804...
C6PWLNR/L45065-08-CHP	63	65	41	45	190	110	0.8	WN**0804...

**RE: Standard corner radius

SPARE PARTS FOR P-TYPE

Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
C*PWLNR/L**-0604-CHP	LSW312	LCS3	P-2.5	LSP3	LCL3
C*PWLNR/L**-08-CHP	LSW42BL	LCS4	P-3	LSP4	LCL4

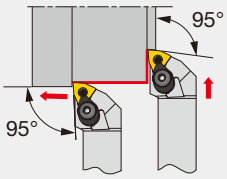
COOLANT SET

Designation	Coolant unit	Mounting screw	Wrench2	O-ring
C*PWLNR/L**-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

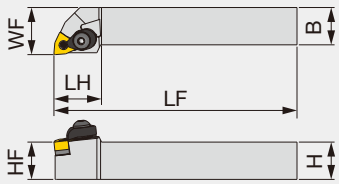
Reference pages: PWLNR/L-CHP, C-PWLNR/L-CHP: Inserts → B101 -, CBN → B181
Parts for coolant hose → C142

DWLNR/L

One-Double toolholder with 95° approach angle, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
DWLNR/L2020K06	20	20	125	25.5	20	25	0.8	WN**0604...
DWLNR/L2020K08	20	20	125	31	20	25	0.8	WN**0804...
DWLNR/L2525M06	25	25	150	26	25	32	0.8	WN**0604...
DWLNR/L2525M08	25	25	150	31	25	32	0.8	WN**0804...
DWLNR/L3225P08	32	25	170	30	32	32	0.8	WN**0804...

Except for 57-type chipbreaker inserts
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench1	Wrench2
DWLNR/L**06	DCPM-33	LCL33	DPIS33	DLCS33	LSW312	BP-9	LSP3	P-2.5	P-3
DWLNR/L**08	DCPM-43	DLCL43	DPIS43	DLCS43	LSW42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

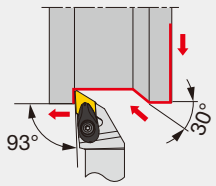
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

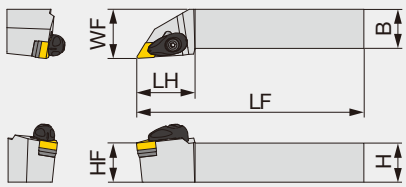
Reference pages: DWLNR/L: Inserts → B101 -, CBN → B181

ADJNR/L-Eco

Double-clamp toolholder with 93° approach angle, for negative 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ADJNR/L1233-A	0.750	0.750	4.500	1.250	0.750	1.000	0.031	DN**33...	2.2
ADJNR/L1633-A	1.000	1.000	6.000	1.250	1.000	1.250	0.031	DN**33...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ADJNR/L2020K1104-A	20	20	125	30	20	25	0.8	DN**1104...	3
ADJNR/L2525M1104-A	25	25	150	30	25	32	0.8	DN**1104...	3

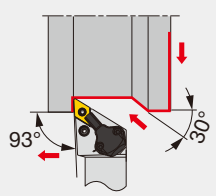
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

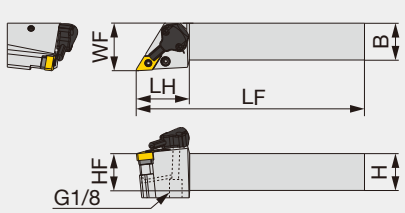
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ADJNR/L**-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASD322	CSTB-3.5	T-15F

PDJNR/L-CHP-Eco

Lever-lock toolholder with 93° approach angle, for negative 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PDJNR/L1233-CHP	0.750	0.750	4.500	1.420	0.750	1.250	0.031	DN**33...	1.5
PDJNR/L1633-CHP	1.000	1.000	6.000	1.125	1.000	1.250	0.031	DN**33...	1.5

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PDJNR/L2020K1104-CHP	20	20	125	36	20	32	0.8	DN**1104...	2
PDJNR/L2525M1104-CHP	25	25	150	36	25	32	0.8	DN**1104...	2

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

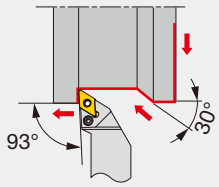
Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
PDJNR/L**-CHP	ELSD32	LCS3	P-2.5	LSP3	LCL33L

SPARE PARTS

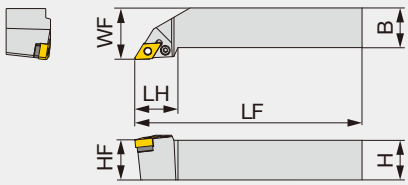
Designation	Coolant unit	Mounting screw	Wrench2	O-ring	Coolant screw	Wrench3
PDJNR/L**-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

Reference pages: ADJNR/L-Eco, PDJNR/L-CHP-Eco: Inserts → B067 -
Parts for coolant hose→ C142

Lever-lock toolholder with 93° approach angle, for negative 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PDJNR/L1033	0.625	0.625	4.000	1.125	0.625	0.875	0.031	DN**33...	1.5
PDJNR/L1233	0.750	0.750	4.500	1.125	0.750	1.000	0.031	DN**33...	1.5
PDJNR/L1633	1.000	1.000	6.000	1.125	1.000	1.250	0.031	DN**33...	1.5

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PDJNR/L1616H1104	16	16	100	27	16	20	0.8	DN**1104...	2
PDJNR/L2020K1104	20	20	125	27	20	25	0.8	DN**1104...	2
PDJNR/L2525M1104	25	25	150	27	25	32	0.8	DN**1104...	2

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PDJNR/L...	ELSD32	LCS3	P-2.5	LSP3	LCL33L

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF	TM
Cutting conditions	B008	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SS	SM
Cutting conditions	B010	

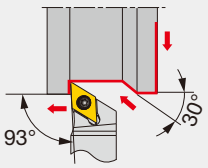
K

Application	Medium cutting
Grade	T515
Chipbreaker shape	TM
Cutting conditions	B012

Reference pages: PDJNR/L-Eco: Inserts → B067 -
Parts for coolant hose→ C142

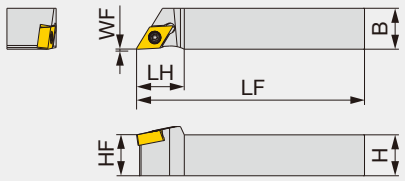
MINIFORCE TURN
JSDJ2XR/L

Screw-on toolholder with 93° approach angle, for DXGU inserts



Cutting edge style **J2**

Without offset



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSDJ2XR/L062	0.375	0.375	4.750	0.625	0.375	0	0.008	DXGU0703**L/R...	0.66
JSDJ2XR/L082	0.500	0.500	4.750	0.625	0.500	0	0.008	DXGU0703**L/R...	0.66
JSDJ2XR/L102	0.625	0.625	4.750	0.625	0.625	0	0.008	DXGU0703**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSDJ2XR/L1010X07	10	10	120	14	10	0	0.2	DXGU0703**L/R...	0.9
JSDJ2XR/L1212F07	12	12	85	14	12	0	0.2	DXGU0703**L/R...	0.9
JSDJ2XR/L1212X07	12	12	120	14	12	0	0.2	DXGU0703**L/R...	0.9
JSDJ2XR/L1616X07	16	16	120	18	16	0	0.2	DXGU0703**L/R...	0.9
JSDJ2XR/L2020H07	20	20	100	18	20	0	0.2	DXGU0703**L/R...	0.9

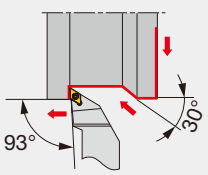
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

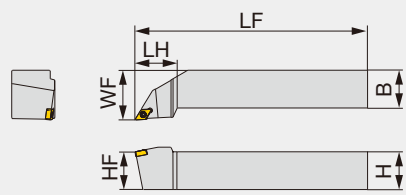
Designation	Clamping screw	Wrench
JSDJ2XR/L...	SR34-514	T-7F

MINIFORCE TURN
JSDJXR/L

Screw-on toolholder with 93° approach angle, for DXGU inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSDJXR/122	0.750	0.750	4.500	1.125	0.750	1.000	0.008	DXGU0703**L/R...	0.66
JSDJXR/162	1.000	1.000	6.000	1.125	1.000	1.250	0.008	DXGU0703**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSDJXR/L2020K07	20	20	125	27	20	25	0.4	DXGU0703**L/R...	0.9
JSDJXR/L2525M07	25	25	150	27	25	32	0.4	DXGU0703**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

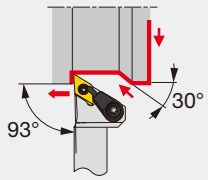
SPARE PARTS

Designation	Clamping screw	Wrench
JSDJXR/L...	SR34-514	T-7F

Reference pages: JSDJ2XR/L, JSDJXR/L: Inserts → B127 -
Standard cutting conditions → C143

JSDJ2XR/L-CHP

Screw-on toolholder with 93° approach angle, for DXGU inserts, with high pressure coolant capability



Cutting edge style **J2**

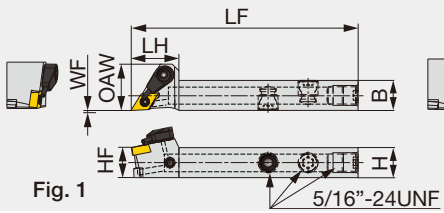


Fig. 1

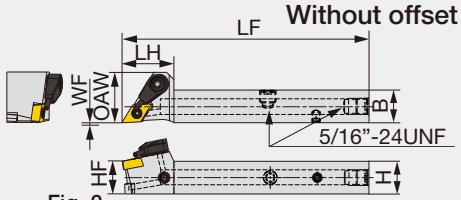


Fig. 2

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque	Fig.
JSDJ2XR/L082-CHP	0.500	0.500	3.344	0.750	0.500	0	0.730	0.008	DXGU0703**L/R...	0.66	1
JSDJ2XR082X-CHP(1)	0.500	0.500	4.750	0.748	0.500	0	0.728	0.008	DXGU0703**L...	0.66	2
JSDJ2XR102X-CHP(1)	0.625	0.625	4.750	0.748	0.625	0	0.728	0.008	DXGU0703**L...	0.66	2

Metric	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*	Fig.
JSDJ2XR/L1212F07-CHP	12	12	85	19	12	0	18.5	0.2	DXGU0703**L/R...	0.9	1
JSDJ2XR1212X07-CHP(1)	12	12	120	19	12	0	18.5	0.2	DXGU0703**L...	0.9	2
JSDJ2XR1616X07-CHP(1)	16	16	120	19	16	0	18.5	0.2	DXGU0703**L...	0.9	2

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).
(1) Compatible to the direct internal coolant supply system without the use of external coolant hose.

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench
JSDJ2XR/L**-CHP	SR34-514	S-CU-CHP	T-7F

INSERT SELECTION

Swiss lathes

P	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS	JTS
	Cutting conditions	C143	

M	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS	JTS
	Cutting conditions	C143	

Small CNC lathes

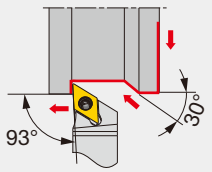
P	Application	Finishing	Medium cutting
	Grade	AH725	AH725
	Chipbreaker shape	SS	TS
	Cutting conditions	C143	

M	Application	Finishing	Medium cutting
	Grade	AH8015	AH8015
	Chipbreaker shape	SS	TS
	Cutting conditions	C143	

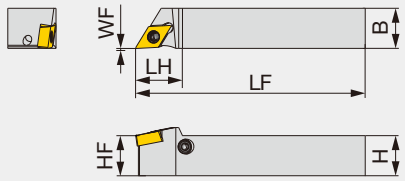
Reference pages: JSDJ2XR/L-CHP: Inserts → B127 -
Standard cutting conditions → C143

JPDJ2XR/L

Back-clamp toolholder with 93° approach angle, for DXGU inserts



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JPDJ2XR/L062	0.375	0.375	4.750	0.625	0.375	0	0.008	DXGU0703**L/R...	0.66
JPDJ2XR/L082	0.500	0.500	4.750	0.625	0.500	0	0.008	DXGU0703**L/R...	0.66
JPDJ2XR/L102	0.625	0.625	4.750	0.625	0.625	0	0.008	DXGU0703**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JPDJ2XR/L1010X07	10	10	120	14	10	0	0.2	DXGU0703**L/R...	0.9
JPDJ2XR/L1212F07	12	12	85	14	12	0	0.2	DXGU0703**L/R...	0.9
JPDJ2XR/L1212X07	12	12	120	14	12	0	0.2	DXGU0703**L/R...	0.9
JPDJ2XR/L1616X07	16	16	120	18	16	0	0.2	DXGU0703**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Lever	Pin	Clamping screw	Wrench
JPDJ2XR/L...	SLLV-2	SL-PI-2	SR10400611	HW2.0/5RED

INSERT SELECTION

Swiss lathes

P	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS	JTS
	Cutting conditions	C143	

M	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker shape	JSS	JTS
	Cutting conditions	C143	

Small CNC lathes

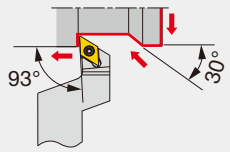
P	Application	Finishing	Medium cutting
	Grade	AH725	AH725
	Chipbreaker shape	SS	TS
	Cutting conditions	C143	

M	Application	Finishing	Medium cutting
	Grade	AH8015	AH8015
	Chipbreaker shape	SS	TS
	Cutting conditions	C143	

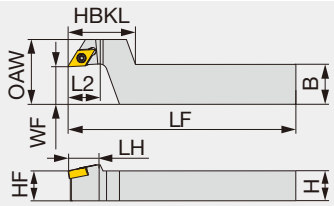
Reference pages: JPDJ2XR/L: Inserts → B127 -
Standard cutting conditions → C143

JSDJXR-F

Screw-on stepped-head toolholder with 93° approach angle, for DXGU inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque
JSDJXR082-F10	0.500	0.625	4.750	0.500	1.125	0.625	0.500	0.625	1	0.008	DXGU0703**L...	0.66
JSDJXR102-F10	0.625	0.750	4.750	0.500	1.125	0.625	0.625	0.625	1	0.008	DXGU0703**L...	0.66

Metric	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSDJXR1016X07-F15	10	16	120	12	27	14	10	15	26	0.2	DXGU0703**L...	0.9
JSDJXR1216F07-F15	12	16	85	12	27	14	12	15	26	0.2	DXGU0703**L...	0.9
JSDJXR1216X07-F15	12	16	120	12	27	14	12	15	26	0.2	DXGU0703**L...	0.9
JSDJXR1620X07-F15	16	20	120	12	27	14	16	15	26	0.2	DXGU0703**L...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: The holder measurements are true with this insert radius
Use the right-hand toolholder (R) for the left-hand insert (L)

SPARE PARTS

Designation	Clamping screw	Wrench
JSDJXR**-F...	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P

Application	Finishing	Medium cutting
Grade	SH725	AH725
Chipbreaker shape	JSS	JTS
Cutting conditions	C143	

M

Application	Finishing	Medium cutting
Grade	SH725	AH725
Chipbreaker shape	JSS	JTS
Cutting conditions	C143	

Small CNC lathes

P

Application	Finishing	Medium cutting
Grade	AH725	AH725
Chipbreaker shape	SS	TS
Cutting conditions	C143	

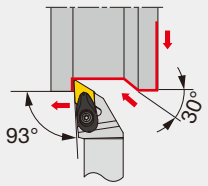
M

Application	Finishing	Medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	SS	TS
Cutting conditions	C143	

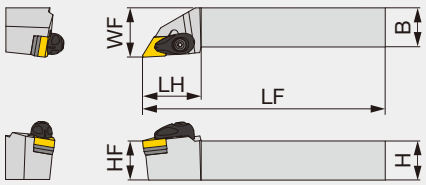
Reference pages: JSDJXR-F: Inserts → B127 -
Standard cutting conditions → C143

ADJNR/L

Double-clamp toolholder with 93° approach angle, for negative 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ADJNR/L124-A	0.750	0.750	4.500	1.500	0.750	1.000	0.031	DN**43...	2.2
ADJNR/L164-A	1.000	1.000	6.000	1.500	1.000	1.250	0.031	DN**43...	2.2
ADJNR/L204-A	1.250	1.250	7.000	1.500	1.250	1.500	0.031	DN**43...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ADJNR/L2020K15-A	20	20	125	36	20	25	0.8	DN**1504...	3
ADJNR/L2020K1506-A	20	20	125	36	20	25	0.8	DN**1506...	3
ADJNR/L2525M15-A	25	25	150	36	25	32	0.8	DN**1504...	3
ADJNR/L2525M1506-A	25	25	150	36	25	32	0.8	DN**1506...	3
ADJNR/L3225P15-A	32	25	170	36	32	32	0.8	DN**1504...	3

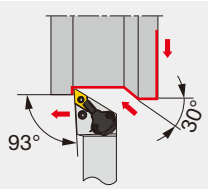
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

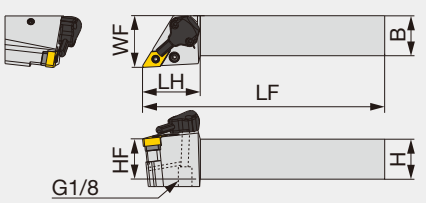
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ADJNR/L**15-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASD432	CSTB-3.5	T-15F
ADJNR/L**4-A, 1506-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASD423	CSTB-3.5	T-15F

PDJNR/L-CHP

Lever-lock toolholder, for negative 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PDJNR/L124-CHP	0.750	0.750	4.500	1.420	0.750	1.250	0.031	DN**43...	2.2
PDJNR/L164-CHP	1.000	1.000	6.000	1.420	1.000	1.250	0.031	DN**43...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PDJNR/L2020K15-CHP	20	20	125	36	20	32	0.8	DN**1504...	3
PDJNR/L2525M15-CHP	25	25	150	36	25	32	0.8	DN**1504...	3

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
PDJNR/L**4-CHP, PDJNR/L**15-CHP	LSD43A	LCS4	P-3	LSP4	LCL4

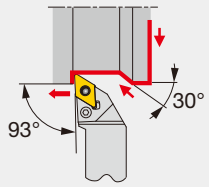
SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench2	O-ring	Coolant screw	Wrench3
PDJNR/L**4-CHP, PDJNR/L**15-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

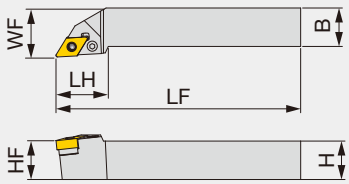
Reference pages: ADJNR/L, PDJNR/L-CHP: Inserts → B067 -, CBN → B174 -, PCD → B194 -
Parts for coolant hose → C142

PDJNR/L

Lever-lock toolholder with 93° approach angle, for negative 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
PDJNR/L1616H11	16	16	100	27	16	20	0.8	DN**1104...
PDJNR/L2020K11	20	20	125	27	20	25	0.8	DN**1104...
PDJNR/L2020	20	20	125	34	20	25	0.8	DN**1504...
PDJNR2020K15E	20	20	125	36	20	25	0.8	DN**1506...
PDJNR/L2520	25	20	150	34	25	25	0.8	DN**1504...
PDJNR/L2525M11	25	25	150	27	25	32	0.8	DN**1104...
PDJNR/L2525	25	25	150	34	25	32	0.8	DN**1504...
PDJNR/L2525M15E	25	25	150	36	25	32	0.8	DN**1506...
PDJNR/L3225	32	25	170	32	32	32	0.8	DN**1504...
PDJNR3225P15E	32	25	170	36	32	34	0.8	DN**1506...

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PDJNR/L*****11	ELSD32	LCS3	P-2.5	LSP3	LCL33L
PDJNR/L2020	LSD42	LCS4	P-3	LSP4	LCL4
PDJNR2020K15E	ELSD42	ELCS4	P-3	LSP4S	LCL44
PDJNR/L2520	LSD42	LCS4	P-3	LSP4	LCL4
PDJNR/L2525	LSD42	LCS4	P-3	LSP4	LCL4
PDJNR/L2525M15E	ELSD42	ELCS4	P-3	LSP4S	LCL44
PDJNR/L3225	LSD42	LCS4	P-3	LSP4	LCL4
PDJNR3225P15E	ELSD42	ELCS4	P-3	LSP4S	LCL44

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

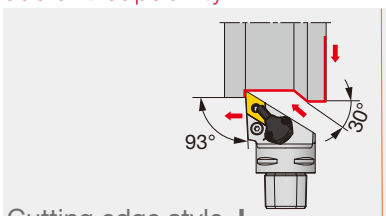
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

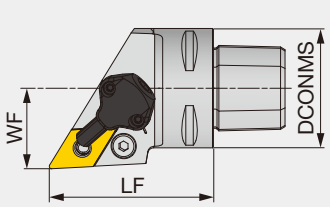
Reference pages: PDJNR/L: Inserts → B067 -, CBN → B174 -, PCD → B194 -

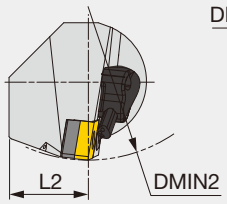
C-PDJNR/L-CHP

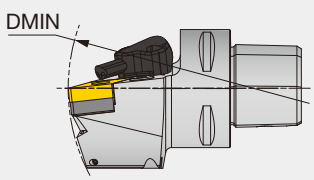
Lever-lock toolholder with TungCap connection, for negative 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **J**







Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4PDJNR/L27055-1104-CHP	40	55	25	27	140	110	0.8	DN**1104...
C4PDJNR/L27055-15-CHP	40	55	25	27	140	110	0.8	DN**1504(06)...
C5PDJNR/L35060-15-CHP	50	60	32	35	165	110	0.8	DN**1504(06)...
C6PDJNR/L45065-1104-CHP	63	65	41	45	190	110	0.8	DN**1104...
C6PDJNR/L45065-15-CHP	63	65	41	45	190	110	0.8	DN**1504(06)...

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
C*PDJNR/L**1104-CHP	ELSD32	LCS3	P-2.5	LSP3	LCL33L
C*PDJNR/L**-15-CHP	LSD43A	LCS4	P-3	LSP4	LCL4

Option: LSD42A (Shim for DN**1506...), LSP4S (Spring pin for DN**1506...)

SPARE PARTS

Designation	Coolant unit	Coolant screw	Wrench 2	Wrench 3
C*PDJNR/L**1104-CHP	CU-D-CHP	SRM4X4TL360	T-8F	P-2
C*PDJNR/L**-15-CHP	CU-D-CHP	SRM4X4TL360	T-8F	P-2

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

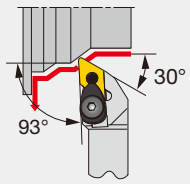
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

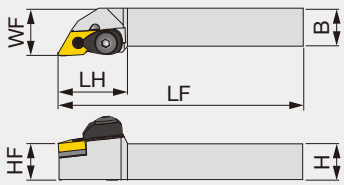
Reference pages: C-PDJNR/L-CHP: Inserts → B067 -, CBN → B174 -, PCD → B194 -
Parts for coolant hose → C142

DDJNR/L

One-Double toolholder with 93° approach angle, for negative 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
DDJNR/L2020K15	20	20	125	38	20	25	0.8	DN**1504...
DDJNR/L2020K1506	20	20	125	38	20	25	0.8	DN**1506...
DDJNR/L2525M15	25	25	150	38	25	32	0.8	DN**1504...
DDJNR/L2525M1506	25	25	150	38	25	32	0.8	DN**1506...
DDJNR/L3225P15	32	25	170	38	32	32	0.8	DN**1504...
DDJNR/L3225P1506	32	25	170	38	32	32	0.8	DN**1506...

Except for 57-type chipbreaker inserts
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench1	Wrench2
DDJNR/L**15	DCPM-43	DLCL43	DPIS43	DLCS43	LSD42	BP-10	LSP4	P-3	P-4
DDJNR/L**1506	DCPM-43	DLCL43	DPIS44	DLCS43	LSD42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA	with rake T-DIA	P
Cutting conditions	B014		

S

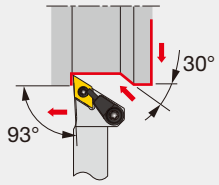
Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

H

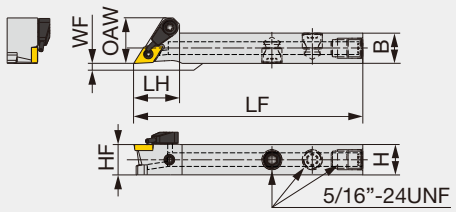
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

Reference pages: DDJNR/L: Inserts → B067 -, CBN → B174 -, PCD → B194 -

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque
JSDJ2CR/L082-CHP	0.500	0.500	3.344	0.710	0.500	0	0.710	0.008	DC**21.5...	0.89
JSDJ2CR083X-CHP	0.500	0.500	4.750	0.748	0.500	0	0.807	0.008	DC**32.5...	0.89
JSDJ2CR103X-CHP	0.625	0.625	4.750	0.748	0.625	0	0.807	0.008	DC**32.5...	0.89

Metric	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSDJ2CR/L1212F07-CHP	12	12	85	18	12	0	18	0.2	DC**0702...	1.2
JSDJ2CR/L1212F11-CHP	12	12	85	19	12	0	20.5	0.2	DC**11T3...	1.2
JSDJ2CR1212X11-CHP	12	12	120	19	12	0	20.5	0.2	DC**11T3...	1.2
JSDJ2CR1616X11-CHP	16	16	120	19	16	0	20.5	0.2	DC**11T3...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench1	Coolant plug	Wrench2	DirectJet plug	Wrench3
JSDJ2CR/L082-CHP, JSDJ2CR/L1212F07-CHP	CSTB-2.5	S-CU-CHP	T-8F	-	-	-	-
JSDJ2CR/L1212F11-CHP	CSTB-4SD	S-CU-CHP	T-8F	-	-	-	-
JSDJ2CR**3X-CHP, JSDJ2CR**X11-CHP	CSTB-4SD	S-CU-CHP	T-8F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Chipbreaker shape	PSS	PS	PM
Cutting conditions	B020		

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Chipbreaker shape	W**	PSF	PSS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B026		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B028	

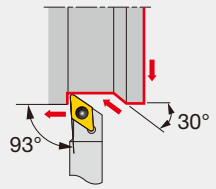
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

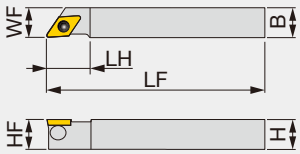
Reference pages: JSDJ2CR/L-CHP: Inserts → B121 -, CBN → B184 -, PCD → B196 -
Parts for coolant hose → C142

JTDJ2CR/L

Back-clamp toolholder with 93° approach angle, for positive 55° rhombic inserts

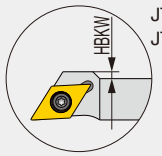


Cutting edge style **J2**



Without offset

JTDJ2CR/L1212F11
JTDJ2CR/L1212X11



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	HBKW	RE**	Insert	Torque
JTDJ2CR/L1010X07	10	10	120	14	10	10	-	0.2	DC**0702...	0.9
JTDJ2CR/L1212F07	12	12	85	14	12	12	-	0.2	DC**0702...	0.9
JTDJ2CR/L1212X07	12	12	120	14	12	12	-	0.2	DC**0702...	0.9
JTDJ2CR/L1212F11	12	12	85	20	12	12	2	0.2	DC**11T3...	1.2
JTDJ2CR/L1212X11	12	12	120	20	12	12	2	0.2	DC**11T3...	1.2
JTDJ2CR/L1616X11	16	16	120	20	16	16	-	0.2	DC**11T3...	1.2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
JTDJ2CR/L**07	JCP-2	JDS-3525	P-2F
JTDJ2CR/L**11	JCP-3	JDS-5040	P-2.5F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B020			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Chipbreaker shape	T-DIA with rake	AL
Cutting conditions	B026	

S

Application	Precision finishing	Finishing to medium cutting
Grade	BX470	AH8005
Chipbreaker shape	T-CBN	PS
Cutting conditions	B028	

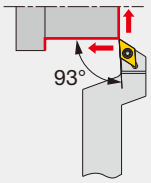
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

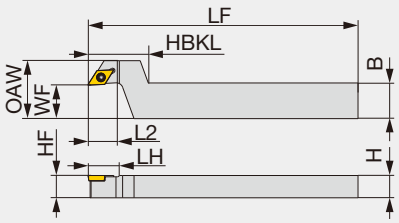
Reference pages: JTDJ2CR/L: Inserts → B121 -, CBN → B184 -, PCD → B196 -

JSDJCR-F

Screw-on stepped-head toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque
JSDJCR1016X07-F15	10	16	120	12.5	27	14	10	15	26	0.2	DC**0702...	1.2
JSDJCR1216F07-F15	12	16	85	12.5	27	14	12	15	26	0.2	DC**0702...	1.2
JSDJCR1216X07-F15	12	16	120	12.5	27	14	12	15	26	0.2	DC**0702...	1.2
JSDJCR1216F11-F15	12	16	85	12.5	27	20	12	15	28	0.2	DC**11T3...	1.2
JSDJCR1216X11-F15	12	16	120	12.5	27	20	12	15	28	0.2	DC**11T3...	1.2
JSDJCR1620X11-F15	16	20	120	12.5	27	20	16	15	28	0.2	DC**11T3...	1.2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JSDJCR**07-F15	CSTB-2.5	T-8F
JSDJCR**11-F15	CSTB-4SD	T-8F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B020			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Chipbreaker shape	T-DIA with rake	AL
Cutting conditions	B026	

S

Application	Precision finishing	Finishing to medium cutting
Grade	BX470	AH8005
Chipbreaker shape	T-CBN	PS
Cutting conditions	B028	

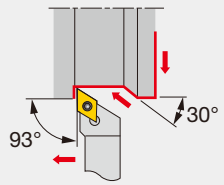
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

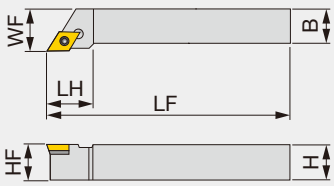
Reference pages: JSDJCR-F: Inserts → B121 -, CBN → B184 -, PCD → B196 -

SDJCR/L

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert
SDJCR/L 062	0.375	0.375	2.500	0.625	0.375	0.500	0.016	DC**21.5...
SDJCR/L 082	0.500	0.500	3.500	0.625	0.500	0.625	0.016	DC**21.5...
SDJCR/L 083	0.500	0.500	3.500	-	0.500	0.625	0.016	DC**32.5...
SDJCR/L 103	0.625	0.625	4.000	-	0.625	0.750	0.031	DC**32.5...
SDJCR/L 123	0.750	0.750	4.500	-	0.750	1.000	0.031	DC**32.5...
SDJCR/L 163	1.000	1.000	6.000	-	1.000	1.250	0.031	DC**32.5...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SDJCR1616H11	16	16	100	20	16	20	0.8	DC**11T3...
SDJCR/L2020K11	20	20	125	20.5	20	25	0.8	DC**11T3...
SDJCR/L2525M11	25	25	150	21.5	25	32	0.8	DC**11T3...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench1	Wrench2
SDJCR/L **2	CSTB-2.5	-	-	-	T-8F
SDJCR/L **3, SDJCR/L**11	CSTB-3.5L	DTS5-3.5	SSD32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Chipbreaker shape	PSS	PS	PM
Cutting conditions	B020		

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Chipbreaker shape	W**	PSF	PSS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B026		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B028	

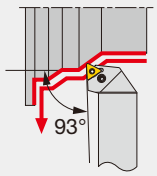
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

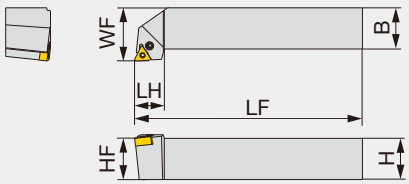
Reference pages: SDJCR/L: Inserts→ B121 -, CBN → B184 -, PCD → B196 -

PTJNR/L-Eco

Lever-lock toolholder with 93° approach angle, for negative triangular inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PTJNR/L2525M1104	25	25	150	18	25	32	0.8	TN**1104...	2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench	Lever
PTJNR/L2525M1104	LCS23A	P-2.5	LCL23

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF	TM
Cutting conditions	B008	

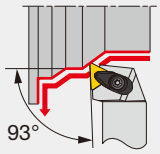
M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SS	SM
Cutting conditions	B010	

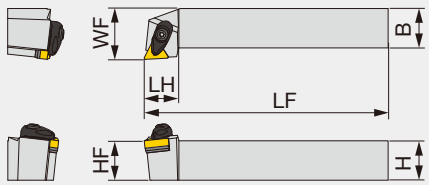
Reference pages: PTJNR/L-Eco: Inserts → B086 -

ATJNR/L

Double-clamp toolholder with 93° approach angle, for negative 60° triangular inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ATJNR/L123-A	0.750	0.750	4.500	0.875	0.750	1.000	0.031	TN**33...	2.2
ATJNR/L163-A	1.000	1.000	6.000	0.875	1.000	1.250	0.031	TN**33...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ATJNR/L2020K16-A	20	20	125	22	20	25	0.8	TN**1604...	3
ATJNR/L2525M16-A	25	25	150	22	25	32	0.8	TN**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ATJNR/L**3-A, 16-A	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA	with rake T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

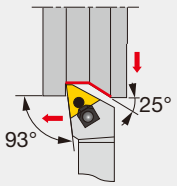
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

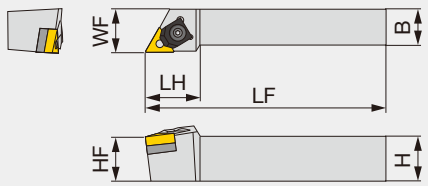
Reference pages: ATJNR/L: Inserts→ B086 -, CBN → B178 -, PCD → B194 -

WTJNR/L

Wedge-on toolholder with 93° approach angle, for negative 60° triangular inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
WTJNR2020	20	20	125	31	20	25	0.8	TN**1604...
WTJNR/L2525M3	25	25	150	31	25	32	0.8	TN**1604...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	E-ring	Nut	Pin	Clamping screw	Shim	Wrench
WTJNR2020	WCW3	5103-25	WCN3S	WCP3S	WCS3	WST33	P-3
WTJNR/L2525M3	WCW3	5103-25	WCN3	WCP3S	WCS3	WST33	P-3

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

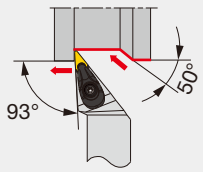
Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

H

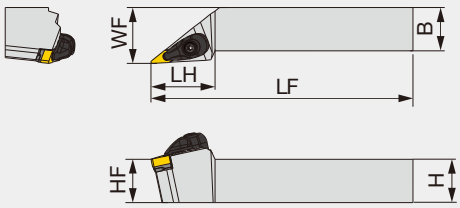
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

Reference pages: WTJNR/L: Inserts→ B086 -, CBN → B178 -, PCD → B194 -

Double-clamp toolholder with 93° approach angle, for negative 35° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
AVJNR/L122.33-A	0.750	0.750	4.500	1.500	0.750	1.000	0.031	VN**2.33**E...	2.2
AVJNR/L162.33-A	1.000	1.000	6.000	1.500	1.000	1.250	0.031	VN**2.33**E...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVJNR/L2020K1204-A	20	20	125	37	20	25	0.8	VN**1204...	3
AVJNR/L2525M1204-A	25	25	150	37	25	32	0.8	VN**1204...	3

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVJNR/L**-A	ACP3L-E	ACS-5W	BP-7	SP-2.5	ASV222	CSTB-3.0	T-15F

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF	TM
Cutting conditions	B008	

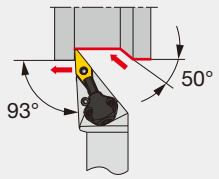
M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SS	SM
Cutting conditions	B010	

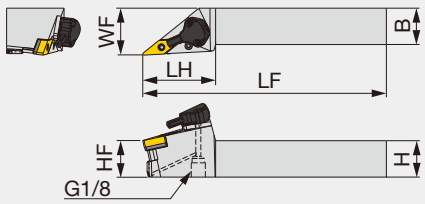
Reference pages: AVJNR/L-Eco: Inserts → B097 -
Parts for coolant hose → C142

PVJNR/L-CHP

Lever-lock toolholder with 93° approach angle, for negative 35° rhombic inserts, with high pressure coolant capability



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PVJNR/L122.33-CHP	0.750	0.750	4.500	1.969	0.750	1.250	0.031	VN**2.33**E...	1.5
PVJNR/L162.33-CHP	1.000	1.000	6.000	1.969	1.000	1.250	0.8	VN**2.33**E...	1.5

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PVJNR/L2020K1204-CHP	20	20	125	50	20	32	0.8	VN**1204...	2
PVJNR/L2525M1204-CHP	25	25	150	50	25	32	0.8	VN**1204...	2

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

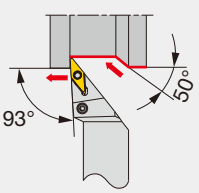
Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
PVJNR/L**-CHP	LSV212	LCS3V	P-2.5	LSP3	LCL3V

SPARE PARTS

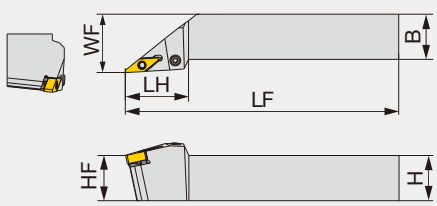
Designation	Coolant unit	Mounting screw	Wrench2	O-ring	Coolant screw	Wrench3
PVJNR/L**-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

ISOECO TURN PVJNR/L-Eco

Lever-lock toolholder with 93° approach angle, for negative 35° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PVJNR/L2020K1204	20	20	125	35	20	25	0.8	VN**1204...	2
PVJNR/L2525M1204	25	25	150	35	25	32	0.8	VN**1204...	2

Torque: Recommended clamping torque: N·m **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PVJNR/L**1204	LSV212	LCS3V	P-2.5	LSP3	LCL3V

INSERT SELECTION

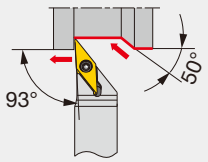
P	Application	Finishing	Medium cutting
	Grade	T9215	T9215
	Chipbreaker shape	TSF	TM
	Cutting conditions	B008	

M	Application	Finishing	Medium cutting
	Grade	T6120	T6130
	Chipbreaker shape	SS	SM
	Cutting conditions	B010	

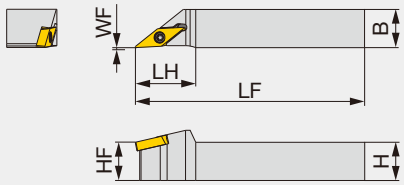
Reference pages: PVJNR/L-CHP, PVJNR/L-Eco: Inserts → B097 -
Parts for coolant hose → C142

MINIFORCE TURN
JSVJ2XR/L

Screw-on toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSVJ2XR/L067	0.375	0.375	4.750	0.669	0.375	0	0.008	VXGU09T2**L/R...	0.66
JSVJ2XR/L087	0.500	0.500	4.750	0.748	0.500	0	0.008	VXGU09T2**L/R...	0.66
JSVJ2XR/L107	0.625	0.625	4.750	0.748	0.625	0	0.008	VXGU09T2**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVJ2XR/L1010X09	10	10	120	17	10	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1212F09	12	12	85	19	12	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1212X09	12	12	120	19	12	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1616X09	16	16	120	19	16	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L2020H09	20	20	100	19	20	0	0.2	VXGU09T2**L/R...	0.9

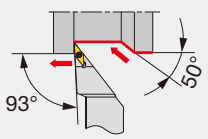
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

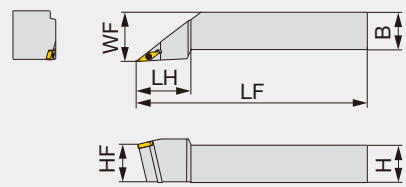
Designation	Clamping screw	Wrench
JSVJ2XR/L...	SR34-508	T-7F

MINIFORCE TURN
JSVJXR/L

Screw-on toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSVJXR/127	0.750	0.750	4.500	1.500	0.750	1.000	0.008	VXGU09T2**L/R...	0.66
JSVJXR/167	1.000	1.000	6.000	1.500	1.000	1.250	0.008	VXGU09T2**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVJXR/L2020K09	20	20	125	35	20	25	0.4	VXGU09T2**L/R...	0.9
JSVJXR/L2525M09	25	25	150	35	25	32	0.4	VXGU09T2**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
JSVJXR/L...	SR34-508	T-7F

INSERT SELECTION

P

Application	Finishing
Grade	SH725
Chipbreaker shape	JRP 
Cutting conditions	C143

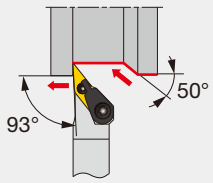
M

Application	Finishing
Grade	SH725
Chipbreaker shape	JRP 
Cutting conditions	C143

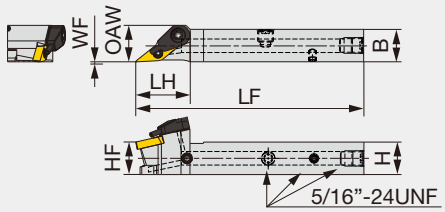
Reference pages: JSVJ2XR/L, JSVJXR/L: Inserts→ B158, Standard cutting conditions → C143

JSVJ2XR/L-CHP

Screw-on toolholder with 93° approach angle, for VXGU inserts, with high pressure coolant capability



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque
JSVJ2XR/L087-CHP	0.500	0.500	4.750	0.748	0.500	0	0.535	0.008	VXGU09T2**L/R...	0.66
JSVJ2XR087X-CHP(1)	0.500	0.500	4.750	0.768	0.500	0	0.528	0.008	VXGU09T2**L...	0.66
JSVJ2XR107X-CHP(1)	0.625	0.625	4.750	0.768	0.625	0	0.625	0.008	VXGU09T2**L...	0.66

Metric	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSVJ2XR/L1212F09-CHP	12	12	85	20	12	0	13.5	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR1212X09-CHP(1)	12	12	120	19.5	12	0	13.4	0.2	VXGU09T2**L...	0.9
JSVJ2XR1616X09-CHP(1)	16	16	120	19.5	16	0	16	0.2	VXGU09T2**L...	0.9

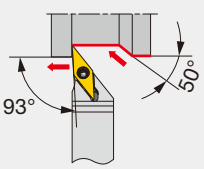
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).
(1) Compatible to the direct internal coolant supply system without the use of external coolant hose.

SPARE PARTS

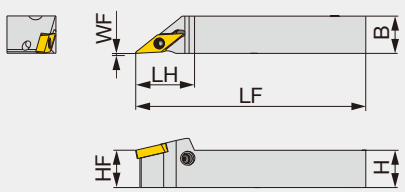
Designation	Clamping screw	Coolant unit	Wrench
JSVJ2XR/L**-CHP	SR34-508	S-CU-CHP	T-7F

JPVJ2XR/L

Back-clamp toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JPVJ2XR/L067	0.375	0.375	4.750	0.669	0.375	0	0.008	VXGU09T2**L/R...	0.66
JPVJ2XR/L087	0.500	0.500	4.750	0.748	0.500	0	0.008	VXGU09T2**L/R...	0.66
JPVJ2XR/L107	0.625	0.625	4.750	0.748	0.625	0	0.008	VXGU09T2**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JPVJ2XR/L1010X09	10	10	120	19	10	0	0.2	VXGU09T2**L/R...	0.9
JPVJ2XR/L1212F09	12	12	85	19	12	0	0.2	VXGU09T2**L/R...	0.9
JPVJ2XR/L1212X09	12	12	120	19	12	0	0.2	VXGU09T2**L/R...	0.9
JPVJ2XR/L1616X09	16	16	120	19	16	0	0.2	VXGU09T2**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

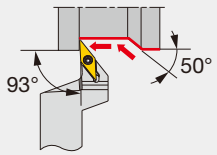
SPARE PARTS

Designation	Lever	Pin	Clamping screw	Wrench
JPVJ2XR/L...	SLLV-1	SL-PI-2	SR10400611	HW2.0/5RED

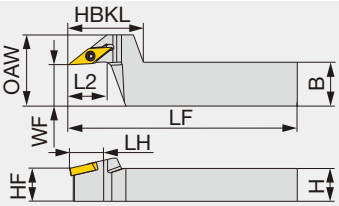
Reference pages: JSVJ2XR/L-CHP, JPVJ2XR/L: Inserts→ B158
Standard cutting conditions → C143

JSVJXR-F

Screw-on stepped-head toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque
JSVJXR087-F10	0.500	0.625	4.750	0.500	1.125	0.750	0.500	0.625	1	0.008	VXGU09T2**L...	0.66
JSVJXR107-F10	0.625	0.750	4.750	0.500	1.125	0.750	0.500	0.625	1	0.008	VXGU09T2**L...	0.66

Metric	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSVJXR1016X09-F15	10	16	120	12	27	19	10	15	26	0.2	VXGU09T2**L...	0.9
JSVJXR1216F09-F15	12	16	85	12	27	19	12	15	26	0.2	VXGU09T2**L...	0.9
JSVJXR1216X09-F15	12	16	120	12	27	19	12	15	26	0.2	VXGU09T2**L...	0.9
JSVJXR1620X09-F15	16	20	120	12	27	19	16	15	26	0.2	VXGU09T2**L...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS


Designation	Clamping screw	Wrench
JSVJXR**-F...	SR34-508	T-7F

INSERT SELECTION

P

Application	Finishing
Grade	SH725
Chipbreaker shape	JRP 
Cutting conditions	C143

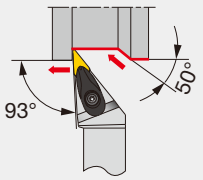
M

Application	Finishing
Grade	SH725
Chipbreaker shape	JRP 
Cutting conditions	C143

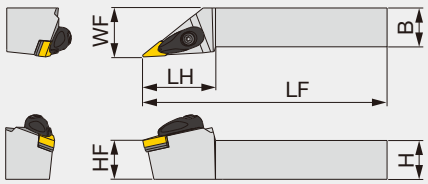
Reference pages: JSVJXR-F: Inserts→ B158
Standard cutting conditions → C143

AVJNR/L

Double-clamp toolholder with 93° approach angle, for negative 35° and 25° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
AVJNR/L123-A	0.750	0.750	4.500	1.750	0.750	1.000	0.031	V/YN**33...	2.2
AVJNR/L163-A	1.000	1.000	6.000	1.870	1.000	1.250	0.031	V/YN**33...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVJNR/L2020K16-A	20	20	125	43	20	25	0.8	V/YN**1604...	3
AVJNR/L2525M16-A	25	25	150	46	25	32	0.8	V/YN**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVJNR/L**3-A, 16-A	ACP3L	ACS-5W	BP-7	SP-2.5	ASV322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker shape	TF	TSF	TM
Cutting conditions	B008		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	T-DIA (with rake)
Cutting conditions	B014

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

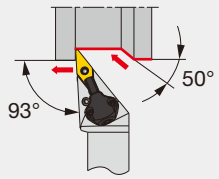
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

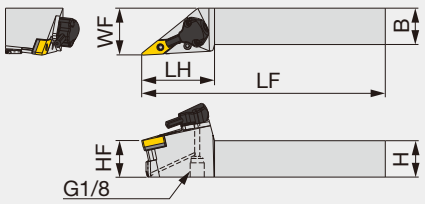
Reference pages: AVJNR/L: Inserts → B096 -, B109, CBN → B180, PCD → B194

PVJNR/L-CHP

Lever-lock toolholder with 93° approach angle, for negative 35° and 25° rhombic inserts, with high pressure coolant capability



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PVJNR/L123-CHP	0.750	0.750	4.500	1.969	0.750	1.250	0.031	V/YN**33...	1.48
PVJNR/L163-CHP	1.000	1.000	6.000	1.969	1.000	1.250	0.031	V/YN**33...	1.48

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PVJNR/L2020K16-CHP	20	20	125	50	20	32	0.8	V/YN**1604...	2
PVJNR/L2525M16-CHP	25	25	150	50	25	32	0.8	V/YN**1604...	2

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench1	Spring pin	Lever
PVJNR/L**-CHP	LSV317	LCS3V	P-2.5	LSP3	LCL3V

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench2	O-ring	Coolant screw	Wrench3
PVJNR/L**-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker shape	TF	TSF	TM
Cutting conditions	B008		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	T-DIA with rake
Cutting conditions	B014

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

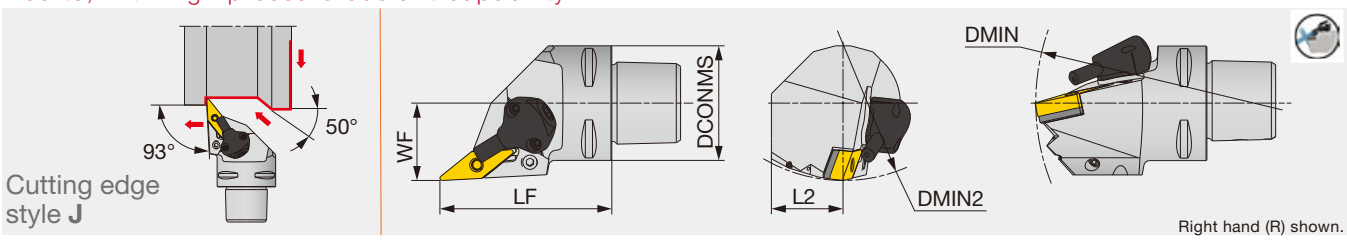
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

Reference pages: PVJNR/L-CHP: Inserts→ B096 -, B109, CBN → B180, PCD → B194
Parts for coolant hose → C142

C-PVJNR/L-CHP

Lever-lock toolholder with TungCap connection, with 93° approach angle, for negative 35° and 25° inserts, with high pressure coolant capability



Inch	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4PVJNR/L27060-1204-CHP	1.575	2.362	0.787	1.063	5.512	3.543	0.031	VN**2.33**E...
C4PVJNR/L27060-16-CHP	1.575	2.362	-	1.063	5.512	4.331	0.031	V/YN**33...
C6PVJNR/L45065-1204-CHP	2.480	2.559	1.240	1.772	7.480	3.189	0.031	VN**2.33**E...
C6PVJNR/L45065-16-CHP	2.480	2.559	-	1.772	7.480	3.189	0.031	V/YN**33...

Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4PVJNR/L27060-1204-CHP	40	60	20	27	140	90	0.8	VN**1204...
C4PVJNR/L27060-16-CHP	40	60	-	27	140	110	0.8	V/YN**1604...
C6PVJNR/L45065-1204-CHP	63	65	31.5	45	190	81	0.8	VN**1204...
C6PVJNR/L45065-16-CHP	63	65	-	45	190	81	0.8	V/YN**1604...

Applicable for 14 MPa coolant
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench1	Wrench2	Spring pin	Lever
C*PVJNR/L**-1204-CHP	LSV212	LCS3V	P-2.5	P-3	LSP3	LCL3V
C*PVJNR/L**-16-CHP	LSV317	LCS3V	P-2.5	-	LSP3	LCL3V

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench3	O-ring
C*PVJNR/L**-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker shape	TF	TSF	TM
Cutting conditions	B008		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	T-DIA (with rake)
Cutting conditions	B014

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

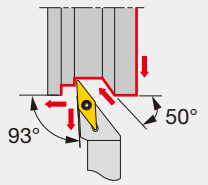
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

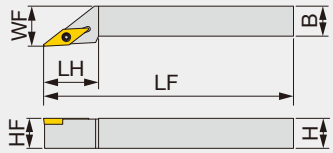
Reference pages: C-PVJNR/L-CHP: Insert→ B096 -, B109, CBN → B180, PCD → B194
Parts for coolant hose → C142

SVJBR/L

Screw-on clamp toolholder with 93° approach angle, for positive 35° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
SVJBR/L122	0.750	0.750	4.500	1.180	0.750	1.000	0.016	VB**22...	0.89
SVJBR/L123	0.750	0.750	4.500	1.180	0.750	1.000	0.032	VB**33...	0.89
SVJBR/L163	1.000	1.000	5.000	1.500	1.000	1.250	0.032	VB**33...	0.89

Torque: Recommended clamping torque: lbs·ft
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
SVJBR/L122	CSTB-2.5	T-8F
SVJBR/L123, 163	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Chipbreaker shape	JS	JS	J10
Cutting conditions	G068		

M

Application	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Chipbreaker shape	JS	JS	J10
Cutting conditions	G068		

K

Application	Medium to finish cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

S

Application	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Chipbreaker shape	JS	JS
Cutting conditions	G068	

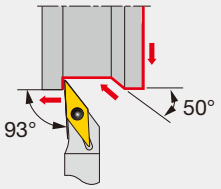
H

Application	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: SVJBR/L: Inserts → B152 -, CBN → B191 -

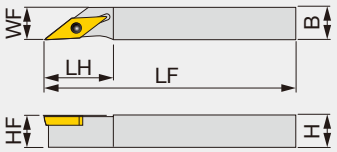
JSVJ2BR/L

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts



Cutting edge style **J2**

Without offset



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSVJ2BR/L062	0.375	0.375	5.000	0.813	0.375	0.375	0.008	VB**22...	0.89
JSVJ2BR/L082	0.500	0.500	5.000	0.813	0.500	0.500	0.008	VB**22...	0.89
JSVJ2BR/L102	0.625	0.625	5.000	0.813	0.625	0.625	0.008	VB**22...	0.89

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVJ2BR/L1010X11	10	10	120	21	10	10	0.2	VB**1103...	1.2
JSVJ2BR/L1212F11	12	12	85	21	12	12	0.2	VB**1103...	1.2
JSVJ2BR/L1212X11	12	12	120	21	12	12	0.2	VB**1103...	1.2
JSVJ2BR/L1616X11	16	16	120	21	16	16	0.2	VB**1103...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS


Designation	Clamping screw	Wrench
JSVJ2BR/L...	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Chipbreaker shape	JS	JS	J10
Cutting conditions	G068		

M

Application	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Chipbreaker shape	JS	JS	J10
Cutting conditions	G068		

K

Application	Medium to finish cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

S

Application	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Chipbreaker shape	JS	JS
Cutting conditions	G068	

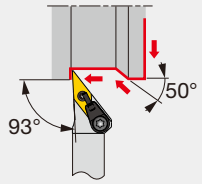
H

Application	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: JSVJ2BR/L: Inserts → B152 -, CBN → B191 -

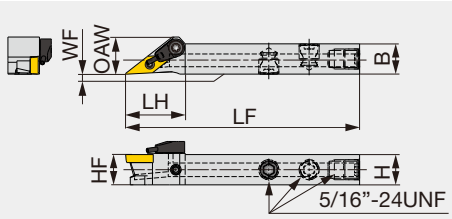
JSVJ2BR/L-CHP

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts, with high pressure coolant capability



Cutting edge style **J2**

Without offset



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque
JSVJ2BR/L082-CHP	0.500	0.500	3.344	0.930	0.500	0	0.610	0.008	VB**22...	0.89
JSVJ2BR082X-CHP	0.500	0.500	4.750	0.929	0.500	0	0.575	0.008	VB**22...	0.89
JSVJ2BR102X-CHP	0.625	0.625	4.750	0.929	0.625	0	0.625	0.008	VB**22...	0.89

Metric	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSVJ2BR/L1212F11-CHP	12	12	85	23.6	12	0	14.7	0.2	VB**1103...	1.2
JSVJ2BR1212X11-CHP	12	12	120	23.6	12	0	14.7	0.2	VB**1103...	1.2
JSVJ2BR1616X11-CHP	16	16	120	23.6	16	0	16	0.2	VB**1103...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
JSVJ2BR/L082-CHP JSVJ2BR/L1212F11-CHP	CSTB-2.5	S-CU-CHP	T-8F	-	-	-	-
JSVJ2BR**2X-CHP JSVJ2BR**X11-CHP	CSTB-2.5	S-CU-CHP	T-8F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Chipbreaker shape	PSS	PS
Cutting conditions	B020	

M

Application	Finishing	Finishing to medium cutting
Grade	AH725	AH630
Chipbreaker shape	PSF	PSS
Cutting conditions	B022	

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B028	

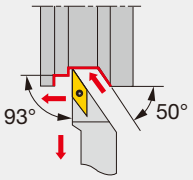
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

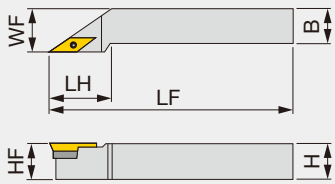
Reference pages: JSVJ2BR/L-CHP: Inserts → B152 -, CBN → B191 -
Parts for coolant hose → C142

SVJCR/L

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert
SVJCR/L103	0.625	0.625	4.500	1.000	0.625	0.725	0.031	VC**33...
SVJCR/L123	0.750	0.750	4.500	1.250	0.750	0.955	0.031	VC**33...
SVJCR/L163	1.000	1.000	6.000	1.500	1.000	1.250	0.031	VC**33...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SVJCR/L1616H16	16	16	100	32	16	20	0.8	VC**1604...
SVJCR/L2020K16	20	20	125	32	20	25	0.8	VC**1604...
SVJCR/L2525M16	25	25	150	40	25	32	0.8	VC**1604...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench1	Wrench2
SVJCR/L...	CSTB-3.5L	DTS5-3.5	SSV32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Chipbreaker shape	PSS	PS
Cutting conditions	B020	

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Chipbreaker shape	PSF	PSS	PM
Cutting conditions	B022		

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B026		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B028	

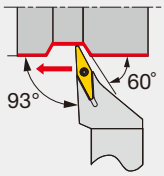
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

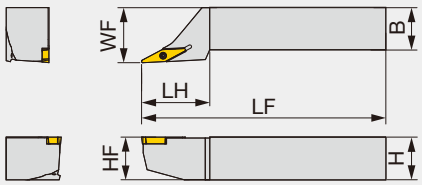
Reference pages: SVJCR/L:Inserts→ B155 -, CBN → B192, PCD → B196

SYJBR/L

Screw-on toolholder with 93° approach angle, for positive 25° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert
SYJBR/L123	0.750	0.750	4.500	1.350	0.750	1.000	0.031	YWMT16T3...
SYJBR/L163	1.000	1.000	6.000	1.500	1.000	1.250	0.031	YWMT16T3...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SYJBR/L2020K16	20	20	125	35	20	25	0.8	YWMT16T3...
SYJBR/L2525M16	25	25	150	40	25	32	0.8	YWMT16T3...

**RE: Standard corner radius

SPARE PARTS


Designation	Clamping screw	Wrench
SYJBR/L...	CSTB-2.5L080	T-8F

INSERT SELECTION

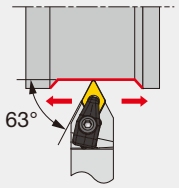
P	Application	Finishing to medium cutting
	Grade	T9225
	Chipbreaker shape	ZM 
	Cutting conditions	B008

K	Application	Finishing to medium cutting
	Grade	GT9530
	Chipbreaker shape	ZM 
	Cutting conditions	B012

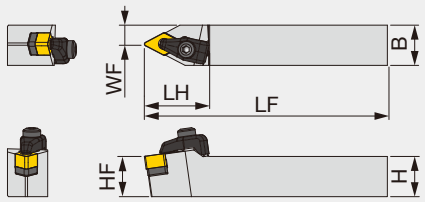
Reference pages: SYJBR/L: Inserts → B163

CDNNN-RD

Double-clamp toolholder with 63° approach angle, for negative 55° rhombic ceramic inserts with dimple



Cutting edge style **N**



Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
CDNNN2525M1507-RD	25	25	150	40	25	12.5	1.2	DN*D1507...	4

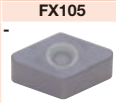
Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench1	Wrench2
CDNNN2525M1507-RD	CCP4-A	CCS4-A	CD44-A	BH5-10-A	BP-5-A	P-3	P-4

INSERT SELECTION

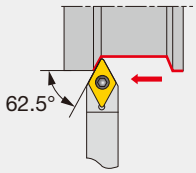
K

Application	Finishing to medium cutting
Grade	FX105
Chipbreaker shape	- 
Cutting conditions	C144

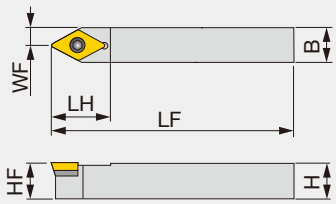
Reference pages: CDNNN-RD: Inserts→ B075
Standard cutting conditions → C144

SDNCN

Screw-on toolholder with 62.5° approach angle, for positive 55° rhombic inserts



Cutting edge style **N**



Metric	H	B	LF	LH	HF	WF	RE**	Insert
SDNCN1616H11	16	16	100	21	16	8	0.8	DC**11T3...
SDNCN2020K11	20	20	125	21	20	10	0.8	DC**11T3...
SDNCN2525M11	25	25	150	21	25	12.5	0.8	DC**11T3...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench1	Wrench2
SDNCN...	CSTB-3.5L	DTS5-3.5	SSD32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Chipbreaker shape	PSS	PS	PM
Cutting conditions	B020		

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Chipbreaker shape	W**	PSF	PSS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B026		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B028	

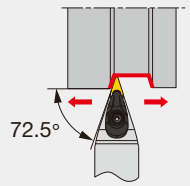
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

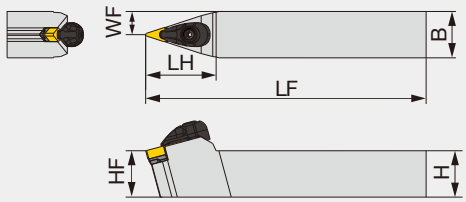
Reference pages: SDNCN:Inserts → B121 -, CBN → B184 -, PCD → B196 -

AVVNN-Eco

Double-clamp toolholder with 72.5° approach angle, for negative 35° rhombic inserts



Cutting edge style **V**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
AVVNN122.33-A	0.750	0.750	4.500	1.500	0.750	0.375	0.031	VN**2.33**E...	2.2
AVVNN162.33-A	1.000	1.000	6.000	1.500	1.000	0.500	0.031	VN**2.33**E...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVVNN2020K1204-A	20	20	125	38	20	10	0.8	VN**1204...	3
AVVNN2525M1204-A	25	25	150	38	25	13	0.8	VN**1204...	3

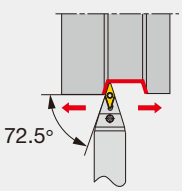
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

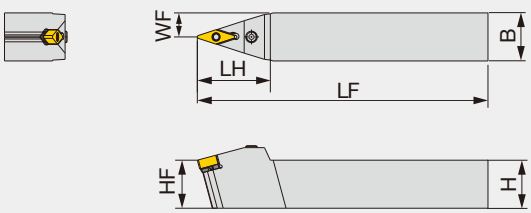
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVVNN**-A	ACP3L-E	ACS-5W	BP-7	SP-2.5	ASV222	CSTB-3.0	T-15F

PVVNN-Eco

Lever-lock toolholder with 72.5° approach angle, for negative 35° rhombic inserts



Cutting edge style **V**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PVVNN2020K1204	20	20	125	38	20	10	0.8	VN**1204...	2
PVVNN2525M1204	25	25	150	38	25	12.5	0.8	VN**1204...	2

Torque: Recommended clamping torque: N·m **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PVVNN**1204	LSV212	LCS3V	P-2.5	LSP3	LCL3V

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker shape	TSF	TM
Cutting conditions	B008	

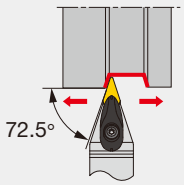
M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SS	SM
Cutting conditions	B010	

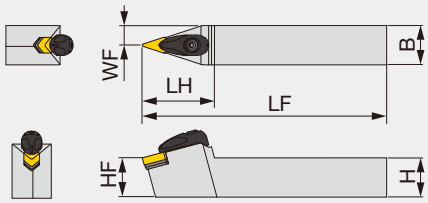
Reference pages: AVVNN-Eco, PVVNN-Eco: Inserts → B097 -

AVVNN

Double-clamp toolholder with 72.5° approach angle, for negative 35° and 25° rhombic inserts



Cutting edge style **V**



Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
AVVNN123-A	0.750	0.750	4.500	1.870	0.750	0.375	0.031	V/YN**33...	2.2
AVVNN163-A	1.000	1.000	6.000	1.870	1.000	0.500	0.031	V/YN**33...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVVNN2020K16-A	20	20	125	46	20	10	0.8	V/YN**1604...	3
AVVNN2525M16-A	25	25	150	46	25	12.5	0.8	V/YN**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVVNN**3-A, 16-A	ACP3L	ACS-5W	BP-7	SP-2.5	ASV322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker shape	TF	TSF	TM
Cutting conditions	B008		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	T-DIA with rake
Cutting conditions	B014

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

H

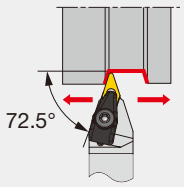
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

Reference pages: AVVNN: Inserts → B096 -, B109, CBN → B180, PCD → B194

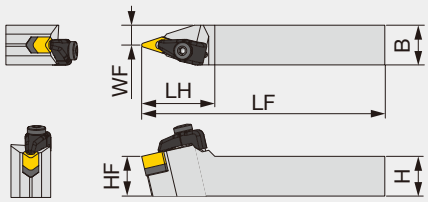
DIMPLEFX

CVVNN-RD

Double-clamp toolholder with 72.5° approach angle, for negative 35° rhombic ceramic inserts with dimple



Cutting edge style **V**



Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
CVVNN2525M1607-RD	25	25	150	46	25	12.5	1.2	VN*D160712	4

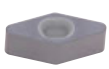
Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench1	Wrench2
CVVNN2525M1607-RD	CCP4-A	CCS4-A	CV34-A	BH-4-10-A	BP-5-A	P-3	P-4

INSERT SELECTION

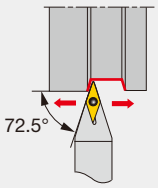
K

Application	Finishing to medium cutting
Grade	FX105
Chipbreaker shape	- 
Cutting conditions	C144

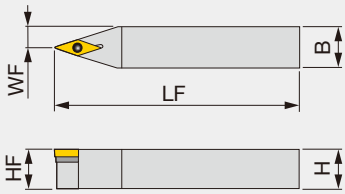
Reference pages: CVVNN-RD: Inserts → B101,
Standard cutting conditions → C144

SVVCN

Screw-on toolholder with 72.5° approach angle, for positive 35° rhombic inserts



Cutting edge style **V**



Metric	H	B	LF	HF	WF	RE**	Insert
SVVCN2020K16	20	20	125	20	10	0.8	VC**1604...
SVVCN2525M16	25	25	150	25	12.5	0.8	VC**1604...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench1	Wrench2
SVVCN...	CSTB-3.5L	DTS5-3.5	SSV32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Chipbreaker shape	PSS	PS
Cutting conditions	B020	

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Chipbreaker shape	PSF	PSS	PM
Cutting conditions	B022		

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B026		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	PSS	PS
Cutting conditions	B028	

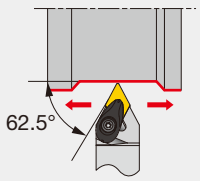
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

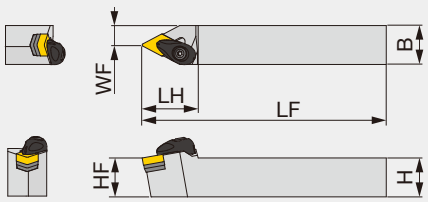
Reference pages: SVVCN: Inserts → B155 -, CBN → B192, PCD → B196

ADPNN

Double-clamp toolholder with 62.5° approach angle, for negative 55° rhombic inserts



Cutting edge style **P**



Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ADPNN124-A	0.750	0.750	4.500	1.500	0.750	0.375	0.031	DN**43...	2.2
ADPNN164-A	1.000	1.000	6.000	1.500	1.000	0.500	0.031	DN**43...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ADPNN2020K15-A	20	20	125	36	20	7.5	0.8	DN**1504...	3
ADPNN2525M15-A	25	25	150	36	25	12.5	0.8	DN**1504...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ADPNN**4-A, 15-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASD432	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

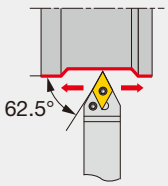
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

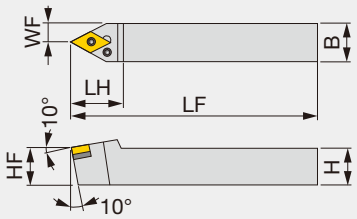
Reference pages: ADPNN: Inserts→ B067 -, CBN → B174 -, PCD → B194 -

PDPNN

Lever-lock toolholder with 62.5° approach angle, for negative 55° rhombic inserts



Cutting edge style **P**



Metric	H	B	LF	LH	HF	WF	RE**	Insert
PDPNN2525	25	25	150	36	25	12.5	0.8	DN**1504...
PDPNN2525M15E	25	25	150	36	25	12.5	0.8	DN**1506...

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PDPNN2525	LSD42	LCS4	P-3	LSP4	LCL4
PDPNN2525M15E	ELSD42	ELCS4	P-3	LSP4S	LCL44

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA	with rake T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

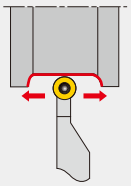
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

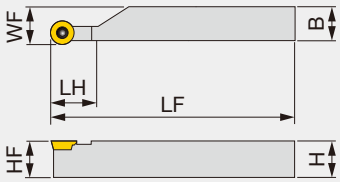
Reference pages: PDPNN: Inserts → B067 -, CBN → B174 -, PCD → B194 -

SRACR/L

Screw-on toolholder with 91° approach angle, for positive round inserts



Cutting edge style **A**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	Insert
SRACR1010H05	10	10	100	10	10	10.3	RCMT0502...
SRACR/L1212H05	12	12	100	10	12	12.3	RCMT0502...
SRACR/L1212H06	12	12	100	12	12	12.4	RC*T0602...
SRACR1616H05	16	16	100	10	16	16.3	RCMT0502...
SRACR/L1616H06	16	16	100	12	16	16.4	RC*T0602...
SRACR/L1616H08	16	16	100	16	16	16.5	RC*T0803...
SRACR/L2020K05	20	20	125	10	20	20.3	RCMT0502...
SRACR/L2020K06	20	20	125	12	20	20.4	RC*T0602...
SRACR/L2020K08	20	20	125	16	20	20.5	RC*T0803...
SRACR/L2525M05	25	25	150	10	25	25.3	RCMT0502...
SRACR/L2525M06	25	25	150	12	25	25.4	RC*T0602...
SRACR/L2525M08	25	25	150	16	25	25.5	RC*T0803...

SPARE PARTS

Designation	Clamping screw	Wrench
SRACR/L1*1*H05	CSTB-2.2R	T-7F
SRACR/L1212H06	CSTB-2.5	T-8F
SRACR1616H05	CSTB-2.2R	T-7F
SRACR/L1616H06	CSTB-2.5	T-8F
SRACR/L1616H08	CSTB-3	T-9F
SRACR/L2020K05	CSTB-2.2R	T-7F
SRACR/L2020K06	CSTB-2.5	T-8F
SRACR/L2020K08	CSTB-3	T-9F
SRACR/L2525M05	CSTB-2.2R	T-7F
SRACR/L2525M06	CSTB-2.5	T-8F
SRACR/L2525M08	CSTB-3	T-9F

INSERT SELECTION

P

Application	Finishing to medium cutting	heavy cutting
Grade	T9215	T9215
Chipbreaker shape	RS 	61 
Cutting conditions	B020	

M

Application	heavy cutting
Grade	T9215
Chipbreaker shape	61 
Cutting conditions	B022

K

Application	heavy cutting
Grade	T9215
Chipbreaker shape	61 
Cutting conditions	B024

N

Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker shape	AL 
Cutting conditions	B026

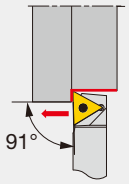
S

Application	Finishing to medium cutting	heavy cutting
Grade	AH8015	AH8015
Chipbreaker shape	RS 	61 
Cutting conditions	B028	

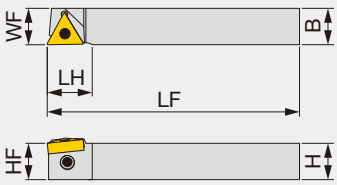
Reference pages: SRACR/L: Inserts → B131 -

JTTANR/L

Back-clamp toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **A**



Without offset

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JTTANR/L1216K16	12	16	125	19.8	12	16	0.4	TN**1604...	1.2
JTTANR/L1616K16	16	16	125	19.8	16	16	0.4	TN**1604...	1.2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

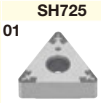
Designation	Clamp	Clamping screw	Wrench
JTTANR/L...	JCP-3N	JDS-5040	P-2.5F

INSERT SELECTION

P

Application	Precision finishing
Grade	SH725
Chipbreaker shape	01 
Cutting conditions	B008

M

Application	Precision finishing
Grade	SH725
Chipbreaker shape	01 
Cutting conditions	B010

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM 
Cutting conditions	B012

N

Application	Precision finishing
Grade	DX120
Chipbreaker shape	T-DIA with rake 
Cutting conditions	B014

S

Application	Precision finishing
Grade	BX470
Chipbreaker shape	T-CBN 
Cutting conditions	B016

H

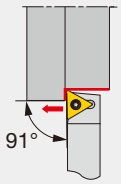
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN 	T-CBN 
Cutting conditions	B018	

Reference pages: JTTANR/L: Inserts → B086 -, CBN → B178 -, PCD → B194 -

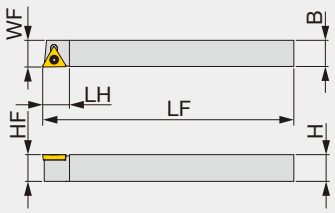
J-SERIES

JSTACR/L

Screw-on toolholder with 91° approach angle, for positive 60° triangular inserts



Cutting edge style **A**



Without offset

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSTACR/L0808K08	8	8	125	10	8	8	0.2	TC**0802...	0.6
JSTACR/L1010K08	10	10	125	10	10	10	0.2	TC**0802...	0.6
JSTACR/L1212K11	12	12	125	12	12	12	0.4	TC**1102...	1.2
JSTACR/L1616H11	16	16	100	12	16	16	0.4	TC**1102...	1.2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

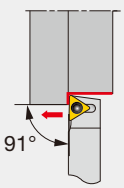
SPARE PARTS


Designation	Clamping screw	Wrench
JSTACR/L**K08	CSTB-2L	T-6F
JSTACR/L**11	CSTB-2.5	T-8F

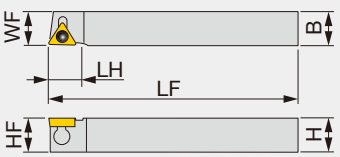
J-SERIES

JTTACR/L

Back-clamp toolholder with 91° approach angle, for positive 60° triangular inserts



Cutting edge style **A**



Without offset

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JTTACL0810K08	8	10	125	10	8	10	0.2	TC**0802...	0.9
JTTACR/L1212M11	12	12	150	12	12	12	0.4	TC**1102...	0.9
JTTACR/L1616M11	16	16	150	12	16	16	0.4	TC**1102...	0.9

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS



Designation	Clamp	Clamping screw	Wrench
JTTACL0810K08	JCP-1	JDS-3525	P-2F
JTTACR/L**M11	JCP-2	JDS-3525	P-2F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B020			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

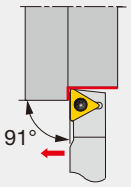
N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Chipbreaker shape	T-DIA	with rake AL
Cutting conditions	B026	

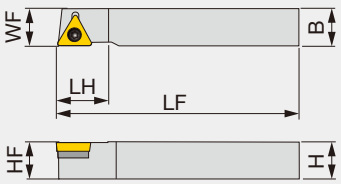
Reference pages: JSTACR/L, JTTACR/L: Inserts→ B139 -, PCD → B196

STACR/L

Screw-on toolholder with 91° approach angle, for positive 60° triangular inserts



Cutting edge style **A**



Without offset

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
STACR/L1616H16	16	16	100	22.5	16	16	0.8	TC**16T3...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench1	Wrench2
STACR/L...	CSTB-3.5L	DTS5-3.5	SST32	P-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	NS9530	T9215	T9215
Chipbreaker shape	01	PSS	PS	PM
Cutting conditions	B020			

M

Application	Finishing	Medium cutting
Grade	AH725	T6130
Chipbreaker shape	PSF	PM
Cutting conditions	B022	

K

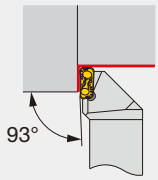
Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

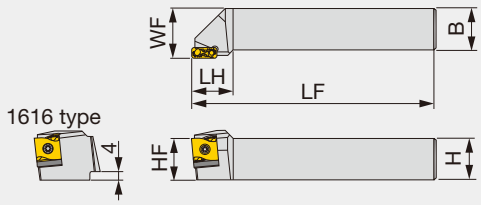
Application	Precision finishing
Grade	DX120
Chipbreaker shape	T-DIA (with rake)
Cutting conditions	B026

Reference pages: STACR/L: Inserts → B139 -

Screw-on toolholder for roughing with 93° approach angle, for negative tangential inserts



Cutting edge style **A**



Right hand (R) shown.

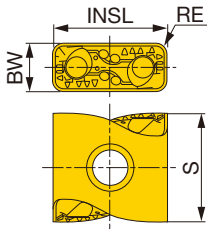
Inch	H	B	LF	LH	HF	WF	Insert
TLANR/L10-12	0.625	0.625	4.000	0.790	0.625	0.750	LNMX1204**R/L...
TLANR/L12-12	0.750	0.750	4.500	0.790	0.750	1.000	LNMX1204**R/L...
TLANR/L12-16	0.750	0.750	4.500	1.000	0.750	1.000	LNMX1606**R/L...
TLANR/L16-12	1.000	1.000	6.000	0.790	1.000	1.250	LNMX1204**R/L...
TLANR/L16-16	1.000	1.000	6.000	1.000	1.000	1.180	LNMX1606**R/L...
TLANR/L20-16	1.250	1.250	6.000	1.380	1.250	1.460	LNMX1606**R/L...
TLANR/L20-24	1.250	1.250	6.000	1.380	1.250	1.500	LNMX2410**R/L...
TLANR/L24-16	1.500	1.500	7.000	1.380	1.500	1.700	LNMX1606**R/L...
TLANR/L24-24	1.500	1.500	7.000	1.380	1.500	1.700	LNMX2410**R/L...
TLANR/L32-24	2.000	2.000	8.000	1.380	2.000	2.275	LNMX2410**R/L...

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Spring	Wrench 1	Wrench 2
TLANR**-12	CSTB-3.5L115-S	CSTF-2L055-S	TSL12R	-	KEYV-T10	T-6F-S
TLANL**-12	CSTB-3.5L115-S	CSTF-2L055-S	TSL12L	-	KEYV-T10	T-6F-S
TLANR**-16	CSTB-4L115-S	-	TSL16R	PSP-16	KEYV-T15	-
TLANL**-16	CSTB-4L115-S	-	TSL16L	PSP-16	KEYV-T15	-
TLANR**-24	CSTB-5L163-S	-	TSL24R	PSP-16	KEYV-T20	-
TLANL**-24	CSTB-5L163-S	-	TSL24L	PSP-16	KEYV-T20	-

Reference pages: TLANR/L: Inserts → C083
Standard cutting conditions → C144

LNMX12/16/24



P	Steel	★	★	★			
M	Stainless			☆			
K	Cast iron	☆	☆	☆			
N	Non-ferrous						
S	Superalloys						
H	Hard materials						

★ : First choice
☆ : Second choice

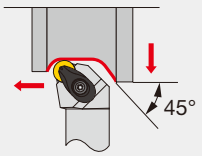
Designation	HAND	RE (in)	Coated										BW (in)	INSL (in)	S (in)
			T9115	T9125	AH725										
LNMX120408R-TDR	R	0.031	●	●									0.189	0.473	0.457
LNMX120408L-TDR	L	0.031	●	●									0.189	0.473	0.457
LNMX120412R-TDR	R	0.047	●	●									0.189	0.473	0.457
LNMX120412L-TDR	L	0.047	●	●									0.189	0.473	0.457
LNMX160608R-TDR	R	0.031	●	●									0.252	0.638	0.532
LNMX160608L-TDR	L	0.031	●	●									0.252	0.638	0.532
LNMX160612R-TDR	R	0.047	●	●									0.252	0.638	0.532
LNMX160612L-TDR	L	0.047	●	●									0.252	0.638	0.532
LNMX160616R-TDR	R	0.063	●	●									0.252	0.638	0.532
LNMX160616L-TDR	L	0.063	●	●									0.252	0.638	0.532
LNMX241016R-TDR	R	0.063	●	●									0.370	0.945	0.807
LNMX241016L-TDR	L	0.063	●	●									0.370	0.945	0.807
LNMX241024R-TDR	R	0.094	●	●									0.370	0.945	0.807
LNMX241024L-TDR	L	0.094	●	●									0.370	0.945	0.807
LNMX160608R-MDR	R	0.031	●	●	●								0.252	0.638	0.532
LNMX160608L-MDR	L	0.031	●	●	●								0.252	0.638	0.532
LNMX160612R-MDR	R	0.047	●	●	●								0.252	0.638	0.532
LNMX160612L-MDR	L	0.047	●	●	●								0.252	0.638	0.532
LNMX160608R-TWR	R	0.031	●	●									0.252	0.638	0.532
LNMX160608L-TWR	L	0.031	●	●									0.252	0.638	0.532
LNMX160612R-TWR	R	0.047	●	●									0.252	0.638	0.532
LNMX160612L-TWR	L	0.047	●	●									0.252	0.638	0.532

● : Line up

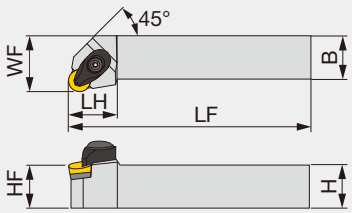
Reference pages: Standard cutting conditions → C144

ARGNR/L

Double-clamp toolholder with 91° approach angle, for negative round inserts



Cutting edge style **G**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ARGNR/L164-A	1.000	1.000	6.000	1.125	1.000	1.250	0.250	RN**43...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ARGNR/L2525M12-A	25	25	150	28	25	32	6.35	RN**120400	3

Torque: Recommended clamping torque: lb·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ARGNR/L...	ACP4S	ACS-5W	BP-7	SP-2.5	ASR420	CSTB-3.5	T-15F

INSERT SELECTION

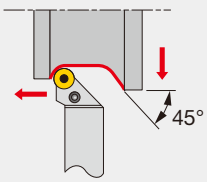
P

Application	Semi-finishing to medium cutting
Grade	T9225
Chipbreaker Shape	61 
Cutting conditions	B008

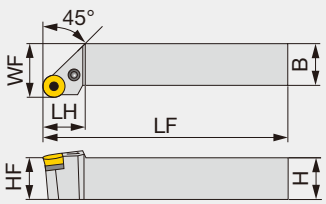
Reference pages: ARGNR/L: Inserts → B076

PRGNR/L

Lever-lock toolholder with 91° approach angle, for negative round inserts



Cutting edge style **G**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
PRGNR/L2020	20	20	125	19	20	25	4.76	RNMG090300-61
PRGNR/L2525M4	25	25	150	25	25	32	6.35	RN**120400

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PRGNR/L2020	LSR32	LCS3	P-2.5	LSP3	LCL3
PRGNR/L2525M4	LSR42	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B008

M

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B010

K

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B012

N

Application	Heavy cutting
Grade	TH10
Chipbreaker Shape	61 
Cutting conditions	B014

S

Application	Heavy cutting
Grade	TH10
Chipbreaker Shape	61 
Cutting conditions	B016

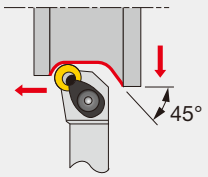
H

Application	Finishing to medium cutting
Grade	LX11
Chipbreaker Shape	- 
Cutting conditions	B018

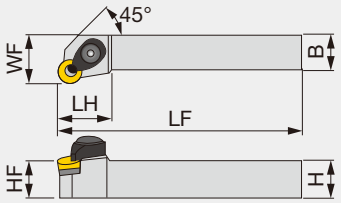
Reference pages: PRGNR/L: Inserts → B076

DRGNR/L

"One-Double" toolholder with 91° approach angle, for negative round inserts



Cutting edge style **G**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
DRGNR/L2525M12	25	25	150	28	25	32	6.35	RN**120400

**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DRGNR/L...	DCPM-43	DLCL43	DPIS43	DLCS43	LSR42	BP-10	LSP4	P-3	P-4

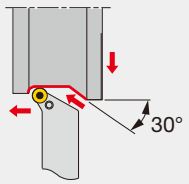
INSERT SELECTION

P	Application	Semi-finishing to medium cutting
	Grade	T9215
	Chipbreaker Shape	61 
	Cutting conditions	B008

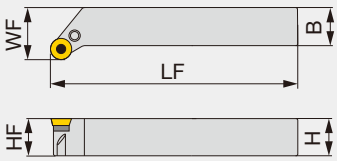
Reference pages: DRGNR/L: Inserts → B076

PRGCR/L

Lever-lock toolholder with 91° approach angle, for positive round inserts



Cutting edge style **G**



Right hand (R) shown.

Metric	H	B	LF	HF	WF	Insert
PRGCR/L2020K10	20	20	125	20	25	RCMM1003...
PRGCR/L2525M12	25	25	150	25	32	RCM*1204...
PRGCR/L3225P16	32	25	170	32	32	RCM*1606...
PRGCR/L3232P20	32	32	170	32	40	RCM*2006...

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PRGCR/L2020K10	LSR32C	LCS2	P-2	LSP3	LCL3C
PRGCR/L2525M12	LSR42C	LCS3	P-2.5	LSP3	LCL4C
PRGCR/L3225P16	LSR53C	LCS5	P-3	LSP4	LCL5C
PRGCR/L3232P20	LSR63C	LCS5	P-3	LSP6C	LCL6C

INSERT SELECTION

P

Application	Finishing to medium cutting	Heavy cutting
Grade	T9215	T9215
Chipbreaker Shape	RS 	61 
Cutting conditions	B020	

M

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B022

K

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B024

N

Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B026

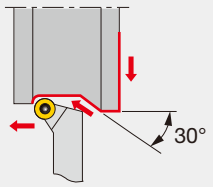
S

Application	Finishing to medium cutting	Heavy cutting
Grade	AH8015	AH8015
Chipbreaker Shape	RS 	61 
Cutting conditions	B028	

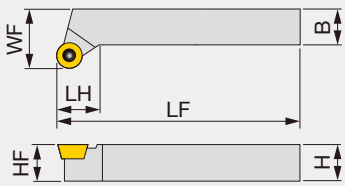
Reference pages: PRGCR/L: Inserts → B131 -

SRGCR/L

Screw-on toolholder with 91° approach angle, for positive round inserts



Cutting edge style **G**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	Insert
SRGCR1212H05	12	12	100	9.5	12	16	RCMT0502...
SRGCR/L1212H06	12	12	100	10	12	16	RC*T0602...
SRGCR/L1616H05	16	16	100	9.5	16	20	RCMT0502...
SRGCR/L1616H06	16	16	100	10	16	20	RC*T0602...
SRGCR/L1616H08	16	16	100	11	16	20	RC*T0803...
SRGCR/L2020K05	20	20	125	11.2	20	25	RCMT0502...
SRGCR/L2020K06	20	20	125	12	20	25	RC*T0602...
SRGCR/L2020K08	20	20	125	12.7	20	25	RC*T0803...
SRGCR/L2020K10	20	20	125	14	25	25	RC*T1003...
SRGCR/L2525M05	25	25	150	14.7	25	32	RCMT0502...
SRGCR/L2525M06	25	25	150	15	25	32	RC*T0602...
SRGCR/L2525M08	25	25	150	16.2	25	32	RC*T0803...
SRGCR/L2525M10	25	25	150	17.5	25	32	RC*T1003...

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SRGCR1212H05	CSTB-2.2R	-	-	-	T-7F
SRGCR/L1212H06	CSTB-2.5	-	-	-	T-8F
SRGCR/L1616H05	CSTB-2.2R	-	-	-	T-7F
SRGCR/L1616H06	CSTB-2.5	-	-	-	T-8F
SRGCR/L1616H08	CSTB-3	-	-	-	T-9F
SRGCR/L2020K05	CSTB-2.2R	-	-	-	T-7F
SRGCR/L2020K06	CSTB-2.5	-	-	-	T-8F
SRGCR/L2020K08	CSTB-3	-	-	-	T-9F
SRGCR/L2020K10	CSTB-3.5L	DTS5-3.5	SSR32	P-3.5	T-15F
SRGCR/L2525M05	CSTB-2.2R	-	-	-	T-7F
SRGCR/L2525M06	CSTB-2.5	-	-	-	T-8F
SRGCR/L2525M08	CSTB-3	-	-	-	T-9F
SRGCR/L2525M10	CSTB-3.5L	DTS5-3.5	SSR32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing to medium cutting	Heavy cutting
Grade	T9215	T9215
Chipbreaker Shape	RS 	61 
Cutting conditions	B020	

M

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B022

S

Application	Finishing to medium cutting	Heavy cutting
Grade	AH8015	AH8015
Chipbreaker Shape	RS 	61 
Cutting conditions	B028	

K

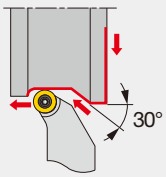
Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B024

N

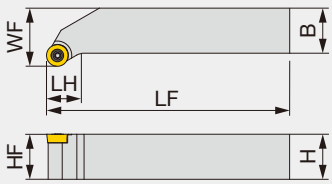
Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B026

Reference pages: SRGCR/L: Inserts → **B131 -**

Screw-on toolholder with 91° approach angle, for positive round inserts



Cutting edge style **G**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	Insert	Torque
SRGCR/L164-6F	1.00	1.00	6.00	0.69	1.00	1.25	RCMT1204M0-6RS/-6RM	2.21

Metric	H	B	LF	LH	HF	WF	Insert	Torque*
SRGCR/L2525M12-6F	25	25	150	18.6	25	32	RCMT1204M0-6RS/-6RM	3

Torque: Recommended clamping torque: lb·ft (*N·m)

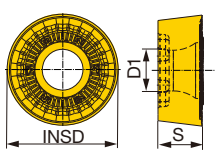
SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
SRGCR/L164-6F, SRGCR/L2525M12-6F	CSTB-4	M-1000	T-15F

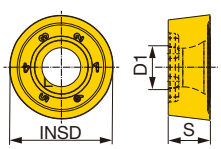
INSERT

RCMT

6RS



6RM



P	Steel	★	★	★	★			★			
M	Stainless										
K	Cast iron	☆	☆	☆	☆			☆			
N	Non-ferrous										
S	Superalloys										
H	Hard materials										

★ : First choice
☆ : Second choice

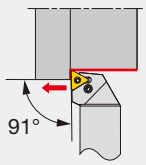
Designation	Coated						Cermet						INSD (in)	S (in)	D1 (in)
	T9225	T9215	T9115	T9125			NS9530								
RCMT1204M0-6RS	●	●	●	●			●						0.472	0.187	0.203
RCMT1204M0-6RM	●	●	●	●			●						0.472	0.187	0.203

● : Line up

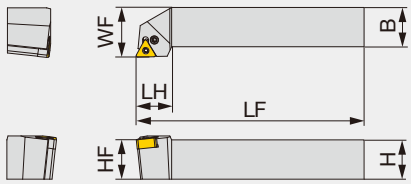
Reference pages: SRGCR/L: Standard cutting conditions → C142

PTGNR/L-Eco

Lever-lock toolholder with 91° approach angle, for negative triangular inserts



Cutting edge style **G**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PTGNR/L1223	0.750	0.750	4.500	0.750	0.750	1.000	0.031	TN**23...	1.5
PTGNR/L1623	1.000	1.000	6.000	0.750	1.000	1.250	0.031	TN**23...	1.5

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PTGNR/L2020K1104	20	20	125	20	20	25	0.8	TN**1104...	2
PTGNR/L2525M1104	25	25	150	20	25	32	0.8	TN**1104...	2

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench	Lever
PTGNR/L...	LCS23A	P-2.5	LCL23

INSERT SELECTION

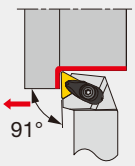
P	Application	Finishing	Medium cutting
	Grade	T9215	T9215
	Chipbreaker Shape	TSF	TM
	Cutting conditions	B008	

M	Application	Finishing	Medium cutting
	Grade	T6120	T6130
	Chipbreaker Shape	SS	SM
	Cutting conditions	B010	

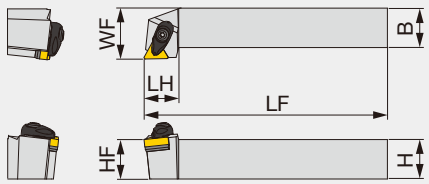
Reference pages: PTGNR/L-Eco: Inserts → B086 -

ATGNR/L

Double-clamp toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **G**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ATGNR/L123-A	0.750	0.750	4.500	0.875	0.750	1.000	0.031	TN**33...	2.2
ATGNR/L163-A	1.000	1.000	6.000	0.875	1.000	1.250	0.031	TN**33...	2.2
ATGNR/L164-A	1.000	1.000	6.000	1.000	1.000	1.250	0.031	TN**43...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ATGNR/L2020K16-A	20	20	125	22	20	25	0.8	TN**1604...	3
ATGNR/L2525M16-A	25	25	150	22	25	32	0.8	TN**1604...	3
ATGNR/L2525M22-A	25	25	150	26	25	32	0.8	TN**2204...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ATGNR/L**3-A, 16-A	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F
ATGNR/L**4-A, 22-A	ACP4S	ACS-5W	BP-7	SP-2.5	AST422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA	with rake T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

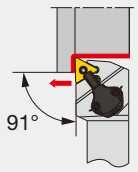
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

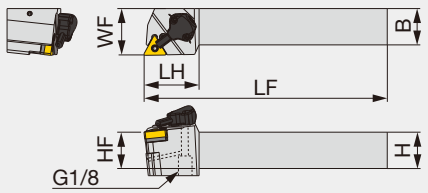
Reference pages: ATGNR/L: Inserts → B086 -, CBN → B178 -, PCD → B194 -

PTGNR/L-CHP

Lever-lock toolholders with 91° approach angle, for negative 60° triangular inserts, with high pressure coolant capability



Cutting edge style **G**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PTGNR/L1223-CHP	0.750	0.750	4.500	1.500	0.750	1.250	0.031	TN**23...	1.5
PTGNR/L123-CHP	0.750	0.750	4.500	1.500	0.750	1.250	0.031	TN**33...	1.5
PTGNR/L1623-CHP	1.000	1.000	6.000	1.500	1.000	1.250	0.031	TN**23...	1.5
PTGNR/L163-CHP	1.000	1.000	6.000	1.500	1.000	1.250	0.031	TN**33...	1.5

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PTGNR/L2020K1104-CHP	20	20	125	38	20	32	0.8	TN**1104...	2
PTGNR/L2020K16-CHP	20	20	125	38	20	32	0.8	TN**1604...	2
PTGNR/L2525M1104-CHP	25	25	150	38	25	32	0.8	TN**1104...	2
PTGNR/L2525M16-CHP	25	25	150	38	25	32	0.8	TN**1604...	2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PTGNR/L**23-CHP, PTGNR/L**1104-CHP	-	LCS23A	P-2.5	LSP3	LCL23
PTGNR/L1*3-CHP, PTGNR/L**16-CHP	LST317	LCS3	P-2.5	LSP3	LCL3

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PTGNR/L**23-CHP, PTGNR/L**1104-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2
PTGNR/L1*3-CHP, PTGNR/L**16-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

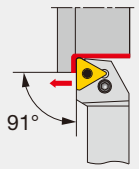
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

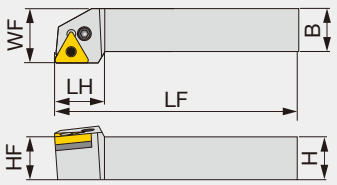
Reference pages: PTGNR/L-CHP: Inserts → B086 -, CBN → B178 -, PCD → B194 -
Parts for coolant hose → C142

PTGNR/L

Lever-lock toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **G**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
PTGNR/L1616	16	16	100	22	16	20	0.8	TN**1604...
PTGNR/L2020	20	20	125	22	20	25	0.8	TN**1604...
PTGNR/L2525M3	25	25	150	22	25	32	0.8	TN**1604...
PTGNR/L2525M4	25	25	150	28	25	32	0.8	TN**2204...
PTGNR3225P4	32	25	170	28	32	32	0.8	TN**2204...

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PTGNR/L1616, 2020	LST317	LCS3	P-2.5	LSP3	LCL3
PTGNR/L2525M3	LST317	LCS3	P-2.5	LSP3	LCL3
PTGNR/L2525M4	LST42	LCS4	P-3	LSP4	LCL4
PTGNR3225P4	LST42	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

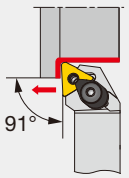
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

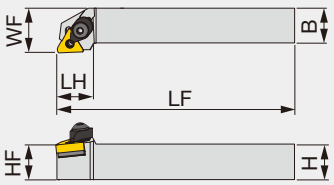
Reference pages: PTGNR/L: Inserts → B086 -, CBN → B178 -, PCD → B194 -

DTGNR/L

"One-Double" toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **G**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
DTGNR/L2020K16	20	20	125	21	20	25	0.8	TN**1604...
DTGNR/L2525M16	25	25	150	21	25	32	0.8	TN**1604...
DTGNR/L2525M22	25	25	150	28	25	32	0.8	TN**2204...

Except for 57-type chipbreaker inserts
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DTGNR/L**16	DCPM-33	LCL33	DPIS33	DLCS33	LST317	BP-9	LSP3	P-2.5	P-3
DTGNR/L**22	DCPM-43	DLCL43	DPIS43	DLCS43	LST42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

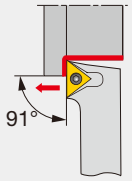
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

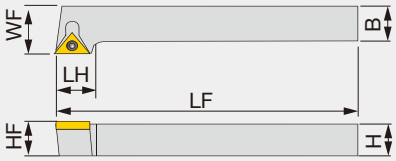
Reference pages: DTGNR/L: Inserts → B086 -, CBN → B178 -, PCD → B194 -

STGCR/L

Screw-on system toolholder with 91° approach angle for positive 60° triangular inserts



Cutting edge style **G**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	Insert
STGCR/L062	0.375	0.375	2.500	0.625	0.375	0.500	TC**21.5...
STGCR/L082	0.500	0.500	3.500	0.625	0.500	0.625	TC**21.5...
STGCR/L103	0.625	0.625	4.000	0.750	4.000	0.750	TC**32.5...
STGCR/L123	0.750	0.750	4.500	0.750	4.500	1.000	TC**32.5...

Except for 57-type chipbreaker inserts

SPARE PARTS

Designation	Shim	Shim screw	Clamp screw	Wrench
STGCR/L0...	-	-	CSTB2.5	T-7F
STGCR/L1...	SKTP-343	SRS-3	CSTB3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B020			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Chipbreaker shape	01	JS	PS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

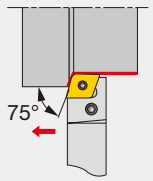
N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Chipbreaker shape	T-DIA	with rake AL
Cutting conditions	B026	

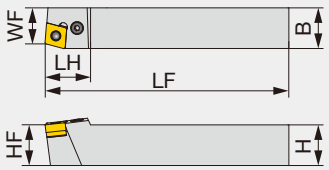
Reference pages: STGCR/L: Inserts→ B139 -, PCD → B196

PCBNR/L

Lever-lock toolholder with 75° approach angle, for negative 80° rhombic inserts



Cutting edge style **B**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
PCBNR/L2525	25	25	150	28	25	22	0.8	CN**1204...

100° corner is used.
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PCBNR/L2525	LSC42	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Medium cutting
Grade	TH10
Chipbreaker Shape	P
Cutting conditions	B014

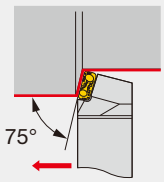
S

Application	Finishing	Medium cutting
Grade	AH8005	AH8005
Chipbreaker Shape	HRF	HRM
Cutting conditions	B016	

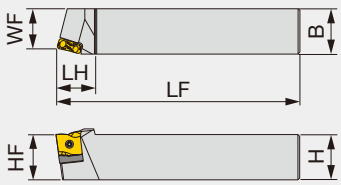
Reference pages: PCBNR/L: Inserts → B056 -, CBN → B172 -, PCD → B194 -

TLBNR/L

Screw-on toolholder for roughing with 75° approach angle, for negative tangential inserts



Cutting edge style **B**



Right hand (R) shown.

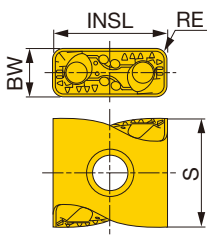
Inch	H	B	LF	LH	HF	WF	Insert
TLBNR/L24-24	1.500	1.500	7.874	1.378	1.500	1.378	LNMX2410**R/L...

SPARE PARTS

Designation	Clamping screw	Shim	Spring pin	Wrench
TLBNR24-24	CSTB-5L163-S	TSL24R	PSP-16	KEYV-T20
TLBNL24-24	CSTB-5L163-S	TSL24L	PSP-16	KEYV-T20

INSERT

LNMX12/16/24



P	Steel	★	★	★
M	Stainless			☆
K	Cast iron	☆	☆	☆
N	Non-ferrous			
S	Superalloys			
H	Hard materials			

★ : First choice
☆ : Second choice

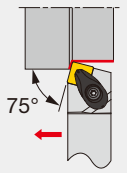
Designation	HAND	RE (in)	Coated T9115	Coated T9125	Coated AH725	BW (in)	INSL (in)	S (in)
LNMX120408R-TDR	R	0.031	●	●		0.189	0.472	0.457
LNMX120408L-TDR	L	0.031	●	●		0.189	0.472	0.457
LNMX120412R-TDR	R	0.047	●	●		0.189	0.472	0.457
LNMX120412L-TDR	L	0.047	●	●		0.189	0.472	0.457
LNMX160608R-TDR	R	0.031	●	●		0.252	0.638	0.531
LNMX160608L-TDR	L	0.031	●	●		0.252	0.638	0.531
LNMX160612R-TDR	R	0.047	●	●		0.252	0.638	0.531
LNMX160612L-TDR	L	0.047	●	●		0.252	0.638	0.531
LNMX160616R-TDR	R	0.063	●	●		0.252	0.638	0.531
LNMX160616L-TDR	L	0.063	●	●		0.252	0.638	0.531
LNMX241016R-TDR	R	0.063	●	●		0.370	0.945	0.807
LNMX241016L-TDR	L	0.063	●	●		0.370	0.945	0.807
LNMX241024R-TDR	R	0.094	●	●		0.370	0.945	0.807
LNMX241024L-TDR	L	0.094	●	●		0.370	0.945	0.807
LNMX160608R-MDR	R	0.031	●	●	●	0.252	0.638	0.531
LNMX160608L-MDR	L	0.031	●	●	●	0.252	0.638	0.531
LNMX160612R-MDR	R	0.047	●	●	●	0.252	0.638	0.531
LNMX160612L-MDR	L	0.047	●	●	●	0.252	0.638	0.531
LNMX160608R-TWR	R	0.031	●	●		0.252	0.638	0.531
LNMX160608L-TWR	L	0.031	●	●		0.252	0.638	0.531
LNMX160612R-TWR	R	0.047	●	●		0.252	0.638	0.531
LNMX160612L-TWR	L	0.047	●	●		0.252	0.638	0.531

● : Line up

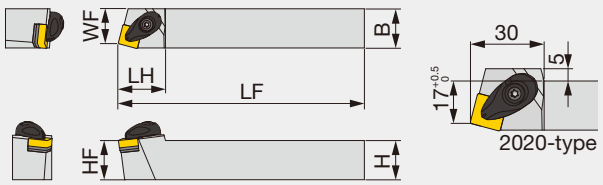
Reference pages:
Standard cutting conditions → C144

ASBNR/L

Double-clamp toolholder with 75° approach angle, for negative square inserts



Cutting edge style **B**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ASBNR/L124-A	0.750	0.750	4.500	1.180	0.750	0.625	0.031	SN**43...	2.2
ASBNR/L164-A	1.000	1.000	6.000	1.180	1.000	0.875	0.031	SN**43...	2.2
ASBNR/L205-A	1.250	1.250	7.000	1.500	1.250	1.100	0.031	SN**54...	4.7
ASBNR/L245-A	1.500	1.500	8.000	1.500	1.500	1.350	0.031	SN**54...	4.7
ASBNR/L206-A	1.250	1.250	7.000	1.625	1.250	1.100	0.031	SN**64...	4.7
ASBNR/L246-A	1.500	1.500	8.000	1.625	1.500	1.350	0.031	SN**64...	4.7

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ASBNR/L2020K12-A	20	20	125	30	20	17	0.8	SN**1204...	3
ASBNR/L2525M12-A	25	25	150	30	25	22	0.8	SN**1204...	3
ASBNR/L2525M15-A	25	25	150	42.5	25	22	1.2	SN**1506...	6.4
ASBNR/L3232P15-A	32	32	170	42.5	32	27	1.2	SN**1506...	6.4
ASBNR/L3232P19-A	32	32	170	47.5	32	27	1.2	SN**1906...	6.4
ASBNR/L4040S19-A	40	40	250	47.5	40	35	1.2	SN**1906...	6.4

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench 1	Wrench 2
ASBNR/L**4-A, 12-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASS422	CSTB-3.5	T-15F	-
ASBNR/L**5-A, 15-A	ACP5S	ACS-6W	BP-8.8	SP-2.5	ASS533	CSTB-5	-	KEYV-T20
ASBNR/L**6-A, 19-A	ACP6S	ACS-6W	BP-8.8	SP-2.5	ASS634	CSTB-5	-	KEYV-T20

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	T-DIA	P
Cutting conditions	B014	

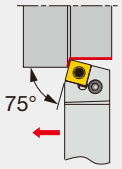
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

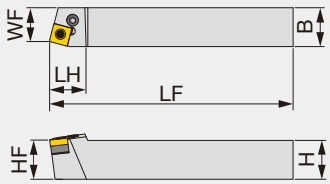
Reference pages: ASBNR/L: Inserts → B077 -, CBN → B177, PCD → B195

PSBNR/L

Lever-lock toolholder with 75° approach angle, for negative square inserts



Cutting edge style **B**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
PSBNR/L1616	16	16	100	22	16	13	0.8	SN**0903...
PSBNR/L2020	20	20	125	28	20	17	0.8	SN**1204...
PSBNR/L2525	25	25	150	24	25	22	0.8	SN**1204...
PSBNR/L3232	32	32	170	40	32	27	1.2	SN**1906...

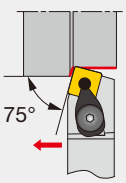
**RE: Standard corner radius

SPARE PARTS

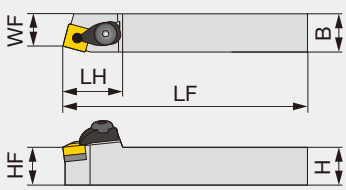
Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PSBNR/L1616	LSS33	LCS3	P-2.5	LSP3L	LCL3
PSBNR/L2*2*	LSS42	LCS4	P-3	LSP4	LCL4
PSBNR/L3232	LSS63	LCS6	P-4	LSP6	LCL6

DSBNR/L

"One-Double" toolholder with 75° approach angle, for negative square inserts



Cutting edge style **B**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
DSBNR/L2020K12	20	20	125	35	20	17	0.8	SN**1204...
DSBNR/L2525M12	25	25	150	35	25	22	0.8	SN**1204...

Except for 57-type chipbreaker inserts **RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DSBNR/L...	DCPM-43	DLCL43	DPIS43	DLCS43	LSS42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

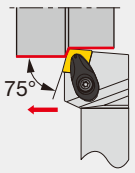
Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	T-DIA	P
Cutting conditions	B014	

S

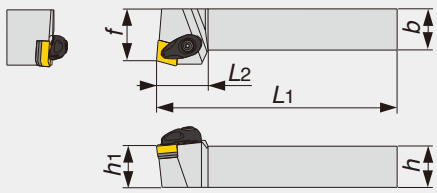
Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

Reference pages: PSBNR/L, DSBNR/L:
Inserts → B077 -, CBN → B177, PCD → B195

Double-clamp toolholder with 75° approach angle, for negative 80° rhombic inserts



Cutting edge style **R**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ACRNR/L164-A	1.000	1.000	6.000	1.25	1.000	1.25	0.032	CN**43...	2.2

Torque: Recommended clamping torque: lbs·ft
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench 1
ACRNR/L164-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASC422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

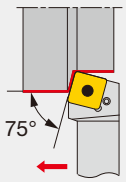
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

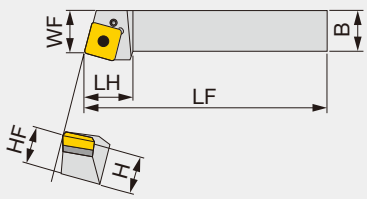
Reference pages: ACRNR/L: Inserts → B056 -, CBN → B172 -, PCD → B194 -

HSRNR/L

Retract-pin toolholder with 75° approach angle, for negative square inserts



Cutting edge style **R**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
HSRNR/L4040R	40	40	200	50	40	43	1.6	SNMM3109...
HSRNR/L5050S	50	50	250	60	50	53	1.6	SNMM3109...

**RE: Standard corner radius

SPARE PARTS

Designation	Pin	Clamping screw	Shim	Wrench
HSRNR/L...	SW99	LS-8	NAS-04	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	T-DIA	P
Cutting conditions	B014	

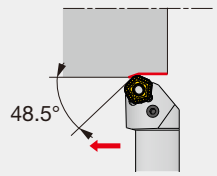
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

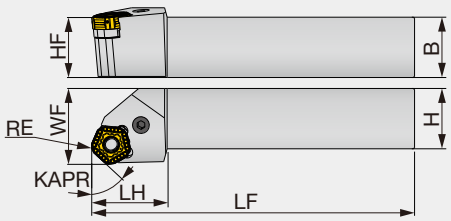
Reference pages: HSRNR/L: Inserts → B083

PPXOR/L-HD

Lever-lock toolholder with 48.5° approach angle, for negative 108° pentagonal inserts



Cutting edge style **X**



Inch	H	B	LF	LH	HF	WF	KAPR	RE	Insert
PPXOR/L165-HD	1.000	1.000	6.000	1.380	1.000	1.260	48.5°	0.047	POMG110612
PPXOR/L206-HD	1.250	1.250	7.000	1.500	1.250	1.510	48.5°	0.047	POMG130612

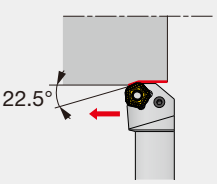
Metric	H	B	LF	LH	HF	WF	KAPR	RE	Insert
PPXOR/L2525M11-HD	25	25	150	35	25	32	48.5°	1.2	POMG110612
PPXOR/L3232P13-HD	32	32	170	40	32	40	48.5°	1.2	POMG130612

SPARE PARTS

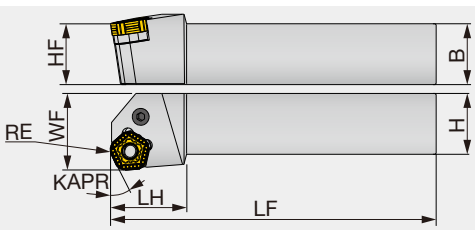
Designation	Shim	Spring pin	Lever	Clamping screw	Wrench
PPXOR/L165-HD PPXOR/L2525M11-HD	LSPO53	LSP5	LCL5	LCS5	P-3
PPXOR/L206-HD PPXOR/L3232P13-HD	LSPO63	LSP6	LCL6	LCS6	P-4

PPXOR/L-HF

Lever-lock toolholder with 22.5° approach angle, for negative 108° pentagonal inserts



Cutting edge style **X**



Inch	H	B	LF	LH	HF	WF	KAPR	RE	Insert
PPXOR/L165-HF	1.000	1.000	6.000	1.380	1.000	1.260	22.5°	0.047	POMG110612
PPXOR/L206-HF	1.250	1.250	7.000	1.500	1.250	1.510	22.5°	0.047	POMG130612

Metric	H	B	LF	LH	HF	WF	KAPR	RE	Insert
PPXOR/L2525M11-HF	25	25	150	35	25	32	22.5°	1.2	POMG110612
PPXOR/L3232P13-HF	32	32	170	40	32	40	22.5°	1.2	POMG130612

SPARE PARTS

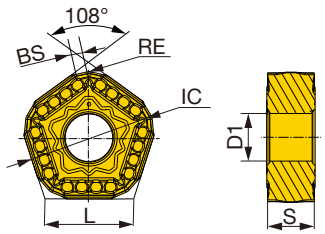
Designation	Shim	Spring pin	Lever	Clamping screw	Wrench
PPXOR/L165-HF PPXOR/L2525M11-HF	LSPO53	LSP5	LCL5	LCS5	P-3
PPXOR/L206-HF PPXOR/L3232P13-HF	LSPO63	LSP6	LCL6	LCS6	P-4

Note : Since the corner angle of TurnTenFeed insert is 108°, the workpiece corner may require additional post-process to remove stock to achieve a right angle.

Reference pages: Inserts → C103, Standard cutting conditions → C143

INSERT

POMG-MNW



P	Steel	★	★	★			
M	Stainless				☆		
K	Cast iron	☆	☆	☆			
N	Non-ferrous						
S	Superalloys				★		
H	Hard materials						

★ : First choice
☆ : Second choice

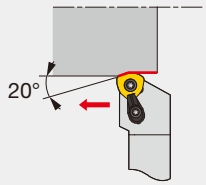
Designation	RE (in)	Coated									IC (in)	L (in)	BS (in)	S (in)	D1 (in)
		T9225	T9215	T9125	AH8015										
POMG110612-MNW	0.047	●	●	●	●						0.625	0.454	0.059	0.250	0.047
POMG130612-MNW	0.047	●	●	●	●						0.750	0.545	0.079	0.250	0.047

● : Line up

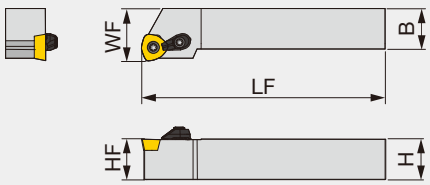
Reference pages: Standard cutting conditions → C143

XWXPR/L

Double-clamp toolholder for roughing with 20° approach angle, for positive 80° trigon inserts



Cutting edge style **X**



Right hand (R) shown.

Inch	H	B	LF	HF	WF	Insert
XWXPR/L16-09	1.000	1.000	6.000	1.000	1.250	WPMT090725ZPR/L-ML
XWXPR/L20-09	1.250	1.250	7.000	1.250	1.500	WPMT090725ZPR/L-ML
XWXPR/L24-09	1.500	1.500	7.000	1.500	2.000	WPMT090725ZPR/L-ML

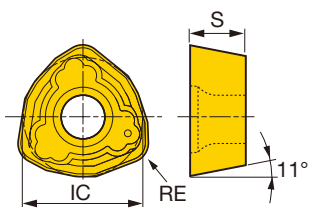
SPARE PARTS

Designation	Clamp set	Clamping screw	Wrench
XWXPR/L...	CSY-20	CSPB-5	IP-20T

Each insert is either right- or left-handed. Please be sure not to use a wrong insert.

INSERT

WPMT09-ML



P	Steel	★	★	★	★	★			
M	Stainless					☆			
K	Cast iron	☆	☆	☆	☆	☆			
N	Non-ferrous								
S	Superalloys								
H	Hard materials								

★ : First choice
☆ : Second choice

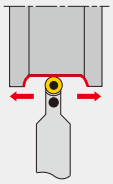
Designation	Max. *ap* (in)	RE (in)	Coated							IC (in)	S (in)
			T9225	T9215	T9115	T9125	AH120				
WPMT090725ZPR-ML	0.118	0.098	●	●	●	●	●			0.059	0.276
WPMT090725ZPL-ML	0.118	0.098	●	●	●	●	●			0.059	0.276

● : Line up

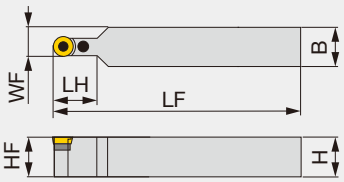
Reference pages: Standard cutting conditions → C143

PRDCN

Lever-lock toolholder with 45° approach angle, for positive round inserts



Cutting edge style **D**



Metric	H	B	LF	LH	HF	WF	Insert
PRDCN2020K10	20	20	125	22.5	20	15	RCMM1003...
PRDCN2525M12	25	25	150	24	25	18.5	RCM*1204...
PRDCN3225P12	32	25	170	24	32	18.5	RCM*1204...
PRDCN3225P16	32	25	170	28	32	20.5	RCM*1606...
PRDCN3232P20	32	32	170	32	32	26	RCM*2006...
PRDCN4040R25	40	40	200	42	40	32.5	RCM*2507...

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PRDCN2020K10	LSR32C	LCS2	P-2	LSP3	LCL3C
PRDCN**25*12	LSR42C	LCS3	P-2.5	LSP3	LCL4C
PRDCN3225P16	LSR53C	LCS5	P-3	LSP4	LCL5C
PRDCN3232P20	LSR63C	LCS5	P-3	LSP6C	LCL6C
PRDCN4040R25	LSR84C	LCS8C	P-4	LSP6	LCL8C

INSERT SELECTION

P

Application	Finishing to medium cutting	Heavy cutting
Grade	T9215	T9215
Chipbreaker Shape	RS 	61 
Cutting conditions	B020	

M

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B022

K

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B024

N

Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B026

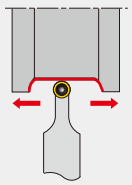
S

Application	Finishing to medium cutting	Heavy cutting
Grade	AH8015	AH8015
Chipbreaker Shape	RS 	61 
Cutting conditions	B028	

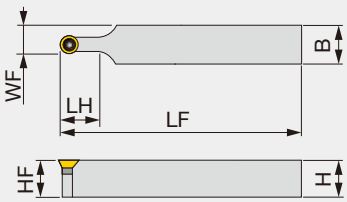
Reference pages: PRDCN: Inserts → **B131 -**

SRDCN

Screw-on toolholder with 45° approach angle, for positive round inserts



Cutting edge style **D**



Metric	H	B	LF	LH	HF	WF	Insert
SRDCN2020K06	20	20	125	12	20	13	RC*T0602...
SRDCN2020K08	20	20	125	16	20	14	RC*T0803...
SRDCN2020K10	20	20	125	20.3	25	15	RC*T1003...
SRDCN2525M06	25	25	150	12	25	15.5	RC*T0602...
SRDCN2525M08	25	25	150	16	25	16.5	RC*T0803...
SRDCN2525M10	25	25	150	20.3	25	17.5	RC*T1003...

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SRDCN2020K06	CSTB-2.5	-	-	-	T-8F
SRDCN2020K08	CSTB-3	-	-	-	T-9F
SRDCN2020K10	CSTB-3.5L	DTS5-3.5	SSR32	P-3.5	T-15F
SRDCN2525M06	CSTB-2.5	-	-	-	T-8F
SRDCN2525M08	CSTB-3	-	-	-	T-9F
SRDCN2525M10	CSTB-3.5L	DTS5-3.5	SSR32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing to medium cutting	Heavy cutting
Grade	T9215	T9215
Chipbreaker Shape	RS 	61 
Cutting conditions	B020	

M

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B022

K

Application	Heavy cutting
Grade	T9215
Chipbreaker Shape	61 
Cutting conditions	B024

N

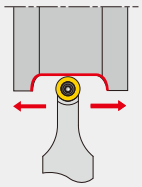
Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B026

S

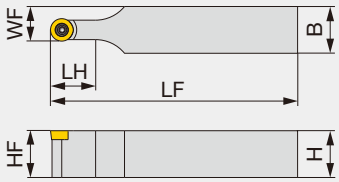
Application	Finishing to medium cutting	Heavy cutting
Grade	AH8015	AH8015
Chipbreaker Shape	RS 	61 
Cutting conditions	B028	

Reference pages: SRDCN: Inserts → **B131 -**

Screw-on toolholder with 45° approach angle, for positive round inserts



Cutting edge style **D**



Inch	H	B	LF	LH	HF	WF	Insert	Torque
SRDCN164-6F	1.00	1.00	6.00	0.95	1.00	0.74	RCMT1204M0-6RS/-6RM	2.21

Metric	H	B	LF	LH	HF	WF	Insert	Torque*
SRDCN2525M12-6F	25	25	150	24.1	25	18.5	RCMT1204M0-6RS/-6RM	3

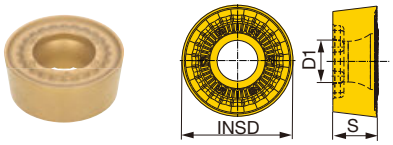
Torque: Recommended clamping torque: lb·ft (*N·m)

SPARE PARTS

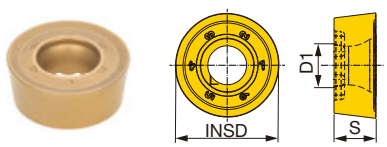
Designation	Clamping screw	Lubricant	Wrench
SRDCN164-6F, SRDCN2525M12-6F	CSTB-4	M-1000	T-15F

INSERT

RCMT



6RS



6RM

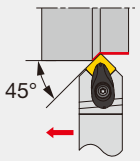
		Coated					Cermet							
	Designation	T9225	T9215	T9115	T9125		NS9530					INSD (in)	S (in)	D1 (in)
P	Steel	★	★	★	★		★							
M	Stainless													
K	Cast iron	☆	☆	☆	☆		☆							
N	Non-ferrous													
S	Superalloys													
H	Hard materials													
	RCMT1204M0-6RS	●	●	●	●		●					0.472	0.187	0.203
	RCMT1204M0-6RM	●	●	●	●		●					0.472	0.187	0.203

★ : First choice
☆ : Second choice
● : Line up

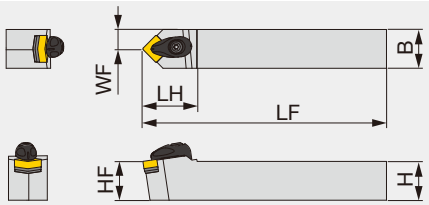
Reference pages: SRDCN: Standard cutting conditions → C142

ASDNN

Double-clamp toolholder with 45° approach angle, for negative square inserts



Cutting edge style **D**



Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ASDNN124-A	0.750	0.750	4.500	1.380	0.750	0.375	0.031	SN**43...	2.2
ASDNN164-A	1.000	1.000	6.000	1.380	1.000	0.500	0.031	SN**43...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ASDNN2020K12-A	20	20	125	35	20	10	0.8	SN**1204...	3
ASDNN2525M12-A	25	25	150	35	25	12.5	0.8	SN**1204...	3

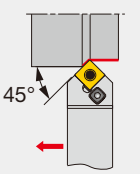
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

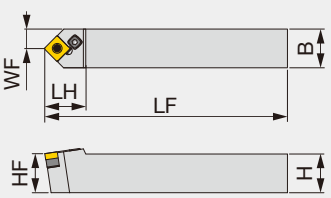
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ASDNN**4-A, 12-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASS422	CSTB-3.5	T-15F

PSDNN

Lever-lock toolholder with 45° approach angle, for positive round inserts



Cutting edge style **D**



Metric	H	B	LF	LH	HF	WF	RE**	Insert
PSDNN1616	16	16	100	22	16	8	0.8	SN**0903...
PSDNN2020	20	20	125	30	20	10.3	0.8	SN**1204...
PSDNN2525	25	25	150	30	25	12.8	0.8	SN**1204...

**RE: Standard corner radius

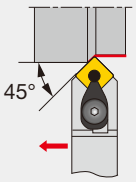
SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PSDNN1616	LSS33	LCS3	P-2.5	LSP3L	LCL3
PSDNN2020	LSS42	LCS4	P-3	LSP4	LCL4
PSDNN2525	LSS42	LCS4	P-3	LSP4	LCL4

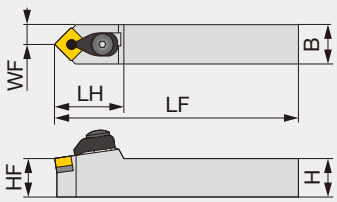
Reference pages: ASDNN, PSDNN: Inserts → B077 -, CBN → B177, PCD → B195

DSDNN

One-Double toolholder with 45° approach angle, for negative square inserts



Cutting edge style **D**



Metric	H	B	LF	LH	HF	WF	RE**	Insert
DSDNN2020K12	20	20	125	36	20	10	0.8	SN**1204...
DSDNN2525M12	25	25	150	36	25	12.5	0.8	SN**1204...

Except for 57-type chipbreaker inserts
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DSDNN...	DCPM-43	DLCL43	DPIS43	DLCS43	LSS42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	T-DIA	P
Cutting conditions	B014	

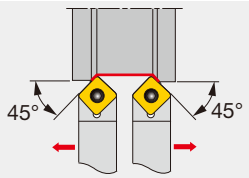
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

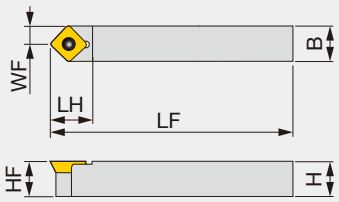
Reference pages: DSDNN: Inserts → B077 -, CBN → B177, PCD → B195

SSDC/PN

Screw-on toolholder with 45° approach angle, for positive square inserts



Cutting edge style **D**



Metric	H	B	LF	LH	HF	WF	RE**	Insert
SSDCN1010K07	10	10	125	12	10	5	0.4	SC**0702...
SSDPN1010H	10	10	100	12	10	5	0.4	SP*P042...
SSDCN1212K09	12	12	125	15	12	6	0.8	SC**09T3...
SSDPN1212H	12	12	100	12	12	6	0.4	SP*P042...
SSDCN1616H09	16	16	100	15	16	8	0.8	SC**09T3...
SSDPN1616H	16	16	100	14	16	8	0.8	SP*M322...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SSDCN1010K07	CSTB-3	-	-	-	T-9F
SSDPN1010H	CSTA-NO3	-	-	-	T-9F
SSDCN1212K09	CSTB-4	-	-	-	T-15F
SSDPN1212H	CSTA-NO3	-	-	-	T-9F
SSDCN1616H09	CSTB-3.5L	DTS5-3.5	SSS32	P-3.5	T-15F
SSDPN1616H	CSTA-NO5	-	-	-	T-9F

INSERT SELECTION

P

Application	Finishing to medium cutting	Medium cutting
Grade	T9215	T9215
Chipbreaker Shape	PS	PM
Cutting conditions	B020	

M

Application	Medium cutting
Grade	T6130
Chipbreaker Shape	PM
Cutting conditions	B022

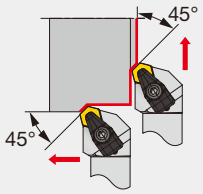
K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker Shape	CM
Cutting conditions	B024

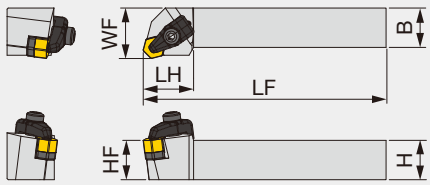
Reference pages: SSDC/PN: Inserts → B135, J092

CHSNR-RD

Double-clamp toolholder with 45° approach angle, for negative 120° hexagonal ceramic inserts with dimple



Cutting edge style **S**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
CHSNR16M45-RD	1.000	1.000	6.000	1.260	1.000	1.250	0.047	HNGD45...	3.0

Torque: Recommended clamping torque: lb·ft
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench 1	Wrench 2
CHSNR16M45-RD	CCP4-A	CCS4-A	CH44-A	BH-40050-A	BP-5-A	P-3	P-4

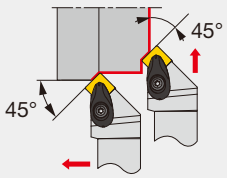
INSERT SELECTION

Application	Finishing to medium cutting
Grade	FX105
Chipbreaker Shape	
Cutting conditions	C144

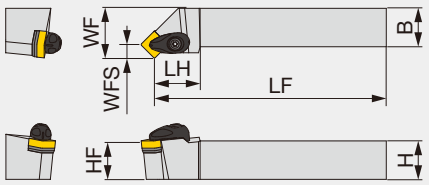
Reference pages: CHSNR-RD: Inserts → B110
Standard cutting conditions → C144

ASSNR/L

Double-clamp toolholder with 45° approach angle (S-style), for negative square inserts



Cutting edge style **S**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	WFS	RE**	Insert	Torque
ASSNR/L124-A	0.750	0.750	4.500	1.250	0.750	1.000	0.327	0.031	SN**43...	2.2
ASSNR/L164-A	1.000	1.000	6.000	1.250	1.000	1.250	0.327	0.031	SN**43...	2.2
ASSNR/L205-A	1.250	1.250	7.000	1.500	1.250	1.500	0.406	0.031	SN**54...	4.7
ASSNR/L245-A	1.500	1.500	8.000	1.500	1.500	1.750	0.406	0.031	SN**54...	4.7
ASSNR/L206-A	1.250	1.250	7.000	1.500	1.250	1.500	0.492	0.031	SN**64...	4.7
ASSNR/L246-A	1.500	1.500	8.000	1.500	1.500	1.750	0.492	0.031	SN**64...	4.7

Metric	H	B	LF	LH	HF	WF	WFS	RE**	Insert	Torque*
ASSNR/L2020K12-A	20	20	125	30	20	25	8.3	0.8	SN**1204...	3
ASSNR/L2525M12-A	25	25	150	30	25	32	8.3	0.8	SN**1204...	3
ASSNR/L2525M15-A	25	25	150	25	25	32	10.3	1.2	SN**1506...	6.4
ASSNR/L3232P15-A	32	32	170	25	32	40	10.3	1.2	SN**1506...	6.4
ASSNR/L3232P19-A	32	32	170	27.5	32	40	12.5	1.2	SN**1906...	6.4
ASSNR/L4040S19-A	40	40	250	27.5	40	50	12.5	1.2	SN**1906...	6.4

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench 1	Wrench 2
ASSNR/L**4-A, 12-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASS422	CSTB-3.5	T-15F	-
ASSNR/L**5-A, 15-A	ACP5S	ACS-6W	BP-8.8	SP-2.5	ASS533	CSTB-5	-	KEYV-T20
ASSNR/L**6-A, 19-A	ACP6S	ACS-6W	BP-8.8	SP-2.5	ASS634	CSTB-5	-	KEYV-T20

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Medium cutting
Grade	TH10
Chipbreaker Shape	P
Cutting conditions	B014

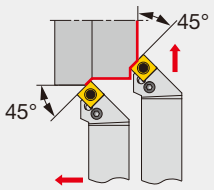
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

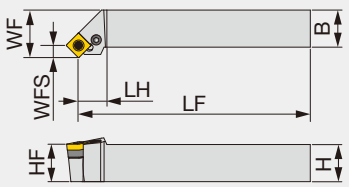
Reference pages: ASSNR/L: Inserts → B077 -, CBN → B177, PCD → B195

PSSNR/L

Lever-lock toolholder with 45° approach angle, for positive round inserts



Cutting edge style **S**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	WFS	RE**	Insert
PSSNR/L1616	16	16	94	16	16	20	6.1	0.8	SN**0903...
PSSNR/L2020	20	20	116	21	20	25	8.3	0.8	SN**1204...
PSSNR/L2525	25	25	141	21	25	32	8.3	0.8	SN**1204...
PSSNR3225	32	25	161	21	32	32	8.3	0.8	SN**1204...
PSSNR/L3232	32	32	157.5	27.5	32	40	12.5	1.2	SN**1906...

**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PSSNR/L1616	LSS33	LCS3	P-2.5	LSP3L	LCL3
PSSNR/L2020	LSS42	LCS4	P-3	LSP4	LCL4
PSSNR/L**25	LSS42	LCS4	P-3	LSP4	LCL4
PSSNR/L3232	LSS63	LCS6	P-4	LSP6	LCL6

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Medium cutting
Grade	TH10
Chipbreaker Shape	P
Cutting conditions	B014

S

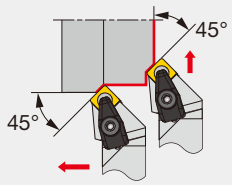
Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

Reference pages: PSSNR/L: Inserts → B077 -, CBN → B177, PCD → B195

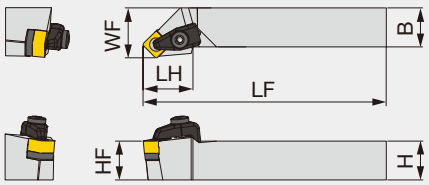
DIMPLEFX

CSSNR/L-RD

Double-clamp toolholder with 45° approach angle, for negative square ceramic inserts with dimple



Cutting edge style **S**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
CSSNR/L16M45-RD	1.000	1.000	6.000	1.260	1.000	1.250	0.047	SNGD45...	3.0

Torque: Recommended clamping torque: lb·ft
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Wrench 1	Wrench 2
CSSNR/L16M45-RD	CCP4-A	CCS4-A	CS44-A	BH5-10-A	BP-5-A	P-3	P-4

INSERT SELECTION

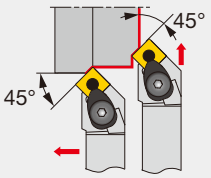
K

Application	Finishing to medium cutting
Grade	FX105
Chipbreaker Shape	- 
Cutting conditions	C144

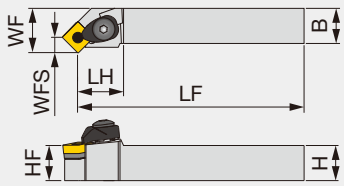
Reference pages: CSSNR/L-RD: Insert → B085
Standard cutting conditions → C144

DSSNR/L

"One-Double" toolholder with 45° approach angle, for negative square inserts



Cutting edge style **S**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	WFS	RE**	Insert
DSSNR/L2020K12	20	20	125	34.3	20	25	8.3	0.8	SN**1204...
DSSNR/L2525M12	25	25	150	34.3	25	32	8.3	0.8	SN**1204...

Except for 57-type chipbreaker inserts
**RE : Standard corner radius

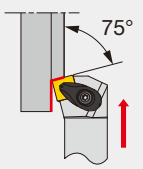
SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DSSNR/L...	DCPM-43	DLCL43	DPIS43	DLCS43	LSS42	BP-10	LSP4	P-3	P-4

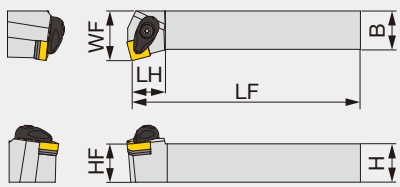
TURNING A

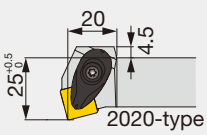
ASKNR/L

Double-clamp toolholder with 75° approach angle, for negative square inserts



Cutting edge style **K**





Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ASKNR/L124-A	0.750	0.750	4.500	0.875	0.750	1.000	0.031	SN**43...	2.21
ASKNR/L164-A	1.000	1.000	6.000	1.000	1.000	1.260	0.031	SN**43...	2.21

Torque: Recommended clamping torque: lbs·ft
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ASKNR/L**4-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASS422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	T-DIA	P
Cutting conditions	B014	

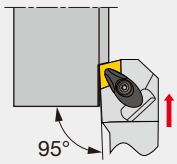
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

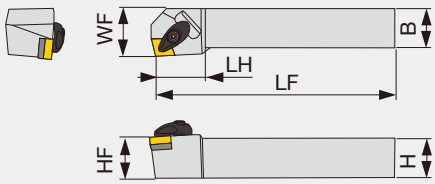
Reference pages: DSSNR/L, ASKNR/L:
Inserts → B077 -, CBN → B177, PCD → B195

ACKNR/L

Double-clamp toolholder with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style **K**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ACKNR/L164-A	1.000	1.000	6.000	1.375	1.000	1.312	0.032	CN**43...	2.2

Torque: Recommended clamping torque: lbs·ft
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench 1
ACKNR/L164-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASC422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

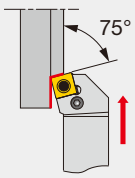
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

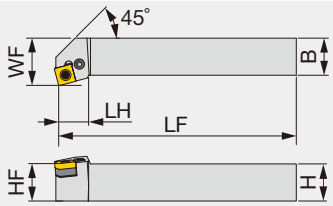
Reference pages: ACKNR/L: Inserts → B056 -, CBN → B172 -, PCD → B194 -

PSKNR/L

Lever-lock toolholder with 75° approach angle, for negative square inserts



Cutting edge style **K**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
PSKNR/L1616	16	16	100	17	16	25	0.8	SN**0903...
PSKNR/L2020	20	20	125	22	20	25	0.8	SN**1204...
PSKNR/L2525	25	25	150	22	25	32	0.8	SN**1204...
PSKNR3232	32	32	170	40	32	40	1.2	SN**1906...

**RE : Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PSKNR/L1616	LSS33	LCS3	P-2.5	LSP3L	LCL3
PSKNR/L2*2*	LSS42	LCS4	P-3	LSP4	LCL4
PSKNR3232	LSS63	LCS6	P-4	LSP6	LCL6

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	T-DIA	P
Cutting conditions	B014	

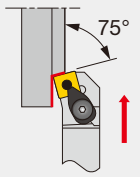
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

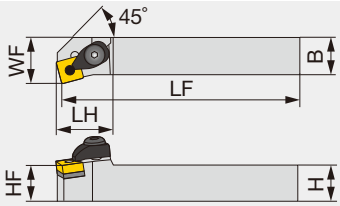
Reference pages: PSKNR/L: Inserts → B077 -, CBN → B177, PCD → B195

DSKNR/L

"One-Double" toolholder with 75° approach angle, for negative square inserts



Cutting edge style **K**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
DSKNR/L2020K12	20	20	125	31	20	25	0.8	SN**1204...
DSKNR/L2525M12	25	25	150	31	25	32	0.8	SN**1204...

Except for 57-type chipbreaker inserts
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DSKNR/L...	DCPM-43	DLCL43	DPIS43	DLCS43	LSS42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Chipbreaker Shape	T-DIA	P
Cutting conditions	B014	

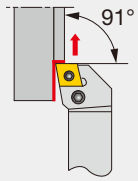
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

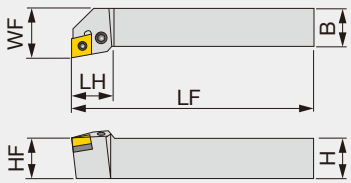
Reference pages: DSKNR/L: Inserts → B077 -, CBN → B177, PCD → B195

PCFNR/L

Lever-lock type toolholder for facing with 91° approach angle, for negative 80° rhombic inserts



Cutting edge style **F**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
PCFNR/L2020	20	20	125	28	20	25	0.8	CN**1204...
PCFNR/L2525	25	25	150	28	25	32	0.8	CN**1204...

**RE : Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PCFNR/L...	LSC42 D30	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

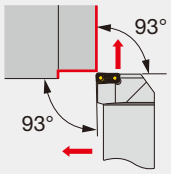
Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

H

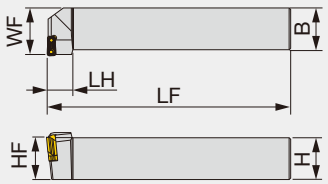
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

Reference pages: PCFNR/L: Inserts → B056 -, CBN → B172 -, PCD → B194 -

Screw-on toolholder for roughing with 93° approach angle, for negative tangential inserts



Cutting edge style **F**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	Insert
TLFNR/L16-16	1.000	1.000	6.000	0.780	1.000	1.000	LNMX1606**L/R...
TLFNR/L20-16	1.250	1.300	6.000	0.780	1.250	1.000	LNMX1606**L/R...

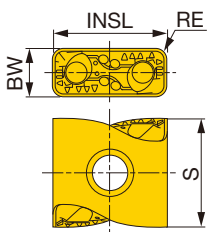
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Shim	Spring pin	Wrench
TLFNR16-16	CSTB-4L115-S	TSL16L	PSP-16	KEYV-T15
TLFNL16-16	CSTB-4L115-S	TSL16R	PSP-16	KEYV-T15
TLFNR20-16	CSTB-4L115-S	TSL16L	PSP-16	KEYV-T15
TLFNL20-16	CSTB-4L115-S	TSL16R	PSP-16	KEYV-T15

INSERT

LNMX16



P	Steel	★	★	★		
M	Stainless			☆		
K	Cast iron	☆	☆	☆		
N	Non-ferrous					
S	Superalloys					
H	Hard materials					

★ : First choice
☆ : Second choice

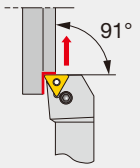
Designation	HAND	RE (in)	Coated					BW (in)	INSL (in)	S (in)
			T9115	T9125	AH725					
LNMX160608R-TDR	R	0.031	●	●				0.252	0.638	0.532
LNMX160608L-TDR	L	0.031	●	●				0.252	0.638	0.532
LNMX160612R-TDR	R	0.047	●	●				0.252	0.638	0.532
LNMX160612L-TDR	L	0.047	●	●				0.252	0.638	0.532
LNMX160616R-TDR	R	0.063	●	●				0.252	0.638	0.532
LNMX160616L-TDR	L	0.063	●	●				0.252	0.638	0.532
LNMX160608R-MDR	R	0.031	●	●	●			0.252	0.638	0.532
LNMX160608L-MDR	L	0.031	●	●	●			0.252	0.638	0.532
LNMX160612R-MDR	R	0.047	●	●	●			0.252	0.638	0.532
LNMX160612L-MDR	L	0.047	●	●	●			0.252	0.638	0.532
LNMX160608R-TWR	R	0.031	●	●				0.252	0.638	0.532
LNMX160608L-TWR	L	0.031	●	●				0.252	0.638	0.532
LNMX160612R-TWR	R	0.047	●	●				0.252	0.638	0.532
LNMX160612L-TWR	L	0.047	●	●				0.252	0.638	0.532

● : Line up

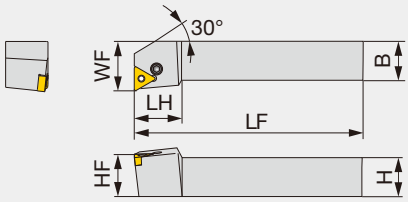
Reference pages: TLFNR/L: Standard cutting conditions → C144

PTFNR/L-Eco

Lever-lock toolholder with 91° approach angle, for negative triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PTFNR/L2020K1104	20	20	125	16	20	25	0.8	TN**1104...	2
PTFNR/L2525M1104	25	25	150	22	25	32	0.8	TN**1104...	2

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench	Lever
PTFNR/L**1104	LCS23A	P-2.5	LCL23

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker Shape	TSF 	TM 
Cutting conditions	B008	

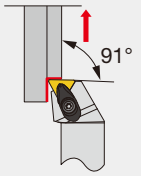
M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SS 	SM 
Cutting conditions	B010	

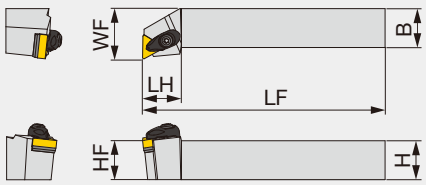
Reference pages: PTFNR/L-Eco: Inserts → B086 -

ATFNR/L

Double-clamp toolholder for facing with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ATFNR/L123-A	0.750	0.750	4.500	1.000	0.750	1.000	0.031	TN**33...	2.2
ATFNR/L163-A	1.000	1.000	6.000	1.000	1.000	1.250	0.031	TN**33...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ATFNR/L2020K16-A	20	20	125	25	20	25	0.8	TN**1604...	3
ATFNR/L2525M16-A	25	25	150	25	25	32	0.8	TN**1604...	3
ATFNR/L2525M22-A	25	25	150	29	25	32	0.8	TN**2204...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ATFNR/L**3-A, 16-A	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F
ATFNR/L**22-A	ACP4S	ACS-5W	BP-7	SP-2.5	AST422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

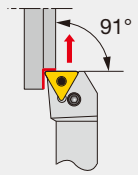
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

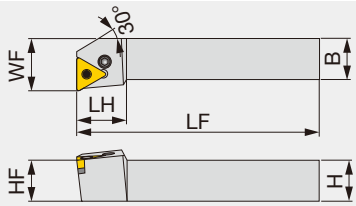
Reference pages: ATFNR/L: Inserts → B086 -, CBN → B178 -, PCD → B194 -

PTFNR/L

Lever-lock toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
PTFNR/L1616	16	16	100	22	16	20	0.8	TN**1604...
PTFNR/L2020	20	20	125	22	20	25	0.8	TN**1604...
PTFNR/L2525M3	25	25	150	22	25	32	0.8	TN**1604...
PTFNR/L2525M4	25	25	150	28	25	32	0.8	TN**2204...
PTFNR/L3225P4	32	25	170	28	32	32	0.8	TN**2204...

**RE : Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PTFNR/L1616, 2020	LST317	LCS3	P-2.5	LSP3	LCL3
PTFNR/L2525M3	LST317	LCS3	P-2.5	LSP3	LCL3
PTFNR/L**25*4	LST42	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

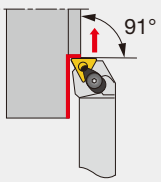
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

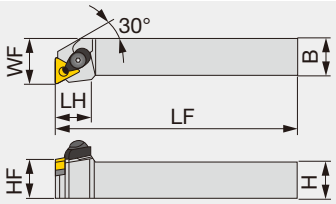
Reference pages: PTFNR/L: Inserts → B086 -, CBN → B178 -, PCD → B194 -

DTFNR/L

"One-Double" toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
DTFNR/L2020K16	20	20	125	23	20	25	0.8	TN**1604...
DTFNR/L2525M16	25	25	150	23	25	32	0.8	TN**1604...
DTFNR/L2525M22	25	25	150	31	25	32	0.8	TN**2204...

Except for 57-type chipbreaker inserts
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DTFNR/L**16	DCPM-33	LCL33	DPIS33	DLCS33	LST317	BP-9	LSP3	P-2.5	P-3
DTFNR/L**22	DCPM-43	DLCL43	DPIS43	DLCS43	LST42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

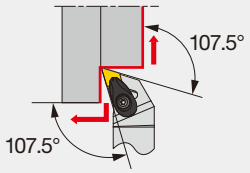
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

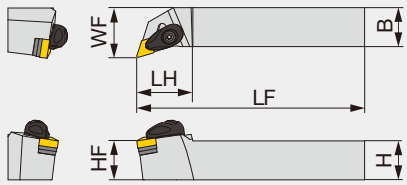
Reference pages: DTFNR/L: Inserts → B086 -, CBN → B178 -, PCD → B194 -

ADQNR/L-Eco

Double-clamp toolholder with 107.5° approach angle, for negative 55° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ADQNR/L1233-A	0.750	0.750	4.500	1.150	0.750	1.000	0.031	DN**33...	2.2
ADQNR/L1633-A	1.000	1.000	6.000	1.150	1.000	1.250	0.031	DN**33...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ADQNR/L2020K1104-A	20	20	125	30	20	25	0.8	DN**1104...	3
ADQNR/L2525M1104-A	25	25	150	30	25	32	0.8	DN**1104...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ADQNR/L**-A	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASD322	CSTB-3.5	T-15F

INSERT SELECTION

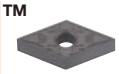
P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker Shape	TSF 	TM 
Cutting conditions	B008	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SS 	SM 
Cutting conditions	B010	

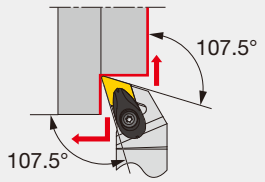
K

Application	Medium cutting
Grade	T515
Chipbreaker Shape	TM 
Cutting conditions	B012

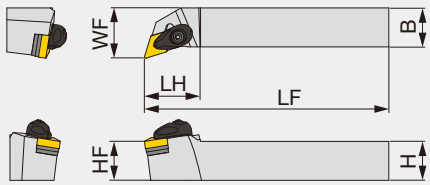
Reference pages: ADQNR/L-Eco: Inserts → B067 -

ADQNR/L

Double-clamp toolholder with 107.5° approach angle, for negative 55° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ADQNR/L124-A	0.750	0.750	4.500	1.250	0.750	1.000	0.031	DN**43...	2.2
ADQNR/L164-A	1.000	1.000	6.000	1.500	1.000	1.250	0.031	DN**43...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ADQNR/L2020K15-A	20	20	125	32	20	25	0.8	DN**1504...	3
ADQNR/L2020K1506-A	20	20	125	32	20	25	0.8	DN**1506...	3
ADQNR/L2525M15-A	25	25	150	36	25	32	0.8	DN**1504...	3
ADQNR/L2525M1506-A	25	25	150	36	25	32	0.8	DN**1506...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ADQNR/L**4-A, 15-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASD432	CSTB-3.5	T-15F
ADQNR/L**1506-A	ACP4S	ACS-5W	BP-7	SP-2.5	ASD423	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

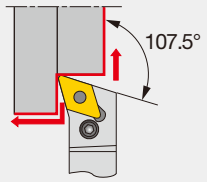
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

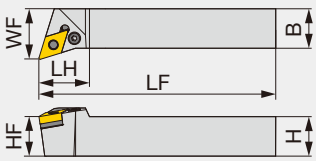
Reference pages: ADQNR/L: Inserts → B067 -, CBN → B174 -, PCD → B194 -

PDQNR/L

Lever-lock toolholder with 107.5° approach angle, for negative 55° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
PDQNR/L2525	25	25	150	32	25	32	0.8	DN**1504...

**RE : Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PDQNR/L...	LSD42 D30	LCS4	P-3	LSP4	LCL4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

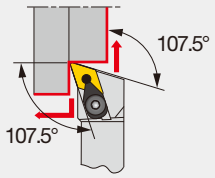
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

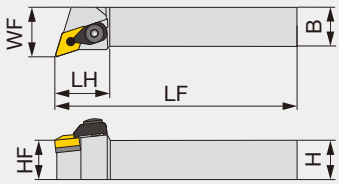
Reference pages: PDQNR/L: Inserts → B067 -, CBN → B174 -, PCD → B194 -

DDQNR/L

"One-Double" toolholder with 107.5° approach angle, for negative 55° rhombic inserts



Cutting edge style **Q**



Metric	H	B	LF	LH	HF	WF	RE**	Insert
DDQNR/L2020K15	20	20	125	35	20	25	0.8	DN**1504...
DDQNR/L2020K1506	20	20	125	35	20	25	0.8	DN**1506...
DDQNR/L2525M15	25	25	150	35	25	32	0.8	DN**1504...
DDQNR/L2525M1506	25	25	150	35	25	32	0.8	DN**1506...
DDQNR/L3225P15	32	25	170	35	32	32	0.8	DN**1504...
DDQNR/L3225P1506	32	25	170	35	32	32	0.8	DN**1506...

Except for 57-type chipbreaker inserts
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Lever	Piston	Clamp screw	Shim	Spring	Spring pin	Wrench 1	Wrench 2
DDQNR/L**15	DCPM-43	DLCL43	DPIS43	DLCS43	LSD42	BP-10	LSP4	P-3	P-4
DDQNR/L**1506	DCPM-43	DLCL43	DPIS44	DLCS43	LSD42	BP-10	LSP4	P-3	P-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

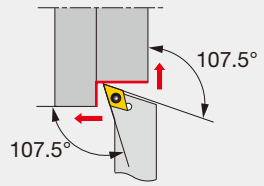
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

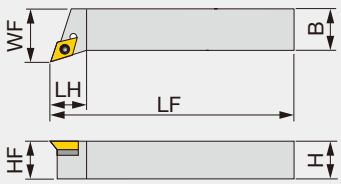
Reference pages: DDQNR/L: Inserts → B067 -, CBN → B174 -, PCD → B194 -

SDQCR/L

Screw-on toolholder with 107.5° approach angle, for positive 55° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SDQCR/L2020K11	20	20	125	20.5	20	25	0.8	DC**11T3...
SDQCR2525M11	25	25	150	21.5	25	32	0.8	DC**11T3...

**RE : Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SDQCR/L...	CSTB-3.5L	DTS5-3.5	SSD32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Chipbreaker Shape	PSS	PS	PM
Cutting conditions	B020		

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Chipbreaker Shape	W**	PSF	PSS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker Shape	T-DIA (with rake)	T-DIA	AL
Cutting conditions	B026		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker Shape	PSS	PS
Cutting conditions	B028	

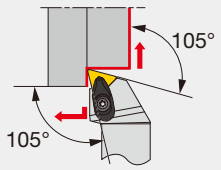
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

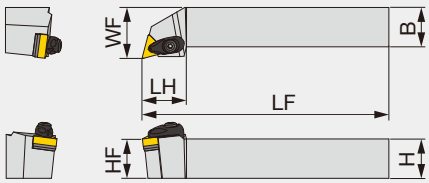
Reference pages: SDQCR/L: Inserts → B121 -, CBN → B184 -, PCD → B196 -

ATQNR/L

Double-clamp toolholder with 105° approach angle, for negative 60° triangular inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
ATQNR/L123-A	0.750	0.750	4.500	1.125	0.750	1.000	0.031	TN**33...	2.2
ATQNR/L163-A	1.000	1.000	6.000	1.125	1.000	1.250	0.031	TN**33...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
ATQNR/L2020K16-A	20	20	125	28	20	25	0.8	TN**1604...	3
ATQNR/L2525M16-A	25	25	150	28	25	32	0.8	TN**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
ATQNR/L**3-A, 16-A	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B010	

K

Grade Application	Finishing	Medium cutting	Medium to heavy cutting
Chipbreaker	T515	T515	T515
Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

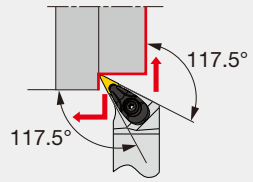
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

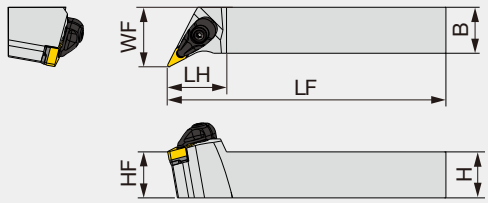
Reference pages: ATQNR/L: Inserts → B086 -, CBN → B178 -, PCD → B194 -

AVQNR/L-Eco

Double-clamp toolholder with 117.5° approach angle, for negative 35° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
AVQNR/L122.33-A	0.750	0.750	4.500	1.250	0.750	1.000	0.031	VN**2.33...	2.21
AVQNR/L162.33-A	1.000	1.000	6.000	1.250	1.000	1.250	0.031	VN**2.33...	2.21

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVQNR/L2020K1204-A	20	20	125	32	20	25	0.8	VN**1204...	3
AVQNR/L2525M1204-A	25	25	150	32	25	32	0.8	VN**1204...	3

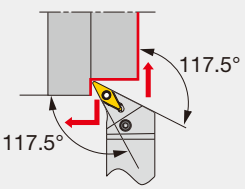
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

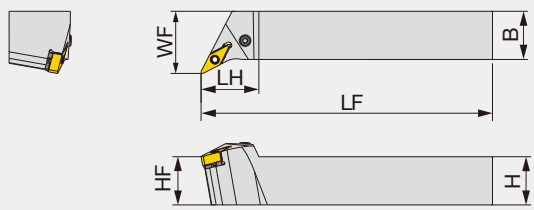
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVQNR/L**-A	ACP3L-E	ACS-5W	BP-7	SP-2.5	ASV222	CSTB-3.0	T-15F

PVQNR/L-Eco

Lever-lock toolholder with 117.5° approach angle, for negative 35° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PVQNR/L2020K1204	20	20	125	30	20	25	0.8	VN**1204...	2
PVQNR/L2525M1204	25	25	150	30	25	32	0.8	VN**1204...	2

Torque: Recommended clamping torque: N·m **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PVQNR/L**1204	LSV212	LCS3V	P-2.5	LSP3	LCL3V

INSERT SELECTION

P

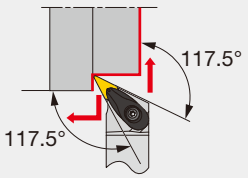
Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker Shape	TSF	TM
Cutting conditions	B008	

M

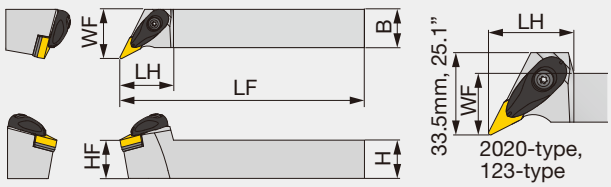
Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SS	SM
Cutting conditions	B010	

Reference pages: AVQNR/L-Eco, PVQNR/L-Eco: Insert → B097 -

Double-clamp toolholder with 117.5° approach angle, for negative 35° and 25° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
AVQNR/L123-A	0.750	0.750	4.500	1.380	0.750	1.000	0.031	V/YN**33...	2.2
AVQNR/L163-A	1.000	1.000	6.000	1.380	1.000	1.250	0.031	V/YN**33...	2.2

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
AVQNR/L2020K16-A	20	20	125	35	20	25	0.8	V/YN**1604...	3
AVQNR/L2525M16-A	25	25	150	35	25	32	0.8	V/YN**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
AVQNR/L...	ACP3L	ACS-5W	BP-7	SP-2.5	ASV322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker Shape	TF	TSF	TM
Cutting conditions	B008		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing
Grade	DX120
Chipbreaker Shape	T-DIA with rake
Cutting conditions	B014

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

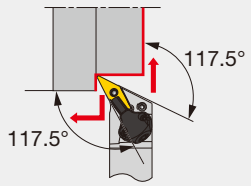
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

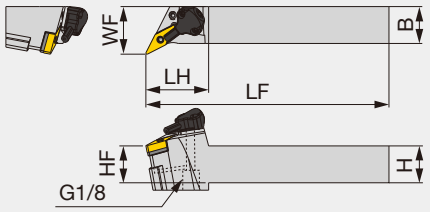
Reference pages: AVQNR/L: Inserts → B096 -, B109, CBN → B180, PCD → B194

PVQNR/L-CHP

Lever-lock toolholders with 117.5° approach angle, for negative 35° and 25° rhombic inserts, with high pressure coolant capability



Cutting edge style **Q**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PVQNR/L123-CHP	0.750	0.750	4.500	1.688	0.750	1.250	0.031	V/YN**33...	1.48
PVQNR/L163-CHP	1.000	1.000	6.000	1.688	1.000	1.250	0.031	V/YN**33...	1.48

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
PVQNR/L2020K16-CHP	20	20	125	42.5	20	32	0.8	V/YN**1604...	2
PVQNR/L2525M16-CHP	25	25	150	42.5	25	32	0.8	V/YN**1604...	2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
PVQNR/L**-CHP	LSV317	LCS3V	P-2.5	LSP3	LCL3V

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring	Coolant screw	Wrench 3
PVQNR/L**-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N	SRM4X4TL360	P-2

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Chipbreaker Shape	TF	TSF	TM
Cutting conditions	B008		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing
Grade	DX120
Chipbreaker Shape	T-DIA with rake
Cutting conditions	B014

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

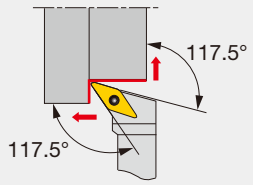
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

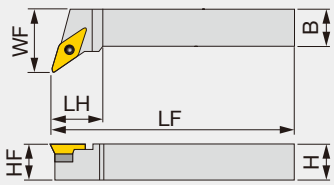
Reference pages: PVQNR/L-CHP: Inserts → B096 -, B109, CBN → B180, PCD → B194
Parts for coolant hose → C142

SVQCR/L

Screw-on toolholder with 117.5° approach angle, for positive 35° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert
SVQCR/L163	1.00	1.00	6.00	1.50	1.00	1.25	0.031	VC**33...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SVQCR/L2020K16	20	20	125	35	20	27	0.8	VC**1604...
SVQCR/L2525M16	25	25	150	35	25	32	0.8	VC**1604...

**RE : Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SVQCR/L...	CSTB-3.5L	DTS5-3.5	SSV32	P-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Chipbreaker Shape	PSS	PS
Cutting conditions	B020	

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Chipbreaker Shape	PSF	PSS	PM
Cutting conditions	B022		

K

Application	Finishing to medium cutting
Grade	T515
Chipbreaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker Shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B026		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Chipbreaker Shape	PSS	PS
Cutting conditions	B028	

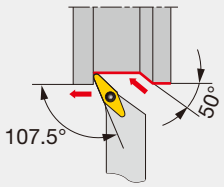
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

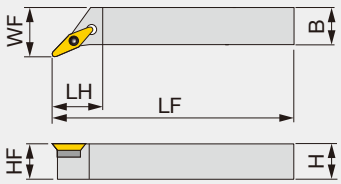
Reference pages: SVQCR/L: Inserts → B155 -, CBN → B192, PCD → B196

SVHCR/L

Screw-on toolholder with 107.5° approach angle, for positive 35° rhombic inserts



Cutting edge style **H**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SVHCR/L2525M22	25	25	150	33.8	25	32	0.8	VCG*2205...

**RE : Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SVHCR/L2525M22	CSTB-4.5L110P	DTS6-4.5	SSV42	P-4.5	T-15F

INSERT SELECTION

K

Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B024

N

Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B026

S

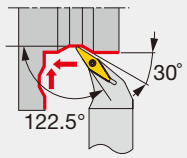
Application	Finishing to medium cutting
Grade	KS05F
Chipbreaker Shape	AL 
Cutting conditions	B028

Reference pages: SVHCR/L: Inserts → B156

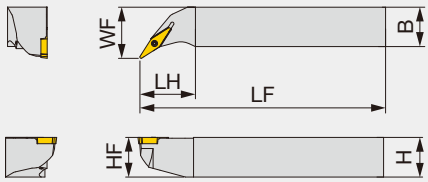
Y-PRO SERIES

SYQBR/L

Screw-on toolholder with 122.5° approach angle, for positive 25° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert
SYQBR/L123	0.750	0.750	4.500	1.350	0.750	1.000	0.031	YWMT16T3...
SYQBR/L163	1.000	1.000	6.000	1.500	1.000	1.250	0.031	YWMT16T3...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SYQBR/L2020K16	20	20	125	35	20	27	0.8	YWMT16T3...
SYQBR/L2525M16	25	25	150	35	25	32	0.8	YWMT16T3...

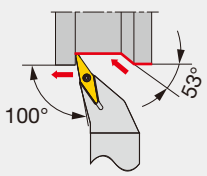
**RE : Standard corner radius

SPARE PARTS

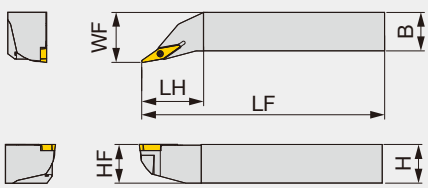
Designation	Clamping screw	Wrench
SYQBR/L...	CSTB-2.5L080	T-8F

SYHBR/L

Screw-on toolholder with 100° approach angle, for positive 25° rhombic inserts



Cutting edge style **H**



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert
SYHBR/L123	0.750	0.750	4.500	1.350	0.750	1.000	0.031	YWMT16T3...
SYHBR/L163	1.000	1.000	6.000	1.500	1.000	1.250	0.031	YWMT16T3...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SYHBR/L2020K16	20	20	125	35	20	27	0.8	YWMT16T3...
SYHBR/L2525M16	25	25	150	40	25	32	0.8	YWMT16T3...

**RE : Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
SYHBR/L...	CSTB-2.5L080	T-8F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9225
Chipbreaker Shape	ZM 
Cutting conditions	B008

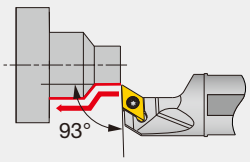
K

Application	Finishing to medium cutting
Grade	GT9530
Chipbreaker Shape	ZM 
Cutting conditions	B012

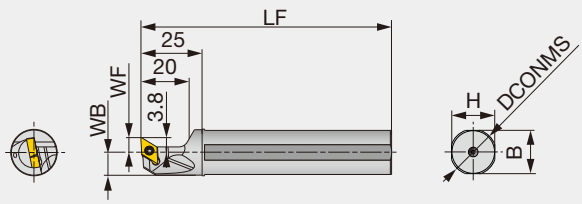
Reference pages: SYQBR/L, SYHBR/L: Inserts → B163

JS-SDUXL

Screw-on round-shank toolholder with 93° approach angle, for DXGU inserts



Cutting edge style **U**



Left hand (L) shown.

Inch	DCONMS	WF	LF	H	B	WB	RE**	Insert	Torque
JS159F-SDUXL07	0.625	0.236	3.346	0.591	0.591	0.303	0.008	DXGU0703**L...	0.66
JS19G-SDUXL07	0.750	0.236	3.543	0.709	0.709	0.365	0.008	DXGU0703**L...	0.66
JS19X-SDUXL07	0.750	0.236	4.724	0.709	0.709	0.365	0.008	DXGU0703**L...	0.66
JS254X-SDUXL07	1.000	0.394	4.724	0.945	0.945	0.490	0.008	DXGU0703**L...	0.66

Metric	DCONMS	WF	LF	H	B	WB	RE**	Insert	Torque*
JS14H-SDUXL07	14	6	100	13	13	6.75	0.2	DXGU0703**L...	0.9
JS159F-SDUXL07	15.875	6	85	15	15	7.687	0.2	DXGU0703**L...	0.9
JS16F-SDUXL07	16	6	85	15	15	7.75	0.2	DXGU0703**L...	0.9
JS19G-SDUXL07	19.05	6	90	18	18	9.275	0.2	DXGU0703**L...	0.9
JS19X-SDUXL07	19.05	6	120	18	18	9.275	0.2	DXGU0703**L...	0.9
JS20G-SDUXL07	20	6	90	19	19	9.75	0.2	DXGU0703**L...	0.9
JS20X-SDUXL07	20	6	120	19	19	9.75	0.2	DXGU0703**L...	0.9
JS22X-SDUXL07	22	10	120	21	21	10.75	0.2	DXGU0703**L...	0.9
JS25H-SDUXL07	25	10	100	24	24	12.25	0.2	DXGU0703**L...	0.9
JS254X-SDUXL07	25.4	10	120	24	24	12.45	0.2	DXGU0703**L...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use left-hand toolholders (L) with left-hand inserts (L).

SPARE PARTS


Designation	Clamping screw	Wrench
JS**-SDUXL07	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker Shape	JSS 	JTS 
	Cutting conditions	C143	

M	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Chipbreaker Shape	JSS 	JTS 
	Cutting conditions	C143	

Small CNC lathes

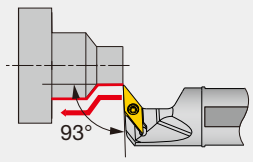
P	Application	Finishing	Medium cutting
	Grade	AH725	AH725
	Chipbreaker Shape	SS 	TS 
	Cutting conditions	C143	

M	Application	Finishing	Medium cutting
	Grade	AH8015	AH8015
	Chipbreaker Shape	SS 	TS 
	Cutting conditions	C143	

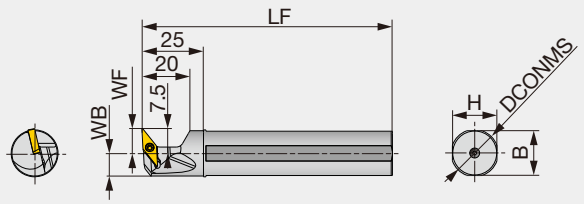
Reference pages: JS-SDUXL: Inserts → B127 -
Standard cutting conditions → C143

JS-SVUXL

Screw-on round-shank toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **U**



Left hand (L) shown.

Inch	DCONMS	WF	LF	H	B	WB	RE**	Insert	Torque
JS159F-SVUXL09	0.625	0.394	3.346	0.591	0.591	0.303	0.008	VXGU09T2**L...	0.66
JS19G-SVUXL09	0.750	0.394	3.543	0.709	0.709	0.362	0.008	VXGU09T2**L...	0.66
JS19X-SVUXL09	0.750	0.394	4.724	0.709	0.709	0.362	0.008	VXGU09T2**L...	0.66
JS254X-SVUXL09	1.000	0.394	4.724	0.945	0.945	0.488	0.008	VXGU09T2**L...	0.66

Metric	DCONMS	WF	LF	H	B	WB	RE**	Insert	Torque*
JS159F-SVUXL09	15.875	10	85	15	15	7.7	0.2	VXGU09T2**L...	0.9
JS16F-SVUXL09	16	10	85	15	15	7.7	0.2	VXGU09T2**L...	0.9
JS19G-SVUXL09	19.05	10	90	18	18	9.2	0.2	VXGU09T2**L...	0.9
JS19X-SVUXL09	19.05	10	120	18	18	9.2	0.2	VXGU09T2**L...	0.9
JS20G-SVUXL09	20	10	90	19	19	9.7	0.2	VXGU09T2**L...	0.9
JS20X-SVUXL09	20	10	120	19	19	9.7	0.2	VXGU09T2**L...	0.9
JS22X-SVUXL09	22	10	120	21	21	10.7	0.2	VXGU09T2**L...	0.9
JS25H-SVUXL09	25	10	100	24	24	12.2	0.2	VXGU09T2**L...	0.9
JS254X-SVUXL09	25.4	10	120	24	24	12.4	0.2	VXGU09T2**L...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use left-hand toolholders (L) with left-hand inserts (L).

SPARE PARTS


Designation	Clamping screw	Wrench
JS**-SVUXL09	SR34-508	T-7F

INSERT SELECTION

Swiss lathes

P	Application	Finishing	M	Application	Finishing
	Grade	SH725		Grade	SH725
	Chipbreaker Shape	JRP 		Chipbreaker Shape	JRP 
	Cutting conditions	C143		Cutting conditions	C143

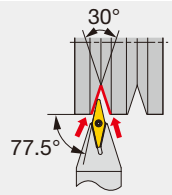
Small CNC lathes

P	Application	Finishing	M	Application	Finishing
	Grade	SH725		Grade	SH725
	Chipbreaker Shape	JRP 		Chipbreaker Shape	JRP 
	Cutting conditions	C143		Cutting conditions	C143

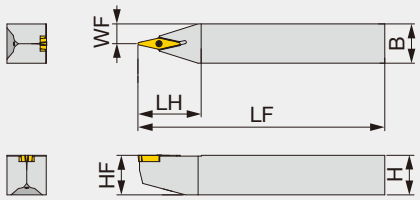
Reference pages: JS-SVUXL: Inserts → B158
Standard cutting conditions → C143

SYIBN

Screw-on toolholder with 77.5° approach angle, for positive 25° rhombic inserts



Cutting edge style **I**



Inch	H	B	LF	LH	HF	WF	RE**	Insert
SYIBN123	0.750	0.750	4.500	1.250	0.750	0.375	0.031	YWMT16T3...
SYIBN163	1.000	1.000	6.000	1.500	1.000	0.500	0.031	YWMT16T3...

Metric	H	B	LF	LH	HF	WF	RE**	Insert
SYIBN2020K16	20	20	125	32	20	10	0.8	YWMT16T3...
SYIBN2525M16	25	25	150	40	25	12.5	0.8	YWMT16T3...

**RE : Standard corner radius

SPARE PARTS


Designation	Clamping screw	Wrench
SYIBN...	CSTB-2.5L080	T-8F

INSERT SELECTION

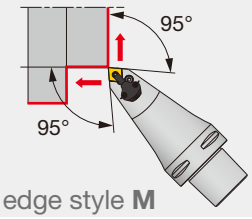
P	Application	Finishing to medium cutting
	Grade	T9225
	Chipbreaker Shape	ZM 
	Cutting conditions	B008

K	Application	Finishing to medium cutting
	Grade	GT9530
	Chipbreaker Shape	ZM 
	Cutting conditions	B012

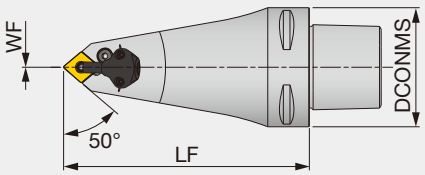
Reference pages: SYIBN: Inserts → B163

C-PCMNN-CHP

Lever-lock toolholder with TungCap connection, for negative 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **M**



Metric	DCONMS	LF	WF	RE	Insert
C6PCMNN00130-12-CHP	63	115	0	0.8	CN/GN**1204...

Applicable for 14 MPa coolant
**RE : Standard corner radius

For external turning only

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
C6PCMNN00130-12-CHP	LSC42	LCS4	P-3	LSP4	LCL4

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C6PCMNN00130-12-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Chipbreaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

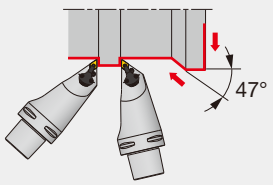
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Chipbreaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

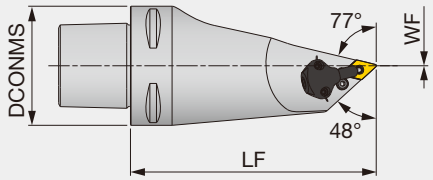
Reference pages: C-PCMNN-CHP: Inserts → B056 -, CBN → B172 -, PCD → B194 -
Parts for coolant hose → C142

C-PDMNL-CHP

Lever-lock toolholder with TungCap connection, for negative 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **M**



Left hand (L) shown.

Metric	DCONMS	LF	WF	RE**	Insert
C6PDMNL00130-1104-CHP	63	130	0	0.8	DN**1104...

Applicable for 14 MPa coolant
**RE : Standard corner radius

For external turning only

SPARE PARTS

Designation	Shim	Clamping screw	Wrench 1	Spring pin	Lever
C6PDMNL00130-1104-CHP	ELSD32	LCS3	P-2.5	LSP3	LCL33L

SPARE PARTS

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C6PDMNL00130-1104-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Chipbreaker Shape	TSF 	TM 
Cutting conditions	B008	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Chipbreaker Shape	SS 	SM 
Cutting conditions	B010	

K

Application	Medium cutting
Grade	T515
Chipbreaker Shape	TM 
Cutting conditions	B012

Reference pages: C-PDMNL-CHP: Inserts → B067 -
Parts for coolant hose → C142

PARTS FOR COOLANT HOSE

Connecting hose

Fig. 1

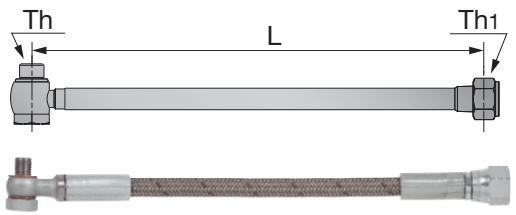
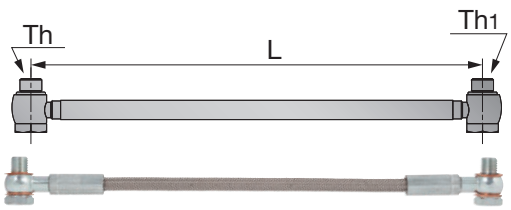
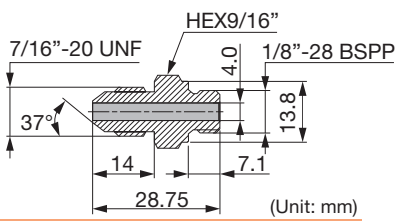


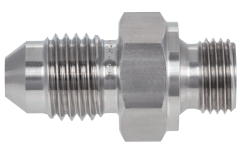
Fig. 2



Metric	L	Th	Th1	Max. pressure (Mpa)	Fig.
CHP-HOSE-G1/8-7/16-200BS	200	G1/8"-28 BSPP	7/16"-20 UNF	26	1
CHP-HOSE-G1/8-7/16-250BS	250	G1/8"-28 BSPP	7/16"-20 UNF	26	1
CHP-HOSE-5/16-7/16-200BS	200	5/16"-24UNF	7/16"-20 UNF	20	1
CHP-HOSE-5/16-G1/8-200BS	200	5/16"-24UNF	G1/8"-28 BSPP	20	1
CHP-HOSE-G1/8-G1/8-200BB	200	G1/8"-28 BSPP	G1/8"-28 BSPP	26	2
CHP-HOSE-G1/8-G1/8-250BB	250	G1/8"-28 BSPP	G1/8"-28 BSPP	26	2

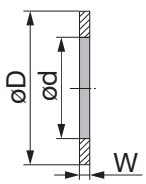
Connector

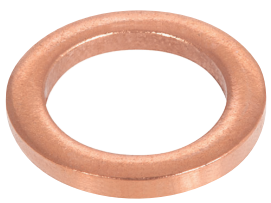




Metric
CHP-NIPPLE-G1/8-7/16UNF

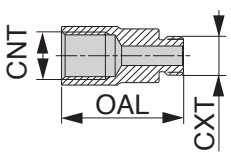
Seal washer

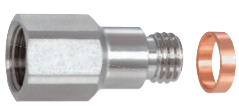




Metric	øD	ød	W
CHP-COPPER-SEAL1/8	15	10	1
CHP-COPPER-SEAL5/16	11	8	1
CHP-COPPER-SEAL5/16-2.5	11	8	2.5

Connector for small lathe with seal washer





Metric	CNT	CXT	OAL
CHP-CONECTOR5/16-G1/8	G1/8"-28 BSPP	5/16"-24 UNF	25
CHP-CONNECTOR-G1/8-R1/8	G1/8"-28 BSPP	R1/8"-28 BSPT	25

STANDARD CUTTING CONDITIONS

FIXRTURN

ISO	Workpiece material	Chipbreaker	Grade	Cutting Speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed *f* (ipr)
P	Steels 1045, etc.	6RS	T9215	492 - 984	0.020 - 0.079	0.020 - 0.039
		6RS	T9225	394 - 820	0.020 - 0.079	0.020 - 0.039
		6RS	NS9530	492 - 820	0.020 - 0.079	0.020 - 0.039
		6RM	T9215	492 - 984	0.039 - 0.118	0.020 - 0.039
		6RM	T9225	394 - 820	0.039 - 0.118	0.020 - 0.039
		6RM	NS9530	492 - 820	0.039 - 0.118	0.020 - 0.039

Reference pages: SRGCR/L → C089, SRDCN → C107

STANDARD CUTTING CONDITIONS

MINIFORCE TURN

Applications	ISO	Workpiece material	Priority	Chipbreaker	Grade	Cutting speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed *f* (ipr)
Swiss lathes	P	Low carbon steels , Carbon steels 1045, etc. Low alloy steels, Alloy steels 4140, etc.	First choice	JS	SH725	164 - 590	0.004 - 0.118	0.001 - 0.004
			Sharpness	JSS	SH725	164 - 590	0.004 - 0.059	0.001 - 0.004
	M	Stainless steels (Austenitic) 304, etc. Stainless steels (Martensitic and ferritic) 430, etc. Stainless steels (Precipitation hardened) 174, etc.	First choice	JS	SH725	164 - 590	0.004 - 0.049	0.001 - 0.004
			Sharpness	JSS	SH725	164 - 590	0.004 - 0.059	0.001 - 0.004
Small CNC lathes	P	Low carbon steels, Carbon steels 1045, etc. Low alloy steels, Alloy steels 4140, etc.	First choice	SS	AH725	164 - 590	0.006 - 0.059	0.002 - 0.008
				TS	AH725	164 - 590	0.012 - 0.079	0.003 - 0.012
			Surface quality	SS	NS9530	164 - 656	0.006 - 0.059	0.002 - 0.008
				TS	NS9530	164 - 656	0.012 - 0.079	0.003 - 0.012
			Wear resistance	SS	GT9530	164 - 820	0.006 - 0.059	0.002 - 0.008
				TS	GT9530	164 - 820	0.012 - 0.079	0.003 - 0.012
	M	Stainless steels (Austenitic) 304, etc. Stainless steels (Martensitic and ferritic) 430, etc. Stainless steels (Precipitation hardened) 174, etc.	First choice	SS	AH725	164 - 492	0.006 - 0.059	0.002 - 0.008
			Fracture resistance	TS	AH725	164 - 492	0.012 - 0.079	0.003 - 0.012

TURNTEEN FEED

For HD holder (High Depth of Cut)

ISO	Insert	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)		
				T9215	T9125	T9225
P	POMG110612-MNW	0.031 - 0.217	0.016 - 0.047	150 - 400	80 - 180	120 - 300
	POMG130612-MNW	0.039 - 0.051	0.016 - 0.051	150 - 400	80 - 180	120 - 300

For HF holder (High Feed)

ISO	Insert	Depth of cut *ap* (in)	Feed *f* (ipr)	Cutting speed: *Vc* (sfm)		
				T9215	T9125	T9225
P	POMG110612-MNW	0.039 - 0.098	0.020 - 0.059	150 - 400	80 - 180	120 - 300
	POMG130612-MNW	0.039 - 0.118	0.020 - 0.079	150 - 400	80 - 180	120 - 300

TURNFEED

ISO	Workpiece material	Grade	Chipbreaker	Cutting speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed *f* (ipr)
P	Mild and low carbon steels 400SS, 1025, etc. < 180 HB	T9225	ML	330 - 990	0.025 - 0.100	0.025 - 0.100
	Carbon and alloy steels 1049, 4142, etc. < 300HB	T9215	ML	390 - 1150	0.025 - 0.100	0.025 - 0.100
M	Stainless steels 304, 316, etc. < 250 HB	T9225	ML	330 - 990	0.025 - 0.100	0.025 - 0.100
K	Gray and ductile cast irons No35B, 60-40-18, etc.	AH120	ML	330 - 820	0.025 - 0.100	0.025 - 0.100

When the side cutting edge is used for facing, the maximum feed is limited to within 0.040 ipr.

Reference pages: JSWL2XR/L, JSWLXR/L, JSWL2XR/L-CHP, JPWL2XR/L, JSWLXR-F → C033 - C036
JSDJ2XR/L, JSDJXR/L, JSDJ2XR/L-CHP, JPDJ2XR/L, JSDJXR-F → C042 - C045
JSVJ2XR/L, JSVJXR/L, JSVJ2XR/L-CHP, JPVJ2XR/L, JSVJXR-F → C059 - C061
PPXOR/L-HD, PPXOR/L-HF → C102, XWXPR/L → C104
JS-SDUXL, JS-SVUXL → C137 - C138

STANDARD CUTTING CONDITIONS

TURNTEC

*Values in red are for facing.

LNMX1204

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (sfm)	Depth of cut: *ap* (in)		Feed: *f* (ipr)	
					RE : 0.031	RE : 0.047	RE : 0.031	RE : 0.047
P	Steels 1045, 4130, etc.	TDR	T9115	390 - 820	0.020 - 0.195 0.020 - 0.086	0.031 - 0.195 0.031 - 0.086	0.006 - 0.024	0.010 - 0.031
		TDR	T9125	260 - 590	0.020 - 0.195 0.020 - 0.086	0.031 - 0.195 0.031 - 0.086	0.006 - 0.024	0.010 - 0.031
M	Stainless steels 304, 316, etc.	TDR	T9115	330 - 590	0.020 - 0.195 0.020 - .086	0.031 - 0.195 0.031 - 0.086	0.006 - 0.024	0.010 - 0.031
		TDR	T9125	260 - 590	0.020 - 0.195 0.020 - 0.086	0.031 - 0.195 0.031 - 0.086	0.006 - 0.024	0.010 - 0.031

LNMX1606

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (sfm)	Depth of cut: *ap* (in)			Feed: *f* (ipr)		
					RE : 0.031	RE : 0.047	RE : 0.063	RE : 0.031	RE : 0.047	RE : 0.063
P	Steels 1045, 4130, etc.	TDR	T9115	390 - 820	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 .031 - 0.126	0.039 - 0.315 0.039 - 0.126	0.006 - 0.024	0.010 - 0.031	0.012 - 0.039
		TDR	T9125	260 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 .031 - 0.126	0.039 - 0.315 0.039 - 0.126	0.006 - 0.024	0.010 - 0.031	0.012 - 0.039
		TWR	T9115	390 - 820	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	-	0.006 - 0.024	0.010 - 0.031	-
		TWR	T9125	260 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	-	0.006 - 0.024	0.010 - 0.031	-
M	Stainless steels 304, 316, etc.	TDR	T9115	330 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	0.039 - 0.315 0.039 - 0.126	0.006 - 0.024	0.010 - 0.031	0.012 - 0.039
		TDR	T9125	260 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	0.039 - 0.315 0.039 - 0.126	0.006 - 0.024	0.010 - 0.031	0.012 - 0.039
		MDR	T9115	330 - 490	0.059 - 0.236 0.020 - 0.126	0.059 - 0.276 0.031 - 0.126	-	0.004 - 0.020	0.006 - 0.028	-
		MDR	AH725	160 - 490	0.059 - 0.236 0.020 - 0.126	0.059 - 0.276 0.031 - 0.126	-	0.004 - 0.020	0.006 - 0.028	-
		TWR	T9115	330 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	-	0.006 - 0.024	0.010 - 0.031	-
		TWR	T9125	260 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	-	0.006 - 0.024	0.010 - 0.031	-

LNMX2410

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (sfm)	Depth of cut: *ap* (in)		Feed: *f* (ipr)	
					RE : 0.063	RE : 0.094	RE : 0.063	RE : 0.094
P	Steels 1045, 4130, etc.	TDR	T9115	390 - 820	0.156 - 0.585 0.039 - 0.176	0.195 - 0.585 0.039 - 0.176	0.012 - 0.039	0.012 - 0.043
		TDR	T9125	260 - 490	0.156 - 0.585 0.039 - 0.176	0.195 - 0.585 0.039 - 0.176	0.012 - 0.039	0.012 - 0.043
M	Stainless steels 304, 316, etc.	TDR	T9115	330 - 590	0.156 - 0.585 0.039 - 0.176	0.195 - 0.585 0.039 - 0.176	0.012 - 0.039	0.012 - 0.043
		TDR	T9125	260 - 490	0.156 - 0.585 0.039 - 0.176	0.195 - 0.585 0.039 - 0.176	0.012 - 0.039	0.012 - 0.043

DIMPLEFX

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed *f* (ipr)
K	Gray cast irons	FX105	2300 (1000 - 3300)	0.040 (0.002 - 0.120)	0.012 (0.002 - 0.024)
	Ductile cast irons	FX105	650 (330 - 1000)	0.040 (0.002 - 0.120)	0.008 (0.002 - 0.016)

Reference pages: CCLNR/L-RD → C024, CDNNN-RD → C070, CVVNN-RD → C074
TLANR/L → C082, TLBNR/L → C097, CHSNR/L → C111
CSSNR/L → C114, TLFNR/L → C120

Internal Toolholder

Internal Toolholder - Content structure

- Indexable toolholders are listed by cutting edge shape.
- In the same cutting edge shape, the inserts are sorted alphabetically.
  The order of the list: CN□□ insert → DN□□ insert → RN□□ insert → SN□□ insert → TN□□ insert → VN□□ insert → WN□□ insert
- Toolholders in the catalog are our standard stock items.

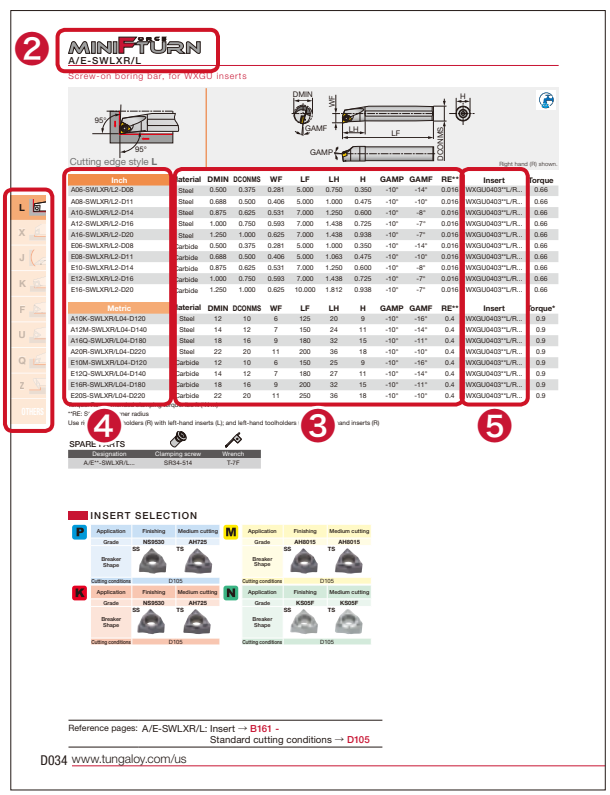
How to use the page

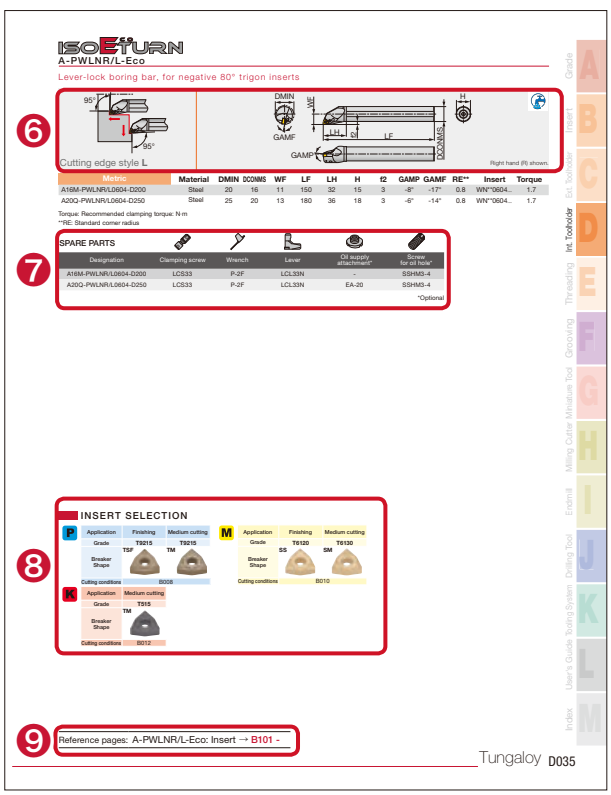
Method ① Select the approach angle described at the left end of each page, jump to the page on the left index, and choose a designation you need (❹) in the dimension table (❸). Applicable inserts are shown in (❻) and (❽).

Method ② Select the approach angle on D003 and check the details on the product page.

Method ③ Select the series name of a toolholder on D003 and check the details on each page.

Method ④ Select an item from Quick Guide on D006 - D011.





❶ : Cutting edge shape
❷ : Series name of indexable boring bars
❸ : Dimension table
❹ : Toolholder designation
e.g. To select right-handed steel shank for minimum machining diameter ø0.750"
→ **A12-SCLCR3-D16**

❺ : Applicable insert
❻ : Dimension drawing (conforming to ISO13399)
❼ : Spare parts
❽ : Insert selection
❾ : Reference pages

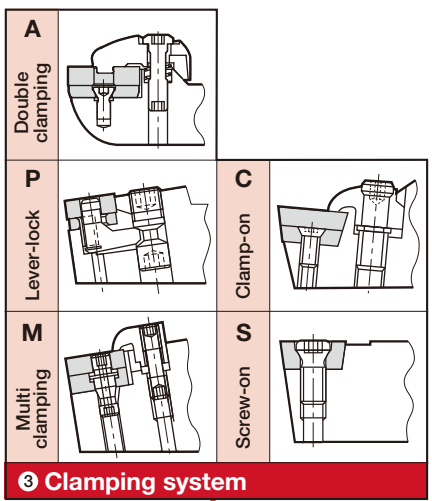
When ordering
- Please specify the designation and quantity.
  e.g. **A12-SCLCR/L3-D16 ...** 1 (one boring bar per package)
  * Inserts are not included. Please order those separately.

Main products

L 95° D020
X 100° D040
J 142° D043
K 75° D045
F 91° D049
U 93° D056
Q 107.5° D085
Z 93° D093
OTHERS D100

		Inch	Metric
	**BOREMEISTER** Boring head suitable for L/D=10 Shank **ø0.625" - ø2.500"** D018	✓	
	**MINIFORCE TURN** Economical double-sided inserts with excellent sharpness Shank **ø0.500" - ø1.250" (ø10 mm - 20 mm)** D034, D042, D093	✓	✓
	**ISOECOTURN** Small-sized "Eco" insert series for maximized profits Shank **ø1.000" - ø1.250" (ø16 mm - 32 mm)** D028 D035, D036 D052, D062 D069, D080	✓	✓
	**STREAMJETBAR** Highly rigid toolholders providing good chip evacuation Shank **ø0.157" - ø1.000" (ø4 mm - 50 mm)** D019	✓	✓
	**Y-PRO SERIES** Inserts with 25° corner angle for profiling Shank **ø0.500" - ø0.625" (ø12 mm - 16 mm)** D084, D092	✓	✓
	**TURNINGA** Highly rigid clamping system with excellent repeatability Shank **ø1.000" - ø2.000"** D039, D048 D055, D065 D082	✓	
	**TUNGTJET TURN** Toolholders for high pressure coolant supply D031, D065	✓	✓
	Sleeve D103 - D104		✓

Designation system for Toolholders



C	80° Rhombic
D	55° Rhombic
K	55° Parallelogram
R	Round
S	Square
T	Triangular
V	35° Rhombic
Y	25° Rhombic (Non ISO)
W	Trigon

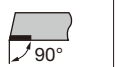
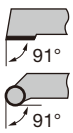
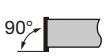
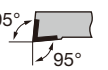
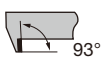
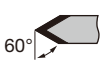
④ Insert shape

A ① **32** ② **-** **③ S** **④ C**

① Bar composition	
A	Steel shank with oil hole
E	Carbide shank with steel head & oil hole
C	Carbide shank with steel head
S	Steel shank

② Bar diameter (in)	
06	0.375
08	0.500
10	0.625
12	0.750
16	1.000
20	1.250
Metric: The diameter of the bar is shown in mm.	

ANSI Designation

Symbol	Style	Offset	Symbol	Style	Offset	Symbol	Style	Offset
A		Without	G		With	S		With
						V		Without
			J		With	U		With
B		Without	K		With	X*		With
C		Without	L		With	Y		With
D		Without	N		Without	Z		Without
E		Without	P*		Without	Note *mark: Tungaloy standard No mark: ISO standard		
F		With	Q*		With			

⑤ Cutting edge style

N	0°
B	5°
C	7°
D	15°
E	20°
P	11°

⑥ Relief angle of insert

⑤	⑥	⑦	⑧		⑨
L	C	R	4	-	D14

⑦ Hand of tool

R	
L	
N	Neutral

⑧ Insert size I.C.

Symbol	Inscribed circle (in)
3	0.375
4	0.500
5	0.625
6	0.750

⑨ Min. bore diameter (in)

Stream Jet Bar	
D14	14/16 (ø0.875)

Designation system for Toolholders

A	Double clamping		
P	Lever-lock	C	Clamp-on
M	Multi clamping	S	Screw-on

④ Clamping system

C	80° Rhombic
D	55° Rhombic
K	55° Parallelogram
R	Round
S	Square
T	Triangular
V	35° Rhombic
Y	25° Rhombic (Non ISO)
W	Trigon

⑤ Insert shape

A 12 M - S T

① ② ③ ④ ⑤

① Bar composition

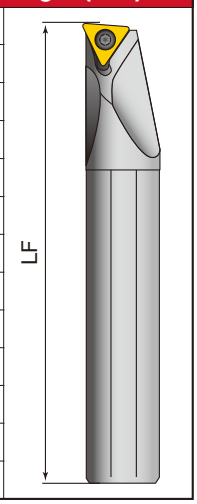
A	Steel shank with oil hole
E	Carbide shank with steel head & oil hole
C	Carbide shank with steel head
S	Steel shank
T	Steel shank reinforced with carbide plates (“Tsuppari-Ichiban”)
JS	J series Steel shank

② Bar diameter

Bar diameter is shown in mm.

③ Toolholder length (mm)

F	80
G	90
H	100
J	110
K	125
L	130
M	150
P	170
Q	180
R	200
S	250
T	300
U	350



ISO Designation

Symbol	Style	Offset	Symbol	Style	With	Symbol	Style	With
A	90°	Without	G	91° / 91°	With	S	45°	With
						V	72.5°	Without
			J	93°	With	U	93°	With
B	75°	Without	K	75°	With	X*	100°	With
C	90°	Without	L	95° / 95°	With	Y	80°	With
D	45°	Without	N	63°	Without	Z	93°	Without
E	60°	Without	P*	62.5°	Without	Note *mark: Tungaloy standard No mark: ISO standard		
F	91°	With	Q*	45°	With			

⑥ Cutting edge style

C	7°
B	5°
N	0°
P	11°
X	Special

⑦ Relief angle of insert

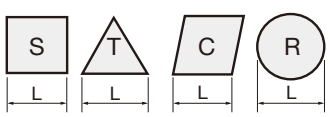
⑥	⑦	⑧	⑨			⑩	⑪
U	P	R	11	02		C	- D140

⑧ Hand of tool

R	
L	

⑨ Insert size

For M, S, & C types conformed to ISO



"In ISO metric system, a two digit number indicates the edge length (L) of the insert to be used in mm.
If the insert thickness is different for the same edge length, add the thickness symbol (S) (two digit number).

In above example, TP"□□1102□□

⑩ Oil hole

Only "Tsuppari-Ichiban" holder

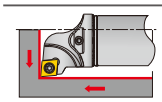
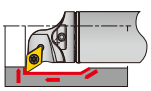
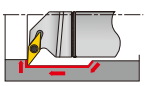
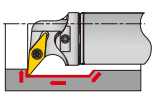
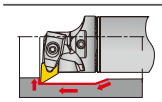
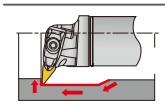
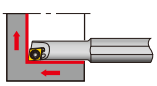
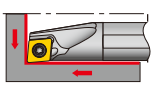
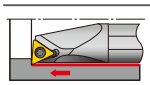
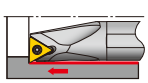
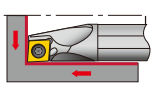
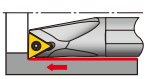
⑪ Min. bore diameter (mm)

Stream Jet Bar		Tsuppari-Ichiban	
D140	ø14.0	D14	ø14.0

Internal Toolholder - Quick Guide

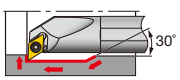
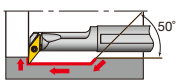
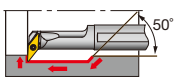
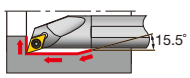
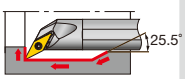
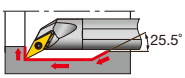
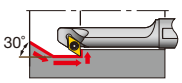
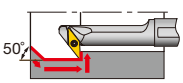
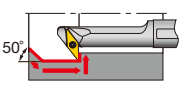
Positive type

Inch

Style	Designation & Application	ISO Insert	Y-PRO SERIES Insert	Material	BOREMEISTER	STREAMJETBAR	MINIFÜRN Toolholder	Min. bore diameter DMIN (in) 0 0.375 0.750 1.125 1.500 2.000	Page
	**S-SCLCR/L-H** Boring & internal facing Insert : CC□□	✓		Steel	✓			ø0.787" ø1.968"	D020
	**S-SDUCR/L-H** Boring & internal profiling Insert : DC□□	✓		Steel	✓			ø0.787" ø1.968"	D056
	**S-SVUCR/L-H** Boring & internal profiling Insert : VC□□	✓		Steel	✓			ø1.063" ø1.260"	D074
	**S-SVLCR/L-H** Boring & internal profiling Insert : VC□□	✓		Steel	✓			ø1.260" ø1.575"	D032
	**S-DDUNR/L-H** Boring & internal profiling Insert : DN□□	✓		Steel	✓			ø1.575" ø1.968"	D060
	**S-DVUNR/L-H** Boring & internal profiling Insert : VN□□	✓		Steel	✓			ø1.575"	D078
	**SEXPR/L** Boring & internal facing Insert : EP□□	✓		Steel Carbide		✓		ø0.250" ø0.250"	D040
	**SCLCR/L** Boring & internal facing Insert : CC□□	✓		Steel Carbide		✓		ø0.500" ø1.250" ø0.500" ø1.250"	D022
	**STUPR/L** Boring Insert : TP□□	✓		Steel Carbide		✓		ø0.438" ø1.250" ø0.438" ø0.875"	D066
	**STFPR/L** Blind hole boring Insert : TP□□	✓		Carbide		✓		ø0.500" ø1.000"	D050
	**SCLPR/L** Boring & internal facing Insert : CP□□	✓		Steel Carbide		✓		ø0.500" ø0.875" ø0.500" ø0.875"	D025
	**STFCR/L** Blind hole boring Insert : TC□□	✓		Carbide		✓		ø0.500" ø1.000"	D049

Positive type

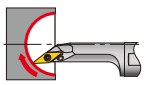
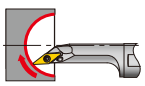
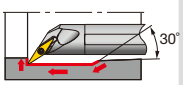
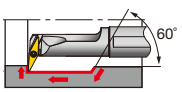
Inch

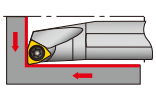
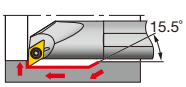
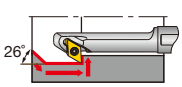
Style	Designation & Application	ISO Insert	Y-PRO SERIES	Material	BOREMEISTER STREAMJETBAR MINIFÜRN	Min. bore diameter DMIN (in)	Page
		Insert			Toolholder	0 0.375 0.750 1.125 1.500 2.000	
	**SDUCR/L** Boring & internal profiling Insert : DC☐☐	✓		Steel Carbide	✓	ø0.625" – ø1.000" ø0.625" – ø1.000"	D058
	**SVUCR/L** Boring & internal profiling Insert : VC☐☐	✓		Steel	✓	ø0.875" – ø1.000"	D076
	**SVUBR/L** Boring & internal profiling Insert : VB☐☐	✓		Steel	✓	ø1.000"	D072
	**SDQCR/L** Boring & internal profiling Insert : DC☐☐	✓		Steel	✓	ø0.625" – ø0.875"	D085
	**SVQCR/L** Boring & internal profiling Insert : VC☐☐	✓		Steel	✓	ø0.688" – ø1.000"	D090
	**SVQBR/L** Boring & internal profiling Insert : VB☐☐	✓		Steel	✓	ø1.000"	D088
	**SDZCR/L** Back boring Insert : DC☐☐	✓		Steel	✓	ø0.875"	D094
	**SVZCR/L** Back boring Insert : VC☐☐	✓		Steel	✓	ø0.750" – ø1.000"	D099
	**SVZBR/L** Back boring Insert : VB☐☐	✓		Steel	✓	ø1.000"	D098

Internal Toolholder - Quick Guide

Positive type

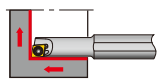
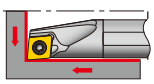
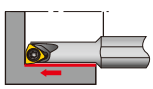
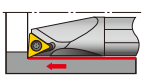
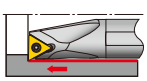
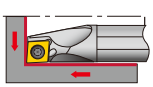
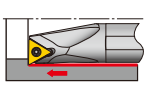
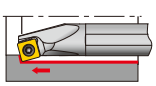
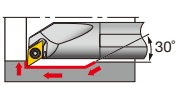
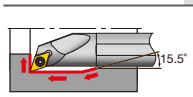
Inch

Style	Designation & Application	ISO Insert	Y-PRO SERIES Insert	Material	BOREMEISTER STREAMJETBAR MINIFÜRN Toolholder	Min. bore diameter DMIN (in) 0 0.375 0.750 1.125 1.500 2.000	Page
	**SVJCR/L** Internal sphere cutting Insert : VC□□	✓		Steel	✓	ø1.000"	D044
	**SVJBR/L** Internal sphere cutting Insert : VB□□	✓		Steel	✓	ø1.000"	D043
	**SYQBR/L** Boring, undercutting & profiling Insert : YW□□		✓	Steel Carbide	✓	ø0.750" ø0.875" ø0.750" ø0.875"	D092
	**SYUBR/L** Boring & internal profiling Insert : YW□□		✓	Steel Carbide	✓	ø1.000" ø0.875" ø1.000"	D084

Style	Designation & Application	Material	MINIFÜRN Insert, Toolholder	Min. bore diameter DMIN (in) 0 0.375 0.750 1.125 1.500 2.000	Page
	**SWLXR/L** Boring & internal facing Insert : WXGU	Steel Carbide	✓	ø0.500" ø1.250" ø0.500" ø1.250"	D034
	**SDXXR/L** Boring & internal profiling Insert : DXGU	Steel Carbide	✓	ø0.625" ø1.250" ø0.625" ø1.250"	D042
	**SDZXR/L** Back boring Insert : DXGU	Steel	✓	ø0.625" ø0.875"	D093

Positive type

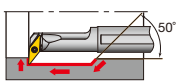
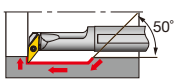
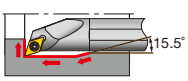
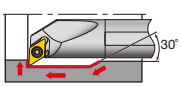
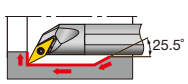
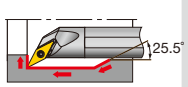
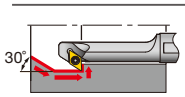
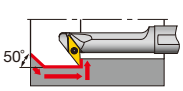
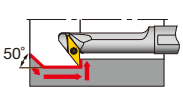
Metric

Style	Designation & Application	ISO Insert	Y-PRO SERIES Insert	Material	BOREMEISTER / STREAMJETBAR / MINIFÜRN Toolholder	Min. bore diameter DMIN (mm) 0 10 20 30 40 50	Page
	**SEXPR/L** Boring & internal facing Insert : EP□□	✓		Steel Carbide	✓	ø4.5 ø7 ø4.5 ø7	D040 D041
	**SCLCR/L** Boring & internal facing Insert : CC□□	✓		Steel Carbide Reinforced	✓	ø5 ø27 ø5 ø27 ø16 ø32	D023 D024
	**SWUBR/L** Boring Insert : WB□□	✓		Steel Carbide	✓	ø6 ø8 ø6 ø8	D083
	**STUPR/L** Boring Insert : TP□□	✓		Steel Carbide Reinforced	✓	ø8 ø34 ø8 ø27 ø14 ø31	D067 D068
	**STFPR/L** Blind hole boring Insert : TP□□	✓		Steel Carbide	✓	ø10 ø27 ø10 ø22	D050
	**SCLPR/L** Boring & internal facing Insert : CP□□	✓		Steel Carbide Reinforced	✓	ø10 ø27 ø10 ø20 ø14 ø32	D026 D027
	**STFCR/L** Blind hole boring Insert : TC□□	✓		Steel Carbide	✓	ø12 ø18 ø12 ø18	D049
	**SSKPR** Through boring Insert : SP□□	✓		Steel	✓	ø20 ø31	D045
	**SDUCR/L** Boring & internal profiling Insert : DC□□	✓		Steel Carbide	✓	ø13 ø32 ø13 ø27	D058
	**SDUPR/L** Boring & internal profiling Insert : DPMT□□			Steel Carbide	✓	ø15 ø22 ø15 ø22	D059

Internal Toolholder - Quick Guide

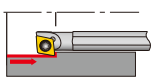
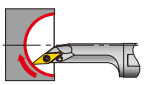
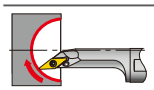
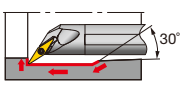
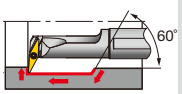
Positive type

Metric

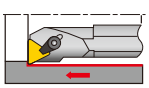
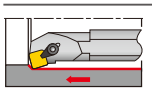
Style	Designation & Application	ISO Insert Y-PRO SERIES Insert	Material	Toolholder BOREMEISTER STREAMJETBAR MINIFÜRN	Min. bore diameter DMIN (mm) 0 10 20 30 40 50	Page
	**SVUCR/L** Boring & internal profiling Insert : VC□□	✓	Steel Carbide Reinforced	✓	ø16 ø32 ø18 ø32 ø32	D076 D077
	**SVUBR/L** Boring & internal profiling Insert : VB□□	✓	Steel Carbide Reinforced	✓	ø20 ø32 ø24.5 ø34 ø25	D072 D073
	**SDQCR/L** Boring & internal profiling Insert : DC□□	✓	Steel Carbide Reinforced	✓	ø13 ø30 ø13 ø25 ø20 ø32	D085 D086
	**SDQPR/L** Boring & internal profiling Insert : DPMT□□		Steel Carbide	✓	ø15 ø22 ø15 ø22	D087
	**SVQCR/L** Boring & internal profiling Insert : VC□□	✓	Steel Carbide Reinforced	✓	ø13.5 ø21.5 ø13.5 ø21.5 ø32	D090 D091
	**SVQBR/L** Boring & internal profiling Insert : VB□□	✓	Steel Carbide Reinforced	✓	ø17 ø30.5 ø17 ø30.5 ø25	D088 D089
	**SDZCR/L** Back boring Insert : DC□□	✓	Steel Carbide	✓	ø14 ø25 ø18 ø22	D094
	**SVZCR/L** Back boring Insert : VC□□	✓	Steel	✓	ø16	D099
	**SVZBR/L** Back boring Insert : VB□□	✓	Steel	✓	ø20 ø40	D098

Positive type

Metric

Style	Designation & Application	ISO Insert	Y-PRO SERIES Insert	Material	BOREMEISTER / STREAMJETBAR / MINIFÜRN Toolholder	Min. bore diameter DMIN (mm) 0 10 20 30 40 50	Page
	**SEZPR/L** Back boring Insert : EP□□	✓		Steel Carbide	✓	ø5.5 ø6.5 ø5.5 ø6.5	D097
	**SVJCR/L** Internal sphere cutting Insert : VC□□	✓		Steel	✓	ø16 ø20	D044
	**SVJBR/L** Internal sphere cutting Insert : VB□□	✓		Steel	✓	ø25 ø30	D043
	**SYQBR/L** Boring, undercutting & profiling Insert : YW□□		✓	Steel Carbide	✓	ø17 ø21.5 ø17 ø21.5	D092
	**SYUBR/L** Boring & internal profiling Insert : YW□□		✓	Steel Carbide	✓	ø20 ø20 ø24.5	D084

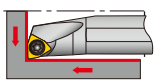
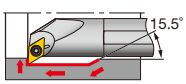
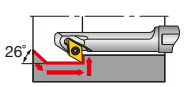
Clamp on

Style	Designation & Application	ISO Insert	Material	BOREMEISTER / STREAMJETBAR / MINIFÜRN Toolholder	Min. bore diameter DMIN (mm) 0 10 20 30 40 50	Page
	**CTFPR/L** Blind hole boring Insert : TP□□ (without hole)	✓	Steel Carbide		ø16 ø40 ø16 ø20	D051
	**CSKPR/L** Through boring Insert : SP□□ (without hole)	✓	Steel		ø20 ø32	D046

Internal Toolholder - Quick Guide

Positive double side

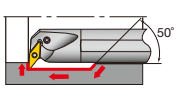
Metric

Style	Designation & Application	Material	MINIFÄRN Insert, Toolholder	Min. bore diameter DMIN (mm) 0 10 20 30 40 50	Page
	**SWLXR/L** Boring & internal facing Insert : WXGU	Steel Carbide	✓	ø12 ø22 ø12 ø22	D034
	**SDXXR/L** Boring & internal profiling Insert : DXGU	Steel Carbide	✓	ø13 ø24 ø13 ø24	D042
	**SDZXR/L** Back boring Insert : DXGU	Steel Carbide	✓	ø14 ø20 ø18 ø22	D093

Negative type

Inch

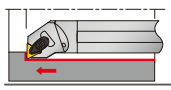
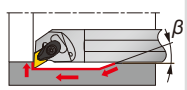
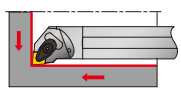
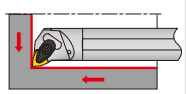
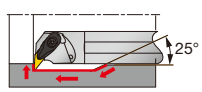
Lever lock

Style	Designation & Application	ISO Insert	ISOETÄRN Insert	Material	STREAMJETBAR TUNGTÄRN Toolholder	Min. bore diameter DMIN (in) 0 0.375 0.750 1.125 1.500 2.000	Page
	**PVUNR/L** Boring & internal profiling Insert : V/YN□□	✓	✓	Steel	✓	ø1.250" ø1.650"	D080 D081

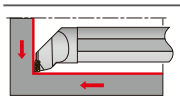
Negative type

Inch

Double clamp

Style	Designation & Application	ISO Insert	ISOTURN Insert	Material	STREAMJETBAR / TURNINGA Toolholder	Min. bore diameter DMIN (in) 0.750 1.125 1.500 2.000 2.500 3.000	Page
	**ATFNR/L** Boring Insert : TN□□	✓		Steel	✓	ø1.250" – ø1.560"	D055
	**ASKNR/L** Boring Insert : SN□□	✓		Steel	✓	ø1.250" – ø1.500"	D048
	**ADUNR/L** Boring & internal profiling Insert : DN□□	✓	✓	Steel	✓	ø1.250" – ø2.000"	D062 D065
	**ACLNR/L** Boring & internal facing Insert : CN□□, GN□□	✓	✓	Steel	✓	ø1.250" – ø2.500"	D028 D031
	**AWLNR/L** Boring & internal facing Insert : WN□□	✓	✓	Steel	✓	ø1.250" – ø2.500"	D036 D039
	**AVUNR/L** Boring & internal profiling Insert : VN□□	✓		Steel	✓	ø1.560" – ø2.000"	D082

Screw-on

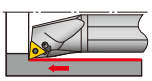
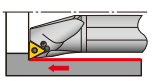
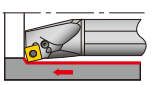
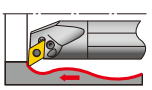
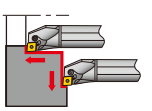
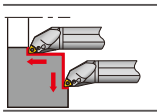
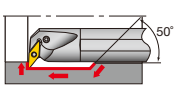
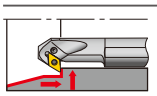
Style	Designation & Application	Material	TURNTEC Insert, Toolholder	Min. bore diameter DMIN (in) 0.750 1.125 1.500 2.000 2.500 3.000	Page
	**S-TLANR/L** Boring & internal facing Insert : LNMX□□	Steel	✓	ø2.090" – ø3.350"	D100

Internal Toolholder - Quick Guide

Negative type

Metric

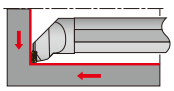
Lever lock

Style	Designation & Application	Insert: ISO Insert	Insert: ISOTURN	Material	Toolholder: STREAMJETBAR	Toolholder: TUNGTJET	Min. bore diameter DMIN (mm)	Page
	**PTUNR/L** Boring Insert : TN☐☐	✓	✓	Steel Reinforced	✓		ø20 ø40 ø20 ø63	D069 - D071
	**PTFNR/L** Boring Insert : TN☐☐	✓	✓	Steel	✓		ø32 ø63	D052 - D054
	**PSKNR/L** Through boring Insert : SN☐☐	✓		Steel	✓		ø40 ø63	D047
	**PDUNR/L** Boring & internal profiling Insert : DN☐☐	✓	✓	Steel Reinforced	✓	✓	ø25 ø63 ø40 ø63	D062 - D064
	**PCLNR/L** Boring & internal facing Insert : CN☐☐	✓	✓	Steel Reinforced	✓	✓	ø20 ø63 ø20 ø63	D028 - D030
	**PWLNR/L** Boring & internal facing Insert : WN☐☐	✓	✓	Steel	✓		ø20 ø50	D035 D037 D038
	**PVUNR/L** Boring & internal profiling Insert : V/YN☐☐	✓	✓	Steel	✓		ø37 ø50	D080 D081
	**PDZNR/L** Back boring Insert : DN☐☐	✓		Steel	✓		ø40 ø63	D095

Negative type

Metric

Screw-on

Style	Designation & Application	Material	TURNTEC Insert, Toolholder	Min. bore diameter DMIN (mm) 40	50	60	70	80	90	Page
	**S-TLANR/L** Boring & internal facing Insert : LNMX□□	Steel	✓	ø53					ø85	D100

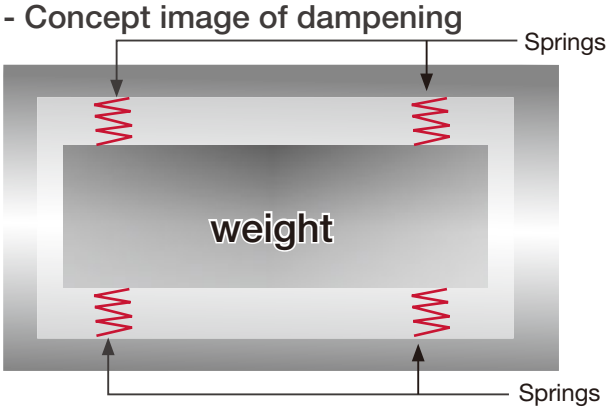
BOREMEISTER

Unique anti-vibration mechanism in the tool body reduces vibration during deep hole boring with long overhangs of up to **L/D = 10**

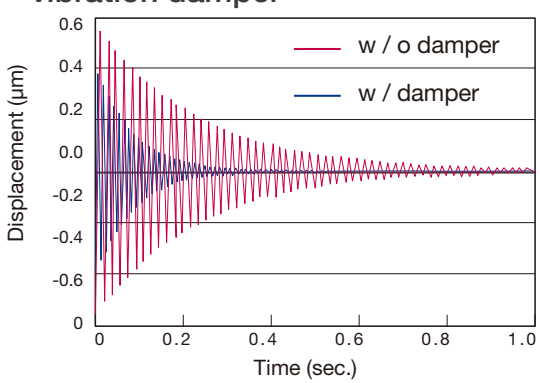
Vibration Dampening Mechanism

When cutting forces create vibration on boring bar set ups with long overhangs, the bar's dampening mechanism counters the tool's motion and cancels the vibration.
The dampening mechanism consists of a weight supported by spring elements.
The vibrations die out quickly eliminating noise and chatter marks.

- Concept image of dampening

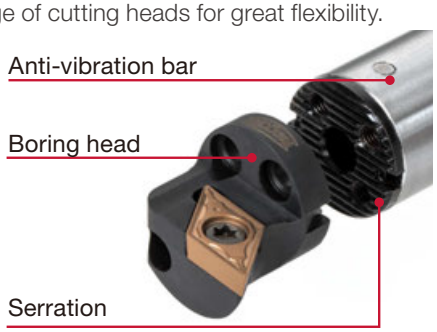


- Tool vibrations with and without vibration damper



Standard Lineup

BoreMeister is comprised of the anti-vibration bar and interchangeable boring head, featuring serrated interfaces for high precision indexing. They are connected by screws, allowing the fitting of a wide range of cutting heads for great flexibility.
- Minimum bore diameter : ø0.787"



Reference pages: D020 - D021, D032 - D033, D056 - D057, D060 - D061, D074 - D075, D078 - D079

STREAMJETBAR

Engineered for tool strength and optimal chip evacuation

Tool body of special alloy steel, designed to reduce chatter!

Competitor

STREAMJETBAR

Minimum bore diameter from ø0.177" (ø4.5 mm)

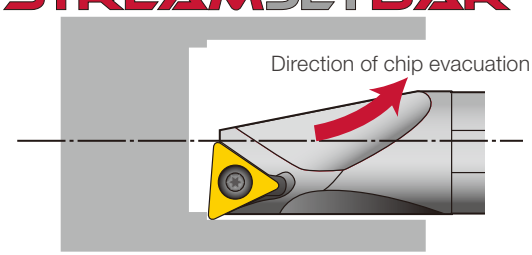
Steel and carbide shank available

New pocket design for excellent chip evacuation

Cutting performance

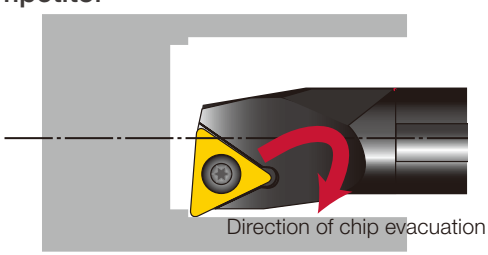
The excellent chip evacuation minimizes tool failure caused by recutting chips and poor chip control. Damage to the work surface from chips is also eliminated.

STREAMJETBAR



Combination of the well designed chip pocket and coolant flow helps chips to effectively evacuate.

Competitor



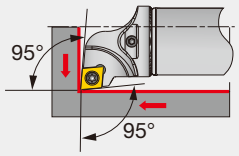
Chip packing is likely to occur.

Reference pages: D022 - D023, D025 - D026, D029, D037, D040, D043 - D045, D047, D049 - D050, D053, D058 - D059, D063, D066 - D067, D070, D072, D076, D081, D083, D085, D087 - D088 D090, D094 - D095, D097 - D099, D102

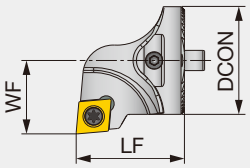
BOREMEISTER

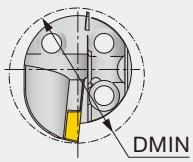
S-SCLCR/L-H

Screw-on exchangeable boring head, for positive 80° rhombic inserts



Cutting edge style **L**





Right hand (R) shown.

Inch	DMIN	DCON	WF	LF	Shank size	Insert
S16-SCLCR/L06-H	0.787	0.630	0.433	0.787	D/G.625	CC**0602...
S20-SCLCR/L09-H	0.984	0.787	0.512	0.787	D/G.750	CC**09T3...
S25-SCLCR/L09-H	1.260	0.984	0.669	0.787	D1.00	CC**09T3...
S32-SCLCR/L09-H	1.575	1.260	0.866	1.260	D1.25	CC**09T3...
S40-SCLCR/L12T-H	1.968	1.575	1.063	1.496	D1.50, D2.00, D2.50	CC**1204...

When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (SCLCL** type), and the left hand insert (L) is used for the right hand toolholders (SCLCR** type).

SPARE PARTS

Designation	Clamping screw	Wrench	Shim	Shim screw
S16-SCLCR/L06-H	SR14-548	T-7/5	-	-
S20-SCLCR/L09-H	SR16-236	T-15/5	-	-
S25-SCLCR/L09-H	SR16-236	T-15/5	-	-
S32-SCLCR/L09-H	SR16-236	T-15/5	-	-
S40-SCLCR/L12T-H	SR16-212	T-20/5	TCC4-2	SRTC-4

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	NS9530	T9215	T9215
Breaker Shape	01	PSS	PS	PM
Cutting conditions	B020			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Breaker Shape	W**	PSF	PSS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B026		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B028	

H

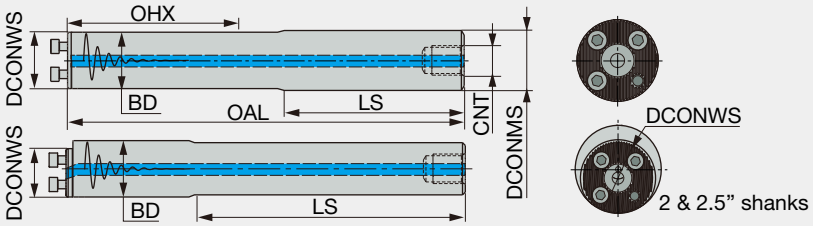
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: S-SCLCR/L-H: Insert → B111 -, CBN → B182, PCD → B196 -

Anti-vibration bar for exchangeable turning heads, with through coolant

Fig. 1

Fig. 2



Inch	Material	DCONWS	DCONMS	BD	OAL	LS	OHX	CNT	Fig.
D.625-L6.14-7D-C	Steel	0.630	0.625	0.630	6.140	3.600	3.500	G1/8	1
G.625-L8.03-10D-E	Carbide	0.630	0.625	0.630	8.030	5.220	5.500	-	1
D.750-L7.87-7D-C	Steel	0.787	0.750	0.787	7.870	4.940	4.400	G1/4	1
G.750-L10.24-10D-E	Carbide	0.787	0.750	0.787	10.240	6.770	7.000	-	1
D1.00-L10.2-7D-C	Steel	0.984	1.000	0.984	10.200	6.830	6.200	G1/4	1
D1.00-L13.21-10D-C	Steel	0.984	1.000	0.984	13.210	8.650	9.200	G1/4	1
D1.25-L12.48-7D-C	Steel	1.260	1.250	1.260	12.480	7.370	7.500	G3/8	1
D1.25-L16.24-10D-C	Steel	1.260	1.250	1.260	16.240	9.670	11.200	G3/8	1
D1.50-L15.26-7D-C	Steel	1.575	1.500	1.575	15.260	9.130	9.200	G1/2	1
D1.50-L19.8-10D-C	Steel	1.575	1.500	1.575	19.800	13.350	13.700	G1/2	1
D2.00-L20.74-7D-C	Steel	1.575	2.000	2.000	20.740	-	12.700	G1/2	2
D2.00-L26.73-10D-C	Steel	1.575	2.000	2.000	26.730	-	18.700	G1/2	2
D2.50-L26.2-7D-C	Steel	1.575	2.500	2.500	26.200	-	16.200	G3/4	2
D2.50-L33.72-10D-C	Steel	1.575	2.500	2.500	33.720	-	23.700	G3/4	2

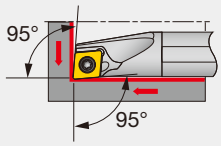
SPARE PARTS


Designation	Clamping screw	Wrench
D.625..., G.625...	SRM3X10DIN912	HW2.5
D.750..., G.750...	SRM3.5X10DIN912	HW2.5
D1.00...	SRM4X12DIN912	HW3.0
D1.25...	SRM5X12DIN912	HW4.0
D1.50..., D2.00... D2.50...	SRM6X16DIN912-12.9	HW5.0

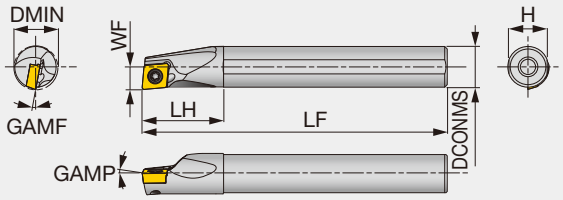
STREAMJETBAR

A/E-SCLCR/L

Screw-on boring bar, for positive 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A06-SCLCR/L2-D08	Steel	0.500	0.375	0.281	5.000	0.750	0.350	0°	-9°	0.016	CC**21.5...	0.89
A08-SCLCR/L2-D11	Steel	0.687	0.500	0.406	5.000	1.000	0.475	0°	-6°	0.016	CC**21.5...	0.89
A10-SCLCR/L3-D14	Steel	0.875	0.625	0.531	7.000	1.250	0.600	0°	-7°	0.016	CC**32.5...	2.2
A12-SCLCR/L3-D16	Steel	1.000	0.750	0.594	7.000	1.438	0.725	0°	-5°	0.031	CC**32.5...	2.2
A16-SCLCR/L3-D20	Steel	1.250	1.000	0.687	7.000	1.750	0.975	0°	-4°	0.031	CC**32.5...	2.2
E06-SCLCR/L2-D08	Carbide	0.500	0.375	0.281	5.000	0.750	0.350	0°	-9°	0.016	CC**21.5...	0.89
E08-SCLCR/L2-D11	Carbide	0.688	0.500	0.406	5.000	1.000	0.475	0°	-6°	0.016	CC**21.5...	0.89
E10-SCLCR/L2-D14	Carbide	0.875	0.625	0.531	7.000	1.250	0.600	0°	-7°	0.016	CC**21.5...	0.89
E10-SCLCR/L3-D14	Carbide	0.875	0.625	0.531	7.000	1.250	0.600	0°	-7°	0.016	CC**32.5...	2.2
E12-SCLCR/L3-D16	Carbide	1.000	0.750	0.594	7.000	1.438	0.725	0°	-5°	0.031	CC**32.5...	2.2
E16-SCLCR/L3-D20	Carbide	1.250	1.000	0.687	10.000	1.750	0.975	0°	-4°	0.031	CC**32.5...	2.2

Torque: Recommended clamping torque: lbs·ft
**RE: Standard corner radius
Use right-hand toolholders (SCLCR**) with left-hand inserts (L); and left-hand toolholders (SCLCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SCLCR/L2-D...	CSTB-2.5S	T-8F
A**-SCLCR/L3-D...	CSTB-4S	T-15F
E06-SCLCR/L2-D08	CSTB-2.5S	T-8F
E**-SCLCR/L2-D...	CSTB-2.5B	T-8F
E**-SCLCR/L3-D...	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	NS9530	T9215	T9215
Breaker Shape	01	PSS	PS	PM
Cutting conditions	B020			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B028	

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Breaker Shape	W**	PSF	PSS	PM
Cutting conditions	B022			

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA	with rake T-DIA	AL
Cutting conditions	B026		

H

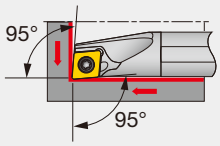
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: A/E-SCLCR/L: Insert → B111 -, CBN → B182, PCD → B196 -

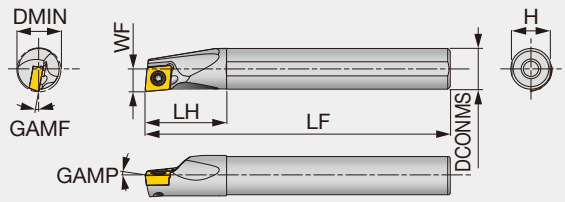
STREAMJETBAR

A/E-SCLCR/L

Screw-on boring bar, for positive 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A04F-SCLCR/L03-D050	Steel	5	4	2.5	80	8	3.8	0°	-15°	0.2	CC**03X1...	0.6
A05F-SCLCR/L03-D060	Steel	6	5	3	80	9	4.8	0°	-13°	0.2	CC**03X1...	0.6
A06G-SCLCR/L04-D070	Steel	7	6	3.5	90	11	5.75	0°	-13°	0.2	CC**04T1...	0.6
A07G-SCLCR/L04-D080	Steel	8	7	4	90	12	6.75	0°	-11°	0.2	CC**04T1...	0.6
A08H-SCLCR/L06-D100	Steel	10	8	5.5	100	16	7.5	0°	-13°	0.4	CC**0602...	1.2
A10F-SCLCR06-D120	Steel	12	10	6	80	20	9	0°	-10°	0.4	CC**0602...	1.2
A10K-SCLCR/L06-D120	Steel	12	10	6	125	20	9	0°	-10°	0.4	CC**0602...	1.2
A12H-SCLCR06-D140	Steel	14	12	7	100	24	11	0°	-8°	0.4	CC**0602...	1.2
A12M-SCLCR/L06-D140	Steel	14	12	7	150	24	11	0°	-8°	0.4	CC**0602...	1.2
A12H-SCLCR06-D160	Steel	16	12	9	100	24	11	0°	-7°	0.4	CC**0602...	1.2
A12M-SCLCR/L06-D160	Steel	16	12	9	150	24	11	0°	-7°	0.4	CC**0602...	1.2
A16K-SCLCR09-D180	Steel	18	16	9	125	32	15	0°	-9°	0.8	CC**09T3...	3
A16Q-SCLCR/L09-D180	Steel	18	16	9	180	32	15	0°	-10°	0.8	CC**09T3...	3
A16K-SCLCR09-D200	Steel	20	16	11	125	32	15	0°	-9°	0.8	CC**09T3...	3
A16Q-SCLCR/L09-D200	Steel	20	16	11	180	32	15	0°	-9°	0.8	CC**09T3...	3
A20R-SCLCR/L09-D220	Steel	22	20	11	200	32	18	0°	-8°	0.8	CC**09T3...	3
A25S-SCLCR/L09-D270	Steel	27	25	13.5	250	45	23	0°	-6°	0.8	CC**09T3...	3
E04G-SCLCR/L03-D050	Carbide	5	4	2.5	90	9	3.8	0°	-15°	0.2	CC**03X1...	0.6
E05G-SCLCR/L03-D060	Carbide	6	5	3	90	10	4.8	0°	-13°	0.2	CC**03X1...	0.6
E06H-SCLCR/L04-D070	Carbide	7	6	3.5	100	12	5.75	0°	-13°	0.2	CC**04T1...	0.6
E07H-SCLCR/L04-D080	Carbide	8	7	4	100	14	6.75	0°	-11°	0.2	CC**04T1...	0.6
E08G-SCLCR06-D100	Carbide	10	8	5.5	90	22	7.5	0°	-13°	0.4	CC**0602...	1.2
E08K-SCLCR/L06-D100	Carbide	10	8	5.5	125	22	7.5	0°	-13°	0.4	CC**0602...	1.2
E10F-SCLCR06-D120	Carbide	12	10	6	80	25	9	0°	-10°	0.4	CC**0602...	1.2
E10H-SCLCR06-D120	Carbide	12	10	6	100	25	9	0°	-10°	0.4	CC**0602...	1.2
E10M-SCLCR/L06-D120	Carbide	12	10	6	150	25	9	0°	-10°	0.4	CC**0602...	1.2
E12G-SCLCR06-D140	Carbide	14	12	7	90	27	11	0°	-8°	0.4	CC**0602...	1.2
E12J-SCLCR06-D140	Carbide	14	12	7	110	27	11	0°	-8°	0.4	CC**0602...	1.2
E12Q-SCLCR/L06-D140	Carbide	14	12	7	180	27	11	0°	-8°	0.4	CC**0602...	1.2
E12G-SCLCR06-D160	Carbide	16	12	9	90	27	11	0°	-7°	0.4	CC**0602...	1.2
E12J-SCLCR06-D160	Carbide	16	12	9	110	27	11	0°	-7°	0.4	CC**0602...	1.2
E12Q-SCLCR/L06-D160	Carbide	16	12	9	180	27	11	0°	-7°	0.4	CC**0602...	1.2
E16H-SCLCR09-D180	Carbide	18	16	9	100	32	15	0°	-10°	0.8	CC**09T3...	3
E16L-SCLCR09-D180	Carbide	18	16	9	130	32	15	0°	-10°	0.8	CC**09T3...	3
E16R-SCLCR/L09-D180	Carbide	18	16	9	200	32	15	0°	-10°	0.8	CC**09T3...	3
E16H-SCLCR09-D200	Carbide	20	16	11	100	32	15	0°	-9°	0.8	CC**09T3...	3
E16L-SCLCR09-D200	Carbide	20	16	11	130	32	15	0°	-9°	0.8	CC**09T3...	3
E16R-SCLCR/L09-D200	Carbide	20	16	11	200	32	15	0°	-9°	0.8	CC**09T3...	3
E20S-SCLCR09-D220	Carbide	22	20	11	250	36	18	0°	-8°	0.8	CC**09T3...	3
E25T-SCLCR09-D270	Carbide	27	25	13.5	300	45	23	0°	-6°	0.8	CC**09T3...	3

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius
Use right-hand toolholders (SCLCR**) with left-hand inserts (L); and left-hand toolholders (SCLCL**) with right-hand inserts (R).

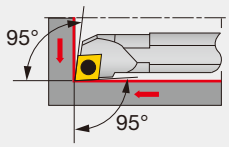
SPARE PARTS

Designation	Clamping screw	Wrench
A/E**-SCLCR/L03-D...	CSTA-1.6	T-6F
A/E**-SCLCR/L04-D...	CSTB-2	T-6F
A/E**-SCLCR/L06-D...	CSTB-2.5S	T-8F
E16*-SCLCR/L09-D...	CSTB-4L060	T-15F
A/E2**-SCLCR/L09-D...	CSTB-4S	T-15F

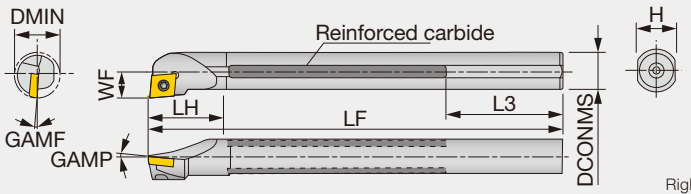
Reference pages: A/E-SCLCR/L: Insert → **B111 -**, CBN → **B182**, PCD → **B196 -**

T-SCLCR/L

Screw-on boring bar, for positive 80° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **L**



Right hand (R) shown.

Metric	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	GAMF	GAMP	RE**	Insert	Torque
T12M-SCLCR/L06	Reinforced	16	–	12	9	150	22	59	11	-10°	0°	0.4	CC**0602...	1.2
T16Q-SCLCR/L09	Reinforced	20	–	16	11	180	27	59	15	-10°	0°	0.8	CC**09T3...	3
T20R-SCLCR/L09C	Reinforced	25	Rc1/4	20	13	200	35	49	18	-8°	0°	0.8	CC**09T3...	3
T25S-SCLCR/L09C	Reinforced	32	Rc1/4	25	17	250	40	64	23	-6°	0°	0.8	CC**09T3...	3

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius
The hole specification of applicable inserts conforms to ISO standard.
Use right-hand toolholders (SCLCR**) with left-hand inserts (L); and left-hand toolholders (SCLCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
T12M-SCLCR/L06	CSTB-2.5	T-8F
T16Q-SCLCR/L09	CSTB-4S	T-15F
T20R-SCLCR/L09C	CSTB-4S	T-15F
T25S-SCLCR/L09C	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B020			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	TH10	KS05F
Breaker Shape	T-DIA (with rake)	W20	AL
Cutting conditions	B026		

S

Application	Precision finishing	Finishing to medium cutting
Grade	BX470	AH8005
Breaker Shape	T-CBN	PS
Cutting conditions	B028	

H

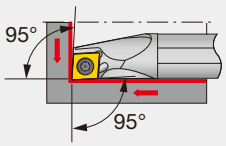
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: T-SCLCR/L: Insert → **B111 -**, CBN → **B182**, PCD → **B196 -**

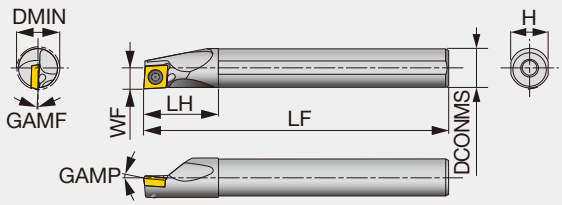
STREAMJETBAR

A/E-SCLPR/L

Screw-on boring bar, for positive 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A06-SCLPR/L2-D08	Steel	0.500	0.375	0.281	5.000	0.750	0.350	5°	-5°	0.016	CP**21.5...	0.89
A08-SCLPR/L2-D11	Steel	0.687	0.500	0.406	5.000	1.000	0.475	5°	-2°	0.016	CP**21.5...	0.89
A10-SCLPR/L3-D14	Steel	0.875	0.625	0.531	7.000	1.250	0.600	5°	-2°	0.016	CP**32.5...	2.21
E06-SCLPR/L2-D08	Carbide	0.500	0.375	0.281	5.000	0.750	0.350	0°	-9°	0.016	CP**21.5...	0.89
E08-SCLPR/L2-D11	Carbide	0.688	0.500	0.406	5.000	1.000	0.475	0°	-6°	0.016	CP**21.5...	0.89
E10-SCLPR/L3-D14	Carbide	0.875	0.625	0.531	7.000	1.250	0.600	0°	-7°	0.032	CP**32.5...	2.21

Torque: Recommended clamping torque: lbs·ft

**RE: Standard corner radius

When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (SCLPL** type), and the left hand insert (L) is used for the right hand toolholders (SCLPR** type).

SPARE PARTS

Designation	Clamping screw	Wrench
A06-SCLPR/L2-D08	CSTB-2.5L042	T-8F
A08-SCLPR/L2-D11	CSTB-2.5S	T-8F
A10-SCLPR/L3-D14	CSTB-4L070	T-15F
E06-SCLPR/L2-D08	CSTB-2.5S	T-8F
E08-SCLPR/L2-D11	CSTB-2.5B	T-8F
E10-SCLPR/L3-D14	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Finishing to medium cutting	Medium cutting
Grade	T9215	T9215
Breaker Shape	PS 	PM 
Cutting conditions	B020	

M

Application	Finishing to medium cutting	Medium cutting
Grade	T9215	T9215
Breaker Shape	PS 	PM 
Cutting conditions	B022	

K

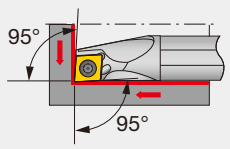
Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM 
Cutting conditions	B024

Reference pages: A/E-SCLPR/L: Insert → **B118 -**

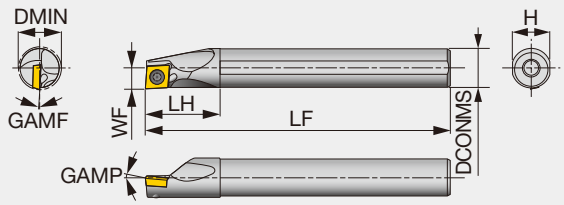
STREAMJETBAR

A/E-SCLPR/L

Screw-on boring bar, for positive 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A08H-SCLPR/L06-D100	Steel	10	8	5.5	100	16	7.5	5°	-8°	0.4	CP**0602...	1.2
A10K-SCLPR/L06-D120	Steel	12	10	6	125	20	9	5°	-5°	0.4	CP**0602...	1.2
A10K-SCLPR/L08-D120	Steel	12	10	6	125	20	9	5°	-5°	0.4	CP**0802...	1.4
A12M-SCLPR/L06-D140	Steel	14	12	7	150	24	11	5°	-4°	0.4	CP**0602...	1.2
A12M-SCLPR/L08-D140	Steel	14	12	7	150	24	11	5°	-4°	0.4	CP**0802...	1.4
A12M-SCLPR/L08-D160	Steel	16	12	9	150	24	11	5°	-3°	0.4	CP**0802...	1.4
A16Q-SCLPR/L09-D180	Steel	18	16	9	180	32	15	5°	-3.5°	0.8	CP**0903...	3
A16Q-SCLPR/L09-D200	Steel	20	16	11	180	32	15	5°	-3°	0.8	CP**0903...	3
A20R-SCLPR/L09-D220	Steel	22	20	11	200	36	18	5°	-2°	0.8	CP**0903...	3
A25S-SCLPR/L09-D270	Steel	27	25	13.5	250	45	23	5°	-1°	0.8	CP**0903...	3
E08K-SCLPR/L06-D100	Carbide	10	8	5.5	125	22	7.5	5°	-8°	0.4	CP**0602...	1.2
E10M-SCLPR/L06-D120	Carbide	12	10	6	150	25	9	5°	-5°	0.4	CP**0602...	1.2
E10H-SCLPR08-D120	Carbide	12	10	6	100	25	9	5°	-5°	0.4	CP**0802...	1.4
E10M-SCLPR/L08-D120	Carbide	12	10	6	150	25	9	5°	-5°	0.4	CP**0802...	1.4
E12Q-SCLPR/L06-D140	Carbide	14	12	7	180	27	11	5°	-4°	0.4	CP**0602...	1.2
E12G-SCLPR08-D140	Carbide	14	12	7	90	27	11	5°	-4°	0.4	CP**0802...	1.4
E12J-SCLPR08-D140	Carbide	14	12	7	110	27	11	5°	-4°	0.4	CP**0802...	1.4
E12Q-SCLPR/L08-D140	Carbide	14	12	7	180	27	11	5°	-4°	0.4	CP**0802...	1.4
E12G-SCLPR08-D160	Carbide	16	12	9	90	27	11	5°	-3°	0.4	CP**0802...	1.4
E12J-SCLPR08-D160	Carbide	16	12	9	110	27	11	5°	-3°	0.4	CP**0802...	1.4
E12Q-SCLPR/L08-D160	Carbide	16	12	9	180	27	11	5°	-3°	0.4	CP**0802...	1.4
E16H-SCLPR09-D180	Carbide	18	16	9	100	32	15	5°	-3.5°	0.8	CP**0903...	3
E16L-SCLPR09-D180	Carbide	18	16	9	130	32	15	5°	-3.5°	0.8	CP**0903...	3
E16R-SCLPL09-D180	Carbide	18	16	9	200	32	15	5°	-3.5°	0.8	CP**0903...	3
E16H-SCLPR09-D200	Carbide	20	16	11	100	32	15	5°	-3°	0.8	CP**0903...	3
E16L-SCLPR09-D200	Carbide	20	16	11	130	32	15	5°	-3°	0.8	CP**0903...	3
E16R-SCLPL09-D200	Carbide	20	16	11	200	32	15	5°	-3°	0.8	CP**0903...	3

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius
Use right-hand toolholders (SCLPR**) with left-hand inserts (L); and left-hand toolholders (SCLPL**) with right-hand inserts (R).

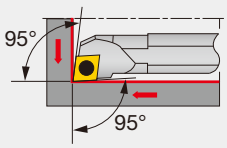
SPARE PARTS

Designation	Clamping screw	Wrench
A**-SCLPR/L06-D...	CSTB-2.5S	T-8F
A10K-SCLPR/L08-D120	CSTB-3L042	T-9F
A12M-SCLPR/L08-D...	CSTB-3L050	T-9F
A**-SCLPR/L09-D...	CSTB-4L060	T-15F
E**-SCLPR/L06-D...	CSTB-2.5S	T-8F
E10*-SCLPR/L08-D...	CSTB-3L042	T-9F
E12*-SCLPR/L08-D...	CSTB-3L050	T-9F
E16*-SCLPR/L09-D...	CSTB-4L060	T-15F

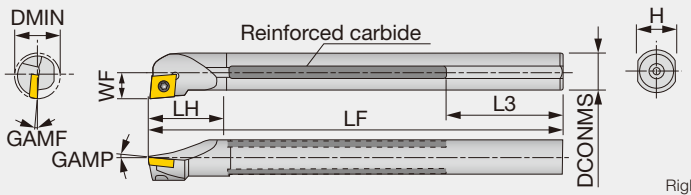
Reference pages: A/E-SCLPR/L: Insert → **B118 -**

T-SCLPR/L

Screw-on boring bar, for positive 80° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **L**



Right hand (R) shown.

Metric	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	GAMF	GAMP	RE**	Insert	Torque
T12M-SCLPR08-D14	Reinforced	14	-	12	7	150	22	59	11	-4°	5°	0.4	CP**0802...	1.4
T12M-SCLPR/L08	Reinforced	16	-	12	9	150	25	59	11	-3°	5°	0.4	CP**0802...	1.4
T16Q-SCLPR09-D18	Reinforced	18	-	16	9	180	27	59	15	-3.5°	5°	0.8	CP**0903...	3
T16Q-SCLPR/L09	Reinforced	20	-	16	11	180	30	59	15	-4°	5°	0.8	CP**0903...	3
T20R-SCLPR09C-D22	Reinforced	22	Rc1/4	20	11	200	35	49	18	-2°	5°	0.8	CP**0903...	3
T20R-SCLPR/L09	Reinforced	25	-	20	13	200	35	49	18	-2°	5°	0.8	CP**0903...	3
T25S-SCLPR09C-D27	Reinforced	27	Rc1/4	25	13.5	250	40	64	23	-1°	5°	0.8	CP**0903...	3
T25S-SCLPR/L09	Reinforced	32	-	25	17	250	40	64	23	0°	5°	0.8	CP**0903...	3

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius
Use right-hand toolholders (SCLPR**) with left-hand inserts (L); and left-hand toolholders (SCLPL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
T12M-SCLPR/L08...	CSTB-3L050	T-9F
T16Q-SCLPR09-D18	CSTB-4L060	T-15F
T16Q-SCLPR/L09	CSTB-4S	T-15F
T20R-SCLPR09C-D22	CSTB-4L060	T-15F
T20R-SCLPR/L09	CSTB-4S	T-15F
T25S-SCLPR09C-D27	CSTB-4L060	T-15F
T25S-SCLPR/L09	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Breaker Shape	PSS	PS	PM
Cutting conditions	B020		

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Breaker Shape	PSF	PSS	PM
Cutting conditions	B022		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Finishing
Grade	DX140
Breaker Shape	T-DIA
Cutting conditions	B026

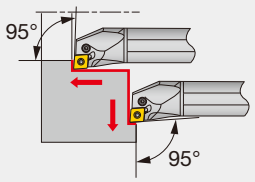
S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B028	

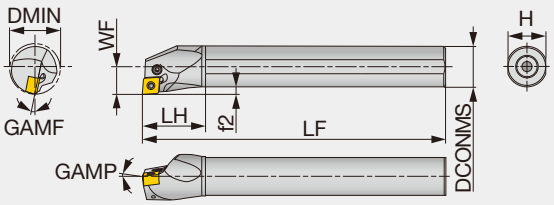
Reference pages: T-SCLPR/L: Insert → **B118 -**

ISOETURN Eco
A-PCLNR/L-Eco

Lever-lock boring bar, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16M-PCLNR/L0904-D200	Steel	20	16	11	150	32	15	3	-6°	-16°	0.8	CN**0904...	1.7
A20Q-PCLNR/L0904-D250	Steel	25	20	13	180	36	18	3	-6°	-12°	0.8	CN**0904...	1.7

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

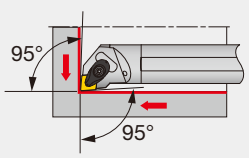
SPARE PARTS

Designation	Clamping screw	Wrench	Lever	Oil supply attachment*	Screw for oil hole*
A16M-PCLNR/L0904-D200	LCS33	P-2F	LCL33N	-	SSHM3-4
A20Q-PCLNR/L0904-D250	LCS33	P-2F	LCL33N	EA-20	SSHM3-4

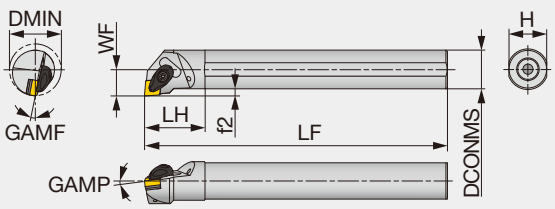
*Optional

ISOETURN Eco
A-ACLNR/L-Eco

Double-clamp boring bar, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16-ACLNR/L33-D20	Steel	1.250	1.000	0.672	12.000	1.750	0.906	0.172	-6°	-13°	0.031	CN**33...	2.21
A20-ACLNR/L33-D25	Steel	1.560	1.250	0.859	14.000	1.938	1.188	0.234	-6°	-10°	0.031	CN**33...	2.21

Torque: Recommended clamping torque: lbs·ft
**RE: The holder measurements are true with this insert radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-ACLNR/L33...	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASC322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Breaker Shape	TSF	TM
Cutting conditions	B020	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SS	SM
Cutting conditions	B022	

K

Application	Medium cutting
Grade	T515
Breaker Shape	TM
Cutting conditions	B024

S

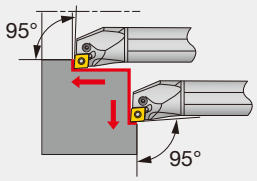
Application	Medium cutting
Grade	AH8015
Breaker Shape	TM
Cutting conditions	B028

Reference pages: A-PCLNR/L-Eco, A-ACLNR/L-Eco: Insert → B056 -

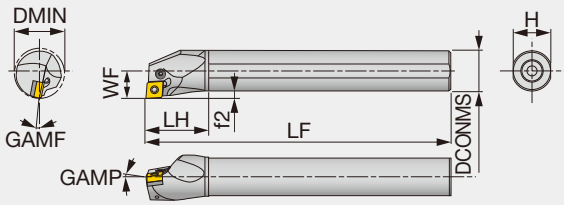
STREAMJETBAR

A-PCLNR/L

Lever-lock boring bar, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16M-PCLNR/L09-D200	Steel	20	16	11	150	32	15	3	-6°	-14°	0.8	CN**0903...	1.7
A20Q-PCLNR/L09-D250	Steel	25	20	13	180	36	18	3	-6°	-12°	0.8	CN**0903...	1.7
A25R-PCLNR/L09-D320	Steel	32	25	17	200	45	23	4.5	-6°	-11°	0.8	CN**0903...	1.7
A25R-PCLNR/L12-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	CN**1204...	2.7
A32S-PCLNR/L12-D400	Steel	40	32	22	250	50	30	6	-6°	-11°	0.8	CN**1204...	4.8
A40T-PCLNR/L12-D500	Steel	50	40	27	300	60	37	7	-6°	-10°	0.8	CN**1204...	4.8
A50U-PCLNR/L12-D630	Steel	63	50	35	350	65	47	10	-6°	-8°	0.8	CN**1204...	4.8

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius
Use right-hand toolholders (PCLNR**) with left-hand inserts (L); and left-hand toolholders (PCLNL**) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever	Oil supply attachment*	Screw for oil hole*
A**-PCLNR/L09-D**0	-	LCS22A	-	P-2F	-	-	LCL32N	EA-25	SSHM5-6
A25R-PCLNR/L12-D320	-	LCS43	-	-	P-2.5	-	LCL43N	EA-32	SSHM5-6
A32S-PCLNR/L12-D400	LSC42BR/L	-	LCS4	-	P-3	LSP4	LCL4	EA-32	SSHM5-6
A40T-PCLNR/L12-D500	LSC42BR/L	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6
A50U-PCLNR/L12-D630	LSC42BR/L	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

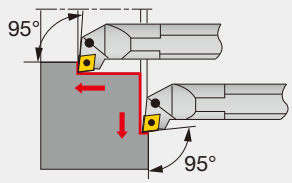
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

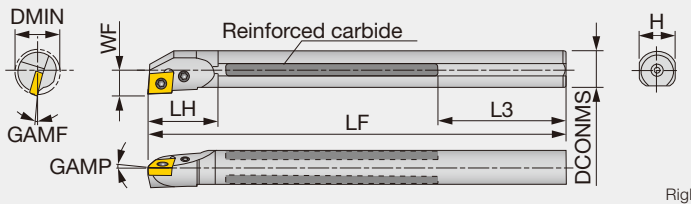
Reference pages: A-PCLNR/L: Insert → B056 -, CBN → B172 -, PCD → B194 -

T-PCLNR

Lever-lock boring bar, for negative 80° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **L**



Right hand (R) shown.

Metric	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	GAMP	GAMF	RE**	Insert	Torque
T16Q-PCLNR09	Reinforced	20	-	16	11	180	27	59	15	-6°	-14°	0.8	CN**0903...	1.7
T20R-PCLNR09C	Reinforced	25	Rc1/4	20	13	200	35	49	18	-6°	-12°	0.8	CN**0903...	1.7
T25S-PCLNR09C	Reinforced	32	Rc1/4	25	17	250	40	64	23	-6°	-11°	0.8	CN**0903...	1.7
T32U-PCLNR12C	Reinforced	40	Rc1/2	32	22	350	50	103	30	-6°	-11°	0.8	CN**1204...	4.8
T40V-PCLNR12C	Reinforced	50	Rc1/2	40	27	400	55	88	37	-6°	-10°	0.8	CN**1204...	4.8
T50W-PCLNR12C	Reinforced	63	Rc1/2	50	35	450	65	63	47	-6°	-8°	0.8	CN**1204...	4.8

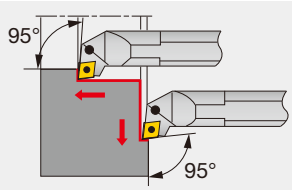
Torque: Recommended clamping torque: N·m
**RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever
T**-PCLNR09...	-	LCS22A	-	P-2F	-	-	LCL32N
T**-PCLNR12C	LSC42BR	-	LCS4	-	P-3	LSP4	LCL4

S-PCLNR/L

Lever-lock boring bar, for negative 80° rhombic inserts



Cutting edge style **L**

Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMP	GAMF	RE**	Insert	Torque
S16M-PCLNR/L09	Steel	20	16	11	150	30	15	15.5	-6°	-14°	0.8	CN**0903...	1.7
S20Q-PCLNR/L09	Steel	25	20	13	180	35	18	19	-6°	-12°	0.8	CN**0903...	1.7
S25R-PCLNR/L09	Steel	32	25	17	200	40	23	24	-6°	-11°	0.8	CN**0903...	1.7
S32S-PCLNR/L12	Steel	40	32	22	250	50	30	29.5	-6°	-11°	0.8	CN**1204...	4.8
S40T-PCLNR/L12	Steel	50	40	27	300	55	37	37.5	-6°	-10°	0.8	CN**1204...	4.8
S50U-PCLNR/L12	Steel	63	50	35	350	65	47	47.5	-6°	-8°	0.8	CN**1204...	4.8

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

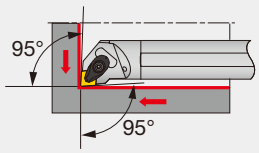
SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever
S**-PCLNR/L09	-	LCS22A	-	P-2F	-	-	LCL32N
S**-PCLNR/L12	LSC42BR/L	-	LCS4	-	P-3	LSP4	LCL4

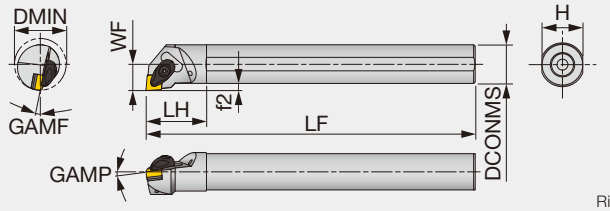
Reference pages: T-PCLNR, S-PCLNR/L: Insert → B056 -, CBN → B172 -, PCD → B194 -

A-ACLNR/L

Double-clamp boring bar, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16-ACLNR/L4-D20	Steel	1.250	1.000	0.640	12.000	1.750	0.906	0.177	-6°	-13°	0.031	CN**43...	2.21
A20-ACLNR/L4-D25	Steel	1.560	1.250	0.770	14.000	1.930	1.180	0.236	-6°	-10°	0.031	CN**43...	2.21
A24-ACLNR/L4-D32	Steel	2.000	1.500	0.890	14.000	2.160	1.450	0.275	-6°	-8°	0.031	CN**43...	2.21
A32-ACLNR/L4-D40	Steel	2.500	2.000	1.280	16.000	2.550	1.850	0.393	-6°	-7°	0.031	CN**43...	2.21

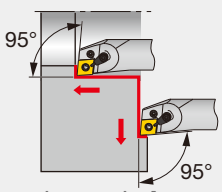
Torque: Recommended clamping torque: lbs·ft
**RE: Standard corner radius

SPARE PARTS

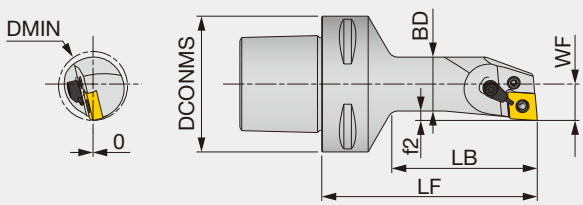
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-ACLNR/L4-D...	ACP4S	ACS-5W	BP-7	SP-2.5	ASC422	CSTB-3.5	T-15F

C-PCLNL-CHP

Lever-lock boring bar with TungCap connection, with 95° approach angle, for negative 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **L**



Left hand (L) shown.

Metric	DMIN	DCONMS	BD	LF	LB	WF	f2	RE**	Insert
C6PCLNL17100-12-CHP	32	63	25	100	67.5	17	4.5	0.8	CN**1204...

Applicable for 14 MPa coolant
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench	Lever
C6PCLNL17100-12-CHP	LCS43	S-CU-CHP	P-2.5F	LCL43N

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B010		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

H

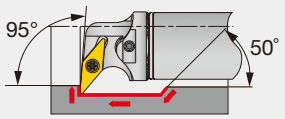
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

Reference pages: A-ACLNR/L, C-PCLNL-CHP: Insert → B056 -, CBN → B172 -, PCD → B194 -

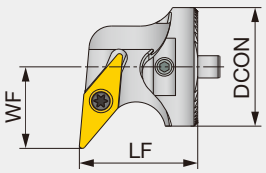
BOREMEISTER

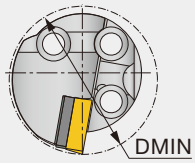
S-SVLCR/L-H

Screw-on exchangeable boring head, for positive 35° rhombic inserts



Cutting edge style **L**





Right hand (R) shown.

Inch	DMIN	DCON	WF	LF	Shank size	Insert
S32-SVLCR/L16T-H	1.575	1.260	0.866	1.260	D1.25	VC**1604...
S40-SVLCR/L16T-H	1.968	1.575	1.063	1.260	D1.50, D2.00, D2.50	VC**1604...

When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (SVLCL** type), and the left hand insert (L) is used for the right hand toolholders (SVLCR** type).

SPARE PARTS

Designation	Clamping screw	Wrench	Shim	Shim screw
S**-SVLCR/L16T-H	SR16-236P	T-15/5	TVC 3-1P	SRTC-3P

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PSS	PS
Cutting conditions	B020	

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Breaker Shape	PSF	PSS	PM
Cutting conditions	B022		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B026		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B028	

H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

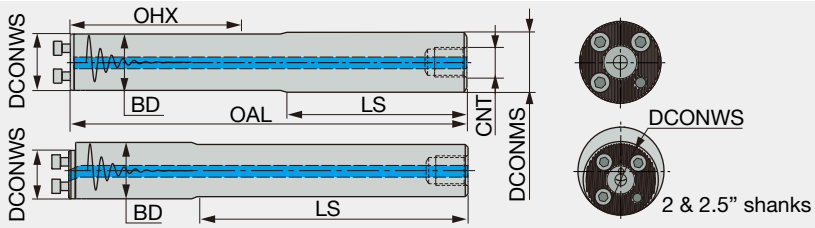
Reference pages: S-SVLCR/L-H: Insert → B155 -, CBN → B192, PCD → B196 -

BOREMEISTER
Anti-vibration bar

Anti-vibration bar for exchangeable turning heads, with through coolant

Fig. 1

Fig. 2



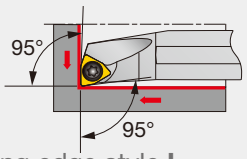
Inch	Material	DCONWS	DCONMS	BD	OAL	LS	OHX	CNT	Fig.
D.625-L6.14-7D-C	Steel	0.630	0.625	0.630	6.140	3.600	3.500	G1/8	1
G.625-L8.03-10D-E	Carbide	0.630	0.625	0.630	8.030	5.220	5.500	-	1
D.750-L7.87-7D-C	Steel	0.787	0.750	0.787	7.870	4.940	4.400	G1/4	1
G.750-L10.24-10D-E	Carbide	0.787	0.750	0.787	10.240	6.770	7.000	-	1
D1.00-L10.2-7D-C	Steel	0.984	1.000	0.984	10.200	6.830	6.200	G1/4	1
D1.00-L13.21-10D-C	Steel	0.984	1.000	0.984	13.210	8.650	9.200	G1/4	1
D1.25-L12.48-7D-C	Steel	1.260	1.250	1.260	12.480	7.370	7.500	G3/8	1
D1.25-L16.24-10D-C	Steel	1.260	1.250	1.260	16.240	9.670	11.200	G3/8	1
D1.50-L15.26-7D-C	Steel	1.575	1.500	1.575	15.260	9.130	9.200	G1/2	1
D1.50-L19.8-10D-C	Steel	1.575	1.500	1.575	19.800	13.350	13.700	G1/2	1
D2.00-L20.74-7D-C	Steel	1.575	2.000	2.000	20.740	-	12.700	G1/2	2
D2.00-L26.73-10D-C	Steel	1.575	2.000	2.000	26.730	-	18.700	G1/2	2
D2.50-L26.2-7D-C	Steel	1.575	2.500	2.500	26.200	-	16.200	G3/4	2
D2.50-L33.72-10D-C	Steel	1.575	2.500	2.500	33.720	-	23.700	G3/4	2

SPARE PARTS

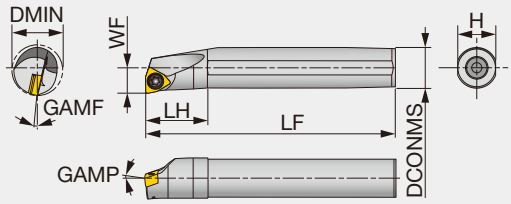

Designation	Clamping screw	Wrench
D.625..., G.625...	SRM3X10DIN912	HW2.5
D.750..., G.750...	SRM3.5X10DIN912	HW2.5
D1.00...	SRM4X12DIN912	HW3.0
D1.25...	SRM5X12DIN912	HW4.0
D1.50..., D2.00... D2.50...	SRM6X16DIN912-12.9	HW5.0

A/E-SWLXR/L

Screw-on boring bar, for WXGU inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A06-SWLXR/L2-D08	Steel	0.500	0.375	0.281	5.000	0.750	0.350	-10°	-14°	0.016	WXGU0403**L/R...	0.66
A08-SWLXR/L2-D11	Steel	0.688	0.500	0.406	5.000	1.000	0.475	-10°	-10°	0.016	WXGU0403**L/R...	0.66
A10-SWLXR/L2-D14	Steel	0.875	0.625	0.531	7.000	1.250	0.600	-10°	-8°	0.016	WXGU0403**L/R...	0.66
A12-SWLXR/L2-D16	Steel	1.000	0.750	0.593	7.000	1.438	0.725	-10°	-7°	0.016	WXGU0403**L/R...	0.66
A16-SWLXR/L2-D20	Steel	1.250	1.000	0.625	7.000	1.438	0.938	-10°	-7°	0.016	WXGU0403**L/R...	0.66
E06-SWLXR/L2-D08	Carbide	0.500	0.375	0.281	5.000	1.000	0.350	-10°	-14°	0.016	WXGU0403**L/R...	0.66
E08-SWLXR/L2-D11	Carbide	0.688	0.500	0.406	5.000	1.063	0.475	-10°	-10°	0.016	WXGU0403**L/R...	0.66
E10-SWLXR/L2-D14	Carbide	0.875	0.625	0.531	7.000	1.250	0.600	-10°	-8°	0.016	WXGU0403**L/R...	0.66
E12-SWLXR/L2-D16	Carbide	1.000	0.750	0.593	7.000	1.438	0.725	-10°	-7°	0.016	WXGU0403**L/R...	0.66
E16-SWLXR/L2-D20	Carbide	1.250	1.000	0.625	10.000	1.812	0.938	-10°	-7°	0.016	WXGU0403**L/R...	0.66

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A10K-SWLXR/L04-D120	Steel	12	10	6	125	20	9	-10°	-16°	0.4	WXGU0403**L/R...	0.9
A12M-SWLXR/L04-D140	Steel	14	12	7	150	24	11	-10°	-14°	0.4	WXGU0403**L/R...	0.9
A16Q-SWLXR/L04-D180	Steel	18	16	9	180	32	15	-10°	-11°	0.4	WXGU0403**L/R...	0.9
A20R-SWLXR/L04-D220	Steel	22	20	11	200	36	18	-10°	-10°	0.4	WXGU0403**L/R...	0.9
E10M-SWLXR/L04-D120	Carbide	12	10	6	150	25	9	-10°	-16°	0.4	WXGU0403**L/R...	0.9
E12Q-SWLXR/L04-D140	Carbide	14	12	7	180	27	11	-10°	-14°	0.4	WXGU0403**L/R...	0.9
E16R-SWLXR/L04-D180	Carbide	18	16	9	200	32	15	-10°	-11°	0.4	WXGU0403**L/R...	0.9
E20S-SWLXR/L04-D220	Carbide	22	20	11	250	36	18	-10°	-10°	0.4	WXGU0403**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R)

SPARE PARTS


Designation	Clamping screw	Wrench
A/E**-SWLXR/L...	SR34-514	T-7F

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	NS9530	AH725
Breaker Shape	SS 	TS 
Cutting conditions	D105	

M

Application	Finishing	Medium cutting
Grade	AH8015	AH8015
Breaker Shape	SS 	TS 
Cutting conditions	D105	

K

Application	Finishing	Medium cutting
Grade	NS9530	AH725
Breaker Shape	SS 	TS 
Cutting conditions	D105	

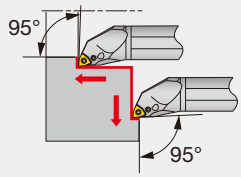
N

Application	Finishing	Medium cutting
Grade	KS05F	KS05F
Breaker Shape	SS 	TS 
Cutting conditions	D105	

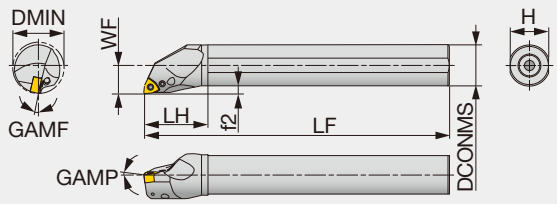
Reference pages: A/E-SWLXR/L: Insert → B161 -
Standard cutting conditions → D105

A-PWLNR/L-Eco

Lever-lock boring bar, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16M-PWLNR/L0604-D200	Steel	20	16	11	150	32	15	3	-8°	-17°	0.8	WN**0604...	1.7
A20Q-PWLNR/L0604-D250	Steel	25	20	13	180	36	18	3	-6°	-14°	0.8	WN**0604...	1.7

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench	Lever	Oil supply attachment*	Screw for oil hole*
A16M-PWLNR/L0604-D200	LCS33	P-2F	LCL33N	-	SSHM3-4
A20Q-PWLNR/L0604-D250	LCS33	P-2F	LCL33N	EA-20	SSHM3-4

*Optional

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Breaker Shape	TSF	TM
Cutting conditions	B008	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SS	SM
Cutting conditions	B010	

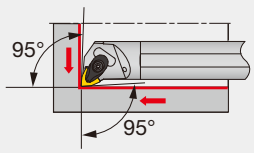
K

Application	Medium cutting
Grade	T515
Breaker Shape	TM
Cutting conditions	B012

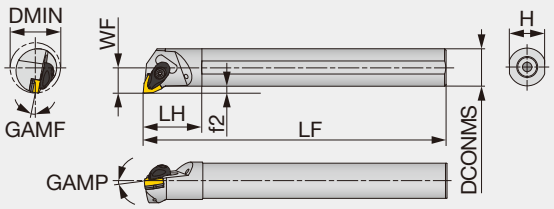
Reference pages: A-PWLNR/L-Eco: Insert → B101 -

A-AWLNR/L-Eco

Double-clamp boring bar, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16-AWLNR/L33-D20	Steel	1.250	1.000	0.672	12.000	1.750	0.906	0.172	-6°	-13°	0.031	WN**33...	2.21
A20-AWLNR/L33-D25	Steel	1.560	1.250	0.859	14.000	1.938	1.188	0.234	-6°	-10°	0.031	WN**33...	2.21

Torque: Recommended clamping torque: lbs·ft
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-AWLNR/L33...	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASW322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Breaker Shape	TSF	TM
Cutting conditions	B008	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SS	SM
Cutting conditions	B010	

K

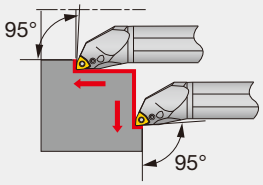
Application	Medium cutting
Grade	T515
Breaker Shape	TM
Cutting conditions	B012

Reference pages: A-AWLNR/L-Eco: Insert → B101 -

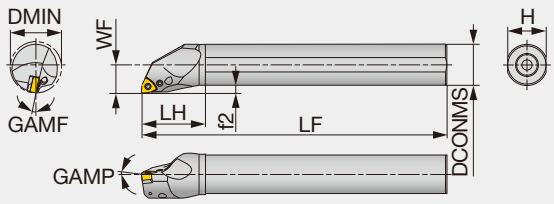
STREAMJETBAR

A-PWLNR/L

Lever-lock boring bar, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16M-PWLNR/L06-D200	Steel	20	16	11	150	32	15	3	-8°	-17°	0.8	WN**0604...	1.7
A20Q-PWLNR/L06-D250	Steel	25	20	13	180	36	18	3	-6°	-14°	0.8	WN**0604...	1.7
A25R-PWLNR/L06-D320	Steel	32	25	17	200	45	23	4.5	-6°	-12°	0.8	WN**0604...	2.7
A32S-PWLNR/L06-D400	Steel	40	32	22	250	50	30	6	-6°	-11°	0.8	WN**0604...	2.7
A25R-PWLNR/L08-D320	Steel	32	25	17	200	45	23	4.5	-6°	-13°	0.8	WN**0804...	2.7
A32S-PWLNR/L08-D400	Steel	40	32	22	250	50	30	6	-6°	-11°	0.8	WN**0804...	4.8
A40T-PWLNR/L08-D500	Steel	50	40	27	300	60	37	7	-6°	-10°	0.8	WN**0804...	4.8

Torque: Recommended clamping torque: N·m **RE: Standard corner radius
Use right-hand toolholders (PWLNR**) with left-hand inserts (L); and left-hand toolholders (PWLNL**) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever	Oil supply attachment*	Screw for oil hole*
A16M-PWLNR/L06-D200	-	LCS33	-	P-2F	-	-	LCL33N	-	SSHM3-4
A20Q-PWLNR/L06-D250	-	LCS33	-	P-2F	-	-	LCL33N	EA-20	SSHM3-4
A25R-PWLNR/L06-D320	LSW312BR/L	-	LCS3B	-	P-2.5	LSP3	LCL3	EA-25	SSHM4-5
A32S-PWLNR/L06-D400	LSW312BR/L	-	LCS3	-	P-2.5	LSP3	LCL3	EA-32	SSHM4-5
A25R-PWLNR/L08-D320	-	LCS43	-	-	P-2.5	-	LCL43N	EA-25	SSHM4-5
A32S-PWLNR/L08-D400	LSW42BR/L	-	LCS4	-	P-3	LSP4	LCL4	EA-32	SSHM4-5
A40T-PWLNR/L08-D500	LSW42BR/L	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM4-5

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

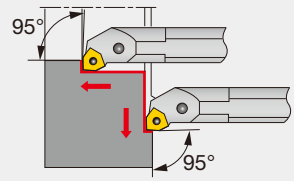
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

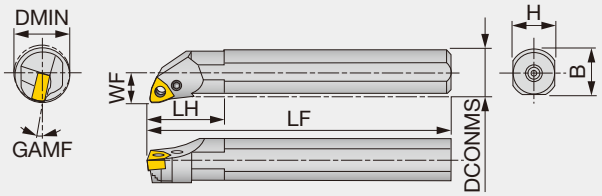
Reference pages: A-PWLNR/L: Insert → B101 -, CBN → B181

S-PWLNR/L

Lever-lock boring bar, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert
S16M-PWLNR/L06	Steel	20	16	11	150	30	15	15.5	-17°	0.8	WN**0604...
S20Q-PWLNR/L06	Steel	25	20	13	180	35	18	19	-14°	0.8	WN**0604...
S25R-PWLNR/L06	Steel	32	25	17	200	40	23	24	-12°	0.8	WN**0604...

**RE : Standard corner radius

Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench	Spring pin	Lever
S**-PWLNR/L06	-	LCS33	-	P-2F	-	-	LCL33N
S25R-PWLNR06	LSW312BR	-	LCS3B	-	P-2.5	LSP3	LCL3
S25R-PWLNL06	LSW312BL	-	LCS3B	-	P-2.5	LSP3	LCL3

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

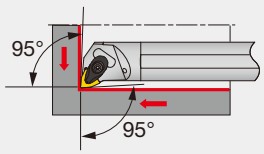
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

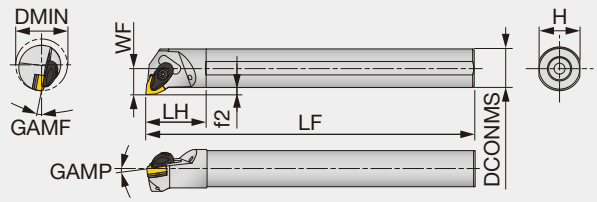
Reference pages: S-PWLNR/L: Insert → **B101 -**, CBN → **B181 -**

A-AWLNR/L

Double-clamp boring bar, for negative 80° trigon inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16-AWLNR/L3-D20	Steel	1.250	1.000	0.672	12.000	1.770	0.906	0.177	-6°	-13°	0.031	WN**33...	2.21
A20-AWLNR/L3-D25	Steel	1.560	1.250	0.859	14.000	1.960	1.180	0.236	-6°	-10°	0.031	WN**33...	2.21
A16-AWLNR/L4-D20	Steel	1.250	1.000	0.672	12.000	1.770	0.906	0.177	-6°	-13°	0.031	WN**43...	2.21
A20-AWLNR/L4-D25	Steel	1.560	1.250	0.859	14.000	1.960	1.180	0.236	-6°	-10°	0.031	WN**43...	2.21
A24-AWLNR/L4-D32	Steel	2.000	1.500	1.060	14.000	2.160	1.460	0.275	-6°	-8°	0.031	WN**43...	2.21
A32-AWLNR/L4-D40	Steel	2.500	2.000	1.370	16.000	2.550	1.850	0.393	-6°	-7°	0.031	WN**43...	2.21

Torque: Recommended clamping torque: lbs·ft
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-AWLNR/L3-D...	ACP3S	ACS-5W	BP-7	SP-2.5	ASW322	CSTB-3.5	T-15F
A**-AWLNR/L4-D...	ACP4S	ACS-5W	BP-7	SP-2.5	ASW422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

H

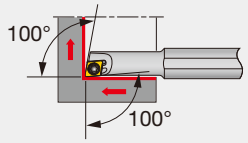
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

Reference pages: A-AWLNR/L: Insert → B101 -, CBN → B181 -

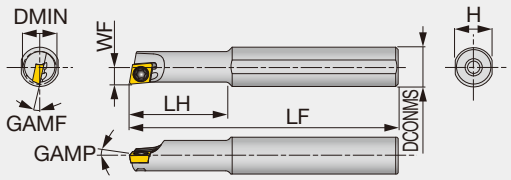
STREAMJETBAR

A/E-SEXPR/L

Screw-on boring bar, for positive 75° rhombic inserts



Cutting edge style **X**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A05-SEXPR/L04-D04	Steel	0.250	0.313	0.125	5.000	0.812	0.287	0°	-12°	0.016	EPGT52...	0.44
E05-SEXPR04-D04	Carbide	0.250	0.313	0.125	5.000	1.562	0.287	0°	-12°	0.016	EPGT52...	0.44

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
*A04F-SEXPR/L03-D045	Steel	4.5	4	2.3	80	8	3.8	0°	-15°	0.2	EP**03X1...	0.6
*A04F-SEXPR/L03-D050	Steel	5	4	2.5	80	8	3.8	0°	-13°	0.2	EP**03X1...	0.6
*A05F-SEXPR/L04-D055	Steel	5.5	5	2.75	80	9	4.8	0°	-12°	0.4	EP**0401...	0.6
*A06G-SEXPR/L04-D070	Steel	7	6	3.6	90	11	5.75	0°	-12°	0.4	EP**0401...	0.6
A08H-SEXPR/L04-D055	Steel	5.5	8	2.75	100	16	7.5	0°	-12°	0.4	EP**0401...	0.6
A08H-SEXPR/L04-D070	Steel	7	8	3.6	100	20	7.5	0°	-12°	0.4	EP**0401...	0.6
*E04G-SEXPR/L03-D045	Carbide	4.5	4	2.3	90	9	3.8	0°	-15°	0.2	EP**03X1...	0.6
*E04G-SEXPR/L03-D050	Carbide	5	4	2.5	90	9	3.8	0°	-13°	0.2	EP**03X1...	0.6
*E05G-SEXPR/L04-D055	Carbide	5.5	5	2.75	90	10	4.8	0°	-12°	0.4	EP**0401...	0.6
*E06H-SEXPR/L04-D070	Carbide	7	6	3.6	100	12	5.75	0°	-12°	0.4	EP**0401...	0.6
E08K-SEXPR/L04-D055	Carbide	5.5	8	2.75	125	28	7.5	0°	-12°	0.4	EP**0401...	0.6
E08K-SEXPR/L04-D070	Carbide	7	8	3.6	125	40	7.5	0°	-12°	0.4	EP**0401...	0.6

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Use right-hand toolholders (SEXPR**) with left-hand inserts (L); and left-hand toolholders (SEXPL**) with right-hand inserts (R).

SPARE PARTS


Designation	Clamping screw	Wrench
A**-SEXPR/L03-D...	CSTA-1.6	T-6F
A**-SEXPR/L04-D...	CSTB-2	T-6F
E**-SEXPR/L03-D...	CSTA-1.6	T-6F
E**-SEXPR/L04-D...	CSTB-2	T-6F

INSERT SELECTION

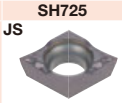
P

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B020

M

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B022

K

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B024

N

Application	Precision finishing	Finishing
Grade	DX140	GH110
Breaker Shape	T-DIA 	W08 
Cutting conditions	B026	

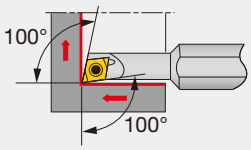
H

Application	Precision finishing
Grade	BX310
Breaker Shape	T-CBN 
Cutting conditions	B030

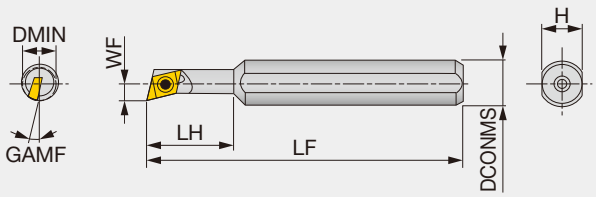
Reference pages: A/E-SEXPR/L: Insert → B129 -, CBN → B186, PCD → B197

JS-SEXPR/L

Screw-on boring bar, for positive 75° rhombic inserts



Cutting edge style **X**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMF	RE**	Insert	Torque
JS08H-SEXPR045	Steel	5.5	8	2.7	100	16	7	12°	0.4	EP**0401...	0.6
JS08H-SEXPR047	Steel	7	8	3.6	100	20	7	12°	0.4	EP**0401...	0.6

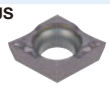
SPARE PARTS

Designation	Clamping screw	Wrench
JS08H-SEXPR04...	CSTB-2	T-6F

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Use right-hand toolholders (SEXPR**) with left-hand inserts (L); and left-hand toolholders (SEXPL**) with right-hand inserts (R).

INSERT SELECTION

P

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B020

M

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B022

K

Application	Finishing
Grade	SH725
Breaker Shape	JS 
Cutting conditions	B024

N

Application	Precision finishing	Finishing
Grade	DX140	GH110
Breaker Shape	T-DIA 	W08 
Cutting conditions	B026	

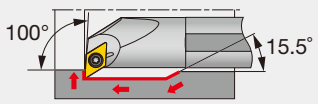
H

Application	Precision finishing
Grade	BX310
Breaker Shape	T-CBN 
Cutting conditions	B030

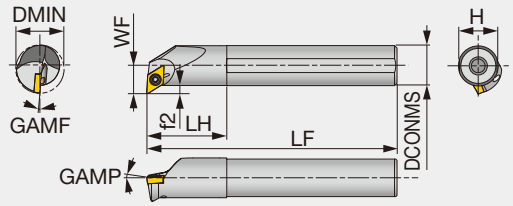
Reference pages: JS-SEXPR/L: Insert → B129 -, CBN → B186, PCD → B197

A/E-SDXXR/L

Screw-on boring bar, for DXGU inserts



Cutting edge style **X**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A06-SDXXR/L2-D10	Steel	0.625	0.375	0.406	5.000	0.750	0.350	0.213	-14°	-12°	0.016	DXGU0703**L/R...	0.66
A08-SDXXR/L2-D11	Steel	0.688	0.500	0.406	5.000	1.000	0.475	0.151	-13.5°	-11°	0.016	DXGU0703**L/R...	0.66
A10-SDXXR/L2-D14	Steel	0.875	0.625	0.531	7.000	1.250	0.600	0.213	-13°	-9°	0.016	DXGU0703**L/R...	0.66
A12-SDXXR/L2-D16	Steel	1.000	0.750	0.593	7.000	1.438	0.725	0.213	-13°	-8°	0.016	DXGU0703**L/R...	0.66
A16-SDXXR/L2-D20	Steel	1.250	1.000	0.625	7.000	1.438	0.938	0.120	-13°	-8°	0.016	DXGU0703**L/R...	0.66
E06-SDXXR/L2-D10	Carbide	0.625	0.375	0.406	5.000	1.000	0.350	0.213	-14°	-12°	0.016	DXGU0703**L/R...	0.66
E08-SDXXR/L2-D11	Carbide	0.688	0.500	0.406	5.000	1.063	0.475	0.151	-13.5°	-11°	0.016	DXGU0703**L/R...	0.66
E10-SDXXR/L2-D14	Carbide	0.875	0.625	0.531	7.000	1.250	0.600	0.213	-13°	-9°	0.016	DXGU0703**L/R...	0.66
E12-SDXXR/L2-D16	Carbide	1.000	0.750	0.593	7.000	1.438	0.725	0.213	-13°	-8°	0.016	DXGU0703**L/R...	0.66
E16-SDXXR/L2-D20	Carbide	1.250	1.000	0.625	10.000	1.812	0.938	0.120	-13°	-8°	0.016	DXGU0703**L/R...	0.66

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A10K-SDXXR/L07-D130	Steel	13	10	7.6	125	20	9	2.6	-14°	-16°	0.4	DXGU0703**L/R...	0.9
A12M-SDXXR/L07-D160	Steel	16	12	8.6	150	24	11	2.6	-14°	-14°	0.4	DXGU0703**L/R...	0.9
A16Q-SDXXR/L07-D200	Steel	20	16	10.6	180	32	15	2.6	-13°	-13°	0.4	DXGU0703**L/R...	0.9
A20R-SDXXR/L07-D240	Steel	24	20	12.6	200	36	18	2.6	-13°	-12°	0.4	DXGU0703**L/R...	0.9
E10M-SDXXR/L07-D130	Carbide	13	10	7.6	150	25	9	2.6	-14°	-16°	0.4	DXGU0703**L/R...	0.9
E12Q-SDXXR/L07-D160	Carbide	16	12	8.6	180	27	11	2.6	-14°	-14°	0.4	DXGU0703**L/R...	0.9
E16R-SDXXR/L07-D200	Carbide	20	16	10.6	200	32	15	2.6	-13°	-13°	0.4	DXGU0703**L/R...	0.9
E20S-SDXXR/L07-D240	Carbide	24	20	12.6	250	36	18	2.6	-13°	-12°	0.4	DXGU0703**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE : Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R)

SPARE PARTS


Designation	Clamping screw	Wrench
A/E**-SDXXR/L...	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Breaker Shape	JSS	JTS
	Cutting conditions	D105	

M	Application	Finishing	Medium cutting
	Grade	SH725	AH725
	Breaker Shape	JSS	JTS
	Cutting conditions	D105	

Small CNC lathes

P	Application	Finishing	Medium cutting
	Grade	AH725	AH725
	Breaker Shape	SS	TS
	Cutting conditions	D105	

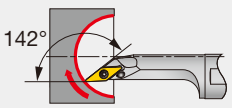
M	Application	Finishing	Medium cutting
	Grade	AH8015	AH8015
	Breaker Shape	SS	TS
	Cutting conditions	D105	

Reference pages: A/E-SDXXR/L: Insert → B127 -
Standard cutting conditions → D105

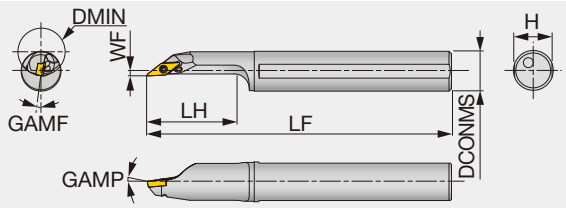
STREAMJETBAR

A-SVJBR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A10-SVJBR/L2-D16	Steel	1.000	0.625	0.156	7.000	1.250	0.600	-5°	-6°	0.016	VB**22...	0.89

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A20R-SVJBR/L11-D250	Steel	25	20	2	200	40	18	-5°	-5°	0.4	VB**1103...	1.2
A25S-SVJBR/L11-D300	Steel	30	25	3.5	250	50	23	-5°	-5°	0.4	VB**1103...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Use right-hand toolholders (SVJBR**) with left-hand inserts (L); and left-hand toolholders (SVJBL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SVJB*11-D...	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	SH725	T9215
Breaker Shape	JS	PS
Cutting conditions	B020	

M

Application	Finishing	Finishing to medium cutting
Grade	SH725	T9215
Breaker Shape	JS	PS
Cutting conditions	B022	

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

H

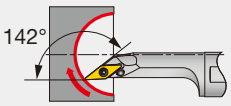
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: A-SVJBR/L: Insert → B153 -, CBN → B191

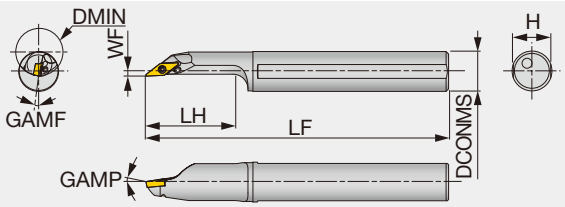
STREAMJETBAR

A-SVJCR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A10-SVJCR2-D16	Steel	1.000	0.625	0.156	7.000	1.750	0.600	-5°	-6°	0.016	VC**22..	0.89

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque*
A12M-SVJCR/L08-D160	Steel	16	12	2	150	28	11	-5°	-5°	0.4	VC**0802...	0.6
A16Q-SVJCR/L08-D200	Steel	20	16	2	180	35	15	-5°	-5°	0.4	VC**0802...	0.6

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Use right-hand toolholders (SVJCR**) with left-hand inserts (L); and left-hand toolholders (SVJCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SVJC*08-D...	CSTB-2L	T-6F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B020

M

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B022

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA (with rake)	AL
Cutting conditions	B026	

S

Application	Finishing to medium cutting
Grade	AH8005
Breaker Shape	PS
Cutting conditions	B028

H

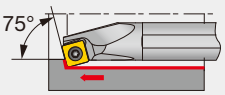
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: A-SVJCR/L: Insert → B155 -

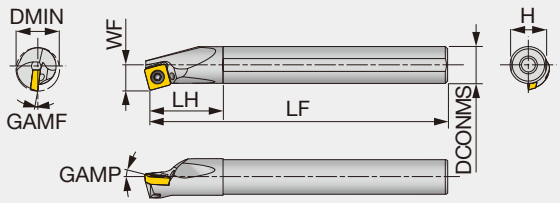
STREAMJETBAR

A-SSKPR

Screw-on boring bar, for positive square inserts



Cutting edge style **K**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A16Q-SSKPR09-D200	Steel	20	16	11	180	32	15	5°	-6°	0.8	SP**0903...	3
A20R-SSKPR09-D240	Steel	24	20	13	200	36	18	5°	-2°	0.8	SP**0903...	3
A25S-SSKPR12-D310	Steel	31	25	17	250	45	23	5°	-2°	0.8	SP**1204...	6

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Note: Use right-hand toolholders (SSKPR**) with left-hand inserts (L); and left-hand toolholders (SSKPL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SSKPR09-D2*0	CSTB-4L060	T-15F
A25S-SSKPR12-D310	CSTB-5S	T-20F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS 
Cutting conditions	B020

M

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS 
Cutting conditions	B022

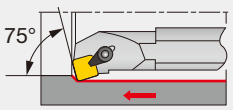
K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM 
Cutting conditions	B024

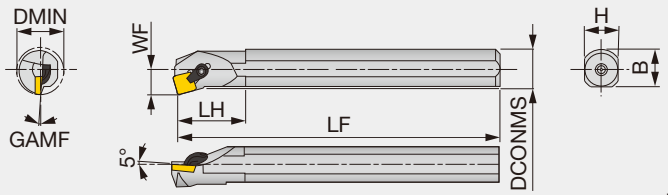
Reference pages: A-SSKPR: Insert → B136 -, CBN → B186

S-CSKPR/L

Clamp-on boring bar, for positive square inserts



Cutting edge style **K**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert
S16Q-CSKPR09	Steel	20	16	11	180	30	15	15	-4°	0.8	SP**0903...
S20R-CSKPR/L09	Steel	25	20	13	200	40	18	18.5	-2°	0.8	SP**0903...
S25S-CSKPR12	Steel	32	25	17	250	45	23	22.5	0°	0.8	SP**1203...

**RE : Standard corner radius

Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamp set	Wrench
S16Q-CSKPR09	CSG-5S	P-2.5
S20R-CSKPR/L09	CSG-5	P-2.5
S25S-CSKPR12	CSG-6	P-3

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS 
Cutting conditions	B020

M

Application	Medium cutting
Grade	T6130
Breaker Shape	PM 
Cutting conditions	B022

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM 
Cutting conditions	B024

N

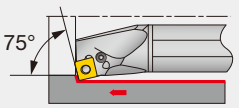
Application	Finishing
Grade	DX140
Breaker Shape	T-DIA 
Cutting conditions	B026

Reference pages: S-CSKPR/L: Insert → B136 -, CBN → B186, PCD → B197

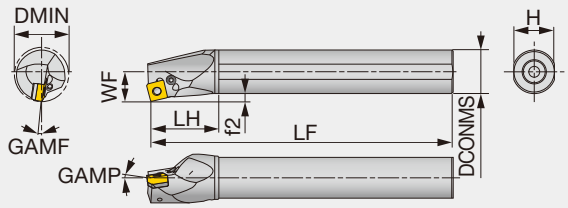
STREAMJETBAR

A-PSKNR/L

Lever-lock boring bar, for negative square inserts



Cutting edge style **K**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A32S-PSKNR/L12-D400	Steel	40	32	22	250	50	30	6	-6°	-10°	0.8	SN**1204...	4.8
A40T-PSKNR/L12-D500	Steel	50	40	27	300	60	37	7	-6°	-10°	0.8	SN**1204...	4.8
A50U-PSKNR/L12-D630	Steel	63	50	35	350	65	47	10	-6°	-8°	0.8	SN**1204...	4.8

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Use right-hand toolholders (PSKNR**) with left-hand inserts (L); and left-hand toolholders (PSKNL**) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Screw	Wrench	Spring pin	Lever	Oil supply attachment*	Screw for oil hole*
A32S-PSKNR/L12-D400	LSS42BR/L	LCS4	P-3	LSP4	LCL4	EA-32	SSHM4-5
A40T-PSKNR/L12-D500	LSS42BR/L	LCS4	P-3	LSP4	LCL4	-	SSHM6-6
A50U-PSKNR/L12-D630	LSS42BR/L	LCS4	P-3	LSP4	LCL4	-	SSHM6-6

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Breaker Shape	T-DIA	P
Cutting conditions	B014	

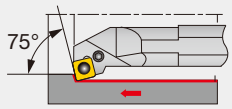
S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

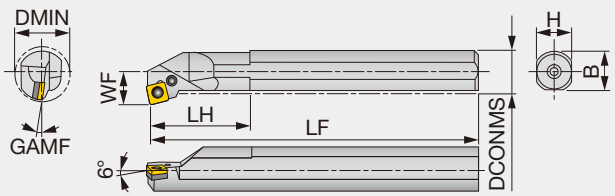
Reference pages: A-PSKNR/L: Insert → B077 -, CBN → B177, PCD → B195

S-PSKNR

Lever-lock boring bar, for negative square inserts



Cutting edge style **K**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert
S32S-PSKNR12	Steel	40	32	22	250	50	30	29.5	-10°	0.8	SN**1204...
S40T-PSKNR12	Steel	50	40	27	300	55	37	37.5	-10°	0.8	SN**1204...
S50U-PSKNR12	Steel	63	50	35	350	65	47	47.5	-8°	0.8	SN**1204...

**RE : Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

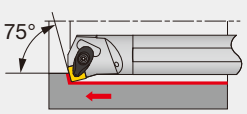
SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
S**-PSKNR12	LSS42BR	LCS4	P-3	LSP4	LCL4

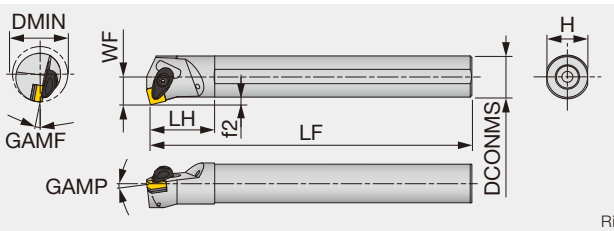
TURNING

A-ASKNR/L

Double-clamp boring bar, for negative square inserts



Cutting edge style **K**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16-ASKNR/L4-D20	Steel	1.250	1.000	0.672	12.000	1.770	0.906	0.177	-6°	-13°	0.031	SN**43...	2.21
A20-ASKNR/L4-D25	Steel	1.500	1.250	0.859	14.000	1.960	1.180	0.236	-6°	-10°	0.031	SN**43...	2.21

Torque: Recommended clamping torque: lbs·ft
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-ASKNR/L4-D...	ACP4S	ACS-5W	BP-7	SP-2.5	ASS422	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Finishing	Medium cutting
Grade	DX140	TH10
Breaker Shape	T-DIA	P
Cutting conditions	B014	

S

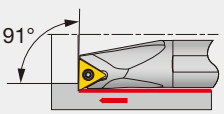
Application	Precision finishing	Finishing	Medium cutting
Grade	BX480	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

Reference pages: S-PSKNR, A-ASKNR/L:
Insert → B077 -, CBN → B177, PCD → B195

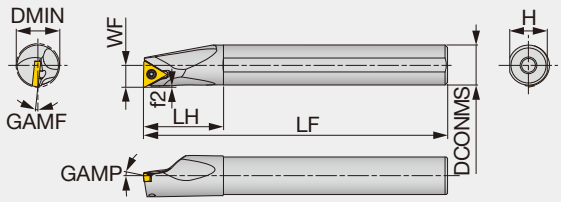
STREAMJETBAR

A/E-STFCR/L

Screw-on boring bar, for positive 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
E06-STFCR/L2-D08	Carbide	0.500	0.375	0.281	5.000	1.000	0.350	-	0°	-9°	0.016	TC**21.5...	0.89
E08-STFCR2-D11	Carbide	0.688	0.500	0.406	5.000	1.062	0.475	-	0°	-6°	0.016	TC**21.5...	0.89
E10-STFCR2-D14	Carbide	0.875	0.625	0.531	7.000	1.250	0.600	-	0°	-5°	0.016	TC**21.5...	0.89
E12-STFCR3-D16	Carbide	1.000	0.750	0.594	7.000	1.438	0.750	-	0°	-5°	0.032	TC**32.5...	2.2

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A10K-STFCR/L1103-D120	Steel	12	10	6.5	125	20	9	0.6	0°	-13°	0.4	TC**1103...	1.2
A12M-STFCR/L1103-D140	Steel	14	12	7	150	24	11	0.5	0°	-10°	0.4	TC**1103...	1.2
A16Q-STFCR/L1103-D180	Steel	18	16	9	180	32	15	0.5	0°	-7°	0.4	TC**1103...	1.2
E10M-STFCR/L1103-D120	Carbide	12	10	6.5	150	25	9	0.7	0°	-13°	0.4	TC**1103...	1.2
E12Q-STFCR/L1103-D140	Carbide	14	12	7	180	27	11	0.5	0°	-10°	0.4	TC**1103...	1.2
E16R-STFCR/L1103-D180	Carbide	18	16	9	200	32	15	0.5	0°	-7°	0.4	TC**1103...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Use right-hand toolholders (STFCR**) with left-hand inserts (L); and left-hand toolholders (STFCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
E**-STFCR/L2-D...	CSTB-2.5	T-8F
E12-STFCR3-D16	CSTB-4S	T15-F
A**-STFCR/L1103-D...	CSTB-2.5	T-8F
E**-STFCR/L1103-D...	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B020			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

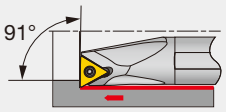
Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA	with rake AL
Cutting conditions	B026	

Reference pages: A/E-STFCR/L: Insert → B139 -, PCD → B196

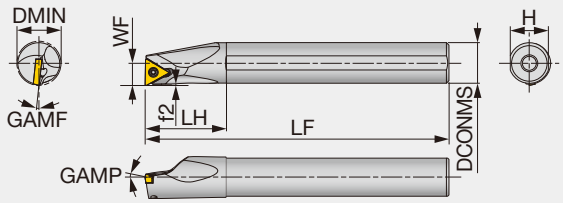
STREAMJETBAR

A/E-STFPR/L

Screw-on boring bar, for positive 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
E06-STFPR2-D08	Carbide	0.500	0.375	0.281	5.000	1.000	0.350	-	0°	-5°	0.016	TP**21.5...	0.89
E08-STFPR2-D11	Carbide	0.688	0.500	0.406	5.000	1.062	0.475	-	0°	-3°	0.016	TP**21.5...	0.89
E10-STFPR2-D14	Carbide	0.875	0.625	0.531	7.000	1.250	0.605	-	0°	-2°	0.016	TP**21.5...	0.89
E12-STFPR/L3-D16	Carbide	1.000	0.750	0.594	7.000	1.438	0.725	-	0°	-2°	0.032	TP**32.5...	2.2

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A08H-STFPR/L09-D100	Steel	10	8	5.5	100	16	7.5	0.7	5°	-8°	0.4	TP**0902...	0.9
A10K-STFPR/L1102-D120	Steel	12	10	6.5	125	20	9	0.7	5°	-6°	0.4	TP**1102...	1.2
A12M-STFPR/L1102-D140	Steel	14	12	7.0	150	24	11	0.6	5°	-4°	0.4	TP**1102...	1.2
A16Q-STFPR/L13-D180	Steel	18	16	9	180	32	15	0.7	5°	-2°	0.4	TP**1303...	1.4
A20R-STFPR13-D220	Steel	22	20	11	200	36	18	0.8	5°	-2°	0.4	TP**1303...	1.4
A25S-STFPR16-D270	Steel	27	25	13.5	250	45	23	0.6	5°	-1°	0.4	TP**16T3...	3
E08K-STFPR/L09-D100	Carbide	10	8	5.5	125	22	7.5	0.7	5°	-8°	0.4	TP**0902...	0.9
E10M-STFPR/L1102-D120	Carbide	12	10	6.5	150	25	9	0.7	5°	-6°	0.4	TP**1102...	1.2
E12Q-STFPR/L1102-D140	Carbide	14	12	7	180	27	11	0.6	5°	-4°	0.4	TP**1102...	1.2
E16R-STFPR13-D180	Carbide	18	16	9	200	32	15	0.7	5°	-2°	0.4	TP**1303...	1.4
E20S-STFPR13-D220	Carbide	22	20	11	250	36	18	0.8	5°	-2°	0.4	TP**1303...	1.4

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE : Standard corner radius

Use right-hand toolholders (STFPR**) with left-hand inserts (L); and left-hand toolholders (STFPL**) with right-hand inserts (R).

(1) TPGH, TPGM, and TPGA inserts cannot be used.

INCH SPARE PARTS

Designation	Clamping screw	Wrench
E06-STFPR2-D08	CSTB-2.5B	T-8F
E08/10-STFPR2-D1...	CSTB-2.5	T-8F
E12-STFPR/L3-D16	CSTB-4S	T15-F

METRIC SPARE PARTS

Designation	Clamping screw	Wrench
A08H-STFPR/L09-D100	CSTB-2.2S	T-7F
A10K-STFPR/L1102-D120	CSTB-2.5B	T-8F
A12M-STFPR/L1102-D140	CSTB-2.5	T-8F
A16Q-STFPR/L13-D180	CSTB-3S	T-9F
A20R-STFPR13-D220	CSTB-3	T-9F
A25S-STFPR16-D270	CSTB-4M	T-15F
E08K-STFPR/L09-D100	CSTB-2.2S	T-7F
E10M-STFPR/L1102-D120	CSTB-2.5B	T-8F
E12Q-STFPR/L1102-D140	CSTB-2.5	T-8F
E16R-STFPR13-D180	CSTB-3S	T-9F
E20S-STFPR13-D220	CSTB-3	T-9F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	T9215	T9215
Breaker Shape	JS	PS	PM
Cutting conditions	B020		

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	T9215	T9215
Breaker Shape	JS	PS	PM
Cutting conditions	B022		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing
Grade	DX120
Breaker Shape	T-DIA (with rake)
Cutting conditions	B026

S

Application	Precision finishing
Grade	BX470
Breaker Shape	T-CBN
Cutting conditions	B028

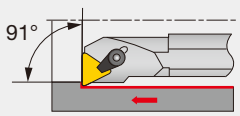
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

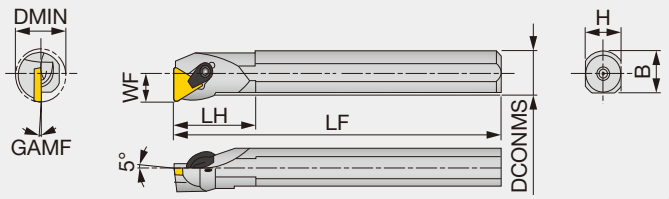
Reference pages: A/E-STFPR/L: Insert → B144 -, CBN → B188 -, PCD → B198

S/C-CTFPR/L

Clamp-on boring bar, for positive 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert
S12M-CTFPR/L11	Steel	16	12	9	150	25	11	11.5	-6°	0.4	TP**1103...
S16Q-CTFPR/L11	Steel	20	16	11	180	30	15	15	-4°	0.4	TP**1103...
S20R-CTFPR/L16	Steel	25	20	13	200	40	18	18.5	-2°	0.8	TP**1603...
S25S-CTFPR/L16	Steel	32	25	17	250	45	23	22.5	0°	0.8	TP**1603...
S32T-CTFPR/L16	Steel	40	32	22	300	50	30	29.5	0°	0.8	TP**1603...
C12Q-CTFPR/L11	Carbide	16	12	9	180	-	11	-	-6°	0.4	TP**1103...
C16R-CTFPR/L11	Carbide	20	16	11	200	-	15	-	-4°	0.4	TP**1103...

**RE : Standard corner radius

*The hole specification of applicable inserts conforms to ISO standard.

Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamp set 1	Clamp set 2	Wrench	Shim	Shim screw
S12M-CTFPR/L11	CSW-00	-	P-2.5	-	-
S16Q-CTFPR/L11	-	CSG-5S	P-2.5	-	-
S20R-CTFPR/L16	-	CSG-6S	P-3	-	-
S25S-CTFPR/L16	-	CSG-6	P-3	-	-
S32T-CTFPR/L16	-	CSG-6	P-3	PAT-32	M3X0.5X6
C12Q-CTFPR/L11	CSW-00	-	P-2.5	-	-
C16R-CTFPR/L11	-	CSG-5S	P-2.5	-	-

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	NS9530	T9215	T9215
Breaker Shape	01	PSS	PS	PM
Cutting conditions	B020			

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Breaker Shape	PSF	PSS	PM
Cutting conditions	B022		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Finishing
Grade	DX140
Breaker Shape	T-DIA
Cutting conditions	B026

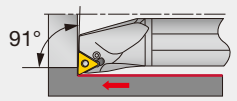
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

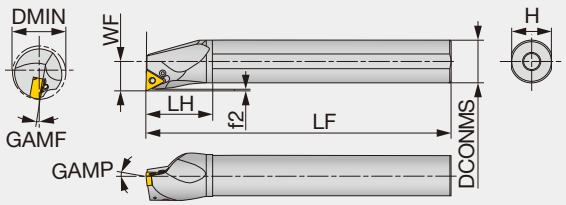
Reference pages: S/C-CTFPR/L: Insert → B144 -, CBN → B188 -, PCD → B198

A-PTFNR/L-Eco

Lever-lock boring bar, for negative triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A25R-PTFNR/L1104-D320	Steel	32	25	17	200	45	23	1.31	-6°	-12°	0.8	TN**1104...	2
A32S-PTFNR/L1104-D400	Steel	40	32	22	250	50	30	1.25	-6°	-10°	0.8	TN**1104...	2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench	Lever	Oil supply attachment*	Screw for oil hole*
A25R-PTFNR/L...	LCS23A	P-2.5	LCL23	EA-25	SSHM4-5
A32S-PTFNR/L...	LCS23A	P-2.5	LCL23	EA-32	SSHM4-5

*Optional

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Breaker Shape	TSF	TM
Cutting conditions	B008	

M

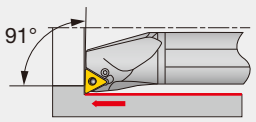
Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SS	SM
Cutting conditions	B010	

Reference pages: A-PTFNR/L-Eco: Insert → B087 -

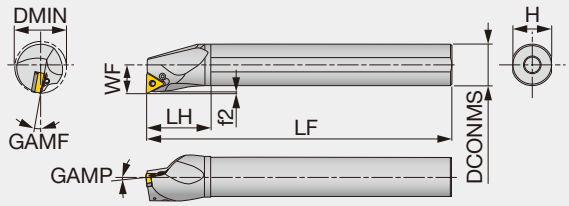
STREAMJETBAR

A-PTFNR/L

Lever-lock boring bar, for negative 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A25R-PTFNR/L16-D320	Steel	32	25	17	200	45	23	1.2	-6°	-12°	0.8	TN**1604...	2.7
A32S-PTFNR/L16-D400	Steel	40	32	22	250	50	30	1.1	-6°	-10°	0.8	TN**1604...	2.7
A40T-PTFNR/L16-D500	Steel	50	40	27	300	60	37	1.1	-6°	-10°	0.8	TN**1604...	2.7
A50U-PTFNR/L16-D630	Steel	63	50	35	350	65	47	1.1	-6°	-8°	0.8	TN**1604...	2.7

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Note: Use right-hand toolholders (PTFNR**) with left-hand inserts (L); and left-hand toolholders (PTFNL**) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever	Oil supply attachment*	Screw for oil hole*
A25R-PTFNR/L16-D320	ELST317BR/L	LCS3	P-2.5	LSP3	LCL33	EA-25	SSHM4-5
A32S-PTFNR/L16-D400	LST317BR/L	LCS3	P-2.5	LSP3	LCL3	EA-32	SSHM4-5
A40T-PTFNR/L16-D500	LST317BR/L	LCS3	P-2.5	LSP3	LCL3	-	SSHM6-6
A50U-PTFNR/L16-D630	LST317BR/L	LCS3	P-2.5	LSP3	LCL3	-	SSHM6-6

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

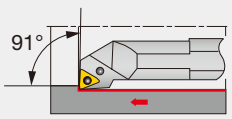
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

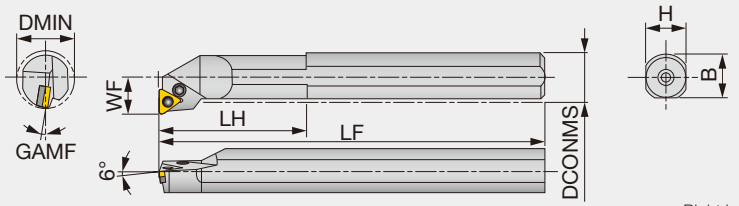
Reference pages: A-PTFNR/L: Insert → B086 -, CBN → B178 -, PCD → B194 -

S-PTFNR/L

Lever-lock boring bar, for negative 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert	Torque
S32S-PTFNR/L16	Steel	40	32	22	250	50	30	29.5	-10°	0.8	TN**1604...	2.7
S40T-PTFNR/L16	Steel	50	40	27	300	55	37	37.5	-10°	0.8	TN**1604...	2.7
S50U-PTFNR16	Steel	63	50	35	350	65	47	47.5	-8°	0.8	TN**1604...	2.7

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
S32S-PTFNR16	LST317BR	LCS3	P-2.5	LSP3	LCL3
S32S-PTFNL16	LST317BL	LCS3	P-2.5	LSP3	LCL3
S40T-PTFNR16	LST317BR	LCS3	P-2.5	LSP3	LCL3
S40T-PTFNL16	LST317BL	LCS3	P-2.5	LSP3	LCL3
S50U-PTFNR16	LST317BR	LCS3	P-2.5	LSP3	LCL3

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

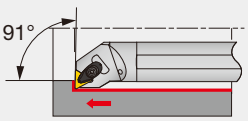
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

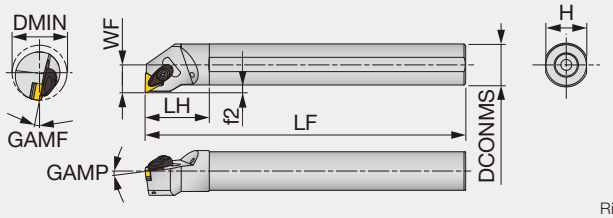
Reference pages: S-PTFNR/L: Insert → B086 -, CBN → B178 -, PCD → B194 -

A-ATFNR/L

Double-clamp boring bar, for negative 60° triangular inserts



Cutting edge style **F**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16-ATFNR/L3-D20	Steel	1.250	1.000	0.672	12.000	1.770	0.906	0.177	-6°	-13°	0.031	TN**33...	2.21
A20-ATFNR/L3-D25	Steel	1.560	1.250	0.859	14.000	1.960	1.180	0.236	-6°	-10°	0.031	TN**33...	2.21

Torque: Recommended clamping torque: lbs·ft
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-ATFNR/L3-D...	ACP3S	ACS-5W	BP-7	SP-2.5	AST322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

H

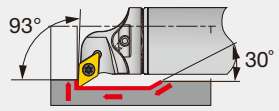
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

Reference pages: A-ATFNR/L: Insert → B086 -, CBN → B178 -, PCD → B194 -

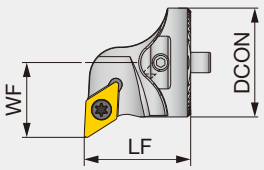
BOREMEISTER

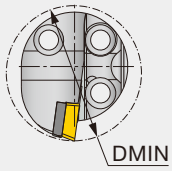
S-SDUCR/L-H

Screw-on exchangeable boring head, for positive 55° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Inch	DMIN	DCON	WF	LF	Shank size	Insert
S16-SDUCR/L07-H	0.787	0.630	0.433	0.787	D/G.625	DC**0702...
S20-SDUCR/L11-H	0.984	0.787	0.512	0.787	D/G.750	DC**11T3...
S25-SDUCR/L11-H	1.260	0.984	0.669	0.787	D1.00	DC**11T3...
S32-SDUCR/L11T-H	1.575	1.260	0.866	1.260	D1.25	DC**11T3...
S40-SDUCR/L11T-H	1.969	1.575	1.063	1.260	D1.50, D2.00, D2.50	DC**11T3...

When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (SDUCL** type), and the left hand insert (L) is used for the right hand toolholders (SDUCR** type).

SPARE PARTS

Designation	Clamping screw	Wrench	Shim	Shim screw
S16-SDUCR/L07-H	SR14-548	T-7/5	-	-
S20-SDUCR/L11-H	SR16-236P	T-15/5	-	-
S25-SDUCR/L11-H	SR16-236P	T-15/5	-	-
S32-SDUCR/L11T-H	SR16-236P	T-15/5	TDC3-1P	SRTC-3P
S40-SDUCR/L11T-H	SR16-236P	T-15/5	TDC3-1P	SRTC-3P

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Breaker Shape	PSS	PS	PM
Cutting conditions	B020		

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Breaker Shape	W**	PSF	PSS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B026		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B028	

H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: S-SDUCR/L-H: Insert → B121 -, CBN → B184, PCD → B196 -

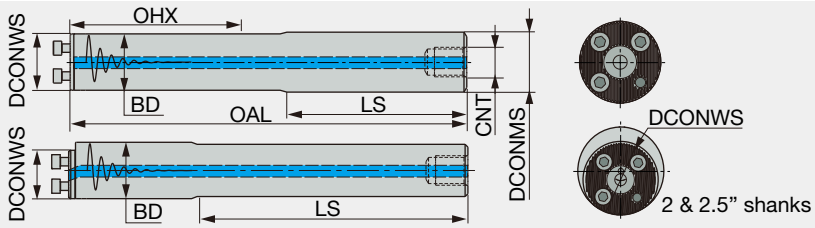
BOREMEISTER

Anti-vibration bar

Anti-vibration bar for exchangeable turning heads, with through coolant

Fig. 1

Fig. 2



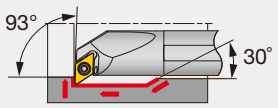
Inch	Material	DCONWS	DCONMS	BD	OAL	LS	OHX	CNT	Fig.
D.625-L6.14-7D-C	Steel	0.630	0.625	0.630	6.140	3.600	3.500	G1/8	1
G.625-L8.03-10D-E	Carbide	0.630	0.625	0.630	8.030	5.220	5.500	-	1
D.750-L7.87-7D-C	Steel	0.787	0.750	0.787	7.870	4.940	4.400	G1/4	1
G.750-L10.24-10D-E	Carbide	0.787	0.750	0.787	10.240	6.770	7.000	-	1
D1.00-L10.2-7D-C	Steel	0.984	1.000	0.984	10.200	6.830	6.200	G1/4	1
D1.00-L13.21-10D-C	Steel	0.984	1.000	0.984	13.210	8.650	9.200	G1/4	1
D1.25-L12.48-7D-C	Steel	1.260	1.250	1.260	12.480	7.370	7.500	G3/8	1
D1.25-L16.24-10D-C	Steel	1.260	1.250	1.260	16.240	9.670	11.200	G3/8	1
D1.50-L15.26-7D-C	Steel	1.575	1.500	1.575	15.260	9.130	9.200	G1/2	1
D1.50-L19.8-10D-C	Steel	1.575	1.500	1.575	19.800	13.350	13.700	G1/2	1
D2.00-L20.74-7D-C	Steel	1.575	2.000	2.000	20.740	-	12.700	G1/2	2
D2.00-L26.73-10D-C	Steel	1.575	2.000	2.000	26.730	-	18.700	G1/2	2
D2.50-L26.2-7D-C	Steel	1.575	2.500	2.500	26.200	-	16.200	G3/4	2
D2.50-L33.72-10D-C	Steel	1.575	2.500	2.500	33.720	-	23.700	G3/4	2

SPARE PARTS

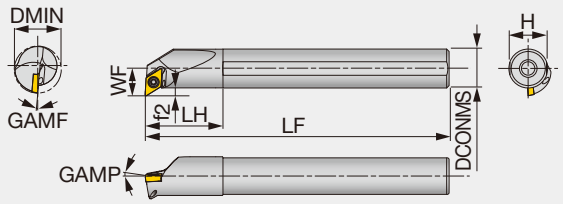
Designation	Clamping screw	Wrench
D.625..., G.625...	SRM3X10DIN912	HW2.5
D.750..., G.750...	SRM3.5X10DIN912	HW2.5
D1.00...	SRM4X12DIN912	HW3.0
D1.25...	SRM5X12DIN912	HW4.0
D1.50..., D2.00... D2.50...	SRM6X16DIN912-12.9	HW5.0

STREAMJETBAR
A/E-SDUCR/L

Screw-on boring bar, for positive 55° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A06-SDUCR2-D10	Steel	0.625	0.375	0.406	5.000	0.750	0.350	0.218	0°	-8°	0.016	DC**21.5...	0.89
A08-SDUCR/L2-D11	Steel	0.688	0.500	0.406	5.000	1.000	0.475	0.156	0°	-6°	0.016	DC**21.5...	0.89
A10-SDUCR2-D14	Steel	0.875	0.625	0.531	7.000	1.250	0.600	0.218	0°	-4°	0.016	DC**21.5...	0.89
A12-SDUCR/L3-D16	Steel	1.000	0.750	0.594	10.000	1.500	0.700	0.218	0°	-2°	0.032	DC**32.5...	2.2
E06-SDUCR2-D10	Carbide	0.625	0.375	0.406	5.000	1.000	0.375	0.218	0°	-7°	0.016	DC**21.5...	0.89
E08-SDUCR2-D11	Carbide	0.688	0.500	0.406	5.000	1.062	0.475	0.156	0°	-6°	0.016	DC**21.5...	0.89
E10-SDUCR2-D14	Carbide	0.875	0.625	0.531	7.000	1.250	0.600	0.218	0°	-4°	0.016	DC**21.5...	0.89
E12-SDUCR/L3-D16	Carbide	1.000	0.750	0.594	7.000	1.438	0.750	0.218	0°	-5°	0.032	DC**32.5...	2.2

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A10K-SDUCR/L07-D130	Steel	13	10	7	125	20	9	2	0°	-10°	0.4	DC**0702...	1.2
A12M-SDUCR/L07-D160	Steel	16	12	9.3	150	24	11	3.3	0°	-6°	0.4	DC**0702...	1.2
A16Q-SDUCR/L07-D200	Steel	20	16	11.3	180	32	15	3.3	0°	-5°	0.4	DC**0702...	1.2
A20R-SDUCR/L11-D270	Steel	27	20	16.1	200	36	18	6.1	0°	-5°	0.8	DC**11T3...	3
A25S-SDUCR/L11-D320	Steel	32	25	18.6	250	45	23	6.1	0°	-4°	0.8	DC**11T3...	3
E10H-SDUCR07-D130	Carbide	13	10	7	100	25	9	1.9	5°	-3.5°	0.4	DC**0702...	1.2
E10M-SDUCR/L07-D130	Carbide	13	10	7	150	25	9	2	0°	-10°	0.4	DC**0702...	1.2
E12J-SDUCR07-D160	Carbide	16	12	9.3	110	27	11	3.2	0°	-6°	0.4	DC**0702...	1.2
E12Q-SDUCR/L07-D160	Carbide	16	12	9.3	180	27	11	3.3	0°	-6°	0.4	DC**0702...	1.2
E16L-SDUCR07-D200	Carbide	20	16	11.3	130	32	15	3.2	0°	-5°	0.4	DC**0702...	1.2
E16R-SDUCR/L07-D200	Carbide	20	16	11.3	200	32	15	3.3	0°	-5°	0.4	DC**0702...	1.2
E20S-SDUCR11-D270	Carbide	27	20	16.1	250	36	18	6.1	0°	-5°	0.8	DC**11T3...	3

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE : Standard corner radius

Use right-hand toolholders (SDUCR**) with left-hand inserts (L); and left-hand toolholders (SDUCL**) with right-hand inserts (R).

INCH SPARE PARTS

Designation	Clamping screw	Wrench
A/E06-SDUCR2-D10, A/E10-SDUCR2-D14	CSTB-2.5	T-8F
A08-SDUCR/L2-D11 E08-SDUCR2-D11	CSTB-2.5B	T-8F
A12-SDUCR/L3-D16	CSTB-3.5	T-15F
E12-SDUCR/L3-D16	CSTB-4S	T15-F

METRIC SPARE PARTS

Designation	Clamping screw	Wrench
A1**-SDUCR/L07-D1*0	CSTB-2.5S	T-8F
A16Q-SDUCR/L07-D200	CSTB-2.5	T-8F
A2**-SDUCR/L11-D**0	CSTB-4S	T-15F
E1**-SDUCR/L07-D1*0	CSTB-2.5S	T-8F
E16*-SDUCR/L07-D200	CSTB-2.5	T-8F
E20S-SDUCR11-D270	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B020			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA with rake	AL
Cutting conditions	B026	

S

Application	Precision finishing	Finishing to medium cutting
Grade	BX470	AH8005
Breaker Shape	T-CBN	PS
Cutting conditions	B028	

H

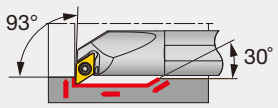
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: A/E-SDUCR/L: Insert → B121 -, CBN → B184, PCD → B196 -

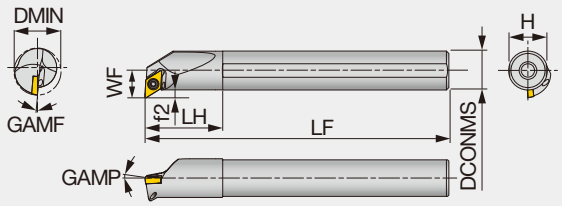
STREAMJETBAR

A/E-SDUPR/L

Screw-on boring bar, for positive 55° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE***	Insert	Torque
A12M-SDUPR07-D150-P	Special alloy steel*	15	12	8.3	150	24	11	2.3	5°	0°	0.4	DPMT0702...	1.2
A12M-SDUPL07-D150-P	Special alloy steel*	15	12	8.3	150	24	11	2.3	5°	0°	0.4	DPMT0702...	1.2
A12M-SDUPR07-D180-P	Special alloy steel*	18	12	10.3	150	24	11	4.3	5°	0°	0.4	DPMT0702...	1.2
A12M-SDUPL07-D180-P	Special alloy steel*	18	12	10.3	150	24	11	4.3	5°	0°	0.4	DPMT0702...	1.2
A16Q-SDUPR07-D220-P	Special alloy steel*	22	16	12.3	180	32	15	4.3	5°	0°	0.4	DPMT0702...	1.2
A16Q-SDUPL07-D220-P	Special alloy steel*	22	16	12.3	180	32	15	4.3	5°	0°	0.4	DPMT0702...	1.2
E12Q-SDUPR07-D150	Carbide	15	12	8.3	180	27	11	2.3	5°	0°	0.4	DPMT0702...	1.2
E12Q-SDUPL07-D150	Carbide	15	12	8.3	180	27	11	2.3	5°	0°	0.4	DPMT0702...	1.2
E12Q-SDUPR07-D180	Carbide	18	12	10.3	180	27	11	4.3	5°	0°	0.4	DPMT0702...	1.2
E12Q-SDUPL07-D180	Carbide	18	12	10.3	180	27	11	4.3	5°	0°	0.4	DPMT0702...	1.2
E16R-SDUPR07-D220	Carbide	22	16	12.3	200	32	15	4.3	5°	0°	0.4	DPMT0702...	1.2
E16R-SDUPL07-D220	Carbide	22	16	12.3	200	32	15	4.3	5°	0°	0.4	DPMT0702...	1.2

*Special alloy steel: Exclusively selected material is used to reduce chattering.
Torque: Recommended clamping torque: N·m
***RE : Standard corner radius
Use right-hand toolholders (SCLPR**) with left-hand inserts (L); and left-hand toolholders (SCLPL**) with right-hand inserts (R).

SPARE PARTS


Designation	Clamping screw	Wrench
A**-SDUPR/L07-D**0-P	CSTB-2.5S	T-8F
E**-SDUPR/L07-D**0	CSTB-2.5S	T-8F

INSERT SELECTION

P

Application	Finishing to medium cutting	
Grade	T9225	NS9530
Breaker Shape	PS 	PS 
Cutting conditions	B020	

S

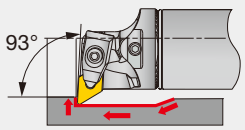
Application	Finishing to medium cutting
Grade	AH8015
Breaker Shape	PS 
Cutting conditions	B028

Reference pages: A/E-SDUPR/L: Insert → B127

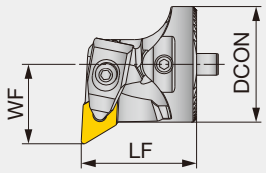
BOREMEISTER

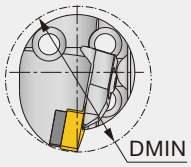
S-DDUNR/L-H

Double-clamp exchangeable boring head, for negative 55° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Inch	DMIN	DCON	WF	LF	Shank size	Insert
S32-DDUNR/L11T-H	1.575	1.260	0.866	1.260	D1.25	DN**33...
S40-DDUNR/L15T-H	1.968	1.575	1.063	1.496	D1.50, D2.00, D2.50	DN**43/44...

When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (DDUNL** type), and the left hand insert (L) is used for the right hand toolholders (DDUNR** type).

SPARE PARTS

Designation	Shim	Shim screw	Clamp	Clamping screw	Spring	Wrench
S32-DDUNR/L11T-H	RDT3-2	SR40085I	LCGR-3	SRRC3	KSP3	HW2.5
S40-DDUNR/L15T-H	RDT433	SR14-506	DLM4	DLS4	DSP4	HW3.0
S40-DDUNR/L15T-H	RDT443	SR14-506	DLM4	DLS4	DSP4	HW3.0

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

Reference pages: S-DDUNR/L-H: Insert → B067 -, CBN → B174 -, PCD → B194 -

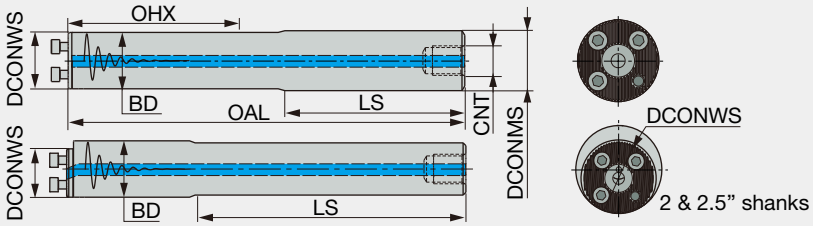
BOREMEISTER

Anti-vibration bar

Anti-vibration bar for exchangeable turning heads, with through coolant

Fig. 1

Fig. 2



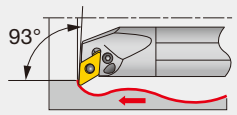
Inch	Material	DCONWS	DCONMS	BD	OAL	LS	OHX	CNT	Fig.
D.625-L6.14-7D-C	Steel	0.630	0.625	0.630	6.140	3.600	3.500	G1/8	1
G.625-L8.03-10D-E	Carbide	0.630	0.625	0.630	8.030	5.220	5.500	-	1
D.750-L7.87-7D-C	Steel	0.787	0.750	0.787	7.870	4.940	4.400	G1/4	1
G.750-L10.24-10D-E	Carbide	0.787	0.750	0.787	10.240	6.770	7.000	-	1
D1.00-L10.2-7D-C	Steel	0.984	1.000	0.984	10.200	6.830	6.200	G1/4	1
D1.00-L13.21-10D-C	Steel	0.984	1.000	0.984	13.210	8.650	9.200	G1/4	1
D1.25-L12.48-7D-C	Steel	1.260	1.250	1.260	12.480	7.370	7.500	G3/8	1
D1.25-L16.24-10D-C	Steel	1.260	1.250	1.260	16.240	9.670	11.200	G3/8	1
D1.50-L15.26-7D-C	Steel	1.575	1.500	1.575	15.260	9.130	9.200	G1/2	1
D1.50-L19.8-10D-C	Steel	1.575	1.500	1.575	19.800	13.350	13.700	G1/2	1
D2.00-L20.74-7D-C	Steel	1.575	2.000	2.000	20.740	-	12.700	G1/2	2
D2.00-L26.73-10D-C	Steel	1.575	2.000	2.000	26.730	-	18.700	G1/2	2
D2.50-L26.2-7D-C	Steel	1.575	2.500	2.500	26.200	-	16.200	G3/4	2
D2.50-L33.72-10D-C	Steel	1.575	2.500	2.500	33.720	-	23.700	G3/4	2

SPARE PARTS

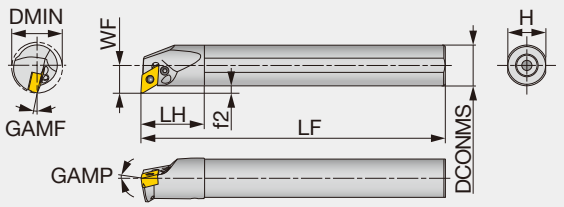
Designation	Clamping screw	Wrench
D.625..., G.625...	SRM3X10DIN912	HW2.5
D.750..., G.750...	SRM3.5X10DIN912	HW2.5
D1.00...	SRM4X12DIN912	HW3.0
D1.25...	SRM5X12DIN912	HW4.0
D1.50..., D2.00... D2.50...	SRM6X16DIN912-12.9	HW5.0

A-PDUNR/L-Eco

Lever-lock boring bar, for negative 55° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A20Q-PDUNR/L1104-D250	Steel	25	20	13	180	36	18	3	-6°	-14°	0.8	DN**1104...	1.7

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Use right-hand toolholders (PDUNR**) with left-hand inserts (L); and left-hand toolholders (PDUNL**) with right-hand inserts (R).

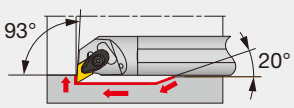
SPARE PARTS

Designation	Clamping screw	Wrench	Lever	Oil supply attachment*	Screw for oil hole*
A20Q-PDUNR/L1104-D250	LCS22A	P-2F	LCL33NL	EA-20	SSHM2.5-3

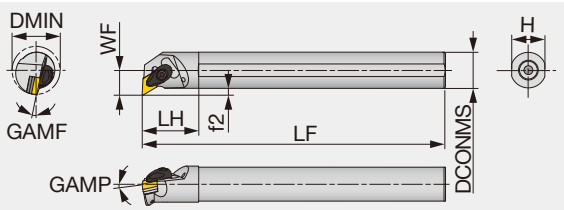
*Optional

A-ADUNR/L-Eco

Double-clamp boring bar, for negative 55° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16-ADUNR/L33-D20	Steel	1.250	1.000	0.672	12.000	1.750	0.906	0.172	-6°	-13°	0.031	DN**33...	2.21
A20-ADUNR/L33-D25	Steel	1.560	1.250	0.859	14.000	1.938	1.188	0.234	-6°	-11°	0.031	DN**33...	2.21

Torque: Recommended clamping torque: lbs·ft
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-ADUNR/L...	ACP3S-E	ACS-5W	BP-7	SP-2.5	ASD322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Breaker Shape	TSF	TM
Cutting conditions	B008	

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SS	SM
Cutting conditions	B010	

K

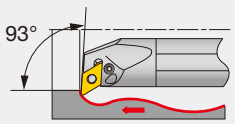
Application	Medium cutting
Grade	T515
Breaker Shape	TM
Cutting conditions	B012

Reference pages: A-PDUNR/L-Eco, A-ADUNR/L-Eco: Insert → B067 -, CBN → B174 -, PCD → B194 -

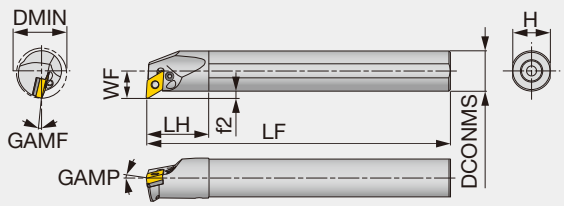
STREAMJETBAR

A-PDUNR/L

Lever-lock boring bar, for negative 55° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A20Q-PDUNR/L11-D250	Steel	25	20	13	180	36	18	3	-6°	-14°	0.8	DN**1104...	1.7
A25R-PDUNR/L11-D320	Steel	32	25	17	200	45	23	4.5	-6°	-12°	0.8	DN**1104...	2.7
A32S-PDUNR/L15-D400	Steel	40	32	22	250	50	30	6	-6°	-13°	0.8	DN**1504...	4.8
A40T-PDUNR/L15-D500	Steel	50	40	27	300	60	37	7	-6°	-10°	0.8	DN**1504...	4.8
A50U-PDUNR/L15-D630	Steel	63	50	35	350	65	47	10	-6°	-8°	0.8	DN**1504...	4.8
A32S-PDUNR/L1506-D400	Steel	40	32	22	250	50	30	6	-6°	-13°	0.8	DN**1506...	4.8
A40T-PDUNR/L1506-D500	Steel	50	40	27	300	60	37	7	-6°	-11°	0.8	DN**1506...	4.8
A50U-PDUNR/L1506-D630	Steel	63	50	35	350	65	47	10	-6°	-10°	0.8	DN**1506...	4.8

Torque: Recommended clamping torque: N·m **RE : Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever	Oil supply attachment*	Screw for oil hole*
A20Q-PDUNR/L11-D250	-	LCS22A	-	P-2F	-	-	LCL33NL	EA-20	SSHM2.5-3
A25R-PDUNR/L11-D320	ELSD317BR/L	-	LCS3	-	P-2.5	LSP3	LCL33L	EA-25	SSHM3-4
A32S-PDUNR/L15-D400	LSD42BR/L	-	LCS4	-	P-3	LSP4	LCL4	EA-32	SSHM5-6
A40T-PDUNR/L15-D500	LSD42BR/L	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6
A50U-PDUNR/L15-D630	LSD42BR/L	-	LCS4	-	P-3	LSP4	LCL4	-	SSHM6-6
A32S-PDUNR/L1506-D400	ELSD42	-	ELCS4	-	P-3	LSP4S	LCL44	EA-20	SSHM5-6
A40T-PDUNR/L1506-D500	ELSD42	-	ELCS4	-	P-3	LSP4S	LCL44	-	SSHM6-6
A50U-PDUNR/L1506-D630	ELSD42	-	ELCS4	-	P-3	LSP4S	LCL44	-	SSHM6-6

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

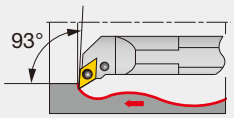
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

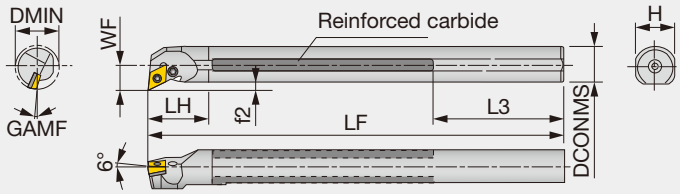
Reference pages: A-PDUNR/L: Insert → B067 -, CBN → B174 -, PCD → B194 -

T-PDUNR

Lever-lock boring bar, for negative 55° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	CNT	DCONMS	WF	LF	LH	L3	H	f2	GAMF	RE**	Insert
T32U-PDUNR15C	Reinforced	40	Rc1/2	32	22	350	50	103	30	6	-13°	0.8	DN**1504...
T40V-PDUNR15C	Reinforced	50	Rc1/2	40	27	400	55	88	37	7	-10°	0.8	DN**1504...
T50W-PDUNR15C	Reinforced	63	Rc1/2	50	35	450	65	63	47	10	-8°	0.8	DN**1504...

**RE : Standard corner radius

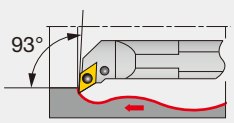
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

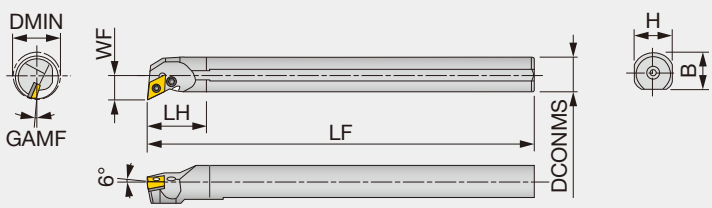
Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
T**-PDUNR15C	LSD42BR	LCS4	P-3	LSP4	LCL4

S-PDUNR/L

Lever-lock boring bar, for negative 55° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert
S20Q-PDUNR/L11	Steel	25	20	13	180	35	18	19	-14°	0.8	DN**1104...
S25R-PDUNR/L11	Steel	32	25	17	200	40	23	24	-12°	0.8	DN**1104...
S32S-PDUNR/L15	Steel	40	32	22	250	50	30	29.5	-13°	0.8	DN**1504...
S40T-PDUNR/L15	Steel	50	40	27	300	55	37	37.5	-10°	0.8	DN**1504...
S50U-PDUNR/L15	Steel	63	50	35	350	65	47	47.5	-8°	0.8	DN**1504...

**RE : Standard corner radius

Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

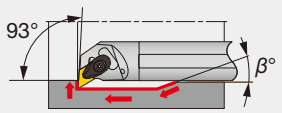
SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever
S20Q-PDUNR/L11	-	LCS22A	-	P-2F	-	-	LCL33NL
S25R-PDUNR11	ELSD317BR	-	LCS3	-	P-2.5	LSP3	LCL33L
S25R-PDUNL11	ELSD317BL	-	LCS3	-	P-2.5	LSP3	LCL33L
S32S-PDUNR15	LSD42BR	-	LCS4	-	P-3	LSP4	LCL4
S32S-PDUNL15	LSD42BL	-	LCS4	-	P-3	LSP4	LCL4
S40T-PDUNR15	LSD42BR	-	LCS4	-	P-3	LSP4	LCL4
S40T-PDUNL15	LSD42BL	-	LCS4	-	P-3	LSP4	LCL4
S50U-PDUNR15	LSD42BR	-	LCS4	-	P-3	LSP4	LCL4
S50U-PDUNL15	LSD42BL	-	LCS4	-	P-3	LSP4	LCL4

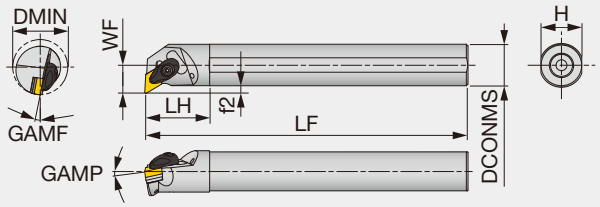
Reference pages: T-PDUNR, S-PDUNR/L: Insert → B067 -, CBN → B174 -, PCD → B194 -

A-ADUNR/L

Double-clamp boring bar, for negative 55° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	β°	RE**	Insert	Torque
A16-ADUNR/L4-D20	Steel	1.250	1.000	0.672	12.000	1.770	0.906	0.177	-6°	-13°	30	0.031	DN**43...	2.21
A20-ADUNR/L4-D25	Steel	1.500	1.250	0.859	14.000	1.960	1.180	0.236	-6°	-11°	20	0.031	DN**43...	2.21
A24-ADUNR/L4-D32	Steel	2.000	1.500	1.063	14.000	2.160	1.450	0.275	-6°	-8°	15	0.031	DN**43...	2.21

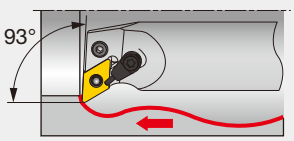
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE : Standard corner radius

SPARE PARTS

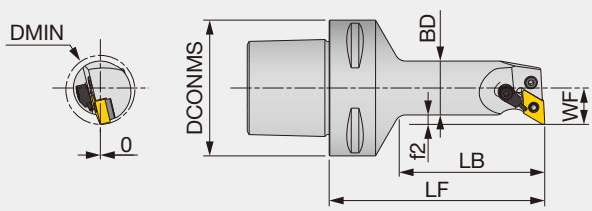
Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-ADUNR/L4-D...	ACP4S	ACS-5W	BP-7	SP-2.5	ASD432	CSTB-3.5	T-15F

C-PDUNL-CHP

Lever-lock boring bar with TungCap connection, with 93° approach angle, for negative 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **U**



Left hand (L) shown.

Metric	DMIN	DCONMS	BD	LF	LB	WF	f2	RE**	Insert
C6PDUNL17100-1104-CHP	32	63	25	100	67.5	17	4.5	0.8	DN**1104...

Applicable for 14 MPa coolant
**RE : Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Coolant unit	Wrench	Spring pin	Lever
C6PDUNL17100-1104-CHP	ELSD317BL	LCS43	S-CU-CHP	P-2.5	LSP3	LCL33L

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

H

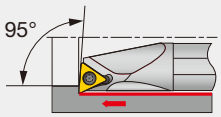
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

Reference pages: A-ADUNR/L, C-PDUNL-CHP Insert → B067 -, CBN → B174 -, PCD → B194 -

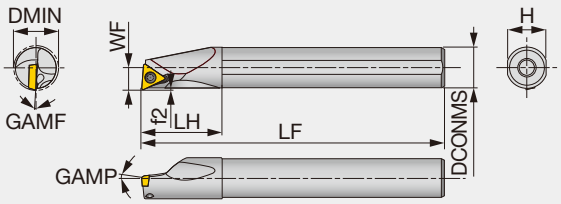
STREAMJETBAR

A/E-STUPR/L

Screw-on boring bar, for positive 60° triangular inserts



Cutting edge style **U**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A05-STUPR/L7-D07	Steel	0.438	0.313	0.250	5.00	0.625	2.880	-	5°	-7°	0.016	TP**73...	0.66
A06-STUPR/L2-D08	Steel	0.500	0.375	0.281	5.00	0.750	0.350	-	5°	-5°	0.016	TP**21.5...	0.89
A08-STUPR/L2-D11	Steel	0.688	0.500	0.406	5.00	1.000	0.475	-	5°	-3°	0.016	TP**21.5...	0.89
A10-STUPR/L2-D14	Steel	0.875	0.625	0.531	7.00	1.250	0.600	-	5°	-2°	0.016	TP**21.5...	1.00
A10-STUPR/L2.5-D14	Steel	0.875	0.625	0.531	7.00	1.250	0.600	-	5°	-2°	0.016	TP**22...	1.00
A12-STUPR/L3-D16	Steel	1.000	0.750	0.594	7.00	1.437	0.725	-	5°	-2°	0.032	TP**32.5...	1.00
A16-STUPR/L3-D20	Steel	1.250	1.000	0.688	7.00	1.750	0.975	-	5°	0°	0.032	TP**32.5...	2.20
E05-STUPR7-D07	Carbide	0.438	0.313	0.250	5.00	0.625	2.880	-	5°	-7°	0.016	TP**73...	0.66
E06-STUPR2-D08	Carbide	0.500	0.375	0.281	5.00	0.750	0.350	-	5°	-5°	0.016	TP**21.5...	0.89
E08-STUPR2-D11	Carbide	0.688	0.500	0.406	5.00	1.000	0.475	-	5°	-3°	0.016	TP**21.5...	0.89
E10-STUPR2.5-D14	Carbide	0.875	0.625	0.531	7.00	1.250	0.600	-	5°	-2°	0.016	TP**22...	1.00

Torque: Recommended clamping torque: lbs·ft

**RE : Standard corner radius

Use right-hand toolholders (STUPR**) with left-hand inserts (L); and left-hand toolholders (STUPL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A05-STUPR/L7-D07	CSTB-2.2S	T-7F
A06-STUPR/L2-D08	CSTB-2.5S	T-8F
A08-STUPR/L2-D11	CSTB-2.5B	T-8F
A10-STUPR/L2-D14	CSTB-2.5	T-8F
A10-STUPR/L2.5-D14	CSTB-2.5	T-8F
A12-STUPR/L3-D16	CSTB-4M	T-15F
A16-STUPR/L3-D20	CSTB-4M	T-15F
E05-STUPR7-D07	CSTB-2.2S	T-7F
E06-STUPR2-D08	CSTB-2.5S	T-8F
E08-STUPR2-D11	CSTB-2.5B	T-8F
E10-STUPR2.5-D14	CSTB-3	T-9F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	T9215	T9215
Breaker Shape	JS	PS	PM
Cutting conditions	B020		

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	T9215	T9215
Breaker Shape	JS	PS	PM
Cutting conditions	B022		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing
Grade	DX120
Breaker Shape	T-DIA (with rake)
Cutting conditions	B026

S

Application	Precision finishing
Grade	BX470
Breaker Shape	T-CBN
Cutting conditions	B028

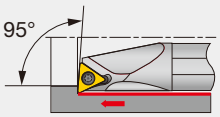
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

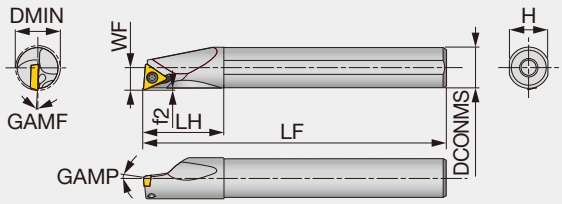
Reference pages: A/E-STUPR/L: Insert → B144 -, CBN → B187 -, PCD → B198

A/E-STUPR/L

Screw-on boring bar, for positive 60° triangular inserts



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A07G-STUPR/L07-D080	Steel	8	7	4	90	12	6.75	0.4	5°	-10°	0.4	TP**0701...	0.9
A08H-STUPR/L07-D080	Steel	8	8	4	100	19.5	7.5	0.5	5°	-10°	0.4	TP**0701...	0.9
A08H-STUPR/L09-D100	Steel	10	8	5.5	100	16	7.5	0.6	5°	-8°	0.4	TP**0902...(1)	0.9
A10F-STUPR1102-D120	Steel	12	10	6.5	80	20	9	1.4	5°	-6°	0.4	TP**1102...(1)	1.2
A10K-STUPR/L1102-D120	Steel	12	10	6.5	125	20	9	0.7	5°	-6°	0.4	TP**1102...(1)	1.2
A10K-STUPR/L1103-D120	Steel	12	10	6.5	125	20	9	0.6	5°	-10°	0.4	TP**1103...(1)	1.4
A12H-STUPR1102-D140	Steel	14	12	7	100	24	11	0.8	5°	-4°	0.4	TP**1102...(1)	1.2
A12M-STUPR/L1102-D140	Steel	14	12	7	150	24	11	0.8	5°	-4°	0.4	TP**1102...(1)	1.2
A12M-STUPR/L1103-D140	Steel	14	12	7	150	24	11	0.6	5°	-6°	0.4	TP**1103...(1)	1.4
A12H-STUPR1102-D160	Steel	16	12	9	100	24	11	0.6	5°	-3°	0.4	TP**1102...(1)	1.2
A12M-STUPR/L1102-D160	Steel	16	12	9	150	24	11	0.6	5°	-3°	0.4	TP**1102...(1)	1.2
A16K-STUPR13-D180	Steel	18	16	9	125	32	15	0.8	5°	-3°	0.4	TP**1303...(1)	1.4
A16Q-STUPR/L1103-D180	Steel	18	16	9	180	32	15	0.8	5°	-4°	0.4	TP**1103...(1)	1.4
A16Q-STUPR/L13-D180	Steel	18	16	9	180	32	15	0.8	5°	-3°	0.4	TP**1303...(1)	1.4
A16K-STUPR13-D200	Steel	20	16	11	125	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
A16Q-STUPR/L13-D200	Steel	20	16	11	180	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
A20R-STUPR/L1103-D220	Steel	22	20	11	200	36	18	0.7	5°	-2°	0.4	TP**1103...(1)	1.4
A20R-STUPR/L13-D220	Steel	22	20	11	200	36	18	0.7	5°	-2°	0.4	TP**1303...(1)	1.4
A25S-STUPR/L16-D270	Steel	27	25	13.5	250	45	23	0.5	5°	-1°	0.8	TP**16T3...(1)	3
A32T-STUPR/L16-D340	Steel	34	32	17	300	50	30	0.7	5°	0°	0.8	TP**16T3...	3
E07H-STUPR/L07-D080	Carbide	8	7	4	100	14	6.75	0.3	5°	-10°	0.4	TP**0701...	0.9
E08G-STUPR07-D080	Carbide	8	8	4	90	44.5	7.5	0.5	5°	-10°	0.4	TP**0701...	0.9
E08K-STUPR/L07-D080	Carbide	8	8	4	125	44.5	7.5	0.5	5°	-10°	0.4	TP**0701...	0.9
E08G-STUPR09-D100	Carbide	10	8	5.5	90	22	7	0.6	5°	-8°	0.4	TP**0902...(1)	0.9
E08K-STUPR/L09-D100	Carbide	10	8	5.5	125	22	7	0.6	5°	-8°	0.4	TP**0902...(1)	0.9
E10F-STUPR1102-D120	Carbide	12	10	6.5	80	25	9	0.5	5°	-6°	0.4	TP**1102...(1)	1.2
E10H-STUPR1102-D120	Carbide	12	10	6.5	100	25	9	0.6	5°	-6°	0.4	TP**1102...(1)	1.2
E10M-STUPR/L1102-D120	Carbide	12	10	6.5	150	25	9	0.6	5°	-6°	0.4	TP**1102...(1)	1.2
E10M-STUPR/L1103-D120	Carbide	12	10	6.5	150	25	9	0.7	5°	-10°	0.4	TP**1103...(1)	1.4
E12G-STUPR1102-D140	Carbide	14	12	7	90	27	11	0.8	5°	-4°	0.4	TP**1102...(1)	1.2
E12J-STUPR1102-D140	Carbide	14	12	7	110	27	11	0.8	5°	-4°	0.4	TP**1102...(1)	1.2
E12Q-STUPR/L1102-D140	Carbide	14	12	7	180	27	11	0.8	5°	-4°	0.4	TP**1102...(1)	1.2
E12Q-STUPR/L1103-D140	Carbide	14	12	7	180	27	11	0.7	5°	-6°	0.4	TP**1103...(1)	1.4
E12G-STUPR1102-D160	Carbide	16	12	9	90	27	11	0.6	5°	-3°	0.4	TP**1102...(1)	1.2
E12J-STUPR1102-D160	Carbide	16	12	9	110	27	11	0.6	5°	-3°	0.4	TP**1102...(1)	1.2
E12Q-STUPR/L1102-D160	Carbide	16	12	9	180	27	11	0.6	5°	-3°	0.4	TP**1102...(1)	1.2
E16H-STUPR13-D180	Carbide	18	16	9	100	32	15	0.9	5°	-3°	0.4	TP**1303...(1)	1.4
E16R-STUPR/L1103-D180	Carbide	18	16	9	200	32	15	0.8	5°	-3°	0.4	TP**1103...(1)	1.4
E16L-STUPR13-D180	Carbide	18	16	9	130	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
E16R-STUPR/L13-D180	Carbide	18	16	9	200	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
E16H-STUPR13-D200	Carbide	20	16	11	100	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
E16L-STUPR13-D200	Carbide	20	16	11	130	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
E16R-STUPL13-D200	Carbide	20	16	11	200	32	15	0.6	5°	-3°	0.4	TP**1303...(1)	1.4
E20S-STUPR1103-D220	Carbide	22	20	11	250	36	18	0.7	5°	-2°	0.4	TP**1103...(1)	1.4
E20S-STUPR13-D220	Carbide	22	20	11	250	36	18	0.6	5°	-2°	0.4	TP**1303...(1)	1.4
E25T-STUPR16-D270	Carbide	27	25	13.5	300	45	23	0.5	5°	-1°	0.8	TP**16T3...	3

SPARE PARTS

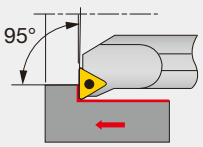
Designation	Clamping screw	Wrench
A/E07*-STUPR/L07-...	CSTB-2.2L038	T-7F
A/E08*-STUPR/L07-...	CSTB-2.2L038	T-7F
A/E08*-STUPR/L09-...	CSTB-2.2L038	T-7F
A/E10*-STUPR/L1102-...	CSTB-2.5S	T-8F
A/E10*-STUPR/L1103-...	CSTB-3L050	T-9F
A/E12*-STUPR/L1102-...	CSTB-2.5B	T-8F
A/E12*-STUPR/L1103-...	CSTB-3L050	T-9F
A/E16*-STUPR/L1103-...	CSTB-3S	T-9F
A/E16*-STUPR/L13-...	CSTB-3S	T-9F
A/E20*-STUPR/L1103-...	CSTB-3S	T-9F
A/E20*-STUPR/L13-...	CSTB-3	T-9F
A/E25*-STUPR/L16-...	CSTB-4M	T-15F
A32*-STUPR/L16-...	CSTB-4M	T-15F

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Use right-hand toolholders (STUPR**) with left-hand inserts (L); and left-hand toolholders (STUPL**) with right-hand inserts (R).
(1) TPGH, TPGM, and TPGA inserts cannot be used.

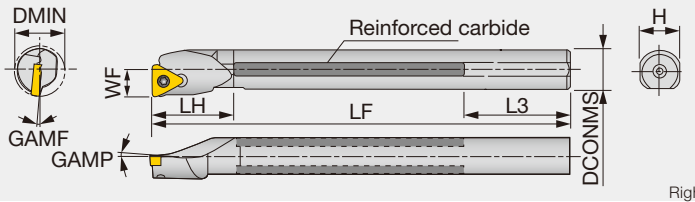
Reference pages: A/E-STUPR/L: Insert → B144 -,
CBN → B187 -, PCD → B198

T-STUPR/L

Screw-on boring bar, for positive 60° triangular inserts (Tsuppari-Ichiban)



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	CNT***	DCONMS	WF	LF	LH	L3	H	GAMP	GAMF	RE**	Insert	Torque
T12M-STUPR11-D14	Reinforced	14	-	12	7	150	24	59	11	5°	-4°	0.4	TP**1102...	1.2
T12M-STUPR/L11	Reinforced	16	-	12	9	150	25	58	11	5°	-4°	0.4	TP**1102...	1.2
T16Q-STUPR13-D18	Reinforced	18	-	16	9	180	30	59	15	5°	-3.5°	0.4	TP**1303...	1.4
T16Q-STUPR/L13	Reinforced	20	-	16	11	180	30	59	15	5°	-3°	0.4	TP**1303...	1.4
T20R-STUPR13C-D22	Reinforced	22	Rc1/4	20	11	200	35	49	18	5°	-2°	0.4	TP**1303...	1.4
T20R-STUPR/L13	Reinforced	24	-	20	13	200	40	49	18	5°	-2°	0.4	TP**1303...	1.4
T25S-STUPR16C-D27	Reinforced	27	Rc1/4	25	13.5	250	40	64	23	5°	-1°	0.8	TP**16T3...	3
T25S-STUPR/L16	Reinforced	31	-	25	17	250	45	64	23	5°	0°	0.8	TP**16T3...	3

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
***CNT : Threading size at the tail port
Use right-hand toolholders (STUPR**) with left-hand inserts (L); and left-hand toolholders (STUPL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
T12M-STUPR11-D14	CSTB-2.5B	T-8F
T12M-STUPR/L11	CSTB-2.5	T-8F
T16Q-STUPR13-D18	CSTB-3S	T-9F
T16Q-STUPR/L13	CSTB-3	T-9F
T20R-STUPR13C-D22	CSTB-3S	T-9F
T20R-STUPR/L13	CSTB-3	T-9F
T25S-STUPR/L16...	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	NS9530	T9215	T9215
Breaker Shape	01	PSS	PS	PM
Cutting conditions	B020			

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Breaker Shape	PSF	PSS	PM
Cutting conditions	B022		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Finishing
Grade	DX140
Breaker Shape	T-DIA
Cutting conditions	B026

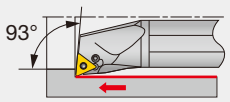
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

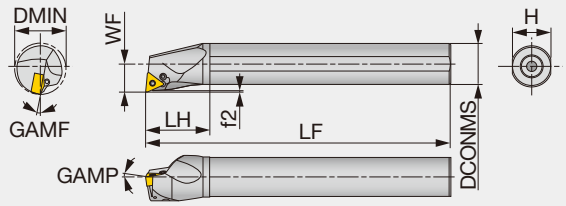
Reference pages: T-STUPR/L: Insert → B144 -, CBN → B187 -, PCD → B198

A-PTUNR/L-Eco

Lever-lock boring bar, for negative triangular inserts



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A25R-PTUNR/L1104-D320	Steel	32	25	17	200	45	23	1.22	-6°	-12°	0.8	TN**1104...	2
A32S-PTUNR/L1104-D400	Steel	40	32	22	250	50	30	1.16	-6°	-10°	0.8	TN**1104...	2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench	Lever	Oil supply attachment*	Screw for oil hole*
A25R-PTUNR/L1104-D320	LCS23A	P-2.5	LCL23	EA-25	SSHM4-5
A32S-PTUNR/L1104-D400	LCS23A	P-2.5	LCL23	EA-32	SSHM4-5

*Optional

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Breaker Shape	TSF 	TM 
Cutting conditions	B008	

M

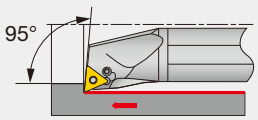
Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SS 	SM 
Cutting conditions	B010	

Reference pages: A-PTUNR/L-Eco: Insert → B087 -

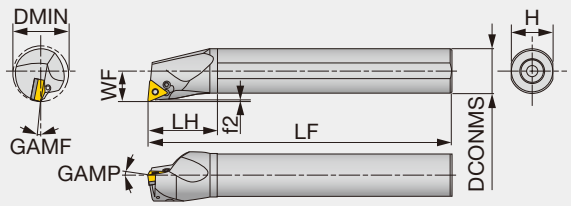
STREAMJETBAR

A-PTUNR/L

Lever-lock boring bar, for negative 60° triangular inserts



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16M-PTUNR/L11-D200	Steel	20	16	11	150	32	15	1	-6°	-14°	0.4	TN**1103...	1.7
A20Q-PTUNR/L11-D250	Steel	25	20	13	180	36	18	1	-6°	-12°	0.4	TN**1103...	1.7
A25R-PTUNR/L16-D320	Steel	32	25	17	200	45	23	1.4	-6°	-12°	0.8	TN**1604...	2.7
A32S-PTUNR/L16-D400	Steel	40	32	22	250	50	30	1.3	-6°	-10°	0.8	TN**1604...	2.7

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Toolholder length may not conform to ISO standard.
Use right-hand toolholders (PTUNR**) with left-hand inserts (L); and left-hand toolholders (PTUNL**) with right-hand inserts (R).

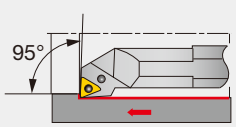
SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever	Oil supply attachment*	Screw for oil hole*
A16M-PTUNR/L11-D200	-	LCS22A	-	P-2F	-	-	LCL22N	-	SSHM3-4
A20Q-PTUNR/L11-D250	-	LCS22A	-	P-2F	-	-	LCL22N	EA-20	SSHM3-4
A25R-PTUNR/L16-D320	ELST317BR/L	-	LCS3	-	P-2.5	LSP3	LCL33	EA-25	SSHM4-5
A32S-PTUNR/L16-D400	LST317BR/L	-	LCS3	-	P-2.5	LSP3	LCL3	EA-32	SSHM4-5

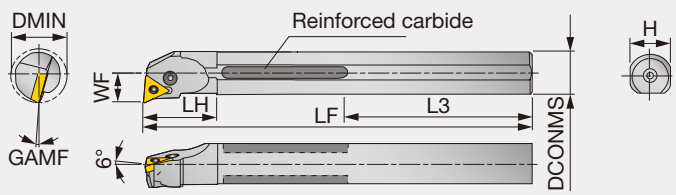
*Optional

T-PTUNR

Lever-lock boring bar, for negative 60° triangular inserts (Tsuppari-Ichiban)



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	CNT***	DCONMS	WF	LF	LH	L3	H	GAMF	RE**	Insert	Torque
T16Q-PTUNR11	Reinforced	20	-	16	11	180	27	59	15	-14°	0.4	TN**1103...	1.7
T20R-PTUNR11C	Reinforced	25	Rc1/4	20	13	200	35	49	18	-12°	0.4	TN**1103...	1.7
T25S-PTUNR16C	Reinforced	32	Rc1/4	25	17	250	40	64	23	-12°	0.8	TN**1604...	2.7
T32U-PTUNR16C	Reinforced	40	Rc1/2	32	22	350	50	103	30	-10°	0.8	TN**1604...	2.7
T40V-PTUNR16C	Reinforced	50	Rc1/2	40	27	400	55	88	37	-10°	0.8	TN**1604...	2.7
T50W-PTUNR16C	Reinforced	63	Rc1/2	50	35	450	65	63	47	-8°	0.8	TN**1604...	2.7

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
***CNT : Threading size at the tail port
*The hole specification of applicable inserts conforms to ISO standard.
Toolholder length may not conform to ISO standard.
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

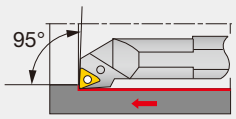
SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever
T**-PTUNR11...	-	LCS22A	-	P-2F	-	-	LCL22N
T25S-PTUNR16C	ELST317BR	-	LCS3	-	P-2.5	LSP3	LCL33
T**-PTUNR16C	LST317BR	-	LCS3	-	P-2.5	LSP3	LCL3

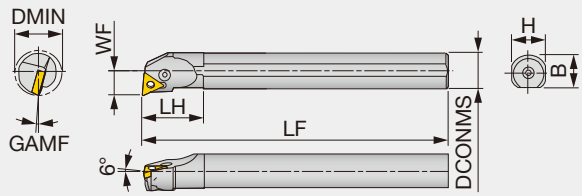
Reference pages: A-PTUNR/L, T-PTUNR: Insert → B086 -, CBN → B178 -, PCD → B194 -

A/S-PTUNR/L

Lever-lock boring bar, for negative 60° triangular inserts



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	B	GAMF	RE**	Insert	Torque
S16M-PTUNR/L11	Steel	20	16	11	150	30	15	15.5	-14°	0.4	TN**1103...	1.7
S20Q-PTUNR/L11	Steel	25	20	13	180	35	18	19	-12°	0.4	TN**1103...	1.7
S25R-PTUNR/L16	Steel	32	25	17	200	40	23	24	-12°	0.8	TN**1604...	2.7
A32S-PTUNR/L16	Steel	40	32	22	250	50	30	29.5	-12°	0.8	TN**1604...	2.7

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
*The hole specification of applicable inserts conforms to ISO standard.
Toolholder length may not conform to ISO standard.
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Shim	Clamping screw 1	Clamping screw 2	Wrench 1	Wrench 2	Spring pin	Lever	Oil supply attachment*
S**-PTUNR/L11	-	LCS22A	-	P-2F	-	-	LCL22N	-
S25R-PTUNR16	ELST317BR	-	LCS3	-	P-2.5	LSP3	LCL33	-
S25R-PTUNL16	ELST317BL	-	LCS3	-	P-2.5	LSP3	LCL33	-
A32S-PTUNR16	LST317BR	-	LCS3	-	P-2.5	LSP3	LCL3	EA-32
A32S-PTUNL16	LST317BL	-	LCS3	-	P-2.5	LSP3	LCL3	EA-32

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

H

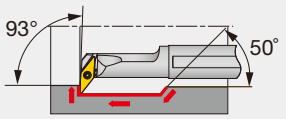
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

Reference pages: A/S-PTUNR/L: Insert → B086 -, CBN → B178 -, PCD → B194 -

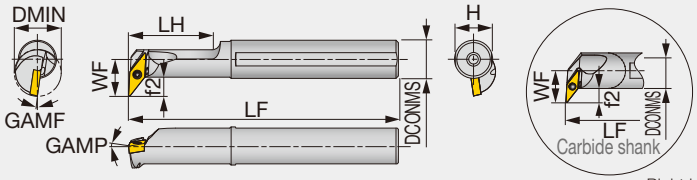
STREAMJETBAR

A/E-SVUBR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A12-SVUBR2-D16	Steel	1.000	0.750	0.594	10.000	1.425	0.725	0.218	-0°	-6°	0.016	VB**22...	0.89

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A16Q-SVUBR/L11-D200	Steel	20	16	15.5	180	35	15	8	0°	-8°	0.4	VB**1103...	1.2
A20R-SVUBR/L11-D250	Steel	25	20	17.5	200	40	19	8	0°	-7°	0.4	VB**1103...	1.2
A25S-SVUBR/L16-D320	Steel	32	25	20.5	250	50	23	8.5	0°	-6°	0.8	VB**1604...	3
E16R-SVUBR/L11-D245	Carbide	24.5	16	16	200	-	15	8	0°	-8°	0.4	VB**1103...	1.2
E20S-SVUBR/L11-D285	Carbide	28.5	20	18	250	-	19	8	0°	-7°	0.4	VB**1103...	1.2
E25T-SVUBR/L16-D340	Carbide	34	25	21	300	-	23	8.5	0°	-6°	0.8	VB**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Use right-hand toolholders (SVUBR**) with left-hand inserts (L); and left-hand toolholders (SVUBL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A12-SVUBR2-D16	CSTB-2.5	T-8F
A**-SVUBR/L11-D2*0	CSTB-2.5	T-8F
A25S-SVUBR/L16-D320	CSTB-3.5	T-15F
E**-SVUBR/L11-D2*5	CSTB-2.5	T-8F
E25T-SVUBR/L16-D340	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	SH725	T9215
Breaker Shape	JS	PS
Cutting conditions	B020	

M

Application	Finishing	Finishing to medium cutting
Grade	SH725	T9215
Breaker Shape	JS	PS
Cutting conditions	B022	

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

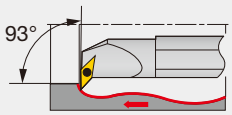
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

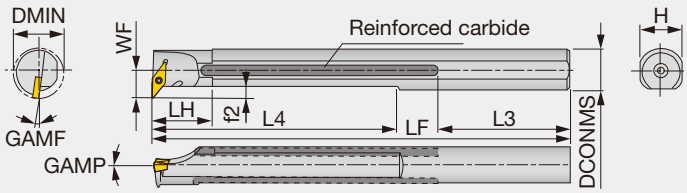
Reference pages: A/E-SVUBR/L: Insert → B152 -, CBN → B191

T-SVUBR

Screw-on boring bar, for positive 35° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	CNT***	DCONMS	WF	LF	LH	L3	L4	H	f2	GAMP	GAMF	RE**	Insert	Torque
T20R-SVUBR11C	Reinforced	25	Rc1/4	20	14	200	30	59	121	18	4	0°	-8°	0.4	VB**1103...	1.2

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
***CNT : Threading size at the tail port
Use right-hand toolholders (SVUBR**) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
T20R-SVUBR11C	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PSS	PS
Cutting conditions	B020	

M

Application	Finishing	Finishing to medium cutting
Grade	AH725	AH630
Breaker Shape	PSF	PSS
Cutting conditions	B022	

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B028	

H

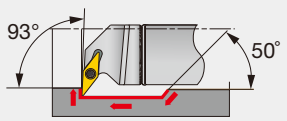
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: T-SVUBR: Insert → **B152 -**, CBN → **B191**

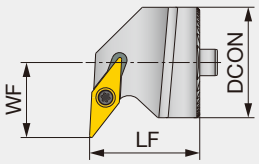
BOREMEISTER

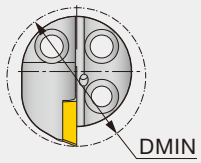
S-SVUCR/L-H

Screw-on exchangeable boring head, for positive 35° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Inch	DMIN	DCON	WF	LF	Shank size	Insert
S20-SVUCR/L11-H	1.063	0.787	0.630	0.787	D/G.750	VC**1103...
S25-SVUCR/L11-H	1.260	0.984	0.669	0.984	D1.00	VC**1103...

When using a right or left hand insert, the right hand insert (R) is used for the left hand toolholders (SVUCL** type), and the left hand insert (L) is used for the right hand toolholders (SVUCR** type).

SPARE PARTS

Designation	Clamping screw	Wrench
S**-SVUCR/L11-H	SR14-560	T-8/5

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PSS	PS
Cutting conditions	B020	

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Breaker Shape	PSF	PSS	PM
Cutting conditions	B022		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B026		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B028	

H

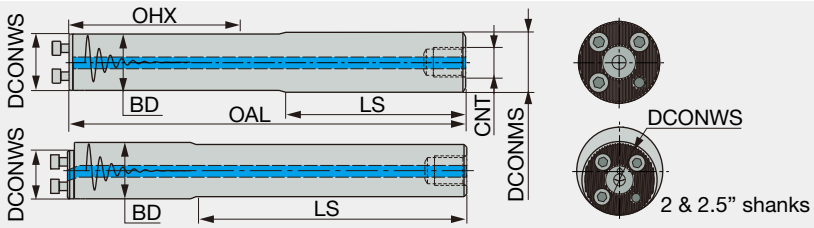
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: S-SVUCR/L-H: Insert → B155 -

Anti-vibration bar for exchangeable turning heads, with through coolant

Fig. 1

Fig. 2



Inch	Material	DCONWS	DCONMS	BD	OAL	LS	OHX	CNT	Fig.
D.625-L6.14-7D-C	Steel	0.630	0.625	0.630	6.140	3.600	3.500	G1/8	1
G.625-L8.03-10D-E	Carbide	0.630	0.625	0.630	8.030	5.220	5.500	-	1
D.750-L7.87-7D-C	Steel	0.787	0.750	0.787	7.870	4.940	4.400	G1/4	1
G.750-L10.24-10D-E	Carbide	0.787	0.750	0.787	10.240	6.770	7.000	-	1
D1.00-L10.2-7D-C	Steel	0.984	1.000	0.984	10.200	6.830	6.200	G1/4	1
D1.00-L13.21-10D-C	Steel	0.984	1.000	0.984	13.210	8.650	9.200	G1/4	1
D1.25-L12.48-7D-C	Steel	1.260	1.250	1.260	12.480	7.370	7.500	G3/8	1
D1.25-L16.24-10D-C	Steel	1.260	1.250	1.260	16.240	9.670	11.200	G3/8	1
D1.50-L15.26-7D-C	Steel	1.575	1.500	1.575	15.260	9.130	9.200	G1/2	1
D1.50-L19.8-10D-C	Steel	1.575	1.500	1.575	19.800	13.350	13.700	G1/2	1
D2.00-L20.74-7D-C	Steel	1.575	2.000	2.000	20.740	-	12.700	G1/2	2
D2.00-L26.73-10D-C	Steel	1.575	2.000	2.000	26.730	-	18.700	G1/2	2
D2.50-L26.2-7D-C	Steel	1.575	2.500	2.500	26.200	-	16.200	G3/4	2
D2.50-L33.72-10D-C	Steel	1.575	2.500	2.500	33.720	-	23.700	G3/4	2

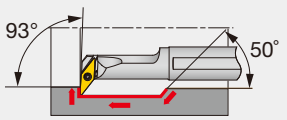
SPARE PARTS


Designation	Clamping screw	Wrench
D.625..., G.625...	SRM3X10DIN912	HW2.5
D.750..., G.750...	SRM3.5X10DIN912	HW2.5
D1.00...	SRM4X12DIN912	HW3.0
D1.25...	SRM5X12DIN912	HW4.0
D1.50..., D2.00... D2.50...	SRM6X16DIN912-12.9	HW5.0

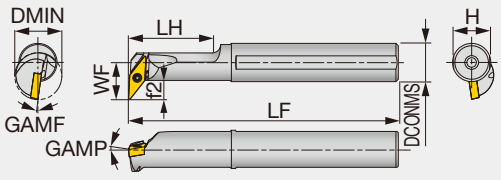
STREAMJETBAR

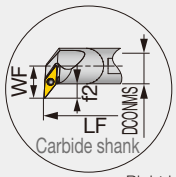
A/E-SVUCR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A10-SVUCR6-D14	Steel	0.875	0.625	0.531	7.000	1.250	0.600	0.218	0°	-5°	0.016	VC**63...	0.44
A12-SVUCR2-D16	Steel	1.000	0.750	0.594	10.000	1.420	0.725	0.218	0°	-5°	0.016	VC**22...	1.0

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SVUCR/L08-D160	Steel	16	12	11	150	30	11	5.5	0°	-8°	0.4	VC**0802...	0.6
A25S-SVUCR/L16-D320	Steel	32	25	19	250	45	23	6.5	0°	-5°	0.8	VC**1604...	3
E12Q-SVUCR/L08-D180	Carbide	18	12	11.5	180	-	11	5.5	0°	-8°	0.4	VC**0802...	0.6
E25T-SVUCR/L16-D320	Carbide	32	25	19	300	-	23	6.5	0°	-5°	0.8	VC**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Use right-hand toolholders (SVUCR**) with left-hand inserts (L); and left-hand toolholders (SVUCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A10-SVUCR6-D14	CSTB-2L	T-6F
A12-SVUCR2-D16	CSTB-2.5	T-8F
A12M-SVUCR/L08-D160	CSTB-2L	T-6F
A25S-SVUCR/L16-D320	CSTB-3.5	T-15F
E12Q-SVUCR/L08-D180	CSTB-2L	T-6F
E25T-SVUCR/L16-D320	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B020

M

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B022

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA with rake	AL
Cutting conditions	B026	

S

Application	Finishing to medium cutting
Grade	AH8005
Breaker Shape	PS
Cutting conditions	B028

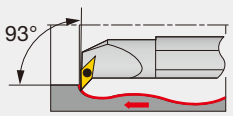
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

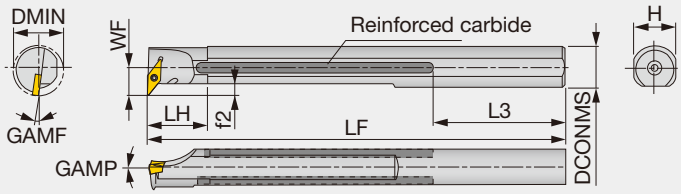
Reference pages: A/E-SVUCR/L: Insert → B155 -, CBN → B192, PCD → B196 -

T-SVUCR

Screw-on boring bar, for positive 35° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	CNT***	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque
T25S-SVUCR16C	Reinforced	32	Rc1/4	25	19	250	40	64	23	6.5	0°	-5°	0.8	VC**1604...	3

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
***CNT : Threading size at the tail port
*The hole specification of applicable inserts conforms to ISO standard.
Use right-hand toolholders (SVUCR**) with left-hand inserts (L).

SPARE PARTS


Designation	Clamping screw	Wrench
T25S-SVUCR16C	CSTB-3.5L	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PSS	PS
Cutting conditions	B020	

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Breaker Shape	PSF	PSS	PM
Cutting conditions	B022		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B026		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B028	

H

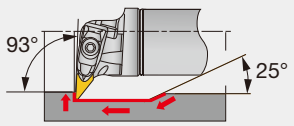
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: T-SVUCR: Insert → B155 -, CBN → B192, PCD → B196 -

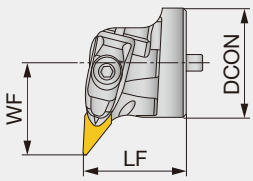
BOREMEISTER

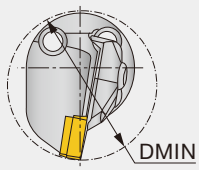
S-DVUNR/L-H

Double-clamp exchangeable boring head, for negative 35° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Inch	DMIN	DCON	WF	LF	Shank size	Insert
S40-DVUNR/L16T-H	2.205	1.575	1.339	1.496	D1.50, D2.00, D2.50	VN**33...

SPARE PARTS

Designation	Shim	Shim screw	Clamp	Clamping screw	Spring	Wrench
S40-DVUNR/L16T-H	ASV322	SR35080I	DLM3V	SR10402267	KSP5	HW4.0

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Breaker Shape	TF	TSF	TM
Cutting conditions	B008		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing
Grade	DX120
Breaker Shape	T-DIA with rake
Cutting conditions	B014

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

Reference pages: S-DVUNR/L-H: Insert → B096 -, CBN → B180, PCD → B194

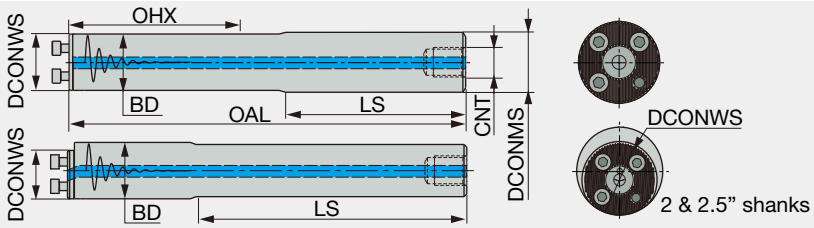
BOREMEISTER

Anti-vibration bar

Anti-vibration bar for exchangeable turning heads, with through coolant

Fig. 1

Fig. 2



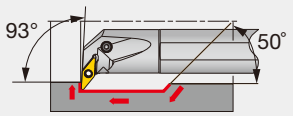
Inch	Material	DCONWS	DCONMS	BD	OAL	LS	OHX	CNT	Fig.
D.625-L6.14-7D-C	Steel	0.630	0.625	0.630	6.140	3.600	3.500	G1/8	1
G.625-L8.03-10D-E	Carbide	0.630	0.625	0.630	8.030	5.220	5.500	-	1
D.750-L7.87-7D-C	Steel	0.787	0.750	0.787	7.870	4.940	4.400	G1/4	1
G.750-L10.24-10D-E	Carbide	0.787	0.750	0.787	10.240	6.770	7.000	-	1
D1.00-L10.2-7D-C	Steel	0.984	1.000	0.984	10.200	6.830	6.200	G1/4	1
D1.00-L13.21-10D-C	Steel	0.984	1.000	0.984	13.210	8.650	9.200	G1/4	1
D1.25-L12.48-7D-C	Steel	1.260	1.250	1.260	12.480	7.370	7.500	G3/8	1
D1.25-L16.24-10D-C	Steel	1.260	1.250	1.260	16.240	9.670	11.200	G3/8	1
D1.50-L15.26-7D-C	Steel	1.575	1.500	1.575	15.260	9.130	9.200	G1/2	1
D1.50-L19.8-10D-C	Steel	1.575	1.500	1.575	19.800	13.350	13.700	G1/2	1
D2.00-L20.74-7D-C	Steel	1.575	2.000	2.000	20.740	-	12.700	G1/2	2
D2.00-L26.73-10D-C	Steel	1.575	2.000	2.000	26.730	-	18.700	G1/2	2
D2.50-L26.2-7D-C	Steel	1.575	2.500	2.500	26.200	-	16.200	G3/4	2
D2.50-L33.72-10D-C	Steel	1.575	2.500	2.500	33.720	-	23.700	G3/4	2

SPARE PARTS

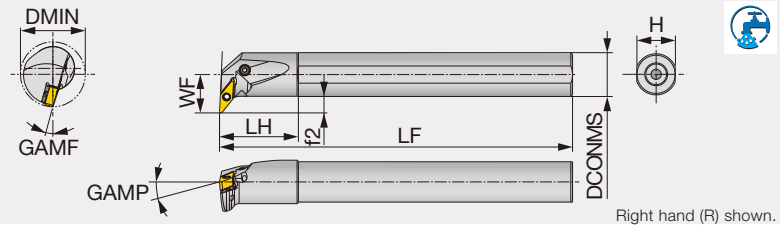
Designation	Clamping screw	Wrench
D.625..., G.625...	SRM3X10DIN912	HW2.5
D.750..., G.750...	SRM3.5X10DIN912	HW2.5
D1.00...	SRM4X12DIN912	HW3.0
D1.25...	SRM5X12DIN912	HW4.0
D1.50..., D2.00... D2.50...	SRM6X16DIN912-12.9	HW5.0

A-PVUNR/L-Eco

Lever-lock boring bar, for negative 35° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A16-PVUNR/L2.33-D20	Steel	1.250	1.000	0.672	12.000	1.750	0.906	0.197	-6°	-13°	0.031	VN**2.33**E...	2.2
A16-PVUNR/L2.33-D24	Steel	1.500	1.000	0.859	12.000	1.750	0.906	0.315	-6°	-10°	0.031	VN**2.33**E...	2.2
A20-PVUNR/L2.33-D26	Steel	1.650	1.250	0.859	14.000	2.000	1.188	0.217	-6°	-10°	0.031	VN**2.33**E...	2.2

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A25R-PVUNR/L1204-D320	Steel	32	25	18	200	45	23	5.0	-5°	-15°	0.8	VN**1204...	3
A25R-PVUNR/L1204-D370	Steel	37	25	22	200	45	23	8.0	-4°	-15°	0.8	VN**1204...	3
A32S-PVUNR/L1204-D400	Steel	40	32	22	250	50	30	5.5	-6°	-12°	0.8	VN**1204...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench	Lever	Shim	Spring pin	Oil supply attachment*	Screw for oil hole*
A16-PVUNR/L2.33-D... A25R-PVUNR/L1204-D...	LCS3V	P-2.5	LCL3V	LSV212	LSP3	EA-25	SSHM4-5
A20-PVUNR/L2.33-D26, A32S-PVUNR/L1204-D400	LCS3V	P-2.5	LCL3V	LSV212	LSP3	EA-32	SSHM4-5

*Optional

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	T9215	T9215
Breaker Shape	TSF	TM
Cutting conditions	B008	

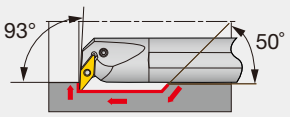
M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SS	SM
Cutting conditions	B010	

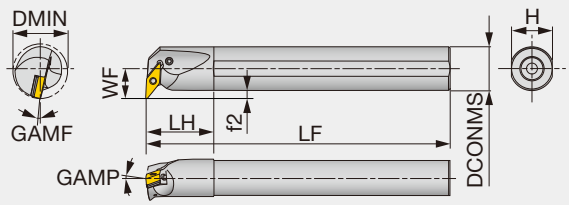
Reference pages: A-PVUNR/L-Eco: Insert → B097 -

A-PVUNR/L

Lever-lock boring bar, for negative 35° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A25R-PVUNR/L16-D370	Steel	37	25	22	200	45	23	9.5	-5°	-14°	0.8	V/YN**1604...	2.7
A32S-PVUNR/L16-D400	Steel	40	32	22	250	50	30	6	-5°	-12°	0.8	V/YN**1604...	2.7
A40T-PVUNR/L16-D500	Steel	50	40	27	300	60	37	7	-5°	-10°	0.8	V/YN**1604...	2.7

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever	Oil supply attachment*	Screw for oil hole*
A25R-PVUNR/L16-D370	LSV317BR/L	LCS3V	P-2.5	LSP3	LCL3V	EA-25	SSHM4-5
A32S-PVUNR/L16-D400	LSV317BR/L	LCS3V	P-2.5	LSP3	LCL3V	EA-32	SSHM4-5
A40T-PVUNR/L16-D500	LSV317BR/L	LCS3V	P-2.5	LSP3	LCL3V	-	SSHM5-6

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Breaker Shape	TF	TSF	TM
Cutting conditions	B008		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing
Grade	DX120
Breaker Shape	T-DIA with rake
Cutting conditions	B014

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

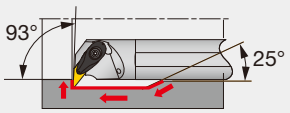
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

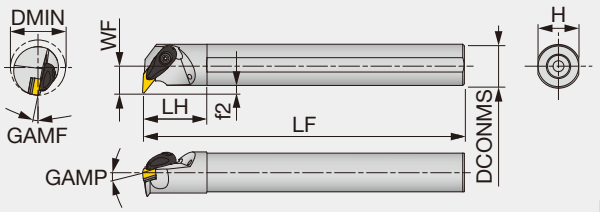
Reference pages: A-PVUNR/L: Insert → B096 -, B109, CBN → B180, PCD → B194

A-AVUNR/L

Double-clamp boring bar, for negative 35° and 25° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A20-AVUNR/L3-D25	Steel	1.560	1.250	0.859	14.000	1.960	1.180	0.236	-6	-10	0.031	V/YN**33...	2.21
A24-AVUNR/L3-D32	Steel	2.000	1.500	1.060	14.000	2.160	1.440	0.275	-6	-8	0.031	V/YN**33...	2.21

Torque: Recommended clamping torque: lbs·ft
**RE : Standard corner radius

SPARE PARTS

Designation	Clamp	Clamp screw	Spring	Spring pin	Shim	Shim screw	Wrench
A**-AVUNR/L3-D...	ACP3L	ACS-5W	BP-7	SP-2.5	ASV322	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting
Grade	NS9530	GT9530	T9215
Breaker Shape	TF	TSF	TM
Cutting conditions	B008		

M

Application	Finishing	Medium cutting
Grade	T6120	T6130
Breaker Shape	SF	SM
Cutting conditions	B010	

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing
Grade	DX120
Breaker Shape	T-DIA (with rake)
Cutting conditions	B014

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

H

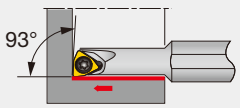
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

Reference pages: A-AVUNR/L: Insert → B096 -, B109, CBN → B180, PCD → B194

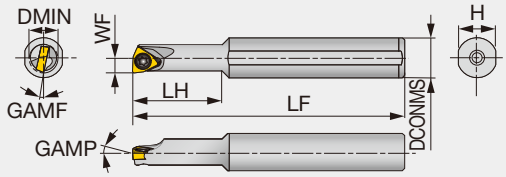
STREAMJETBAR

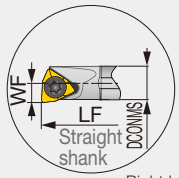
A/E-SWUBR/L

Screw-on boring bar, for positive 80° trigon inserts



Cutting edge style **U**





Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	GAMP	GAMF	RE**	Insert	Torque
A05F-SWUBR/L03-D060	Steel	6	5	3	80	9	4.8	0°	-13°	0.4	WB**0301...	0.6
A06G-SWUBR/L03-D070	Steel	7	6	3.5	90	11	5.75	0°	-12°	0.4	WB**0301...	0.6
A07G-SWUBR/L03-D080	Steel	8	7	4	90	12	6.75	0°	-11°	0.4	WB**0301...	0.6
A08H-SWUBR03-D060	Steel	6	8	3.1	100	18	7.5	0°	-12°	0.4	WB**0301...	0.6
A08H-SWUBR03-D070	Steel	7	8	3.6	100	20	7.5	0°	-12°	0.4	WB**0301...	0.6
E05G-SWUBR/L03-D060	Carbide	6	5	3	90	10	4.8	0°	-13°	0.4	WB**0301...	0.6
E06H-SWUBR/L03-D070	Carbide	7	6	3.5	100	12	5.75	0°	-12°	0.4	WB**0301...	0.6
E07H-SWUBR/L03-D080	Carbide	8	7	4	100	14	6.75	0°	-11°	0.4	WB**0301...	0.6
E08K-SWUBR03-D060	Carbide	6	8	3.1	125	30	7.5	0°	-12°	0.4	WB**0301...	0.6
E08K-SWUBR03-D070	Carbide	7	8	3.6	125	40	7.5	0°	-12°	0.4	WB**0301...	0.6

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Use right-hand toolholders (SVUCR*) with left-hand inserts (L); and left-hand toolholders (SWUBL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A/E**-SWUBR/L...	CSTB-2	T-6F

INSERT SELECTION

P	Application	Finishing
	Grade	SH725
	Breaker Shape	W08 
	Cutting conditions	B008

M	Application	Finishing
	Grade	SH725
	Breaker Shape	W08 
	Cutting conditions	B010

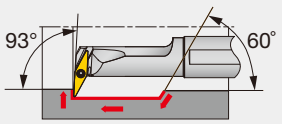
K	Application	Finishing
	Grade	TH10
	Breaker Shape	W08 
	Cutting conditions	B012

N	Application	Finishing
	Grade	GH110
	Breaker Shape	W08 
	Cutting conditions	B014

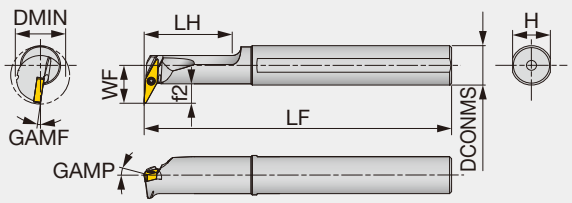
Reference pages: A/E-SWUBR/L: Insert → B159 -

A/E-SYUBR/L

Screw-on boring bar, for positive 25° rhombic inserts



Cutting edge style **U**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A10-SYUBR/L2-D16	Steel	1.000	0.625	0.625	7.000	1.250	0.600	0.312	0°	-8°	0.016	YW**11T2...	0.44
E08-SYUBR/L2-D14	Carbide	0.875	0.500	0.563	5.000	1.060	0.475	0.307	0°	-8°	0.016	YW**11T2...	0.44
E10-SYUBR/L2-D16	Carbide	1.000	0.625	0.625	7.000	1.250	0.600	0.307	0°	-8°	0.016	YW**11T2...	0.44

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A16Q-SYUBR/L11-D200	Steel	20	16	15.5	180	35	15	8	0°	-8°	0.4	YW**11T2...	0.6
E12Q-SYUBR/L11-D200	Carbide	20	12	13.5	180	27	11	7.5	0°	-8°	0.4	YW**11T2...	0.6
E16R-SYUBR/L11-D245	Carbide	24.5	16	16	200	32	15	8	0°	-8°	0.4	YW**11T2...	0.6

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS


Designation	Clamping screw	Wrench
A10-SYUBR/L2-D16	CSTB-2L	T-6F
E**-SYUBR/L2-D...	CSTB-2L	T-6F
A16Q-SYUBR/L11-D200	CSTB-2L	T-6F
E**-SYUBR/L11-D...	CSTB-2L	T-6F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9225
Breaker Shape	ZM 
Cutting conditions	B020

K

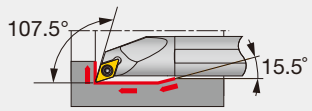
Application	Finishing to medium cutting
Grade	GT9530
Breaker Shape	ZM 
Cutting conditions	B024

Reference pages: A/E-SYUBR/L: Insert → B163

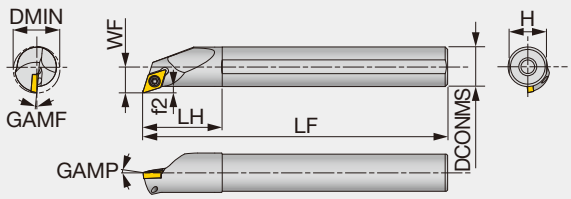
STREAMJETBAR

A/E-SDQCR/L

Screw-on boring bar, for positive 55° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A06-SDQCR2-D10	Steel	0.625	0.375	0.406	5.000	0.750	0.350	-	0°	-7°	0.016	DC**21.5...	0.89
A08-SDQCR2-D11	Steel	0.688	0.500	0.406	5.000	1.000	0.475	-	0°	-6°	0.016	DC**21.5...	0.89
A10-SDQCR2-D14	Steel	0.875	0.625	0.531	7.000	1.250	0.600	-	0°	-4°	0.016	DC**21.5...	0.89

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A10K-SDQCR/L07-D130	Steel	13	10	7.6	125	20	9	2.6	0°	-8°	0.4	DC**0702...	1.2
A12M-SDQCR/L07-D160	Steel	16	12	8.6	150	24	11	2.6	0°	-6°	0.4	DC**0702...	1.2
A16Q-SDQCR/L07-D200	Steel	20	16	10.6	180	32	15	2.6	0°	-5°	0.4	DC**0702...	1.2
A20R-SDQCR/L11-D250	Steel	25	20	13.7	200	36	18	3.7	0°	-7°	0.8	DC**11T3...	3
A25S-SDQCR/L11-D300	Steel	30	25	16.2	250	45	23	3.7	0°	-4°	0.8	DC**11T3...	3
E10H-SDQCR07-D130	Carbide	13	10	7.6	100	25	9	2.5	0°	-8°	0.4	DC**0702...	1.2
E10M-SDQCR/L07-D130	Carbide	13	10	7.6	150	25	9	2.6	0°	-8°	0.4	DC**0702...	1.2
E12J-SDQCR07-D160	Carbide	16	12	8.6	110	27	11	2.5	0°	-6°	0.4	DC**0702...	1.2
E12Q-SDQCR/L07-D160	Carbide	16	12	8.6	180	27	11	2.6	0°	-6°	0.4	DC**0702...	1.2
E16L-SDQCR07-D200	Carbide	20	16	10.6	130	32	15	2.5	0°	-5°	0.4	DC**0702...	1.2
E16R-SDQCR/L07-D200	Carbide	20	16	10.6	200	32	15	2.6	0°	-5°	0.4	DC**0702...	1.2
E20S-SDQCR/L11-D250	Carbide	25	20	13.7	250	36	18	3.7	0°	-7°	0.8	DC**11T3...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Use right-hand toolholders (SDQCR**) with left-hand inserts (L); and left-hand toolholders (SDQCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SDQCR2-D...	CSTB-2.5B	T-8F
A1**-SDQCR/L07-D**0	CSTB-2.5S	T-8F
A2**-SDQCR/L11-D**0	CSTB-4S	T-15F
E1**-SDQCR/L07-D**0	CSTB-2.5S	T-8F
E20S-SDQCR/L11-D250	CSTB-4S	T-15F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B020			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA with rake	AL
Cutting conditions	B026	

S

Application	Precision finishing	Finishing to medium cutting
Grade	BX470	AH8005
Breaker Shape	T-CBN	PS
Cutting conditions	B028	

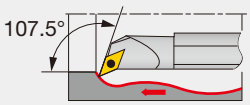
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

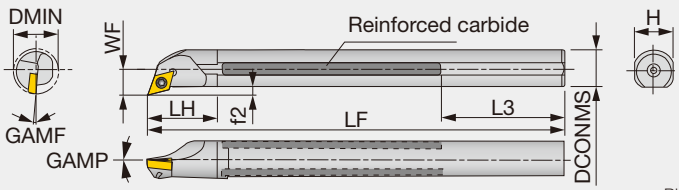
Reference pages: A/E-SDQCR/L: Insert → B121 -, CBN → B184, PCD → B196 -

T-SDQCR/L

Screw-on boring bar, for positive 55° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **Q**



Right hand (R) shown.

Metric	Material	DMIN	CNT***	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque
T16Q-SDQCR/L07	Reinforced	20	-	16	11	180	27	59	15	3	0°	-6°	0.4	DC**0702...	1.2
T20R-SDQCR/L11C	Reinforced	25	Rc1/4	20	13	200	35	49	18	3	0°	-6°	0.8	DC**11T3...	3
T25S-SDQCR/L11C	Reinforced	32	Rc1/4	25	17	250	40	64	23	4.5	0°	-4°	0.8	DC**11T3...	3

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
***CNT : Threading size at the tail port
*The hole specification of applicable inserts conforms to ISO standard.
Use right-hand toolholders (SDQCR**) with left-hand inserts (L); and left-hand toolholders (SDQCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
T16Q-SDQCR/L07	CSTB-2.5	T-8F
T20R-SDQCR/L11C	CSTB-4M	T-15F
T25S-SDQCR/L11C	CSTB-4	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	NS9530	T9215	T9215
Breaker Shape	PSS	PS	PM
Cutting conditions	B020		

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	GH330	AH725	AH630	T6130
Breaker Shape	W**	PSF	PSS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA (with rake)	T-DIA	AL
Cutting conditions	B026		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B028	

H

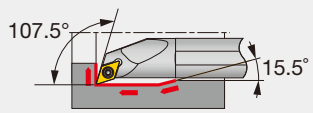
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: T-SDQCR/L: Insert → B121 -, CBN → B184, PCD → B196 -

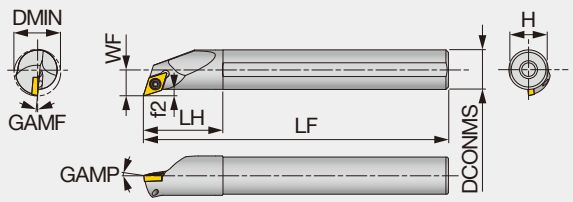
STREAMJETBAR

A/E-SDQPR/L

Screw-on boring bar, for positive 55° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE***	Insert	Torque
A12M-SDQPR07-D150-P	Special alloy steel*	15	12	8.3	150	24	11	2.3	5°	0°	0.40	DPMT0702...	1.2
A12M-SDQPL07-D150-P	Special alloy steel*	15	12	8.3	150	24	11	2.3	5°	0°	0.40	DPMT0702...	1.2
A12M-SDQPR07-D180-P	Special alloy steell*	18	12	9.6	150	24	11	3.6	5°	0°	0.40	DPMT0702...	1.2
A12M-SDQPL07-D180-P	Special alloy steell*	18	12	9.6	150	24	11	3.6	5°	0°	0.40	DPMT0702...	1.2
A16Q-SDQPR07-D220-P	Special alloy steell*	22	16	11.6	180	32	15	3.6	5°	0°	0.40	DPMT0702...	1.2
A16Q-SDQPL07-D220-P	Special alloy steell*	22	16	11.6	180	32	15	3.6	5°	0°	0.40	DPMT0702...	1.2
E12Q-SDQPR07-D150	Carbide	15	12	8.3	180	27	11	2.3	5°	0°	0.40	DPMT0702...	1.2
E12Q-SDQPL07-D150	Carbide	15	12	8.3	180	27	11	2.3	5°	0°	0.40	DPMT0702...	1.2
E12Q-SDQPR07-D180	Carbide	18	12	9.6	180	27	11	3.6	5°	0°	0.40	DPMT0702...	1.2
E12Q-SDQPL07-D180	Carbide	18	12	9.6	180	27	11	3.6	5°	0°	0.40	DPMT0702...	1.2
E16R-SDQPR07-D220	Carbide	22	16	11.6	200	32	15	3.6	5°	0°	0.40	DPMT0702...	1.2
E16R-SDQPL07-D220	Carbide	22	16	11.6	200	32	15	3.6	5°	0°	0.40	DPMT0702...	1.2

*Special alloy steel: Exclusively selected material is used to reduce chattering.
Torque: Recommended clamping torque: N·m
***RE : Standard corner radius
Use right-hand toolholders (SDQCR**) with left-hand inserts (L); and left-hand toolholders (SDQCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SDQPR/L07-D**0-P	CSTB-2.5S	T-8F
E**-SDQPR/L07-D**0	CSTB-2.5S	T-8F

INSERT SELECTION

P

Application	Finishing to medium cutting	
Grade	T9225	NS9530
Breaker Shape	PS 	PS 
Cutting conditions	B020	

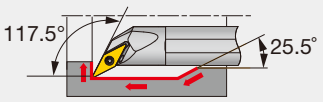
S

Application	Finishing to medium cutting
Grade	AH8015
Breaker Shape	PS 
Cutting conditions	B028

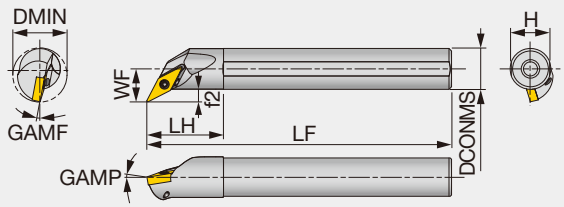
Reference pages: A/E-SDQPR/L: Insert → B127

A/E-SVQBR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A10-SVQBR2-D16	Steel	1.000	0.625	0.500	7.000	1.250	0.600	0.188	-5°	-6°	0.016	VB**1103...	0.89

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SVQBR/L11-D170	Steel	17	12	10.5	150	24	11	4.5	-5°	-10°	0.4	VB**1103...	1.2
A16Q-SVQBR/L11-D215	Steel	21.5	16	13	180	30	15	5	-5°	-8°	0.4	VB**1103...	1.2
A20R-SVQBR/L11-D255	Steel	25.5	20	15	200	36	18	5	-5°	-6°	0.4	VB**1103...	1.2
A25S-SVQBR/L16-D305	Steel	30.5	25	17.5	250	45	23	5	-5°	-8°	0.8	VB**1604...	3
E12Q-SVQBR/L11-D170	Carbide	17	12	10.5	180	27	11	4.5	-5°	-10°	0.4	VB**1103...	1.2
E16R-SVQBR/L11-D215	Carbide	21.5	16	13	200	32	15	5	-5°	-8°	0.4	VB**1103...	1.2
E20S-SVQBR/L11-D255	Carbide	25.5	20	15	250	36	18	5	-5°	-6°	0.4	VB**1103...	1.2
E25T-SVQBR/L16-D305	Carbide	30.5	25	17.5	300	45	23	5	-5°	-8°	0.8	VB**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Use right-hand toolholders (SVQBR**) with left-hand inserts (L); and left-hand toolholders (SVQBL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A10-SVQBR2-D16	CSTB-2.5	T-8F
A**-SVQBR/L11-D...	CSTB-2.5	T-8F
A25S-SVQBR/L16-D305	CSTB-3.5	T-15F
E**-SVQBR/L11-D...	CSTB-2.5	T-8F
E25T-SVQBR/L16-D305	CSTB-3.5	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	SH725	T9215
Breaker Shape	JS	PS
Cutting conditions	B020	

M

Application	Finishing	Finishing to medium cutting
Grade	SH725	T9215
Breaker Shape	JS	PS
Cutting conditions	B022	

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

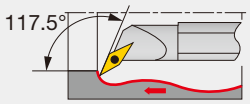
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

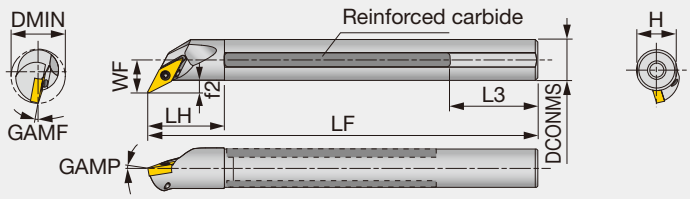
Reference pages: A/E-SVQBR/L: Insert → B152 -, CBN → B191

T-SVQBR

Screw-on boring bar, for positive 35° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **Q**



Right hand (R) shown.

Metric	Material	DMIN	CNT***	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque
T20R-SVQBR11C	Reinforced	25	Rc1/4	20	14	200	30	59	18	4	-5°	-7°	0.4	VB**1103...	1.2

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
***CNT : Threading size at the tail port
*The hole specification of applicable inserts conforms to ISO standard.
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
T20R-SVQBR11C	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PSS	PS
Cutting conditions	B020	

M

Application	Finishing	Finishing to medium cutting
Grade	AH725	AH630
Breaker Shape	PSF	PSS
Cutting conditions	B022	

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B028	

H

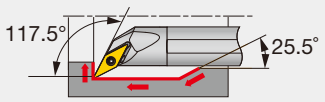
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: T-SVQBR: Insert → **B152 -**, CBN → **B191**

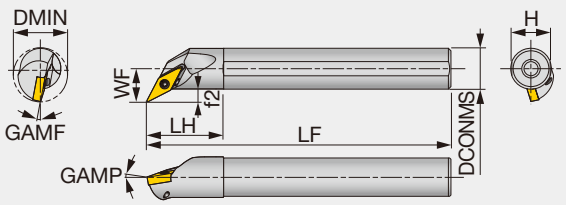
STREAMJETBAR

A/E-SVQCR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A08-SVQCR6-D11	Steel	0.688	0.5	0.375	5.000	1.000	0.475	0.125	-5°	-8°	0.016	VC**0802...	0.44
A10-SVQCR2-D16	Steel	1.000	0.625	0.500	10.000	1.250	0.600	0.188	-5°	-8°	0.016	VC**1103...	0.89

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A10K-SVQCR/L08-D135	Steel	13.5	10	8	125	20	9	3	-5°	-8°	0.4	VC**0802...	0.6
A16Q-SVQCR/L11-D215	Steel	21.5	16	13	180	30	15	4.9	-5°	-8°	0.4	VC**1103...	1.2
E10M-SVQCR/L08-D135	Carbide	13.5	10	8	150	25	9	3	-5°	-8°	0.4	VC**0802...	0.6
E16R-SVQCR/L11-D215	Carbide	21.5	16	13	200	32	15	4.9	-5°	-8°	0.4	VC**1103...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Use right-hand toolholders (SVQCR**) with left-hand inserts (L); and left-hand toolholders (SVQCL**) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Wrench
A08-SVQCR6-D11	CSTB-2L	T-6F
A10-SVQCR2-D16	CSTB-2.5	T-8F
A10K-SVQCR/L08-D135	CSTB-2L	T-6F
A16Q-SVQCR/L11-D215	CSTB-2.5	T-8F
E10M-SVQCR/L08-D135	CSTB-2L	T-6F
E16R-SVQCR/L11-D215	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B020

M

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B022

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA with rake	AL
Cutting conditions	B026	

S

Application	Finishing to medium cutting
Grade	AH8005
Breaker Shape	PS
Cutting conditions	B028

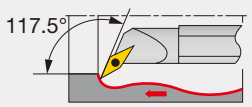
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

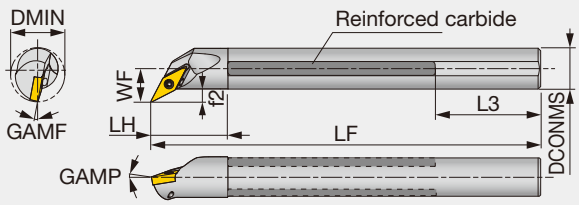
Reference pages: A/E-SVQCR/L: Insert → B155 -

T-SVQCR

Screw-on boring bar, for positive 35° rhombic inserts (Tsuppari-Ichiban)



Cutting edge style **Q**



Right hand (R) shown.

Metric	Material	DMIN	CNT***	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque
T25S-SVQCR16C	Reinforced	32	Rc1/4	25	17	250	40	64	23	8	0°	-5°	0.8	VC**1604...	3

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
***CNT : Threading size at the tail port
*The hole specification of applicable inserts conforms to ISO standard.
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS


Designation	Clamping screw	Wrench
T25S-SVQCR16C	CSTB-3.5L	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	NS9530	T9215
Breaker Shape	PSS	PS
Cutting conditions	B020	

M

Application	Finishing	Finishing to medium cutting	Medium cutting
Grade	AH725	AH630	T6130
Breaker Shape	PSF	PSS	PM
Cutting conditions	B022		

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	KS05F
Breaker Shape	T-DIA with rake	T-DIA	AL
Cutting conditions	B026		

S

Application	Finishing	Finishing to medium cutting
Grade	AH8015	AH8015
Breaker Shape	PSS	PS
Cutting conditions	B028	

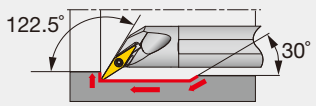
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

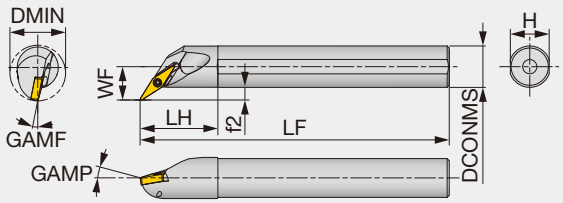
Reference pages: T-SVQCR: Insert → B155 -, CBN → B192, PCD → B196 -

A/E-SYQBR/L

Screw-on boring bar, for positive 25° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A08-SYQBR2-D12	Steel	0.750	0.500	0.438	5.000	1.000	0.475	0.188	-5°	-10°	0.016	YW**11T2...	0.44
A10-SYQBR2-D14	Steel	0.875	0.625	0.500	7.000	1.250	0.600	0.188	-5°	-8°	0.016	YW**11T2...	0.44
E08-SYQBR2-D12	Carbide	0.750	0.500	0.438	5.000	1.000	0.475	0.188	-5°	-10°	0.016	YW**11T2...	0.44
E10-SYQBR2-D14	Carbide	0.875	0.625	0.500	7.000	1.250	0.600	0.188	-5°	-8°	0.016	YW**11T2...	0.44

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SYQBR/L11-D170	Steel	17	12	10.5	150	24	11	4.5	-5°	-10°	0.4	YW**11T2...	0.6
A16Q-SYQBR/L11-D215	Steel	21.5	16	13	180	30	15	5	-5°	-8°	0.4	YW**11T2...	0.6
E12Q-SYQBR/L11-D170	Carbide	17	12	10.5	180	27	11	4.5	-5°	-10°	0.4	YW**11T2...	0.6
E16R-SYQBR/L11-D215	Carbide	21.5	16	13	200	32	15	5	-5°	-8°	0.4	YW**11T2...	0.6

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
A/E**-SYQBR/L2-D...	CSTB-2L	T-6F
A/E**-SYQBR/L11-D...	CSTB-2L	T-6F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9225
Breaker Shape	ZM 
Cutting conditions	B020

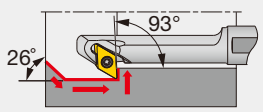
K

Application	Finishing to medium cutting
Grade	GT9530
Breaker Shape	ZM 
Cutting conditions	B024

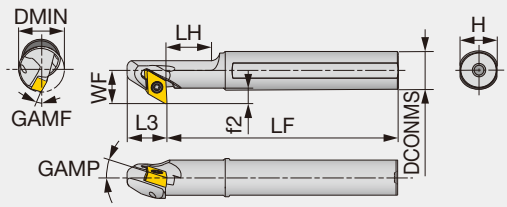
Reference pages: A/E-SYQBR/L: Insert → B163

A/E-SDZXR/L

Screw-on boring bar, for DXGU inserts



Cutting edge style **Z**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque
A08-SDZXR/L2-D10	Steel	0.625	0.500	0.438	5.000	1.125	0.500	0.475	0.188	-10°	-14°	0.016	DXGU0703**R/L...	0.66
A10-SDZXR/L2-D11	Steel	0.688	0.625	0.500	7.000	1.250	0.500	0.600	0.188	-10°	-12.5°	0.016	DXGU0703**R/L...	0.66
A12-SDZXR/L2-D14	Steel	0.875	0.750	0.563	7.000	1.375	0.500	0.725	0.188	-10°	-10.5°	0.016	DXGU0703**R/L...	0.66

Metric	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SDZXR/L07-D140	Steel	14	12	10.5	150	30	13	11	4.5	-10°	-14°	0.4	DXGU0703**R/L...	0.9
A16Q-SDZXR/L07-D160	Steel	16	16	12.5	180	35	13	15	4.5	-10°	-12.5°	0.4	DXGU0703**R/L...	0.9
A20R-SDZXR/L07-D200	Steel	20	20	14.5	200	40	13	18	4.5	-10°	-10.5°	0.4	DXGU0703**R/L...	0.9
E12Q-SDZXR/L07-D180	Carbide	18	12	10.5	180	-	13	11	4.5	-11°	-11°	0.4	DXGU0703**R/L...	0.9
E16R-SDZXR/L07-D220	Carbide	22	16	12.5	200	-	13	15	4.5	-11°	-9°	0.4	DXGU0703**R/L...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE : Standard corner radius
Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
A/E**-SDZXR/L...	SR34-514	T-7F

INSERT SELECTION

P

Application	Finishing	Medium cutting
Grade	NS9530	AH725
Breaker Shape	SS	TS
Cutting conditions	D105	

M

Application	Finishing	Medium cutting
Grade	AH8015	AH8015
Breaker Shape	SS	TS
Cutting conditions	D105	

K

Application	Finishing	Medium cutting
Grade	NS9530	AH725
Breaker Shape	SS	TS
Cutting conditions	D105	

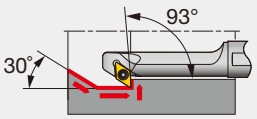
N

Application	Finishing	Medium cutting
Grade	KS05F	KS05F
Breaker Shape	SS	TS
Cutting conditions	D105	

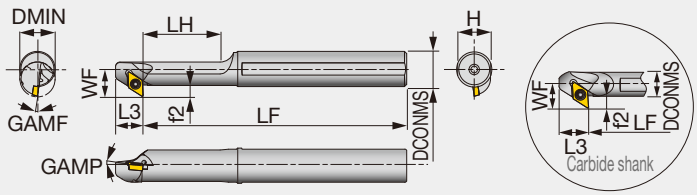
Reference pages: A/E-SDZXR/L: Insert → B127 -
Standard cutting conditions → D105

A/E-SDZCR/L

Screw-on boring bar, for positive 55° rhombic inserts



Cutting edge style **Z**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque
A10-SDZCR2-D14	Steel	0.875	0.625	0.531	7.000	1.250	0.500	0.600	0.219	0°	-4°	0.016	DC**0702...	0.89

Metric	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SDZCR/L07-D140	Steel	14	12	10.5	150	30	12.5	11	4.5	0°	-9°	0.4	DC**0702...	1.2
A16Q-SDZCR/L07-D160	Steel	16	16	12.5	180	35	12.5	15	4.5	0°	-8°	0.4	DC**0702...	1.2
A20R-SDZCR/L11-D200	Steel	20	20	15.5	200	40	15.0	18	5.5	0°	-8°	0.8	DC**11T3...	3
A25S-SDZCR/L11-D250	Steel	25	25	18	250	50	15	23	5.5	0°	-6°	0.8	DC**11T3...	3
E12Q-SDZCR/L07-D180	Carbide	18	12	10.5	180	-	12.5	11	4.5	0°	-8°	0.4	DC**0702...	1.2
E16R-SDZCR/L07-D220	Carbide	22	16	12.5	200	-	12.5	15	4.5	0°	-6°	0.4	DC**0702...	1.2

Torque: Recommended clamping torque: lb·ft (*N·m)
**RE : Standard corner radius
Use right-hand toolholders (SDZCR**) with right-hand inserts (R); and left-hand toolholders (SDZCL**) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
A10-SDZCR2-D14	CSTB-2.5	T-8F
A1**-SDZCR/L07-D1*0	CSTB-2.5	T-8F
A2**-SDZCR/L11-D2*0	CSTB-4S	T-15F
E1**-SDZCR/L07-D**0	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B020			

M

Application	Precision finishing	Finishing	Finishing to medium cutting	Medium cutting
Grade	SH725	SH725	T9215	T9215
Breaker Shape	01	JS	PS	PM
Cutting conditions	B022			

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA with rake	AL
Cutting conditions	B026	

S

Application	Precision finishing	Finishing to medium cutting
Grade	BX470	AH8005
Breaker Shape	T-CBN	PS
Cutting conditions	B028	

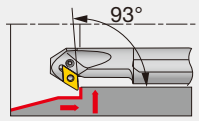
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

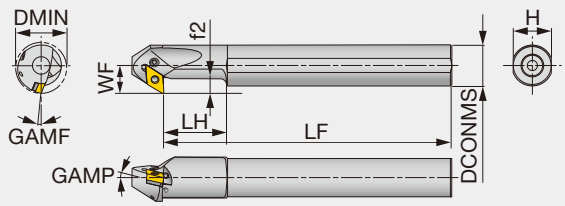
Reference pages: A/E-SDZCR/L: Insert → B121 -, CBN → B184, PCD → B196 -

A-PDZNR/L

Lever-lock boring bar, for negative 55° rhombic inserts



Cutting edge style **Z**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A32S-PDZNR/L15-D400	Steel	40	32	22	250	50	30	11.5	-6°	-13°	0.8	DN**1504...	4.8
A40T-PDZNR/L15-D500	Steel	50	40	27	300	60	37	14.5	-6°	-10°	0.8	DN**1504...	4.8
A50U-PDZNR/L15-D630	Steel	63	50	35	350	65	47	14.5	-6°	-8°	0.8	DN**1504...	4.8

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Use right-hand toolholders (PDZNR**) with right-hand inserts (R); and left-hand toolholders (PDZNL**) with left-hand inserts (L).

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever	Oil supply attachment*	Screw for oil hole*
A32S-PDZNR15-D400	LSZ42BR	LCS4	P-3	LSP4	LCL4	EA-32	SSHM4-5
A32S-PDZNL15-D400	LSZ42BL	LCS4	P-3	LSP4	LCL4	EA-32	SSHM4-5
A40T-PDZNR15-D500	LSZ42BR	LCS4	P-3	LSP4	LCL4	-	SSHM5-6
A40T-PDZNL15-D500	LSZ42BL	LCS4	P-3	LSP4	LCL4	-	SSHM5-6
A50U-PDZNR15-D630	LSZ42BR	LCS4	P-3	LSP4	LCL4	-	SSHM6-6
A50U-PDZNL15-D630	LSZ42BL	LCS4	P-3	LSP4	LCL4	-	SSHM6-6

*Optional

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

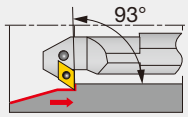
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

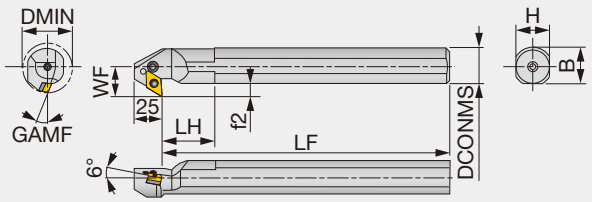
Reference pages: A-PDZNR/L: Insert → B067 -, CBN → B174 -, PCD → B194 -

S-PDZNR/L

Lever-lock boring bar, for negative 55° rhombic inserts



Cutting edge style **Z**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	B	GAMF	RE**	Insert
S32S-PDZNR/L15	Steel	40	32	22	250	30	30	6	29.5	-13°	0.8	DN**1504...
S40T-PDZNR15	Steel	50	40	27	300	35	37	7	37.5	-10°	0.8	DN**1504...
S50U-PDZNR15	Steel	60	50	35	350	40	47	10	47.5	-8°	0.8	DN**1504...

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
S32S-PDZNR15	LSZ42BR	LCS4	P-3	LSP4	LCL4
S32S-PDZNL15	LSZ42BL	LCS4	P-3	LSP4	LCL4
S*0*-PDZNR15	LSZ42BR	LCS4	P-3	LSP4	LCL4

**RE : Standard corner radius

Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)

INSERT SELECTION

P

Application	Precision finishing	Finishing	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Breaker Shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Breaker Shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finishing	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Breaker Shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finishing	Medium cutting
Grade	DX120	DX140	TH10
Breaker Shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finishing	Medium cutting
Grade	BX470	AH8005	AH8005
Breaker Shape	T-CBN	HRF	HRM
Cutting conditions	B016		

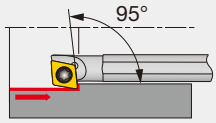
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B018	

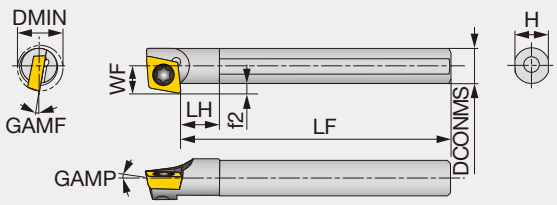
Reference pages: S-PDZNR/L: Insert → B067 -, CBN → B174 -, PCD → B194 -

A/E-SEZPR/L

Screw-on boring bar, for positive 75° rhombic inserts



Cutting edge style **Z**



Right hand (R) shown.

Metric	Material	DMIN	DCONMS	WF	LF	LH	H	f2	GAMP	GAMF	RE**	Insert	Torque
A04F-SEZPR/L03-D055	Steel	5.5	4	3.2	80	4	3.8	1.2	0°	-8°	0.2	EP**03X1...	0.6
A05F-SEZPR/L03-D065	Steel	6.5	5	3.7	80	5	4.8	1.2	0°	-6°	0.2	EP**03X1...	0.6
E04G-SEZPR/L03-D055	Carbide	5.5	4	3.2	90	5	3.8	1.2	0°	-8°	0.2	EP**03X1...	0.6
E05G-SEZPR/L03-D065	Carbide	6.5	5	3.7	90	6	4.8	1.2	0°	-6°	0.2	EP**03X1...	0.6

Torque: Recommended clamping torque: N·m
**RE : Standard corner radius
Use right-hand toolholders (SEZPR**) with right-hand inserts (R); and left-hand toolholders (SEZPL**) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
A**-SEZPR/L03-D...	CSTA-1.6	T-6F
E**-SEZPR/L03-D...	CSTA-1.6	T-6F

INSERT SELECTION

P

Application	Finishing
Grade	SH725
Breaker Shape	JS
Cutting conditions	B008

M

Application	Finishing
Grade	SH725
Breaker Shape	JS
Cutting conditions	B010

K

Application	Finishing
Grade	SH725
Breaker Shape	JS
Cutting conditions	B012

N

Application	Precision finishing	Finishing
Grade	DX140	GH110
Breaker Shape	T-DIA	W08
Cutting conditions	B014	

H

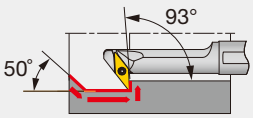
Application	Precision finishing
Grade	BX310
Breaker Shape	T-CBN
Cutting conditions	B018

Reference pages: A/E-SEZPR/L: Insert → B129 -, CBN → B186

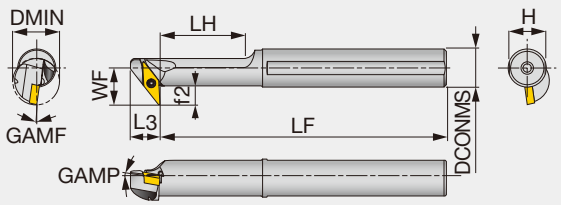
STREAMJETBAR

A-SVZBR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **Z**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque
A12-SVZBR2-D16	Steel	1.000	0.750	0.594	10.000	1.425	0.500	0.725	0.219	0°	-5°	0.016	VB**1103...	0.89

Metric	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A16Q-SVZBR/L11-D200	Steel	20	16	15.5	180	35	12.5	15	8	0°	-8°	0.4	VB**1103...	1.2
A20R-SVZBR/L11-D250	Steel	25	20	17.5	200	40	12.5	18	8	0°	-7°	0.4	VB**1103...	1.2
A25S-SVZBR/L16-D320	Steel	32	25	24	250	50	17.5	23	12	0°	-6°	0.8	VB**1604...	3
A32T-SVZBR/L16-D400	Steel	40	32	27.5	300	72	17.5	30	12	0°	-5°	0.8	VB**1604...	3

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Use right-hand toolholders (SVZBR**) with right-hand inserts (R); and left-hand toolholders (SVZBL**) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
A12-SVZBR2-D16	CSTB-2.5	T-8F
A**-SVZBR/L11-D2*0	CSTB-2.5	T-8F
A25S-SVZBR/L16-D320	CSTB-3.5	T-15F
A32T-SVZBR/L16-D400	CSTB-3.5L	T-15F

INSERT SELECTION

P

Application	Finishing	Finishing to medium cutting
Grade	SH725	T9215
Breaker Shape	JS	PS
Cutting conditions	B020	

M

Application	Finishing	Finishing to medium cutting
Grade	SH725	T9215
Breaker Shape	JS	PS
Cutting conditions	B022	

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

H

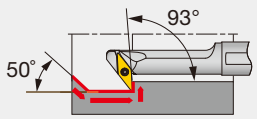
Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: A-SVZBR/L: Insert → B152 -, CBN → B191

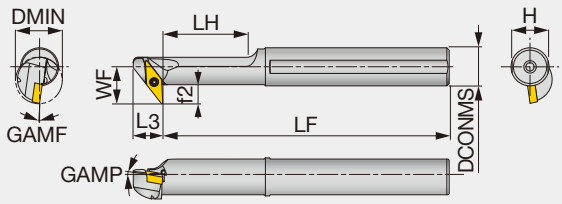
STREAMJETBAR

A-SVZCR/L

Screw-on boring bar, for positive 35° rhombic inserts



Cutting edge style **Z**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque
A08-SVZCR6-D12	Steel	0.750	0.500	0.438	5.000	1.000	0.395	0.475	0.188	0°	-6°	0.016	VC**63...	0.44
A12-SVZCR2-D16	Steel	1.000	0.750	0.593	10.000	1.425	0.500	0.725	0.218	0°	-7°	0.016	VC**22...	0.44

Metric	Material	DMIN	DCONMS	WF	LF	LH	L3	H	f2	GAMP	GAMF	RE**	Insert	Torque*
A12M-SVZCR/L08-D160	Steel	16	12	11	150	30	10	11	5.5	0°	-8°	0.4	VC**0802...	0.6

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE : Standard corner radius
Use right-hand toolholders (SVZCR**) with right-hand inserts (R); and left-hand toolholders (SVZCL**) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
A08-SVZCR6-D12	CSTB-2L	T-6F
A12-SVZCR2-D16	CSTB-2.5	T-8F
A12M-SVZCR/L08-D160	CSTB-2L	T-6F

INSERT SELECTION

P

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B020

M

Application	Finishing to medium cutting
Grade	T9215
Breaker Shape	PS
Cutting conditions	B022

K

Application	Finishing to medium cutting
Grade	T515
Breaker Shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Breaker Shape	T-DIA with rake	AL
Cutting conditions	B026	

S

Application	Finishing to medium cutting
Grade	AH8005
Breaker Shape	PS
Cutting conditions	B028

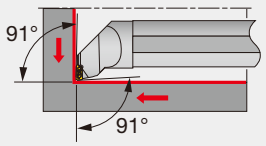
H

Application	Precision finishing	Finishing
Grade	BXM10	BXM20
Breaker Shape	T-CBN	T-CBN
Cutting conditions	B030	

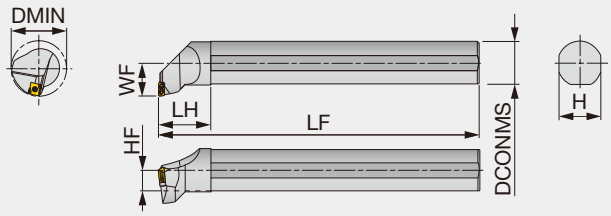
Reference pages: A-SVZCR/L: Insert → B155 -

S-TLANR/L

Screw-on boring bar for roughing, for negative tangential inserts



Cutting edge style **A**



Right hand (R) shown.

Inch	Material	DMIN	DCONMS	WF	LF	LH	H	HF	Insert
S16-TLANR/L12-D34	Steel	2.090	1.000	0.670	12.000	1.500	0.920	0.460	LNMX1204**L/R...
S20-TLANR/L12-D34	Steel	2.090	1.250	0.870	14.000	1.750	1.140	0.570	LNMX1204**L/R...
S24-TLANR/L12-D34	Steel	2.090	1.500	1.060	16.000	2.000	1.340	0.670	LNMX1204**L/R...
S32-TLANR/L16-D54	Steel	3.350	2.000	1.460	16.000	2.360	1.810	0.905	LNMX1606**L/R...

Use right-hand toolholders (TLANR**) with left-hand inserts (L); and left-hand toolholders (TLANL**) with right-hand inserts (R).

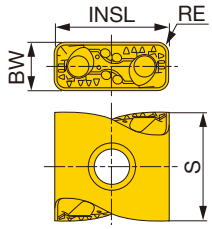
SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Spring pin	Wrench 1	Wrench 2
S**-TLANR/L12-D34	CSTB-3.5L115-S	CSTF-2L055-S	TSL12L/RI	-	KEYV-T10	T-6F-S
S32-TLANR16-D54	CSTB-4L115-S	-	TSL16LI	PSP-16	KEYV-T15	-
S32-TLANL16-D54	CSTB-4L115-S	-	TSL16RI	PSP-16	KEYV-T15	-

L X J K F U Q Z OTHERS

Reference pages: Standard cutting conditions → D106

LNMX12/16/24



P	Steel	★	★	★			
M	Stainless			☆			
K	Cast iron	☆	☆	☆			
N	Non-ferrous						
S	Superalloys						
H	Hard materials						

★ : First choice
☆ : Second choice

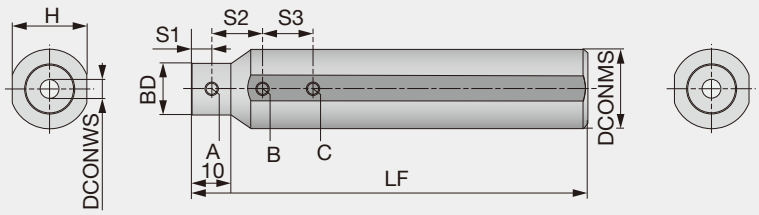
Designation	HAND	RE (in)	Coated						BW (in)	INSL (in)	S (in)
			T9115	T9125	AH725						
LNMX120408R-TDR	R	0.031	●	●					0.189	0.472	0.457
LNMX120408L-TDR	L	0.031	●	●					0.189	0.472	0.457
LNMX120412R-TDR	R	0.047	●	●					0.189	0.472	0.457
LNMX120412L-TDR	L	0.047	●	●					0.189	0.472	0.457
LNMX160608R-TDR	R	0.031	●	●					0.252	0.638	0.531
LNMX160608L-TDR	L	0.031	●	●					0.252	0.638	0.531
LNMX160612R-TDR	R	0.047	●	●					0.252	0.638	0.531
LNMX160612L-TDR	L	0.047	●	●					0.252	0.638	0.531
LNMX160616R-TDR	R	0.063	●	●					0.252	0.638	0.531
LNMX160616L-TDR	L	0.063	●	●					0.252	0.638	0.531
LNMX241016R-TDR	R	0.063	●	●					0.370	0.945	0.807
LNMX241016L-TDR	L	0.063	●	●					0.370	0.945	0.807
LNMX241024R-TDR	R	0.094	●	●					0.370	0.945	0.807
LNMX241024L-TDR	L	0.094	●	●					0.370	0.945	0.807
LNMX160608R-MDR	R	0.031	●		●				0.252	0.638	0.531
LNMX160608L-MDR	L	0.031	●		●				0.252	0.638	0.531
LNMX160612R-MDR	R	0.047	●		●				0.252	0.638	0.531
LNMX160612L-MDR	L	0.047	●		●				0.252	0.638	0.531
LNMX160608R-TWR	R	0.031	●	●					0.252	0.638	0.531
LNMX160608L-TWR	L	0.031	●	●					0.252	0.638	0.531
LNMX160612R-TWR	R	0.047	●	●					0.252	0.638	0.531
LNMX160612L-TWR	L	0.047	●	●					0.252	0.638	0.531

● : Line up

STREAMJETBAR

BLM sleeve

Round shank sleeve for StreamJetBar-Mini series



Metric	DCONMS	DCONWS	BD	LF	H	S1	S2	S3
BLM159-04	15.875 (0.625")	4	15	100	15	5	15	15
BLM159-05	15.875 (0.625")	5	15	100	15	5	15	15
BLM159-06	15.875 (0.625")	6	15	100	15	5	20	20
BLM159-07	15.875 (0.625")	7	15	100	15	5	20	20
BLM16-04	16	4	15	100	15	5	15	15
BLM16-05	16	5	15	100	15	5	15	15
BLM16-06	16	6	15	100	15	5	20	20
BLM16-07	16	7	15	100	15	5	20	20
BLM19-04	19.05 (0.750")	4	18	100	18	5	15	15
BLM19-05	19.05 (0.750")	5	18	100	18	5	15	15
BLM19-06	19.05 (0.750")	6	18	100	18	5	20	20
BLM19-07	19.05 (0.750")	7	18	100	18	5	20	20
BLM20-04	20	4	13	100	19	5	15	15
BLM20-05	20	5	14	100	19	5	15	15
BLM20-06	20	6	15	100	19	5	20	20
BLM20-07	20	7	16	100	19	5	20	20
BLM22-04	22	4	13	125	21	5	15	15
BLM22-05	22	5	14	125	21	5	15	15
BLM22-06	22	6	15	125	21	5	20	20
BLM22-07	22	7	16	125	21	5	20	20
BLM25-04	25	4	13	125	24	5	15	15
BLM25-05	25	5	14	125	24	5	15	15
BLM25-06	25	6	15	125	24	5	20	20
BLM25-07	25	7	16	125	24	5	20	20
BLM254-04	25.4 (1.000")	4	13	125	24	5	15	15
BLM254-05	25.4 (1.000")	5	14	125	24	5	15	15
BLM254-06	25.4 (1.000")	6	15	125	24	5	20	20
BLM254-07	25.4 (1.000")	7	16	125	24	5	20	20

SPARE PARTS

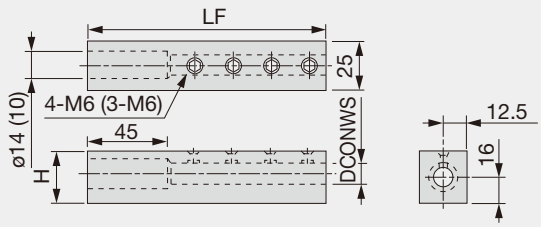



Designation	Clamping screw A	Clamping screw B, C	Wrench	Seal cap* (inner screw)
BLM159, 16...	SSHM4-4	SSHM4-4	P-2	CA-16(M6)
BLM19-04	SSHM4-4	SSHM4-6	P-2	CA-16(M6)
BLM19-05, 06, 07	SSHM4-4	SSHM4-4	P-2	CA-16(M6)
BLM20-04, 05	SSHM4-4	SSHM4-6	P-2	CA-16(M6)
BLM20-06, 07	SSHM4-4	SSHM4-4	P-2	CA-16(M6)
BLM22-...	SSHM4-4	SSHM4-6	P-2	CA-16(M6)
BLM25-04, 05	SSHM4-4	SSHM4-8	P-2	CA-16(M6)
BLM25-06	SSHM4-4	SSHM4-8	P-2	CA-16(M6)
BLM25-07	SSHM4-4	SSHM4-6	P-2	CA-16(M6)
BLM254-04, 05, 06	SSHM4-4	SSHM4-8	P-2	CA-16(M6)
BLM254-07	SSHM4-4	SSHM4-6	P-2	CA-16(M6)

*Optional

BLS sleeve

Square shank sleeve for boring bars (regular length)



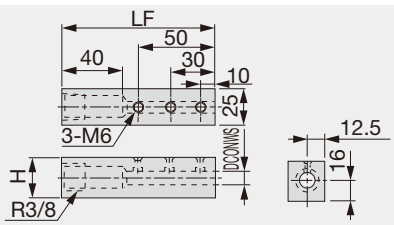
Metric	DCONWS	LF	H
BLS16-08	8	125	28
BLS16-10	10	125	28
BLS16-12	12	125	28

SPARE PARTS

Designation	Wrench
BLS16-...	P-3

BLS-C sleeve

Square shank sleeve for boring bars (short type)



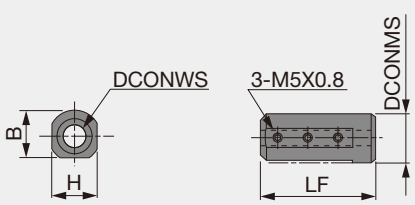
Metric	DCONWS	LF	H
BLS16-08C	8	100	28
BLS16-10C	10	100	28
BLS16-12C	12	100	28

SPARE PARTS

Designation	Wrench
BLS16-**C	P-3

BLM sleeve

Round shank sleeve for boring bars



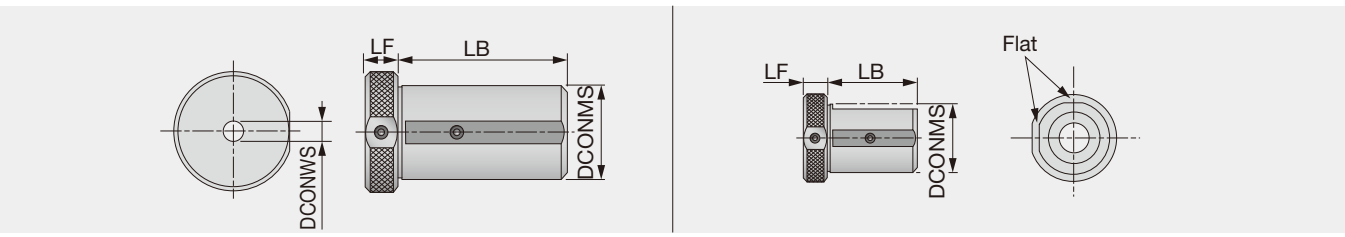
Metric	DCONWS	DCONMS	LF	H	B
BLM19-08	8	19.05	100	18	18
BLM20-08	8	20	100	18	19
BLM22-08	8	22	125	21	21
BLM254-08	8	25.4	125	24	24
BLM25-08C	8	25	55	23	24
BLM25-10C	10	25	55	23	24
BLM25-12C	12	25	55	23	24

SPARE PARTS

Designation	Wrench
BLM...	P-2.5

BLC sleeve

Round shank sleeve for boring bars



Metric	DCONWS	LB	LF	DCONMS
BLC40-8	8	73	13	40
BLC40-10	10	73	13	40
BLC40-12	12	73	13	40
BLC40-16	16	73	13	40
BLC32-8C	8	45	20	32
BLC32-10C	10	45	20	32
BLC32-12C	12	45	20	32
BLC40-8C	8	55	13	40
BLC40-10C	10	55	13	40
BLC40-12C	12	55	13	40
BLC40-16C	16	55	13	40

SPARE PARTS

Designation	Wrench
BLC40-8	P-3
BLC40-1...	P-4
BLC32-8C	P-3
BLC32-1*C	P-4
BLC40-8C	P-3
BLC40-1*C	P-4

STANDARD CUTTING CONDITIONS

Internal turning

ISO	Workpiece material	Grade			Cutting speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed *f* (ipr)
		First Choice	For surface finish	For wear resistance (High speed)			
P	Low carbon steel 1025, etc.	AH725	-	-	164 - 180	0.012 - 0.079	0.003 - 0.012
		-	-	AH8015	164 - 656	0.012 - 0.079	0.003 - 0.012
		-	NS9530	-	262 - 820	0.012 - 0.079	0.003 - 0.012
		-	GT9530	-	262 - 984	0.012 - 0.079	0.003 - 0.012
	Carbon steel 1045, 1055, etc.	AH725	-	-	164 - 591	0.012 - 0.079	0.003 - 0.012
		-	-	AH8015	164 - 656	0.012 - 0.079	0.003 - 0.012
		-	NS9530	-	262 - 820	0.012 - 0.079	0.003 - 0.012
		-	GT9530	-	262 - 984	0.012 - 0.079	0.003 - 0.012
	Low alloy steel 4140, etc.	AH725	-	-	164 - 591	0.012 - 0.079	0.003 - 0.012
		-	-	AH8015	164 - 656	0.012 - 0.079	0.003 - 0.012
		-	NS9530	-	262 - 820	0.012 - 0.079	0.003 - 0.012
		-	GT9530	-	262 - 984	0.012 - 0.079	0.003 - 0.012
	Alloy steel 5120, etc.	AH725	-	-	164 - 591	0.012 - 0.079	0.003 - 0.012
		-	-	AH8015	164 - 656	0.012 - 0.079	0.003 - 0.012
		-	NS9530	-	262 - 820	0.012 - 0.079	0.003 - 0.012
		-	GT9530	-	262 - 984	0.012 - 0.079	0.003 - 0.012
M	Stainless steel (Austenitic) 304, etc.	AH8015	-	-	164 - 492	0.012 - 0.079	0.003 - 0.012
	Stainless steel (Martensitic and ferritic) 430, etc.	AH8015	-	-	164 - 492	0.012 - 0.079	0.003 - 0.012
	Stainless steel (Precipitation hardening) 174, etc.	AH8015	-	-	164 - 492	0.012 - 0.079	0.003 - 0.012
K	Gray cast iron No.250B, etc.	AH725	-	-	164 - 591	0.012 - 0.079	0.003 - 0.012
		-	-	AH8015	164 - 656	0.012 - 0.079	0.003 - 0.012
		-	NS9530	-	262 - 820	0.012 - 0.079	0.003 - 0.012
		-	GT9530	-	262 - 984	0.012 - 0.079	0.003 - 0.012
	Ductile cast iron 80-55-60, etc.	AH725	-	-	164 - 591	0.012 - 0.079	0.003 - 0.012
		-	-	AH8015	164 - 656	0.012 - 0.079	0.003 - 0.012
		-	NS9530	-	262 - 820	0.012 - 0.079	0.003 - 0.012
		-	GT9530	-	262 - 984	0.012 - 0.079	0.003 - 0.012
N	Non ferrous Metal Aluminum alloy, etc.	KS05F	-	-	328 - 984	0.012 - 0.079	0.003 - 0.012
	Non ferrous Metal Cu Alloy, etc.	KS05F	-	-	328 - 984	0.012 - 0.079	0.003 - 0.012
S	Heat-resistant alloys Titanium alloys, etc.	AH8015	-	-	66 -262	0.012 - 0.079	0.003 - 0.012
	Heat-resistant alloys Nickel-base alloys	AH8015	-	-	66 - 262	0.012 - 0.079	0.003 - 0.012

Reference pages: A/E-SWLXR/L → D034, A/E-SDXXR/L → D042
A/E-SDZXR/L → D093

TURNTEC STANDARD CUTTING CONDITIONS

*Values in red are for facing.

LNMX1204

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (sfm)	Depth of cut: *ap* (in)		Feed: *f* (ipr)	
					RE : 0.031	RE : 0.047	RE : 0.031	RE : 0.047
P	Steels 1045, 4130, etc.	TDR	T9115	390 - 820	0.020 - 0.195 0.020 - 0.086	0.031 - 0.195 0.031 - 0.086	0.006 - 0.024	0.010 - 0.031
		TDR	T9125	260 - 590	0.020 - 0.195 0.020 - 0.086	0.031 - 0.195 0.031 - 0.086	0.006 - 0.024	0.010 - 0.031
M	Stainless steels 304, 316, etc.	TDR	T9115	330 - 590	0.020 - 0.195 0.020 - .086	0.031 - 0.195 0.031 - 0.086	0.006 - 0.024	0.010 - 0.031
		TDR	T9125	260 - 590	0.020 - 0.195 0.020 - 0.086	0.031 - 0.195 0.031 - 0.086	0.006 - 0.024	0.010 - 0.031

LNMX1606

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (sfm)	Depth of cut: *ap* (in)			Feed: *f* (ipr)		
					RE : 0.031	RE : 0.047	RE : 0.063	RE : 0.031	RE : 0 .047	RE : 0.063
P	Steels 1045, 4130, etc.	TDR	T9115	390 - 820	0.020 - 0.197 0.020 - .126	0.031 - 0.236 .031 - .126	0.039 - 0.315 0.039 - 0.126	0.006 - 0.024	0.010 - 0.031	0.012 - 0.039
		TDR	T9125	260 - 590	0.020 - 0.197 0.020 - .126	0.031 - 0.236 .031 - .126	0.039 - 0.315 0.039 - 0.126	0.006 - 0.024	0.010 - 0.031	0.012 - 0.039
		TWR	T9115	390 - 820	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	-	0.006 - 0.024	0.010 - 0.031	-
		TWR	T9125	260 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	-	0.006 - 0.024	0.010 - 0.031	-
M	Stainless steels 304, 316, etc.	TDR	T9115	330 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	0.039 - 0.315 0.039 - 0.126	0.006 - 0.024	0.010 - 0.031	0.012 - 0.039
		TDR	T9125	260 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	0.039 - 0.315 0.039 - 0.126	0.006 - 0.024	0.010 - 0.031	0.012 - 0.039
		MDR	T9115	330 - 490	0.059 - 0.236 0.020 - 0.126	0.059 - 0.276 0.031 - 0.126	-	0.004 - 0.020	0.006 - 0.028	-
		MDR	AH725	160 - 490	0.059 - 0.236 0.020 - 0.126	0.059 - 0.276 0.031 - 0.126	-	0.004 - 0.020	0.006 - 0.028	-
		TWR	T9115	330 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	-	0.006 - 0.024	0.010 - 0.031	-
		TWR	T9125	260 - 590	0.020 - 0.197 0.020 - 0.126	0.031 - 0.236 0.031 - 0.126	-	0.006 - 0.024	0.010 - 0.031	-

LNMX2410

ISO	Workpiece material	Chip breaker	Grade	Cutting speed *Vc* (sfm)	Depth of cut: *ap* (in)		Feed: *f* (ipr)	
					RE : 0.063	RE : 0.094	RE : 0.063	RE : 0.094
P	Steels 1045, 4130, etc.	TDR	T9115	390 - 820	0.156 - 0.585 0.039 - 0.176	0.195 - 0.585 0.039 - 0.176	0.012 - 0.039	0.012 - 0.043
		TDR	T9125	260 - 490	0.156 - 0.585 0.039 - 0.176	0.195 - 0.585 0.039 - 0.176	0.012 - 0.039	0.012 - 0.043
M	Stainless steels 304, 316, etc.	TDR	T9115	330 - 590	0.156 - 0.585 0.039 - 0.176	0.195 - 0.585 0.039 - 0.176	0.012 - 0.039	0.012 - 0.043
		TDR	T9125	260 - 490	0.156 - 0.585 0.039 - 0.176	0.195 - 0.585 0.039 - 0.176	0.012 - 0.039	0.012 - 0.043

Reference pages: S-TLANR/L → D100

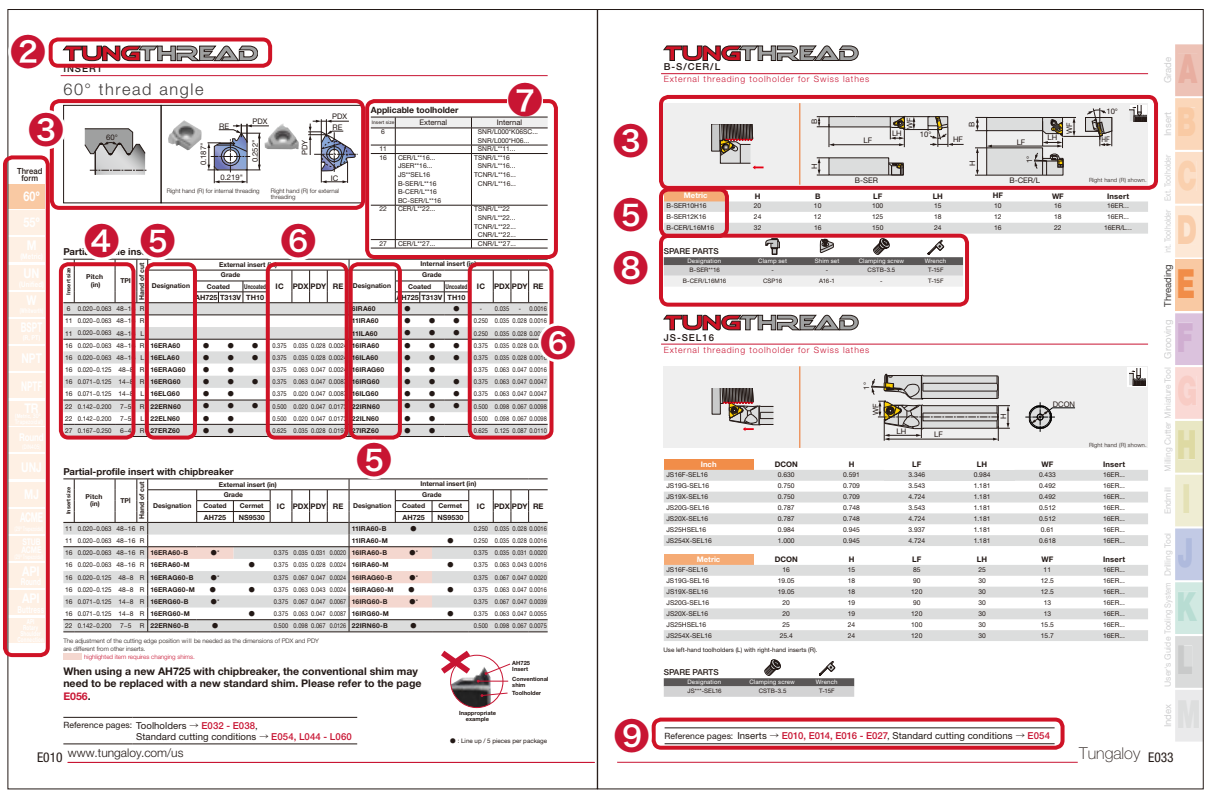
Threading Tool

Threading Tool - Content structure

- Products are listed by product series and thread shape to be machined.
- Inserts and toolholders in the catalog are our standard stock items.

How to use the page

Method ① Select the thread form/type described at the left end of each page, jump to the page on the left index, and choose a designation you need (❺) in the dimension table (❻). Applicable toolholders are shown in (❼).
Method ② Select the series name on E003 and check the details on the product page.
Method ③ Select an item from Quick Guide on E004 - E007.

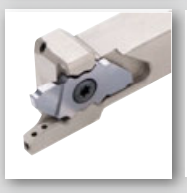


❶ : Screw shape
❷ : Series name
❸ : Drawing of thread, threading insert, threading toolholder
❹ : Applicable pitch and the number of threads
❺ : Designation (for external, for internal)
❻ : Dimension table (conforming to ISO13399)
❼ : Applicable toolholder
❽ : Spare parts
❾ : Reference page

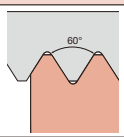
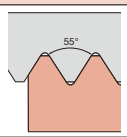
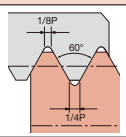
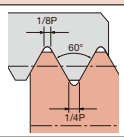
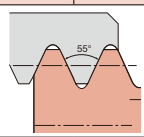
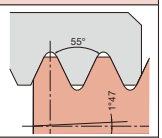
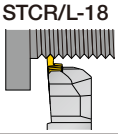
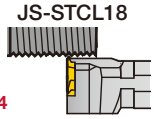
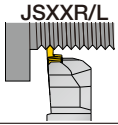
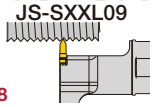
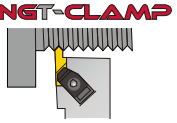
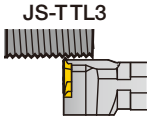
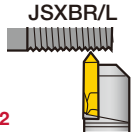
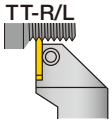
When ordering
- Please specify the designation and quantity for threading toolholders.
  e.g. **SIR0500M16B ...** 1 (one threading toolholder per package)
- Please specify the designation, grade, and quantity for threading inserts.
  e.g. **16IR175ISO AH725 ...** 5 (five threading inserts per package)

Main products

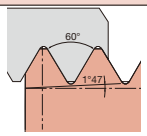
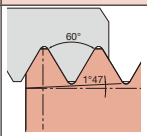
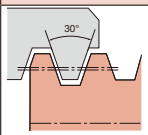
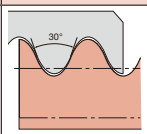
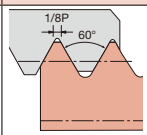
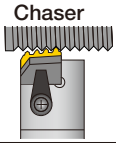
Thread form

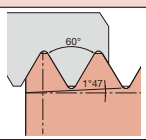
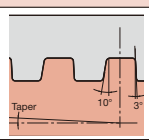
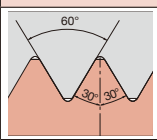
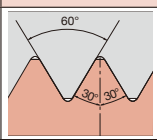
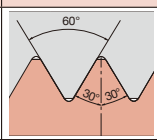
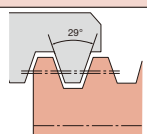
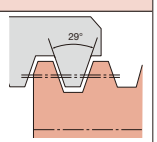
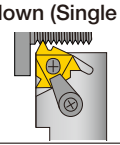
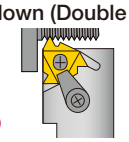
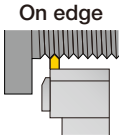
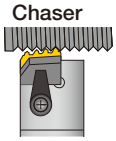
		Inch	Metric
	**TUNGTHREAD** **Lay down insert, toolholder** Standard items cover a wide variety of threading inserts. Standard tool series with double-clamp system for excellent insert stability in machining API-standard threads.	✓	✓
		E004 - E007 E010 - E042 E053, E054	
	**On edge insert, toolholder** ACME and STUB ACME inserts can be used for the range of 16 to 3TPI with 2 types of toolholders. The special full-profile insert realizes both the fine adjustment of thread height and the minimum burr on the crest.	✓	✓
		E004 - E007 E026 - E030 E040 - E041	
	**Chaser** Threading tool with multiple cutting edges for highly efficient machining of API-standard round, buttress, and NPT.	✓	✓
		E005 - E007 E023, E028 - E031 E042	
	**TETRAMINICUT** Reduced interference with tailstock in small diameter threading.	✓	✓
		E004 - E008 E011 E042 - E043 E055	
	**DUOJUSTCUT** Standard threading tool for Swiss machine. Shortest undercut possible between thread and workpiece face due to better accessibility.	✓	
		E004 - E009 E011, E048 E055	
	**TUNGT-CLAMP** Tool with high clamp rigidity that firmly holds the insert with a clamp. Grooving insert and threading insert can be used with the same toolholder.	✓	
		E004 - E006 E012 E049 - E050 E055	
	**J-SERIES** Tool series with 3-cornered inserts. Subselection for threading on Swiss lathes. Standard tool also suitable for radial Swiss lathes.	✓	✓
		E004 E012 - E013 E015 E051 - E052	
	**TINYMINITURN** Internal threading tool suitable for the minimum machining diameter ø4. All tools have oil holes that can supply coolant from the cutting edge.		✓
		E006, E052, E056	
	**Other tool** TT type	✓	✓
		E004 - E006 E013, E015 E053 - E054	

Applicable tool for each external thread type

Applicable tool for each external thread type	General purpose		General purpose		Pipe		
Thread type	National taper pipe		Full profile				
	60°	55°	ISO metric	Unified	Whitworth	Parallel pipe thread	Taper pipe thread
	-	-	M	UNC, UNF UNEF	BSW, BSF W	G BSP, PF	R, PT, BSPT
Thread form / Tool type							
ST type  E034	0.5 ~ 6 mm (0.020" ~ 0.250") 48 ~ 4TPI E010	0.020" ~ 0.200" 48 ~ 5TPI E014	0.020" ~ 0.250" E016	32 ~ 5TPI E018	28 ~ 5TPI E020		28 ~ 11TPI E021
TETRAMCUT STCR/L-18  E043	0.4 ~ 3 mm (0.016" ~ 0.125") 64 ~ 8TPI E011	—	—	—	—		—
TETRAMCUT JS-STCL18  E044	0.4 ~ 3 mm (0.016" ~ 0.125") 64 ~ 8TPI E011	—	—	—	—		—
DUOJCUT JSXXR/L  E045	0.2 ~ 1.5 mm (0.008" ~ 0.0625") 127 ~ 16TPI E011	—	—	—	—		—
DUOJCUT JS-SXXL09  E048	0.2 ~ 1.5 mm (0.008" ~ 0.0625") 127 ~ 16TPI E011	—	—	—	—		—
TUNGT-CLAMP  E049	1.27 ~ 4.23 mm (0.050" ~ 0.167") 20 ~ 6TPI E012	—	—	—	—		—
JSTTR/L  E051	0.5 ~ 1 mm (0.021" ~ 0.025") 48 ~ 25TPI E012	0.021" ~ 0.025" 48 ~ 25TPI E015	—	—	—		—
JS-TTL3  E051	0.5 ~ 1 mm (0.021" ~ 0.025") 48 ~ 25TPI E012	0.021" ~ 0.025" 48 ~ 25TPI E015	—	—	—		—
JSXBR/L  E052	0.5 ~ 1 mm (0.021" ~ 0.025") 48 ~ 25TPI E013	—	—	—	—		—
TT-R/L  E049	~ 3 mm (~ 0.125") ~ 8TPI E013	~ 0.125" ~ 8TPI E015	—	—	—		—

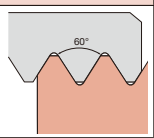
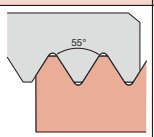
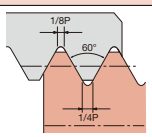
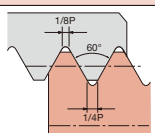
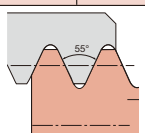
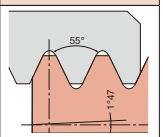
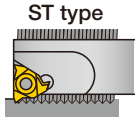
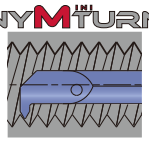
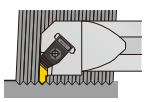
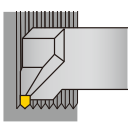
Please see the page E*** for the product details.

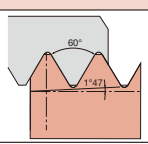
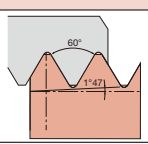
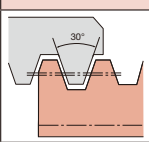
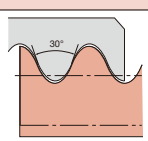
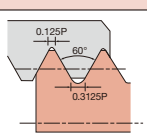
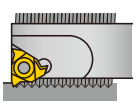
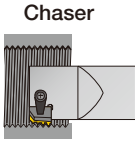
Applicable tool for each external thread type	Pipe		Machine parts		Aerospace	
Thread type	Full profile					
	National taper pipe		30° Trapezoidal	Round DIN405	UNJ	
	NPT	NPTF	TR	Rd	UNJC,UNJF	
Thread form / Tool type						
ST type  E034	27 ~ 8TPI E022	27 ~ 8TPI E023	1.5 ~ 6 mm E024	8TPI, 6TPI E024	32 ~ 8TPI E025	
Chaser  E042	11.5TPI, 8TPI E023	—	—	—	—	

Applicable tool for each external thread type	Energy					Machine parts, Pipe	
Thread type	Full profile						
	API Tubing & Casing		API Rotary Shoulder Connection			ACME	STUB ACME
	Round	Buttress	V-0.038R	V-0.040	V-0.050		
Thread form / Tool type							
ST type  E034	10TPI, 8TPI E027	5TPI (0.75TPF) E029	—	—	—	12 ~ 5TPI E026	—
Lay down (Single side)  E038	—	5TPI (0.75TPF) 5TPI (1TPF) E029	—	—	—	—	—
Lay down (Double side)  E039	—	—	4TPI (2TPF) 4TPI (3TPF) E031	5TPI (3TPF) E031	4TPI (2TPF) 4TPI (3TPF) E031	—	—
On edge  E040	10TPI, 8TPI E028	5TPI (0.75TPF) 5TPI (1TPF) E030	—	—	—	16 ~ 3TPI E026	16 ~ 3TPI E027
Chaser  E041	10TPI, 8TPI E028	5TPI (0.75TPF) E030	—	—	—	—	—

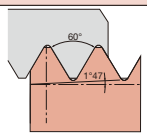
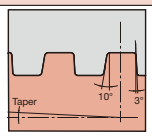
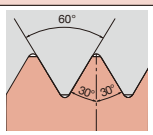
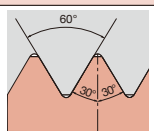
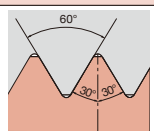
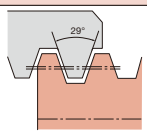
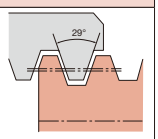
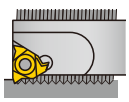
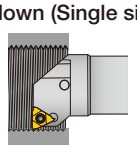
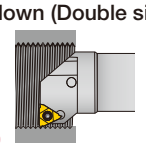
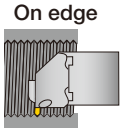
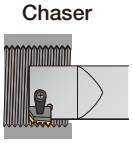
Please see the page E*** for the product details.

Applicable tool for each internal thread type

Applicable tool for each external thread type	General purpose		General purpose		Pipe		
Thread type	National taper pipe		Full profile				
	60°	55°	ISO metric	Unified	Whitworth	Parallel pipe thread	Taper pipe thread
	-	-	M	UNC, UNF UNEF	BSW, BSF W	G, Rp BSP, PF, PS	Rc, PT, BSPT
Thread form / Tool type							
ST type  E036	0.5 ~ 6 mm (0.020" ~ 0.250") 48 ~ 4TPI E010	0.020" ~ 0.200" 48 ~ 5TPI E014	0.020" ~ 0.250" E016	32 ~ 5TPI E018	28 ~ 5TPI E020		19 ~ 11TPI E021
TINYMTURN  E052	0.5 ~ 1.5 mm (0.021" ~ 0.0625") 48 ~ 16TPI E052	—	—	—	—	—	—
TUNGT-CLAMP  E049	1.27 ~ 4.23 mm 20 ~ 6TPI E012	—	—	—	—	—	—
TT-R/L  E053	~ 3 mm (~ 0.125") ~ 8TPI E013	~ 0.125" ~ 8TPI E015	—	—	—	—	—

Applicable tool for each external thread type	Pipe		Machine parts		Aerospace	
Thread type	Full profile					
	National taper pipe		30° Trapezoidal (DIN103)	Round (DIN405)	MJ	
	NPT	NPTF	TR	Rd	MJ	
Thread form / Tool type						
ST type  E036	27 ~ 8TPI E022	14 ~ 8TPI E023	1.5 ~ 5 mm (0.059" ~ 0.197") E024	6TPI E024	0.039" E025	
Chaser  E042	11.5TPI, 8TPI E023	—	—	—	—	

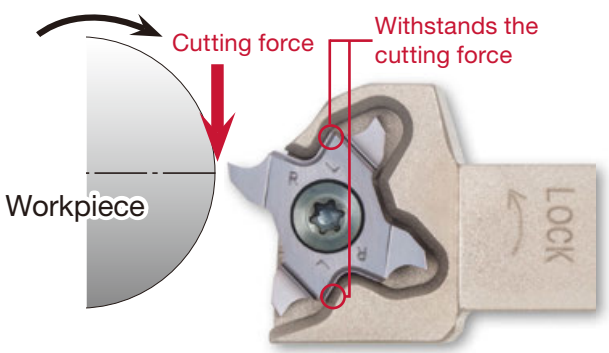
Please see the page E*** for the product details.

Applicable tool for each external thread type	Energy					Machine parts, Pipe	
Thread type	Full profile						
	API Tubing & Casing		API Rotary Shoulder Connection			ACME	STUB ACME
	Round	Buttress	V-0.038R	V-0.040	V-0.050		
Thread form / Tool type							
ST type  E036	10TPI, 8TPI E027	5TPI (0.75TPF) E029	——	——	——	12 ~ 5TPI E026	——
Lay down (Single side)  E039	——	5TPI (0.75TPF) 5TPI (1TPF) E029	——	——	——	——	——
Lay down (Double side)  E040	——	——	4TPI (2TPF) 4TPI (3TPF) E031	5TPI (3TPF) E031	4TPI (2TPF) 4TPI (3TPF) E031	——	——
On edge  E041	10TPI, 8TPI E028	5TPI (0.75TPF) 5TPI (1TPF) E030	——	——	——	——	——
Chaser  E042	10TPI, 8TPI E028	5TPI (0.75TPF) E030	——	——	——	——	——

Please **see the page E***** for the product details.

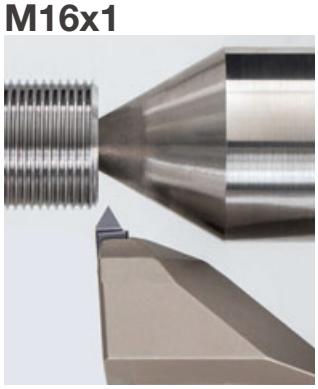
Unique clamping system

The unique pocket design provides accurate indexing repeatability of the cutting edge height.



No tool interference with the tailstock when machining small parts

TETRA MINI CUT
M16x1



Insert: TCT18R-60N-020

Conventional
M24x1

Insert: 16ER10ISO

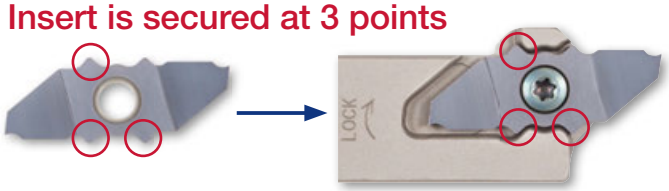
Reference pages: Inserts → E011, Toolholders → E043 - E044, Standard cutting conditions → E055

DUOJCUT UST

Unique clamping system for highly rigid clamping

The unused cutting edge is always protected due to the innovative clamping system.
Even if the first cutting edge is chipped, the other unused cutting edge can be used because the insert is clamped in the center.

Insert is secured at 3 points



Excellent accessibility to the workpiece face

Utilizing various tools minimizes the length of undercut between the thread and work face.

	Type A	Type B	Type N
Right hand	a > b	a < b	a = b
Left hand	a > b	a < b	a = b

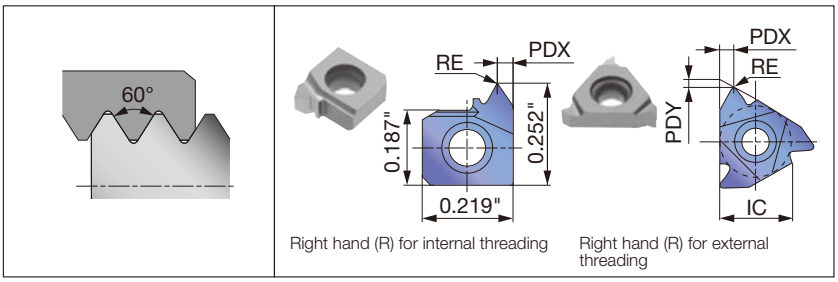
DUOJCUT UST

Insert designation	PDX mm (in)	Pitch: mm (in) 0.2 (0.008)	0.25 (0.010)	0.35 (0.014)	0.4 (0.016)	0.5 (0.020)	0.6 (0.024)	0.8 (0.031)	1 (0.039)	1.25 (0.049)	1.5 (0.059)
JXTG12FR-60A-000	0.25 (0.010)		Applicable area								
JXTG12FL-60A-000											
JXTG12FR-60B-000	2.25 (0.089)										
JXTG12FL-60B-000											
JXTG12FR-60A-005	0.6 (0.024)				Applicable area						
JXTG12FL-60A-005											
JXTG12FR-60B-005	1.9 (0.075)										
JXTG12FL-60B-005											
JXTG12FR-60N-010	1.25 (0.049)									Applicable area	
JXTG12FL-60N-010											

Threads per inch (TPI): 127 | 72 | 52 | 32 | 16

Reference pages: Inserts → E011, Toolholders → E045 - E048, Standard cutting conditions → E055

60° thread angle



Right hand (R) for internal threading

Right hand (R) for external threading

Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
11		SNR/L**11...
16	CER/L**16... JSER**16... JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...
27	CER/L**27...	CNR/L**27...

Partial-profile insert

Insert size	Pitch (mm)	TPI	Hand of cut	External insert (in) Designation	Grade: Coated AH725	Coated T313V	Uncoated TH10	IC	PDX	PDY	RE	Internal insert (in) Designation	Grade: Coated AH725	Coated T313V	Uncoated TH10	IC	PDX	PDY	RE
6	0.5~1.5	48~16	R									6IRA60	●		●	-	0.035	-	0.0016
11	0.5~1.5	48~16	R	11ERA60	●			0.250	0.035	0.031	0.0024	11IRA60	●	●	●	0.250	0.035	0.028	0.0016
11	0.5~1.5	48~16	L									11ILA60	●	●	●	0.250	0.035	0.028	0.0016
16	0.5~1.5	48~16	R	16ERA60	●	●	●	0.375	0.035	0.028	0.0024	16IRA60	●	●	●	0.375	0.035	0.028	0.0016
16	0.5~1.5	48~16	L	16ELA60	●	●	●	0.375	0.035	0.028	0.0024	16ILA60	●	●	●	0.375	0.035	0.028	0.0016
16	0.5~3	48~8	R	16ERAG60	●	●		0.375	0.063	0.047	0.0024	16IRAG60	●	●		0.375	0.063	0.047	0.0016
16	1.75~3	14~8	R	16ERG60	●	●	●	0.375	0.063	0.047	0.0087	16IRG60	●	●	●	0.375	0.063	0.047	0.0047
16	1.75~3	14~8	L	16ELG60	●	●		0.375	0.020	0.047	0.0087	16ILG60	●	●	●	0.375	0.063	0.047	0.0047
22	3.5~5	7~5	R	22ERN60	●	●	●	0.500	0.020	0.047	0.0173	22IRN60	●	●	●	0.500	0.098	0.067	0.0098
22	3.5~5	7~5	L	22ELN60	●	●		0.500	0.020	0.047	0.0173	22ILN60	●	●		0.500	0.098	0.067	0.0098
27	4~6	6~4	R	27ERZ60	●	●		0.625	0.035	0.028	0.0197	27IRZ60	●	●		0.625	0.125	0.087	0.0110

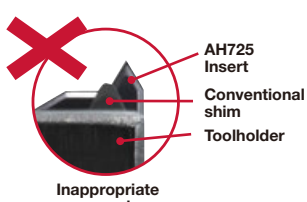
Partial-profile insert with chipbreaker

Insert size	Pitch (mm)	TPI	Hand of cut	External insert (in) Designation	Grade: Coated AH725	Cermet NS9530	IC	PDX	PDY	RE	Internal insert (in) Designation	Grade: Coated AH725	Cermet NS9530	IC	PDX	PDY	RE
11	0.5~1.5	48~16	R								11IRA60-B	●		0.250	0.035	0.028	0.0016
11	0.5~1.5	48~16	R								11IRA60-M		●	0.250	0.035	0.028	0.0016
16	0.5~1.5	48~16	R	16ERA60-B	●*		0.375	0.035	0.031	0.0020	16IRA60-B	●*		0.375	0.035	0.031	0.0020
16	0.5~1.5	48~16	R	16ERA60-M		●	0.375	0.035	0.028	0.0024	16IRA60-M		●	0.375	0.063	0.043	0.0016
16	0.5~3	48~8	R	16ERAG60-B	●*		0.375	0.067	0.047	0.0024	16IRAG60-B	●*		0.375	0.067	0.047	0.0020
16	0.5~3	48~8	R	16ERAG60-M	●	●	0.375	0.063	0.043	0.0024	16IRAG60-M	●	●	0.375	0.063	0.047	0.0016
16	1.75~3	14~8	R	16ERG60-B	●*		0.375	0.067	0.047	0.0067	16IRG60-B	●*		0.375	0.067	0.047	0.0039
16	1.75~3	14~8	R	16ERG60-M		●	0.375	0.063	0.047	0.0087	16IRG60-M		●	0.375	0.063	0.047	0.0055
22	3.5~5	7~5	R	22ERN60-B	●		0.500	0.098	0.067	0.0126	22IRN60-B	●		0.500	0.098	0.067	0.0075

The adjustment of the cutting edge position will be needed as the dimensions of PDX and PDY are different from other inserts.

highlighted item requires changing shims.

When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim. Please refer to the page E056.



Inappropriate example

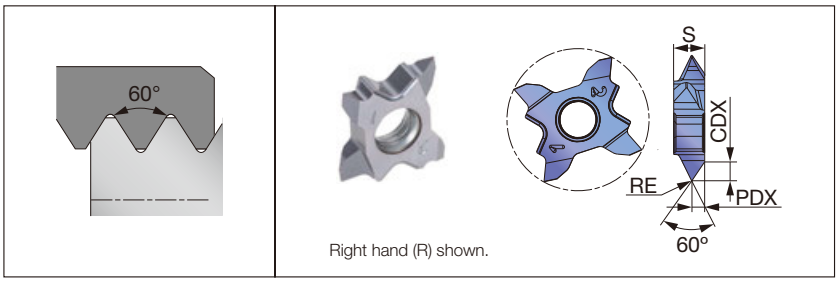
Reference pages: Toolholders → E032 - E038,
Standard cutting conditions → E054, L044 - L060

● : Line up / 5 pieces per package

TETRAMINI CUT

INSERT

60° thread angle



Applicable toolholder

External
STCR/L**-18
STCR/L**18-CHP
JS**-STCL18

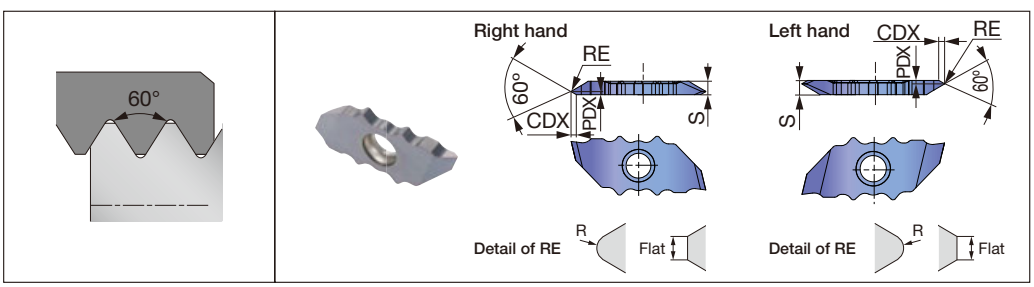
Partial-profile insert

Pitch (mm)	TPI	Hand of cut	External insert (in)						
			Designation	Grade		PDX	CDX	RE	S
				Coated					
				SH725	AH725				
0.4 - 1	25 - 64	R	**TCT18FR-60A-005**	●		0.024	0.039	0.002	0.157
1 - 2	25 - 12	R	**TCT18FR-60A-010**	●		0.039	0.064	0.004	0.157
0.8 - 3	8 - 32	R/L	**TCT18R/L-60N-010**		●	0.063	0.105	0.004	0.157
1.5 - 3	8 - 16	R/L	**TCT18R/L-60N-020**		●	0.063	0.101	0.008	0.157

DUOJUST CUT

INSERT

60° thread angle



Applicable toolholder

External
JSXXR/L**09
JSXXR/L**09-CHP
JS**-SXXL09

Partial-profile insert

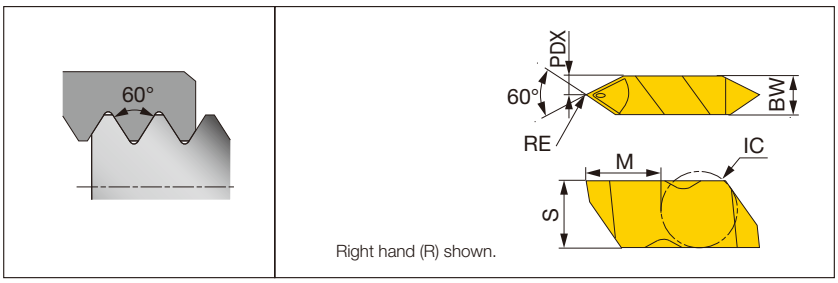
Insert size	Pitch (mm)	TPI	Hand of cut	External insert (in)						
				Designation	Grade		PDX	CDX	RE	S
					Coated					
					SH725					
					R	L				
12	0.2 - 0.4	64 - 127	R/L	**JXTG12FR/L-60A-000**	●	●	0.010	0.016	Flat 0.002 max	0.098
12	0.2 - 0.4	64 - 127	R/L	**JXTG12FR/L-60B-000**	●	●	0.089	0.016	Flat 0.002 max	0.098
12	0.4 - 1	25 - 64	R/L	**JXTG12FR/L-60A-005**	●	●	0.024	0.039	R 0.002	0.098
12	0.4 - 1	25 - 64	R/L	**JXTG12FR/L-60B-005**	●	●	0.075	0.039	R 0.002	0.098
12	1 - 1.5	16 - 25	R/L	**JXTG12FR/L-60N-010**	●	●	0.049	0.081	R 0.004	0.098

	Type A	Type B	Type N
Right hand	a b a > b	a b a < b	a b a = b
Left hand	a b a > b	a b a < b	a b a = b

Reference pages: TetraMini-Cut : Toolholders → E043 - E044,
Standard cutting conditions → E055, L044 - L060
DuoJust-Cut : Toolholders → E045 - E048,
Standard cutting conditions → E055, L044 - L060

● : Line up / 5 pieces per package

60° thread angle



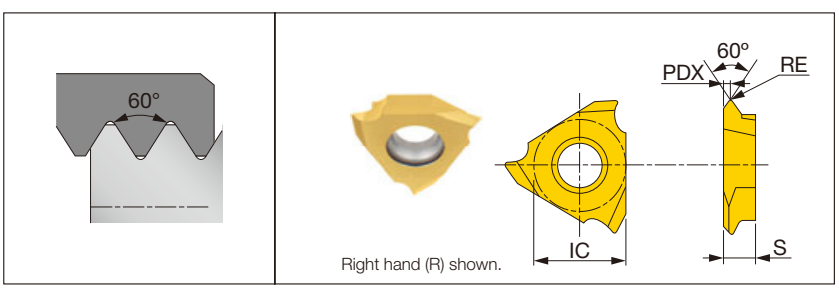
Applicable toolholder

External	Internal
FLASR/L-1616M3	A**M-FLER/L3
FLSR/L...	HS**-FLER3W

Partial-profile insert for external and internal threads

External Pitch (mm)	Internal Pitch (mm)	TPI	Hand of cut	Designation	Grade: Coated: AH725	IC (in)	PDX (in)	BW (in)	RE (in)	S (in)	M (in)
1.27 - 4.23	2.11 - 5.08	6 - 20	R/L	**FLT-3R/L-HCB**	●	0.375	0.098	0.195	0.007	0.344	0.3999
2.31 - 4.23	3.175 - 5.08	11 - 20	R/L	**FLT-3R/LC-HCB**	●	0.375	0.098	0.195	0.014	0.344	0.3999
1.27 - 4.23	2.11 - 5.08	6 - 20	R/L	**FLT-3R/L-CB**	●	0.375	0.098	0.195	0.007	0.344	0.3999

60° thread angle



Applicable toolholder

External
JSTTR/L**3
JS**-TTL3

Partial-profile insert

Pitch (mm)	TPI	Hand of cut	Designation	External insert (in): Grade: Coated: SH725 R	SH725 L	J740 R	J740 L	Cermet: NS9530 R	NS9530 L	Uncoated: TH10 R	TH10 L	IC	PDX	S	RE
0.5 - 1	25 - 48	R/L	**JTTR/L3005F**	●	●	●		●		●		0.375	0.035	0.125	0.002
0.5 - 1	25 - 48	R/L	**JTTR/L3010F**	●	●	●		●		●		0.375	0.035	0.125	0.004

Reference pages: TungT-Clamp : Toolholders → E049 - E050,
Standard cutting conditions → E055, L044 - L060
J-Series : Toolholders → E051 - E052

● : Line up

60° thread angle

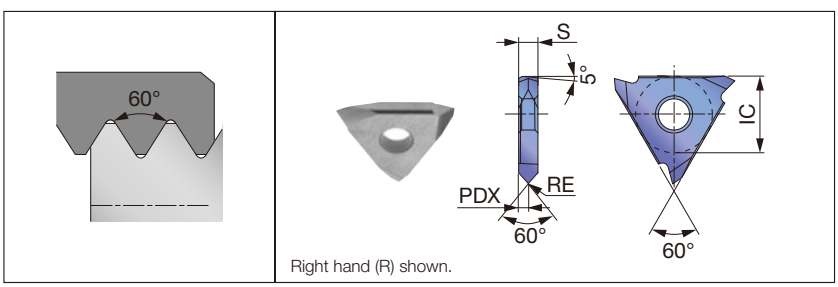
Applicable toolholder

External
JSXBR**K8
JSXBR**K8-C

Partial-profile insert

Pitch (mm)	TPI	Hand of cut	Designation	External insert (in)				
				Grade		IC	S	RE
				Coated	Uncoated			
				J740	TH10			
0.5 - 1	25 - 48	R	**JXT1R6000F**	●	●	0.315	0.156	0.001
0.5 - 1	25 - 48	R	**JXT2R6000F**	●	●	0.315	0.156	0.001

TT type / 60° thread angle



Applicable toolholder

External	Internal
TT-****RE/LI	TT-2525RI

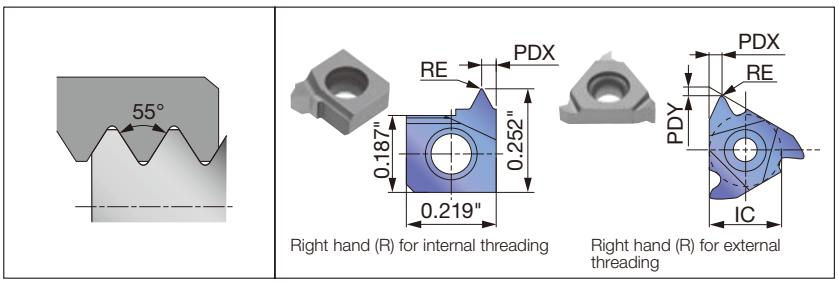
Partial-profile insert for external and internal threads

Pitch (mm)	TPI	Hand of cut	Designation	Grade		IC (in)	PDX (in)	S (in)	RE (in)
				Cermet	Uncoated				
				NS9530	TH10				
≤ 3	≥ 8	R	**TTR42M-005**	●	●	0.500	0.063	0.126	0.002
≤ 3	≥ 8	L	**TTL42M-005**	●	●	0.500	0.063	0.126	0.002

Reference pages: J-Series : Toolholders → E051 - E052,
Standard cutting conditions → E054, L044 - L060

● : Line up

55° thread angle (General purpose)



Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
11		SNR/L**11...
16	CER/L**16... JSER**16... JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

Partial-profile insert

Insert size	Pitch (in)	TPI	Hand of cut	External insert (in)								Internal insert (in)							
				Designation	Grade			IC	PDX	PDY	RE	Designation	Grade			IC	PDX	PDY	RE
					Coated		Uncoated						Coated		Uncoated				
					AH725	T313V	TH10						AH725	T313V	TH10				
6	0.020~0.063	48~16	R									6IRA55	●		●	-	0.035	-	0.0028
11	0.020~0.063	48~16	R	11ERA55	●			0.250	0.035	0.020	0.0020	11IRA55	●	●	●	0.250	0.035	0.028	0.0028
16	0.020~0.063	48~16	R	16ERA55	●	●	●	0.375	0.035	0.028	0.0028	16IRA55	●	●	●	0.375	0.035	0.028	0.0028
16	0.020~0.125	48~8	R	16ERAG55	●			0.375	0.067	0.047	0.0028	16IRAG55	●			0.375	0.067	0.047	0.0028
16	0.071~0.125	14~8	R	16ERG55	●	●	●	0.375	0.063	0.047	0.0110	16IRG55	●	●	●	0.375	0.067	0.047	0.0098
22	0.142~0.200	7~5	R	22ERN55	●	●	●	0.500	0.098	0.067	0.0197	22IRN55	●	●	●	0.500	0.098	0.067	0.0197

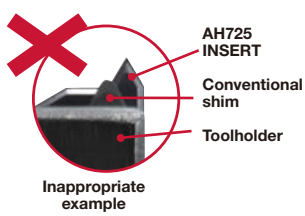
Partial-profile insert with chipbreaker

Insert size	Pitch (in)	TPI	Hand of cut	External insert (in)							Internal insert (in)						
				Designation	Grade	IC	PDX	PDY	RE		Designation	Grade	IC	PDX	PDY	RE	
					Coated							Coated					
					AH725							AH725					
16	0.020~0.063	48~16	R	16ERAG55-B	●*	0.375	0.067	0.047	0.0028		16IRAG55-B	●*	0.375	0.067	0.047	0.0020	
16	0.071~0.125	14~8	R	16ERG55-B	●*	0.375	0.067	0.047	0.0091		16IRG55-B	●*	0.375	0.067	0.047	0.0079	

The adjustment of the cutting edge position will be needed as the dimensions of PDX and PDY are different from other inserts.

highlighted item requires changing shims.

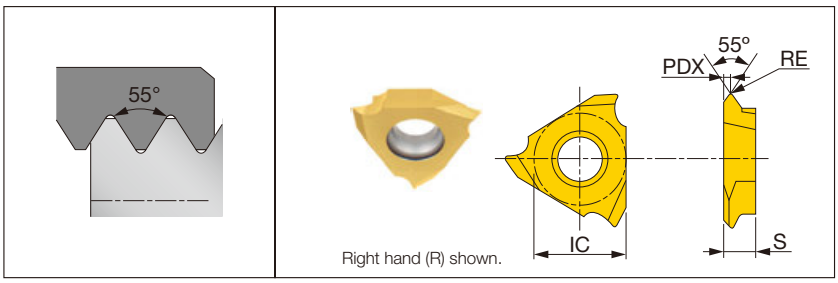
When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim. Please refer to the page E056.



Reference pages: Toolholders → E032 - E038,
Standard cutting conditions → E054, L044 - L060

● : Line up / 5 pieces per package

55° thread angle (General purpose)



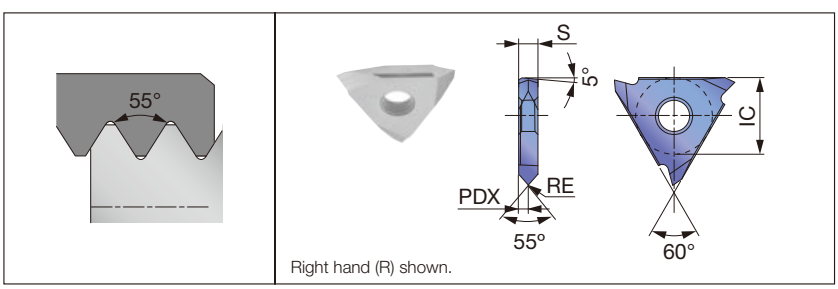
Applicable toolholder

External
JSTTR/L**3
JS**-TTL3

Partial-profile insert

Pitch (in)	TPI	Hand of cut	Designation	External insert (in)							
				Grade				IC	PDX	S	RE
				Coated							
				SH725		J740					
				R	L	R	L				
0.020-0.039	25 - 48	R/L	**JTTR/L3005F-55**	●		●		0.375	0.024	0.125	0.002

TT type / 55° thread angle (General purpose)



Applicable toolholder

External	Internal
TT-****RE/LI	TT-2525RI

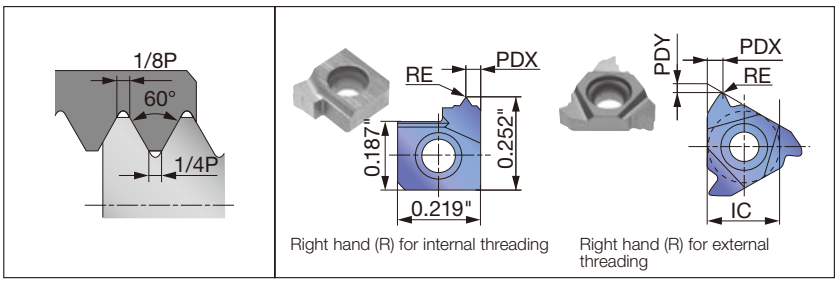
Partial-profile insert for external and internal threads

Pitch (in)	TPI	Hand of cut	Designation	Grade		IC (in)	PDX (in)	S (in)	RE (in)
				Cermet	Uncoated				
				NS9530	TH10				
≤ 0.118	≥ 8	R	**TTR42W-005**	●	●	0.500	0.063	0.126	0.002
≤ 0.118	≥ 8	L	**TTL42W-005**	●	●	0.500	0.063	0.126	0.002

Reference pages: J-Series : Toolholders→ E051 - E052,
TungThread : Toolholders → E053

● : Line up / 5 pieces per package

ISO metric (General purpose)



Right hand (R) for internal threading

Right hand (R) for external threading

Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
11		SNR/L**11...
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...
27	CER/L**27...	CNR/L**27...

Full-profile insert

Insert size	Pitch (mm)	TPI	Hand of cut	External insert (in)									Internal insert (in)							
				Designation	Grade				IC	PDX	PDY	RE	Designation	Grade			IC	PDX	PDY	RE
					Coated			Uncoated						Coated		Uncoated				
					AH725	AH8015	T313V	TH10						AH725	T313V	TH10				
6	0.75	R											6IR075ISO	●		●	-	0.02	-	0.002
6	1	R											6IR10ISO	●		●	-	0.035	-	0.0028
6	1.25	R											6IR125ISO	●		●	-	0.035	-	0.0035
6	1.5	R											6IR15ISO	●		●	-	0.035	-	0.0043
6	1.75	R											6IR175ISO	●		●	-	0.035	-	0.0047
6	2	R											6IR20ISO	●		●	-	0.035	-	0.0055
11	0.35	R		11ER035ISO	●				0.25	0.016	0.024	0.0016								
11	0.5	R		11ER05ISO	●				0.25	0.024	0.024	0.0024	11IR05ISO	●		●	0.25	0.02	0.047	0.0016
11	0.7	R		11ER07ISO	●				0.25	0.024	0.024	0.0043								
11	0.75	R		11ER075ISO	●				0.25	0.024	0.024	0.0043	11IR075ISO	●			0.25	0.02	0.047	0.002
11	0.8	R		11ER080ISO	●				0.25	0.024	0.024	0.0047								
11	1	R		11ER10ISO	●				0.25	0.028	0.028	0.0051	11IR10ISO	●	●	●	0.25	0.035	0.028	0.0028
11	1	L											11IL10ISO	●			0.25	0.035	0.028	0.0028
11	1.25	R		11ER125ISO	●				0.25	0.035	0.031	0.0063	11IR125ISO	●			0.25	0.035	0.028	0.0035
11	1.25	L											11IL125ISO	●			0.25	0.035	0.028	0.0035
11	1.5	R		11ER15ISO	●				0.25	0.031	0.039	0.0075	11IR15ISO	●	●	●	0.25	0.035	0.028	0.0043
11	1.5	L											11IL15ISO	●			0.25	0.035	0.028	0.0043
11	1.75	R											11IR175ISO	●	●		0.25	0.035	0.028	0.0047
11	1.75	L											11IL175ISO	●			0.25	0.035	0.028	0.0047
11	2	R											11IR20ISO	●	●		0.25	0.035	0.028	0.0055
11	2	L											11IL20ISO	●			0.25	0.035	0.028	0.0055
16	0.5	R		16ER05ISO	●			●	0.375	0.02	0.047	0.0024	16IR05ISO	●			0.375	0.02	0.047	0.0016
16	0.75	R		16ER075ISO	●		●	●	0.375	0.02	0.047	0.0035	16IR075ISO	●			0.375	0.02	0.047	0.002
16	1	R		16ER10ISO	●		●	●	0.375	0.035	0.028	0.0051	16IR10ISO	●	●	●	0.375	0.035	0.028	0.0028
16	1	L		16EL10ISO					0.375	0.035	0.028	0.0051	16IL10ISO	●			0.375	0.035	0.028	0.0028
16	1.25	R		16ER125ISO	●		●		0.375	0.035	0.028	0.0063	16IR125ISO	●			0.375	0.035	0.028	0.0035
16	1.25	L		16EL125ISO					0.375	0.035	0.028	0.0063	16IL125ISO	●			0.375	0.035	0.028	0.0035
16	1.5	R		16ER15ISO	●		●	●	0.375	0.035	0.028	0.0075	16IR15ISO	●	●	●	0.375	0.035	0.028	0.0043
16	1.5	L		16EL15ISO					0.375	0.035	0.028	0.0075	16IL15ISO	●			0.375	0.035	0.028	0.0043
16	1.75	R		16ER175ISO	●		●		0.375	0.063	0.047	0.0087	16IR175ISO	●	●		0.375	0.063	0.047	0.0047
16	2	R		16ER20ISO	●	●	●	●	0.375	0.063	0.047	0.0098	16IR20ISO	●	●	●	0.375	0.063	0.047	0.0055
16	2	L		16EL20ISO	●				0.375	0.063	0.047	0.0098	16IL20ISO	●			9.525	0.063	0.047	0.0055
16	2.5	R		16ER25ISO	●		●	●	0.375	0.063	0.047	0.0122	16IR25ISO	●	●	●	0.375	0.063	0.047	0.0071
16	3	R		16ER30ISO	●		●	●	0.375	0.063	0.047	0.015	16IR30ISO	●	●	●	0.375	0.063	0.047	0.0083
16	3	L		16EL30ISO					0.375	0.063	0.047	0.015	16IL30ISO	●			0.375	0.063	0.047	0.0083

Reference pages: Toolholders → E032 - E038,
Standard cutting conditions → E054, L044 - L060

● : Line up / 5 pieces per package

Insert size	Pitch (mm)	TPI	Hand of cut	External insert (in) Designation	Grade: Coated AH725	Coated T313V	Uncoated TH10	IC	PDX	PDY	RE	Internal insert (in) Designation	Grade: Coated AH725	Coated T313V	Uncoated TH10	IC	PDX	PDY	RE
22	3.5		R	22ER35ISO	●	●		0.500	0.098	0.067	0.0173	22IR35ISO	●	●		0.500	0.098	0.067	0.0098
22	4		R	22ER40ISO	●	●		0.500	0.098	0.067	0.0197	22IR40ISO	●	●		0.500	0.098	0.067	0.0110
22	4.5		R	22ER45ISO	●			0.500	0.098	0.067	0.0220	22IR45ISO	●			0.500	0.098	0.067	0.0126
22	5		R	22ER50ISO	●	●		0.500	0.098	0.067	0.0248	22IR50ISO	●	●		0.500	0.098	0.067	0.0138
27	6		R	27ER60ISO	●	●		0.625	0.126	0.087	0.0295	27IR60ISO	●	●		0.625	0.126	0.087	0.0165

Full-profile insert with chipbreaker

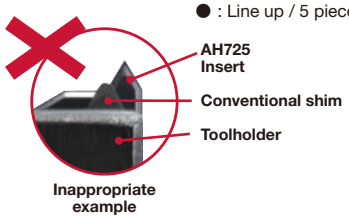
Insert size	Pitch (mm)	TPI	Hand of cut	External insert (in) Designation	Grade: Coated AH725	Coated AH8015	Cermet NS9530	IC	PDX	PDY	RE	Internal insert (in) Designation	Grade: Coated AH725	Coated AH8015	Cermet NS9530	IC	PDX	PDY	RE
11	0.5		R									11IR05ISO-B	●			0.250	0.020	0.047	0.0016
11	0.5		R									11IR05ISO-M			●	0.250	0.020	0.047	0.0016
11	0.75		R									11IR075ISO-B	●			0.250	0.020	0.047	0.0020
11	0.75		R									11IR075ISO-M			●	0.250	0.020	0.047	0.0020
11	1		R									11IR10ISO-B	●			0.250	0.035	0.028	0.0031
11	1		R									11IR10ISO-M			●	0.250	0.035	0.028	0.0031
11	1.25		R									11IR125ISO-B	●			0.250	0.035	0.028	0.0039
11	1.25		R									11IR125ISO-M			●	0.250	0.035	0.028	0.0039
11	1.5		R									11IR15ISO-B	●			0.250	0.035	0.028	0.0047
11	1.5		R									11IR15ISO-M			●	0.250	0.035	0.028	0.0047
11	1.75		R									11IR175ISO-B	●			0.250	0.035	0.028	0.0047
11	1.75		R									11IR175ISO-M			●	0.250	0.035	0.028	0.0047
11	2		R									11IR20ISO-B	●			0.250	0.035	0.028	0.0055
11	2		R									11IR20ISO-M			●	0.250	0.035	0.028	0.0055
16	0.5		R	16ER05ISO-M			●	0.375	0.020	0.047	0.0024								
16	0.75		R	16ER075ISO-B	●*			0.375	0.024	0.024	0.0031								
16	0.75		R	16ER075ISO-M			●	0.375	0.020	0.047	0.0035								
16	1		R	16ER10ISO-B	●*			0.375	0.028	0.028	0.0043	16IR10ISO-B	●*			0.375	0.028	0.024	0.0020
16	1		R	16ER10ISO-M	●		●	0.375	0.035	0.028	0.0051	16IR10ISO-M		●	●	0.375	0.035	0.028	0.0031
16	1.25		R	16ER125ISO-B	●*			0.375	0.035	0.031	0.0055	16IR125ISO-B	●*			0.375	0.035	0.031	0.0028
16	1.25		R	16ER125ISO-M		●	●	0.375	0.035	0.028	0.0063	16IR125ISO-M			●	0.375	0.035	0.028	0.0039
16	1.5		R	16ER15ISO-B	●*			0.375	0.039	0.031	0.0075	16IR15ISO-B	●*			0.375	0.039	0.031	0.0031
16	1.5		R	16ER15ISO-M	●	●	●	0.375	0.035	0.028	0.0075	16IR15ISO-M	●	●	●	0.375	0.035	0.028	0.0047
16	1.75		R	16ER175ISO-B	●*			0.375	0.047	0.035	0.0079	16IR175ISO-B	●*			0.375	0.047	0.035	0.0039
16	1.75		R	16ER175ISO-M			●	0.375	0.063	0.047	0.0087	16IR175ISO-M			●	0.375	0.063	0.047	0.0055
16	2		R	16ER20ISO-B	●*			0.375	0.051	0.039	0.0094	16IR20ISO-B	●*			0.375	0.051	0.039	0.0043
16	2		R	16ER20ISO-M	●		●	0.375	0.063	0.047	0.0098	16IR20ISO-M			●	0.375	0.063	0.047	0.0055
16	2.5		R	16ER25ISO-B	●*			0.375	0.059	0.043	0.0118	16IR25ISO-B	●*			0.375	0.059	0.043	0.0055
16	2.5		R	16ER25ISO-M			●	0.375	0.063	0.047	0.0122	16IR25ISO-M			●	0.375	0.063	0.047	0.0071
16	3		R	16ER30ISO-B	●*			0.375	0.063	0.047	0.0150	16IR30ISO-B	●*			0.375	0.059	0.043	0.0071
16	3		R	16ER30ISO-M			●	0.375	0.063	0.047	0.0150	16IR30ISO-M			●	0.375	0.063	0.047	0.0083
22	3.5		R	22ER35ISO-B	●			0.500	0.091	0.063	0.0189								
22	4		R	22ER40ISO-B	●			0.500	0.091	0.063	0.0205								

The adjustment of the cutting edge position will be needed as the dimensions of PDX and PDY are different from other inserts.
highlighted item requires changing shims.

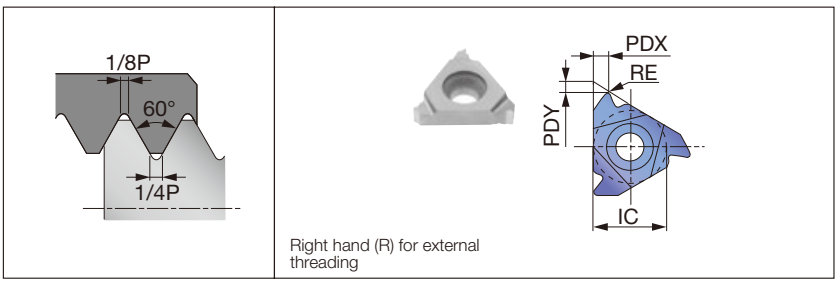
When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim. Please refer to the page E056.

Reference pages: Toolholders → E032 - E038,
Standard cutting conditions → E054, L044 - L060

● : Line up / 5 pieces per package



Unified (General purpose)



Applicable toolholder

Insert size	External	Internal
11		SNR/L**11...
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

Full-profile insert

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in) Designation	Grade Coated AH725	Grade Coated T313V	IC	PDX	PDY	RE	Internal insert (in) Designation	Grade Coated AH725	Grade Coated T313V	IC	PDX	PDY	RE
11	(0.031)	32	R								11IR32UN	●		0.250	0.020	0.047	0.0024
11	(0.036)	28	R								11IR28UN	●		0.250	0.020	0.047	0.0024
11	(0.042)	24	R								11IR24UN	●		0.250	0.035	0.028	0.0028
11	(0.050)	20	R								11IR20UN	●		0.250	0.035	0.028	0.0035
11	(0.056)	18	R								11IR18UN	●		0.250	0.035	0.028	0.0039
11	(0.063)	16	R								11IR16UN	●		0.250	0.035	0.028	0.0043
11	(0.071)	14	R								11IR14UN	●		0.250	0.035	0.028	0.0051
16	(0.031)	32	R	16ER32UN	●		0.375	0.020	0.047	0.0039	16IR32UN	●		0.375	0.020	0.047	0.0024
16	(0.036)	28	R	16ER28UN	●		0.375	0.020	0.047	0.0043	16IR28UN	●		0.375	0.020	0.047	0.0024
16	(0.042)	24	R	16ER24UN	●		0.375	0.035	0.028	0.0051	16IR24UN	●		0.375	0.035	0.028	0.0028
16	(0.050)	20	R	16ER20UN	●		0.375	0.035	0.028	0.0063	16IR20UN	●		0.375	0.035	0.028	0.0035
16	(0.056)	18	R	16ER18UN	●		0.375	0.035	0.028	0.0071	16IR18UN	●		0.375	0.035	0.028	0.0039
16	(0.063)	16	R	16ER16UN	●	●	0.375	0.035	0.028	0.0079	16IR16UN	●	●	0.375	0.035	0.028	0.0043
16	(0.071)	14	R	16ER14UN	●	●	0.375	0.063	0.047	0.0091	16IR14UN	●	●	0.375	0.063	0.047	0.0051
16	(0.077)	13	R	16ER13UN	●		0.375	0.063	0.047	0.0094	16IR13UN	●		0.375	0.063	0.047	0.0055
16	(0.083)	12	R	16ER12UN	●	●	0.375	0.063	0.047	0.0106	16IR12UN	●	●	0.375	0.063	0.047	0.0059
16	(0.091)	11	R	16ER11UN	●		0.375	0.063	0.047	0.0114	16IR11UN	●		0.375	0.063	0.047	0.0063
16	(0.100)	10	R	16ER10UN	●		0.375	0.063	0.047	0.0126	16IR10UN	●		0.375	0.063	0.047	0.0071
16	(0.111)	9	R	16ER9UN	●		0.375	0.063	0.047	0.0138	16IR9UN	●		0.375	0.063	0.047	0.0079
16	(0.125)	8	R	16ER8UN	●	●	0.375	0.063	0.047	0.0157	16IR8UN	●	●	0.375	0.063	0.047	0.0087
22	(0.143)	7	R	22ER7UN	●		0.500	0.098	0.067	0.0177	22IR7UN	●		0.500	0.098	0.067	0.0098
22	(0.167)	6	R	22ER6UN	●		0.500	0.098	0.067	0.0209	22IR6UN	●		0.500	0.098	0.067	0.0118
22	(0.200)	5	R	22ER5UN	●		0.500	0.098	0.067	0.0252	22IR5UN	●		0.500	0.098	0.067	0.0142

Reference pages: Toolholders → E032 - E038,
Standard cutting conditions → E054, L044 - L060

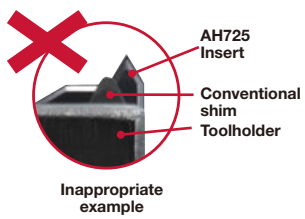
● : Line up / 5 pieces per package

Full-profile insert with chipbreaker

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)							Internal insert (in)						
				Designation	Grade		IC	PDX	PDY	RE	Designation	Grade		IC	PDX	PDY	RE
					Coated AH725	Cermet NS9530						Coated AH725	Cermet NS9530				
16	(0.042)	24	R	**16ER24UN-B**	●*		0.375	0.031	0.028	0.0043							
16	(0.042)	24	R	**16ER24UN-M**		●	0.375	0.035	0.028	0.0051							
16	(0.050)	20	R	**16ER20UN-B**	●*		0.375	0.035	0.031	0.0055	**16IR20UN-B**	●*		0.375	0.035	0.031	0.0024
16	(0.050)	20	R	**16ER20UN-M**		●	0.375	0.035	0.028	0.0063	**16IR20UN-M**		●	0.375	0.035	0.028	0.0035
16	(0.056)	18	R	**16ER18UN-B**	●*		0.375	0.039	0.031	0.0059	**16IR18UN-B**	●*		0.375	0.039	0.031	0.0031
16	(0.056)	18	R	**16ER18UN-M**		●	0.375	0.035	0.028	0.0071	**16IR18UN-M**		●	0.375	0.035	0.028	0.0039
16	(0.063)	16	R	**16ER16UN-B**	●*		0.375	0.043	0.035	0.0071	**16IR16UN-B**	●*		0.375	0.043	0.035	0.0035
16	(0.063)	16	R	**16ER16UN-M**		●	0.375	0.035	0.028	0.0079	**16IR16UN-M**		●	0.375	0.035	0.028	0.0043
16	(0.071)	14	R	**16ER14UN-B**	●*		0.375	0.047	0.039	0.0087	**16IR14UN-B**	●*		0.375	0.047	0.035	0.0043
16	(0.071)	14	R	**16ER14UN-M**		●	0.375	0.063	0.047	0.0091	**16IR14UN-M**		●	0.375	0.063	0.047	0.0043
16	(0.077)	13	R	**16ER13UN-B**	●*		0.375	0.051	0.039	0.0094							
16	(0.083)	12	R	**16ER12UN-B**	●*		0.375	0.055	0.043	0.0098	**16IR12UN-B**	●*		0.375	0.055	0.043	0.0047
16	(0.083)	12	R	**16ER12UN-M**		●	0.375	0.063	0.047	0.0106	**16IR12UN-M**		●	0.375	0.063	0.047	0.0059
16	(0.125)	8	R	**16ER8UN-B**	●*		0.375	0.063	0.047	0.0161	**16IR8UN-B**	●*		0.375	0.059	0.043	0.0075
16	(0.125)	8	R	**16ER8UN-M**		●	0.375	0.063	0.047	0.0157	**16IR8UN-M**		●	0.375	0.063	0.047	0.0087

The adjustment of the cutting edge position will be needed as the dimensions of PDX and PDY are different from other inserts.
highlighted item requires changing shims.

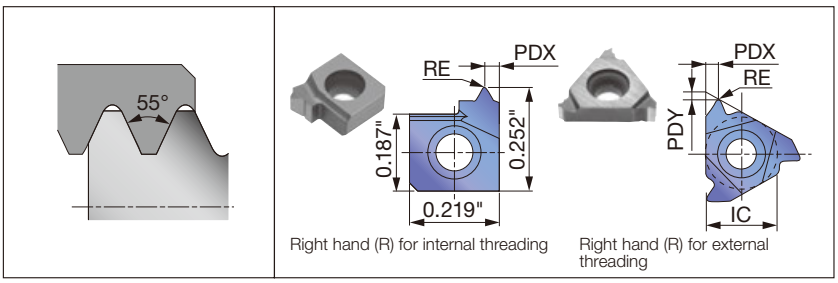
When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim. Please refer to the page E056.



Reference pages: Toolholders → E032 - E038,
Standard cutting conditions → E054, L044 - L060

● : Line up / 5 pieces per package

Whitworth, Parallel pipe thread



Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
11		SNR/L**11...
16	CER/L**16... JSER**16 JSE**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

Thread form: 60° | 55° | M (Metric) | UN (Unified) | W (Whitworth) | BSPT (R, PT) | NPT | NPTF | TR (Metric, 30° Trapezoidal) | Round (DIN405) | UNJ | MJ | ACME (29° Trapezoidal) | STUB ACME (29° Trapezoidal) | API Round | API Buttress | API Rotary Shoulder Connection

Full-profile insert

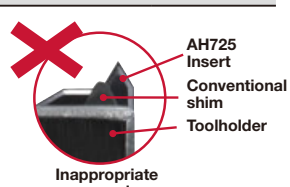
Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in) Designation	Grade: Coated AH725	Grade: Coated T313V	Grade: Uncoated TH10	IC	PDX	PDY	RE	Internal insert (in) Designation	Grade: Coated AH725	Grade: Coated T313V	Grade: Uncoated TH10	IC	PDX	PDY	RE
6	(0.053)	19	R									6IR19W	●		●	-	0.035	-	0.0067
11	(0.053)	19	R									11IR19W	●	●	●	0.250	0.035	0.028	0.0067
11	(0.071)	14	R									11IR14W	●	●	●	0.250	0.035	0.028	0.23
16	(0.036)	28	R	16ER28W	●	●		0.375	0.035	0.028	0.0043	16IR28W	●			0.375	0.035	0.028	0.0043
16	(0.038)	26	R	16ER26W	●			0.375	0.035	0.028	0.0047	16IR26W	●			0.375	0.035	0.028	0.0047
16	(0.050)	20	R	16ER20W	●			0.375	0.035	0.028	0.0063	16IR20W	●			0.375	0.035	0.028	0.0063
16	(0.053)	19	R	16ER19W	●	●		0.375	0.035	0.028	0.0067	16IR19W	●			0.375	0.035	0.028	0.0067
16	(0.056)	18	R	16ER18W	●			0.375	0.035	0.028	0.0071	16IR18W	●			0.375	0.035	0.028	0.0071
16	(0.063)	16	R	16ER16W	●	●		0.375	0.035	0.028	0.0079	16IR16W	●	●		0.375	0.035	0.028	0.0079
16	(0.071)	14	R	16ER14W	●	●	●	0.375	0.063	0.047	0.0091	16IR14W	●	●	●	0.375	0.063	0.047	0.0091
16	(0.071)	14	L	16EL14W	●			0.375	0.063	0.047	0.0091								
16	(0.083)	12	R	16ER12W	●	●		0.375	0.063	0.047	0.0106	16IR12W	●	●		0.375	0.063	0.047	0.0106
16	(0.091)	11	R	16ER11W	●	●	●	0.375	0.063	0.047	0.0114	16IR11W	●	●	●	0.375	0.063	0.047	0.0114
16	(0.100)	10	R	16ER10W	●	●		0.375	0.063	0.047	0.0126	16IR10W	●	●		0.375	0.063	0.047	0.0126
16	(0.111)	9	R	16ER9W	●			0.375	0.063	0.047	0.0138	16IR9W	●			0.375	0.063	0.047	0.0138
16	(0.125)	8	R	16ER8W	●	●		0.375	0.063	0.047	0.0157	16IR8W	●	●		0.375	0.063	0.047	0.0157
22	(0.143)	7	R	22ER7W	●			0.500	0.098	0.067	0.0177	22IR7W	●			0.500	0.098	0.067	0.0177
22	(0.167)	6	R	22ER6W	●			0.500	0.098	0.067	0.0209	22IR6W	●			0.500	0.098	0.067	0.0209
22	(0.200)	5	R	22ER5W	●			0.500	0.098	0.067	0.0252	22IR5W	●			0.500	0.098	0.067	0.0252

Full-profile insert with chipbreaker

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in) Designation	Grade: Coated AH725	Grade: Cermet NS9530	IC	PDX	PDY	RE	Internal insert (in) Designation	Grade: Coated AH725	Grade: Coated AH8015	Grade: Cermet NS9530	IC	PDX	PDY	RE
16	(0.053)	19	R	16ER19W-B	●*		0.375	0.039	0.031	0.0063								
16	(0.053)	19	R	16ER19W-M		●	0.375	0.035	0.028	0.0067	16IR19W-M			●	0.375	0.035	0.028	0.0067
16	(0.063)	16	R	16ER16W-B	●*		0.375	0.043	0.035	0.0079	16IR16W-B	●*			0.375	0.043	0.035	0.0071
16	(0.071)	14	R	16ER14W-B	●*		0.375	0.047	0.039	0.0094	16IR14W-B	●*			0.375	0.047	0.039	0.0083
16	(0.071)	14	R	16ER14W-M		●	0.375	0.063	0.047	0.0091	16IR14W-M		●	●	0.375	0.063	0.047	0.0091
16	(0.091)	11	R	16ER11W-B	●*		0.375	0.059	0.043	0.0106	16IR11W-B	●*			0.375	0.059	0.043	0.0106
16	(0.091)	11	R	16ER11W-M		●	0.375	0.063	0.047	0.0114	16IR11W-M			●	0.375	0.063	0.047	0.0114

The adjustment of the cutting edge position will be needed as the dimensions of PDX and PDY are different from other inserts.
highlighted item requires changing shims.

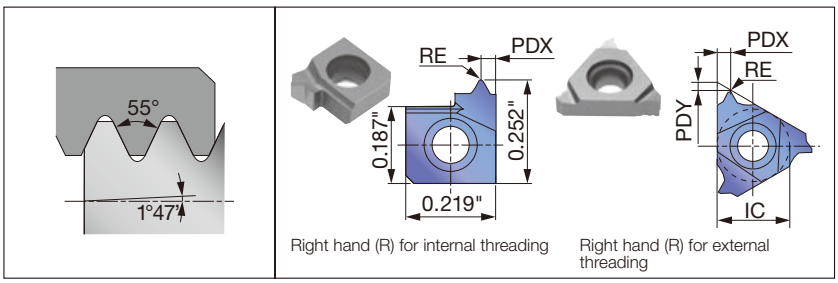
When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim. Please refer to the page E056.



● : Line up / 5 pieces per package

Reference pages: Toolholders → E032 - E038,
Standard cutting conditions → E054, L044 - L060

BSPT (for Pipe)



Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
11		SNR/L**11...
16	CER/L**16... JSER**16 JSE**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...

Full-profile insert

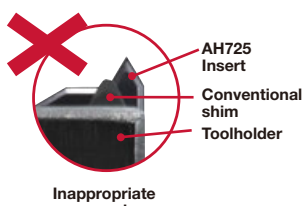
Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)								Internal insert (in)							
				Designation	Grade			IC	PDX	PDY	RE	Designation	Grade			IC	PDX	PDY	RE
					Coated		Uncoated						Coated		Uncoated				
					AH725	T313V	TH10						AH725	T313V	TH10				
6	(0.053)	19	R									6IR19PT	●		●	-	0.035	-	0.0055
11	(0.053)	19	R									11IR19PT	●	●	●	0.250	0.035	0.028	0.0055
11	(0.071)	14	R									11IR14PT	●	●	●	0.250	0.035	0.028	0.0063
16	(0.036)	28	R	16ER28PT	●	●		0.375	0.035	0.028	0.0035								
16	(0.053)	19	R	16ER19PT	●	●		0.375	0.035	0.028	0.0055	16IR19PT	●			0.375	0.035	0.028	0.0055
16	(0.071)	14	R	16ER14PT	●	●		0.375	0.063	0.047	0.0063	16IR14PT	●	●	●	0.375	0.063	0.047	0.0063
16	(0.091)	11	R	16ER11PT	●	●		0.375	0.063	0.047	0.0102	16IR11PT	●	●	●	0.375	0.063	0.047	0.0102

Full-profile insert with chipbreaker

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)							Internal insert (in)							
				Designation	Grade		IC	PDX	PDY	RE	Designation	Grade		IC	PDX	PDY	RE
					Coated	Cermet						Coated	Cermet				
					AH725	NS9530						AH725	NS9530				
16	(0.053)	19	R	16ER19PT-M		●	0.375	0.035	0.028	0.0071	16IR19PT-M		●	0.375	0.035	0.028	0.0071
16	(0.071)	14	R	16ER14PT-B	●*		0.375	0.047	0.039	0.0083	16IR14PT-B	●*		0.375	0.039	0.047	0.0083
16	(0.071)	14	R	16ER14PT-M		●	0.375	0.063	0.047	0.0098	16IR14PT-M		●	0.375	0.063	0.047	0.0098
16	(0.091)	11	R	16ER11PT-B	●*		0.375	0.059	0.043	0.0110	16IR11PT-B	●*		0.375	0.059	0.043	0.0110
16	(0.091)	11	R	16ER11PT-M		●	0.375	0.063	0.047	0.0126	16IR11PT-M		●	0.375	0.063	0.047	0.0126

The adjustment of the cutting edge position will be needed as the dimensions of PDX and PDY are different from other inserts.
highlighted item requires changing shims.

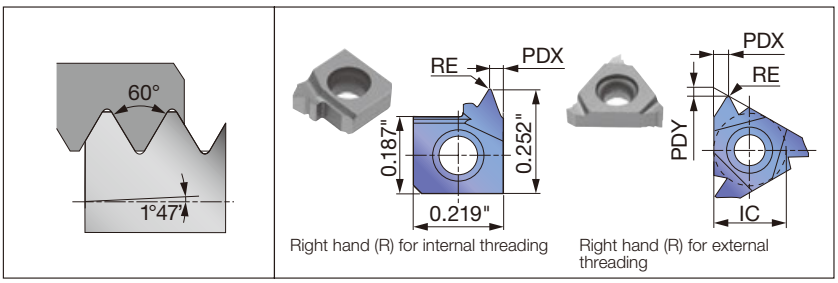
When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim. Please refer to the page E056.



Reference pages: Toolholders → E032 - E038,
Standard cutting conditions → E054, L044 - L060

● : Line up / 5 pieces per package

NPT (for Pipe)



Applicable toolholder

Insert size	External	Internal
6		SNR/L000*K06SC... SNR/L000*H06...
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...

Full-profile insert

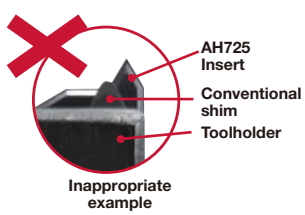
Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)								Internal insert (in)							
				Designation	Grade			IC	PDX	PDY	RE	Designation	Grade			IC	PDX	PDY	RE
					Coated		Uncoated						Coated		Uncoated				
					AH725	T313V	TH10						AH725	T313V	TH10				
6	(0.056)	18	R									6IR18NPT	●		●	-	0.035	-	0.0012
16	(0.037)	27	R	16ER27NPT	●			0.375	0.020	0.047	0.0008	16IR27NPT	●			0.375	0.020	0.047	0.0008
16	(0.056)	18	R	16ER18NPT	●	●		0.375	0.035	0.028	0.0012	16IR18NPT	●			0.375	0.035	0.028	0.0012
16	(0.071)	14	R	16ER14NPT	●			0.375	0.063	0.047	0.0016	16IR14NPT	●		●	0.375	0.063	0.047	0.0016
16	(0.087)	11.5	R	16ER115NPT	●			0.375	0.063	0.047	0.0020	16IR115NPT	●		●	0.375	0.063	0.047	0.0020
16	(0.125)	8	R	16ER8NPT	●			0.375	0.063	0.047	0.0028	16IR8NPT	●		●	0.375	0.063	0.047	0.0028

Full-profile insert with chipbreaker

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)							Internal insert (in)							
				Designation	Grade		IC	PDX	PDY	RE	Designation	Grade		IC	PDX	PDY	RE
					Coated	Cermet						Coated	Cermet				
					AH725	NS9530						AH725	NS9530				
16	(0.056)	18	R	16ER18NPT-B	●*		0.375	0.039	0.031	0.0020							
16	(0.056)	18	R	16ER18NPT-M		●	0.375	0.035	0.028	0.0028	16IR18NPT-M		●	0.375	0.035	0.028	0.0028
16	(0.071)	14	R	16ER14NPT-B	●*		0.375	0.047	0.035	0.0020	16IR14NPT-B	●*		0.375	0.047	0.9	0.0020
16	(0.071)	14	R	16ER14NPT-M		●	0.375	0.063	0.047	0.0031	16IR14NPT-M		●	0.375	0.063	0.047	0.0031
16	(0.087)	11.5	R	16ER115NPT-B	●*		0.375	0.059	0.043	0.0035	16IR115NPT-B	●*		0.375	0.059	0.043	0.0035
16	(0.087)	11.5	R	16ER115NPT-M		●	0.375	0.063	0.047	0.0035	16IR115NPT-M		●	0.375	0.063	0.047	0.0035
16	(0.125)	8	R	16ER8NPT-B	●*		0.375	0.071	0.051	0.0047	16IR8NPT-B	●*		0.375	0.071	0.051	0.0047

The adjustment of the cutting edge position will be needed as the dimensions of PDX and PDY are different from other inserts.
highlighted item requires changing shims.

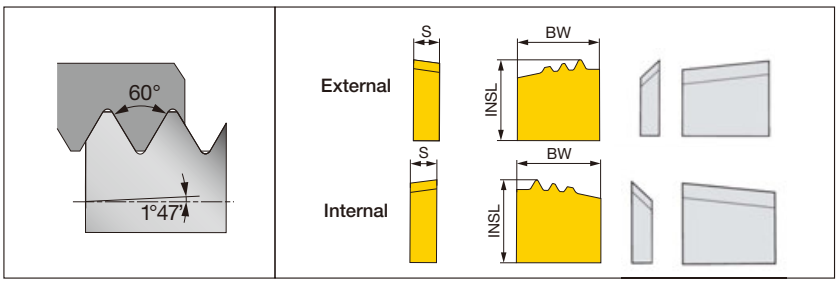
When using a new AH725 with chipbreaker, the conventional shim may need to be replaced with a new standard shim. Please refer to the page E056.



Reference pages: Toolholders → E032 - E038,
Standard cutting conditions → E054, L044 - L060

● : Line up / 5 pieces per package

NPT (for Pipe)



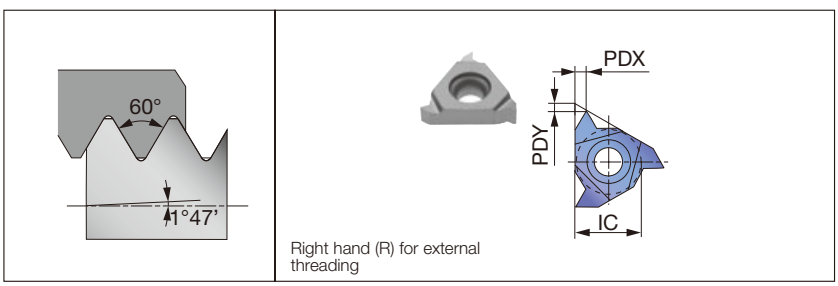
Applicable toolholder

External	Internal
CLVOR...	SI-CLHOR...

Full-profile insert (chaser)

Pitch (Reference) (mm)	TPI	External insert (mm)						Internal insert (mm)					
		Designation	Grade Coated AH725	BW	INSL	S	Breakerpiece	Designation	Grade Coated AH725	BW	INSL	S	Breakerpiece
(2.209)	11.5	**CR-11.5NPT-4E**	●	16	15.7	5.2	CR-8R / 10R-3E / 4E-CB	**CR-11.5NPT-4I**	●	16	15.7	5.2	CR-8R / 10R-3I / 4I-CB
(3.175)	8	**CR-8NPT-4E**	●	16	15.7	5.2	CR-8R / 10R-3E / 4E-CB	**CR-8NPT-4I**	●	16	15.7	5.2	CR-8R / 10R-3I / 4I-CB

NPTF (for Pipe)



Applicable toolholder

Insert size	External	Internal
16	CER/L**16... JSER**16 JSE**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...

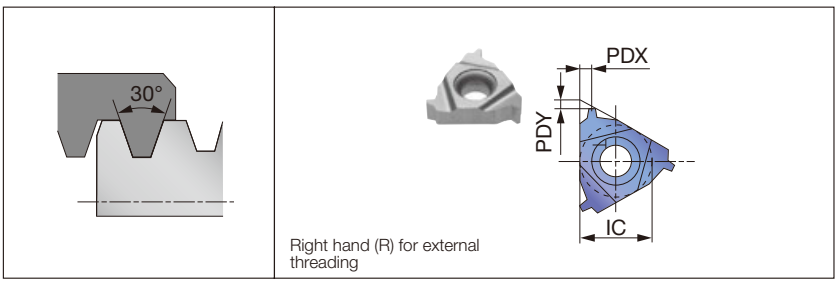
Full-profile insert

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)						Internal insert (in)					
				Designation	Grade Coated AH725	IC	PDX	PDY	RE	Designation	Grade Coated AH725	IC	PDX	PDY	RE
16	(0.037)	27	R	**16ER27NPTF**	●	0.375	0.020	0.047	-						
16	(0.056)	18	R	**16ER18NPTF**	●	0.375	0.035	0.028	-						
16	(0.071)	14	R	**16ER14NPTF**	●	0.375	0.063	0.047	-	**16IR14NPTF**	●	0.375	0.063	0.047	-
16	(0.087)	11.5	R	**16ER115NPTF**	●	0.375	0.063	0.047	-	**16IR115NPTF**	●	0.375	0.063	0.047	-
16	(0.125)	8	R	**16ER8NPTF**	●	0.375	0.063	0.047	-	**16IR8NPTF**	●	0.375	0.063	0.047	-

Reference pages: Toolholders → E032 - E042,
Standard cutting conditions → E054, L044 - L060

● : Line up / 5 pieces per package

30° Trapezoidal / DIN103 (for Machine parts)



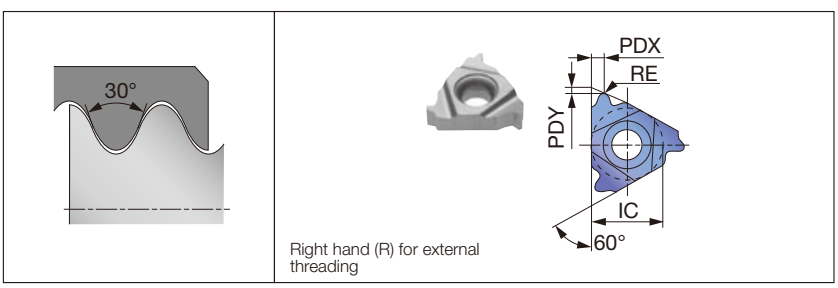
Applicable toolholder

Insert size	External	Internal
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...
27	CER/L**27...	CNR/L**27...

With the special full-profile insert (Please see the page L044)

Insert size	Pitch (mm)	TPI	Hand of cut	External insert (in)						Internal insert (in)					
				Designation	Grade Coated AH725	Grade Coated T313V	IC	PDX	PDY	Designation	Grade Coated AH725	Grade Coated T313V	IC	PDX	PDY
16	1.5		R	**16ER15TR**	●		0.375	0.035	0.028	**16IR15TR**	●		0.375	0.035	0.028
16	2		R	**16ER20TR**	●	●	0.375	0.063	0.051	**16IR20TR**	●	●	0.375	0.063	0.051
16	3		R	**16ER30TR**	●	●	0.375	0.063	0.051	**16IR30TR**	●	●	0.375	0.063	0.051
22	4		R	**22ER40TR**	●	●	0.500	0.098	0.079	**22IR40TR**	●	●	0.500	0.098	0.079
22	5		R	**22ER50TR**	●	●	0.500	0.098	0.079	**22IR50TR**	●	●	0.500	0.098	0.079
27	6		R	**27ER60TR**	●	●	0.625	0.126	0.098						

Round / DIN405 (for Machine parts)



Applicable toolholder

Insert size	External	Internal
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...

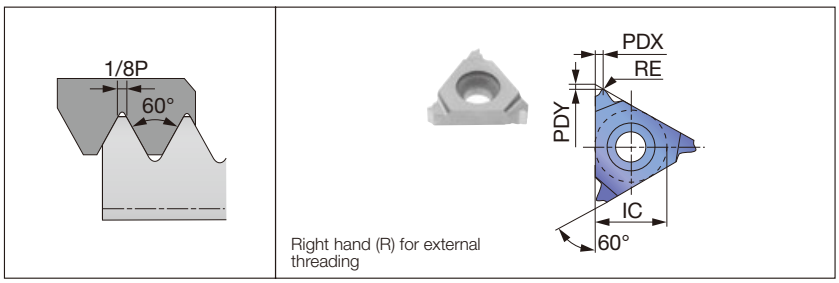
Full-profile insert

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)						Internal insert (in)					
				Designation	Grade Coated AH725	IC	PDX	PDY	RE	Designation	Grade Coated AH725	IC	PDX	PDY	RE
16	(0.125)	8	R	**16ER8RD-B**	●	0.375	0.051	0.055	-						
16	(0.125)	6	R	**16ER6RD-B**	●	0.375	0.067	0.059	-	**16IR6RD-B**	●	0.375	0.059	0.055	-

Reference pages: Toolholders → E032 - E042,
Standard cutting conditions → E054, L044 - L060

● : Line up / 5 pieces per package

UNJ (for Aerospace industry)



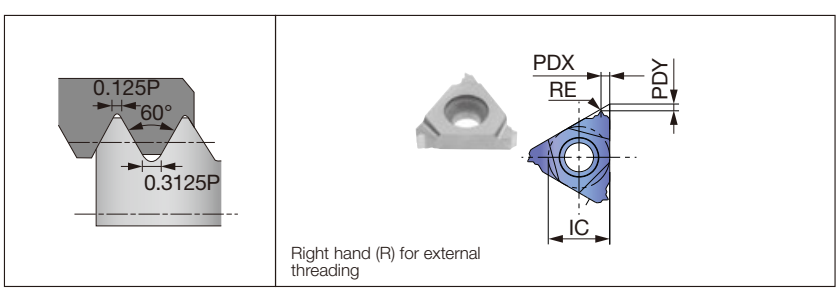
Applicable toolholder

Insert size	External
16	CER/L**16...
	JSER**16
	JS**SEL16
	B-SER/L**16
	B-CER/L**16
	BC-SER/L**16

Full-profile insert

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in) Designation	Grade Coated AH725	IC	PDX	PDY	RE
16	(0.031)	32	R	**16ER32UNJ**	●	0.375	0.020	0.047	0.0051
16	(0.036)	28	R	**16ER28UNJ**	●	0.375	0.020	0.047	0.0059
16	(0.042)	24	R	**16ER24UNJ**	●	0.375	0.035	0.028	0.0071
16	(0.050)	20	R	**16ER20UNJ**	●	0.375	0.035	0.028	0.0083
16	(0.056)	18	R	**16ER18UNJ**	●	0.375	0.035	0.028	0.0094
16	(0.063)	16	R	**16ER16UNJ**	●	0.375	0.035	0.028	0.0102
16	(0.071)	14	R	**16ER14UNJ**	●	0.375	0.063	0.047	0.0118
16	(0.083)	12	R	**16ER12UNJ**	●	0.375	0.063	0.047	0.0138
16	(0.100)	10	R	**16ER10UNJ**	●	0.375	0.063	0.047	0.0165
16	(0.125)	8	R	**16ER8UNJ**	●	0.375	0.063	0.047	0.0209

MJ (for Aerospace industry)



Applicable toolholder

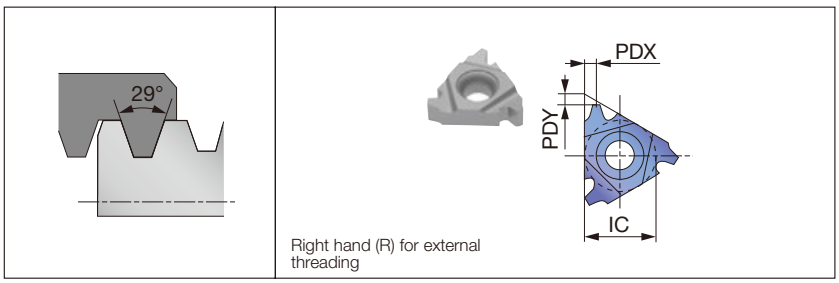
Insert size	External	Internal
11		SNR**11...

Insert size	Pitch (in)	TPI	Hand of cut	Internal insert (in) Designation	Grade Coated AH8015	IC	PDX	PDY	RE
11	0.039		R	**11IR10MJ**	●	0.250	0.035	0.028	0.020

Reference pages: Toolholders → E032 - E042,
Standard cutting conditions → E054, L044 - L060

● : Line up / 5 pieces per package

29° Trapezoidal / ACME (for Machine parts, Pipe)



Applicable toolholder

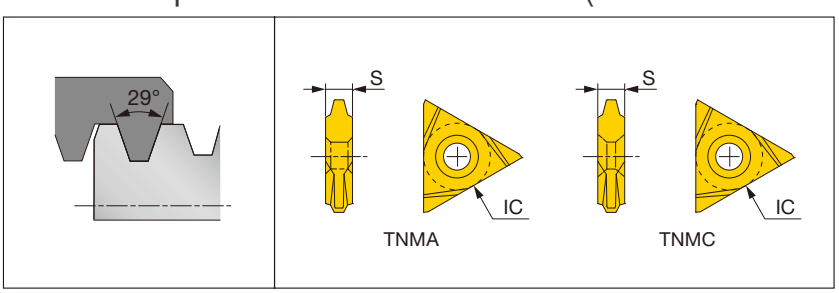
Insert size	External	Internal
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

With the special full-profile insert (Please see the page L044)

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in) Designation	Grade Coated AH725	Grade Coated T313V	IC	PDX	PDY	Internal insert (in) Designation	Grade Coated AH725	Grade Coated T313V	IC	PDX	PDY
16	(0.083)	12	R	**16ER12ACME**	●		0.375	0.063	0.051	**16IR12ACME**	●		0.375	0.063	0.051
16	(0.100)	10	R	**16ER10ACME**	●		0.375	0.063	0.051	**16IR10ACME**	●		0.375	0.063	0.051
16	(0.125)	8	R	**16ER8ACME**	●	●	0.375	0.063	0.051	**16IR8ACME**	●	●	0.375	0.063	0.051
16	(0.100)	10	R	**16ER8STACME (STACME)**	●		0.375	0.063	0.051	**16IR8STACME (STACME)**	●		0.375	0.063	0.051
16	(0.125)	8	R	**16ER8TPI29**	●		0.375	0.063	0.051	**16IR8TPI29**	●		0.375	0.063	0.051
22	(0.167)	6	R	**22ER6ACME**	●	●	0.500	0.098	0.079	**22IR6ACME**	●	●	0.500	0.098	0.079
22	(0.200)	5	R	**22ER6TPI29 (STACME)**	●		0.500	0.098	0.079	**22IR6TPI29 (STACME)**	●		0.500	0.098	0.079
22	(0.200)	5	R	**22ER5ACME**	●	●	0.500	0.098	0.079	**22IR5ACME**	●	●	0.500	0.098	0.079
22	(0.200)	5	R	**22ER5TPI29 (STACME)**	●		0.500	0.098	0.079	**22IR5TPI29 (STACME)**	●		0.500	0.098	0.079

TPI29 inserts are semi-topping insert. STACME inserts are full-topping insert.

29° Trapezoidal / ACME (for Machine parts, Pipe)



Applicable toolholder

External
MTVOR...
STVOR...

On edge

Pitch	TPI	External insert (in) Designation	Grade Coated AH725	IC	S
	16	**TNMA43NT16PEXT-PT**	●	0.500	0.189
	14	**TNMA43NT14PEXT-PT**	●	0.500	0.189
	12	**TNMA43NT12PEXT-PT**	●	0.500	0.189
	10	**TNMA43NT10PEXT-PT**	●	0.500	0.189
	8	**TNMA43NT8PEXT-PT**	●	0.500	0.189
	6	**TNMA43NT6PEXT-PT**	●	0.500	0.189
	5	**TNMA54NT5PEXT-PT**	●	0.625	0.252
	4	**TNMA54NT4PEXT-PT**	●	0.625	0.252
	3	**TNMA54NT3PEXT-PT**	●	0.625	0.252
	16	**TNMC43NT16PEXT-PT**	●	0.500	0.189
	14	**TNMC43NT14PEXT-PT**	●	0.500	0.189
	12	**TNMC43NT12PEXT-PT**	●	0.500	0.189
	10	**TNMC43NT10PEXT-PT**	●	0.500	0.189
	8	**TNMC43NT8PEXT-PT**	●	0.500	0.189
	6	**TNMC43NT6PEXT-PT**	●	0.500	0.189
	5	**TNMC54NT5PEXT-PT**	●	0.625	0.252
	4	**TNMC54NT4PEXT-PT**	●	0.625	0.252
	3	**TNMC54NT3PEXT-PT**	●	0.625	0.252

● : Line up / 5 pieces per package

29° Trapezoidal/ STUB ACME (for Machine parts, Pipe)

On edge

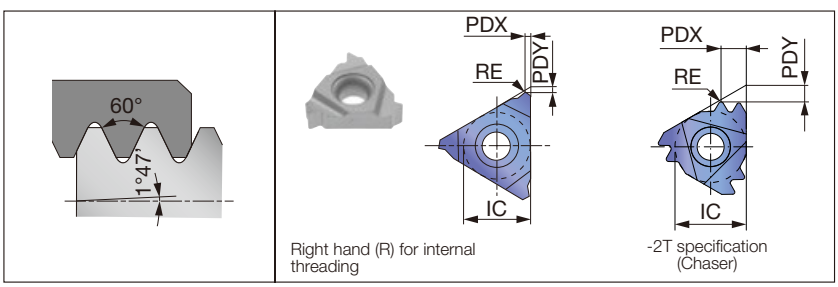
Pitch	TPI	External insert (in)			
		Designation	Grade Coated AH725	IC	S
	16	TNMA43NT16PSTUBE-PT	●	0.500	0.189
	14	TNMA43NT14PSTUBE-PT	●	0.500	0.189
	12	TNMA43NT12PSTUBE-PT	●	0.500	0.189
	10	TNMA43NT10PSTUBE-PT	●	0.500	0.189
	8	TNMA43NT8PSTUBE-PT	●	0.500	0.189
	6	TNMA43NT6PSTUBE-PT	●	0.500	0.189
	5	TNMA54NT5PSTUBE-PT	●	0.625	0.252
	4	TNMA54NT4PSTUBE-PT	●	0.625	0.252
	3	TNMA54NT3PSTUBE-PT	●	0.625	0.252
	16	TNMC43NT16PSTUBE-PT	●	0.500	0.189
	14	TNMC43NT14PSTUBE-PT	●	0.500	0.189
	12	TNMC43NT12PSTUBE-PT	●	0.500	0.189
	10	TNMC43NT10PSTUBE-PT	●	0.500	0.189
	8	TNMC43NT8PSTUBE-PT	●	0.500	0.189
	6	TNMC43NT6PSTUBE-PT	●	0.500	0.189
	5	TNMC54NT5PSTUBE-PT	●	0.625	0.252
	4	TNMC54NT4PSTUBE-PT	●	0.625	0.252
	3	TNMC54NT3PSTUBE-PT	●	0.625	0.252

ACME and STUB ACME can cut crest radius. Crest flat of ACME and STUB ACME need to be cut by another tool.

Applicable toolholder

External
MTVOR...
STVOR...

API Round (for Energy)



Applicable toolholder

Insert size	External	Internal
16	CER/L**16... JSER**16 JS**SEL16 B-SER/L**16 B-CER/L**16 BC-SER/L**16	TSNR/L**16 SNR/L**16... TCNR/L**16... CNR/L**16...
		TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

Full-profile insert

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)							Internal insert (in)						
				Designation	Grade Coated AH725	Grade Coated T313V	IC	PDX	PDY	RE	Designation	Grade Coated AH725	Grade Coated T313V	IC	PDX	PDY	RE
16	(0.100)	10	R	16ER10RAPI	●		0.375	0.063	0.047	0.0142	16IR10RAPI	●	●	0.375	0.063	0.047	0.0142
16	(0.125)	8	R	16ER8RAPI	●		0.375	0.063	0.047	0.0169	16IR8RAPI	●	●	0.375	0.063	0.047	0.0169
22	(0.125)	8	R								22IR8RAPI-2T	●		0.500	0.177	0.118	0.0169

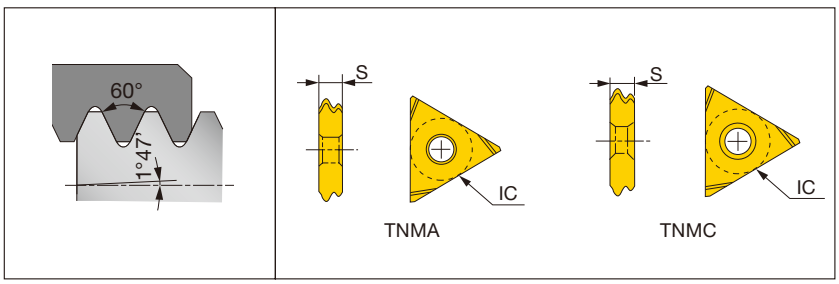
Full-profile insert with chipbreaker

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)							Internal insert (in)						
				Designation	Grade Coated AH725	IC	PDX	PDY	RE		Designation	Grade Coated AH725	IC	PDX	PDY	RE	
16	(0.100)	10	R	16ER10RD-CB	●	0.375	0.047	0.059	0.0142		16IR10RD-CB	●	0.375	0.047	0.059	0.0142	
16	(0.125)	8	R	16ER8RD-CB	●	0.375	0.051	0.059	0.0169		16IR8RD-CB	●	0.375	0.051	0.059	0.0169	

Reference pages: Toolholders → E032 - E042,
Standard cutting conditions → E054, L044 - L060

● : Line up / 5 pieces per package

API Round (for Energy)

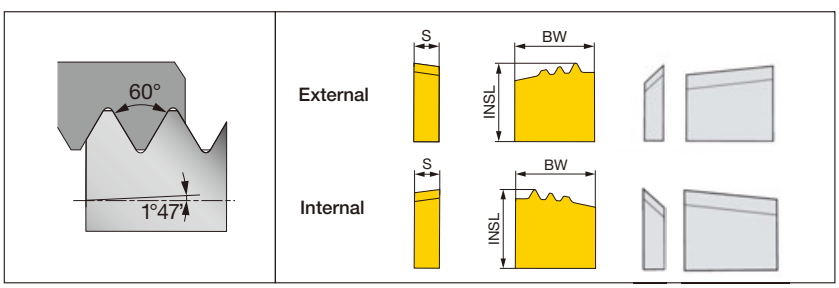


Applicable toolholder

External	Internal
MTHOR...	SI-MTHOR...
MTVOR...	SI-STHOR...
STVOR...	H**-MTHOR...
GTB...	H**M-MTHOR...

On edge

Pitch (Reference) (in)	TPI	External insert (in)				Internal insert (in)			
		Designation	Grade Coated AH725	IC	S	Designation	Grade Coated AH725	IC	S
(0.100)	10	**TNMA4310RDEXT**	●	0.500	0.189	**TNMA4310RDINT**	●	0.500	0.189
(0.125)	8	**TNMA438RDEXT**	●	0.500	0.189	**TNMA438RDINT**	●	0.500	0.189
(0.100)	10	**TNMC4310RDEXT**	●	0.500	0.189	**TNMC4310RDINT**	●	0.500	0.189
(0.125)	8	**TNMC438RDEXT**	●	0.500	0.189	**TNMC438RDINT**	●	0.500	0.189

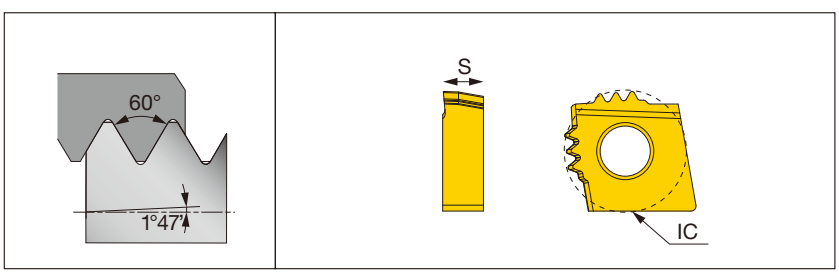


Applicable toolholder

External	Internal
CLVOR...	SI-CLHOR...

Full-profile insert (chaser)

Pitch (Reference) (mm)	TPI	External insert (mm)						Internal insert (mm)					
		Designation	Grade Coated AH725	BW	INSL	S	Breakerpiece	Designation	Grade Coated AH725	BW	INSL	S	Breakerpiece
(3.175)	8	**CR-8R-3E**	●	16	15	5.2	CR-8R / 10R-3E / 4E-CB	**CR-8R-3I**	●	16	15	5.2	CR-8R / 10R-3I / 4I-CB
(2.54)	10	**CR-10R-3E**	●	16	15.9	5.2	CR-8R / 10R-3E / 4E-CB	**CR-10R-3I**	●	16	15.9	5.2	CR-8R / 10R-3I / 4I-CB



Applicable toolholder

External
PCFNR...

Full-profile insert (chaser)

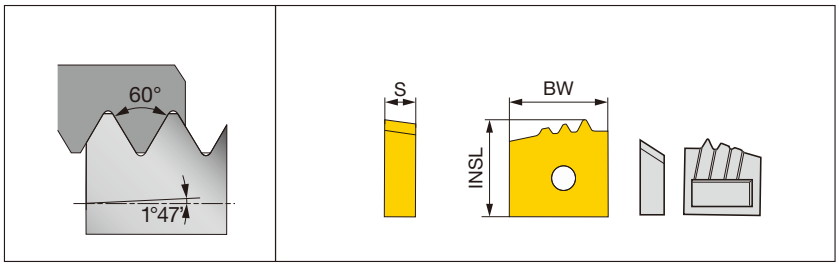
Pitch (Reference) (mm)	TPI	External insert (mm)			
		Designation	Grade Coated AH725	IC	S
(2.54)	10	**CNGA-10R-3E**	●	19.05	6.4
(3.175)	8	**CNGA-8R-3E**	●	19.05	6.4

Toolholders need to be customized for these types of inserts.

Reference pages: Toolholders → E032 - E042,
Standard cutting conditions → E054

● : Line up / 5 pieces per package

API Round (for Energy)
For tool-rotating machines



Applicable toolholder

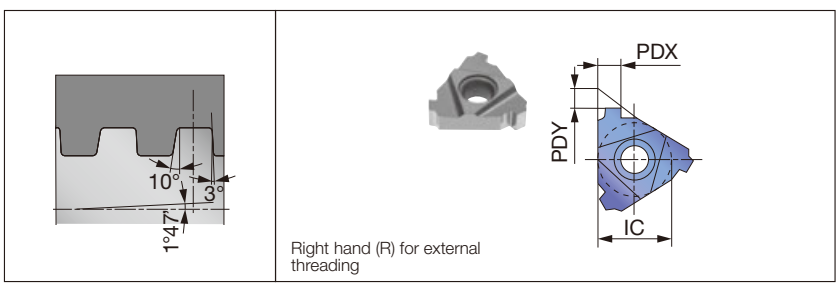
External
CLVOR...

Full-profile insert (chaser)

Pitch (Reference) (mm)	TPI	External insert (mm)					
		Designation	Grade Coated AH725	BW	INSL	S	Breakerpiece
(3.175)	8	**CR-8R-3E #1**	●	16	14.7	5.2	TD39318R-1-CBW/CAVITY
(3.175)	8	**CR-8R-3E #2**	●	16	14.9	5.2	TD39328R-2-CBW/CAVITY
(3.175)	8	**CR-8R-3E #3**	●	16	15	5.2	TD39338R-3-CBW/CAVITY

Toolholders need to be customized for these types of inserts.

API Buttress (for Energy industry)



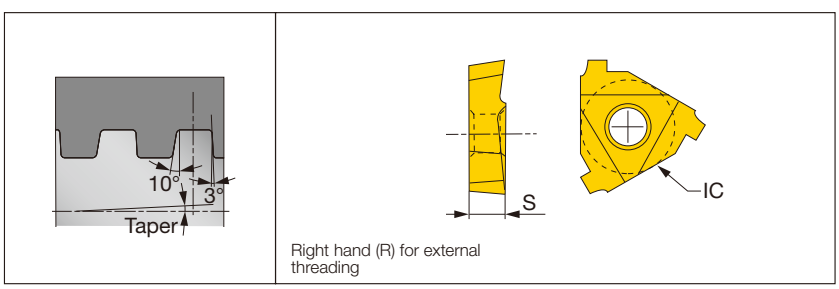
Right hand (R) for external threading

Applicable toolholder

Insert size	External	Internal
22	CER/L**22...	TSNR/L**22 SNR/L**22... TCNR/L**22... CNR/L**22...

Full-profile insert

Insert size	Pitch (Reference) (in)	TPI	Hand of cut	External insert (in)					Internal insert (in)				
				Designation	Grade Coated AH725	IC	PDX	PDY	Designation	Grade Coated AH725	IC	PDX	PDY
22	(0.200)	5	R	**22ER5BAPI**	●	0.500	0.146	0.087	**22IR5BAPI**	●	0.500	0.136	0.087



Right hand (R) for external threading

Applicable toolholder

External	Internal
MTVNR...	H**-LNFR... H**M-LNFR... HS**-LNFR...

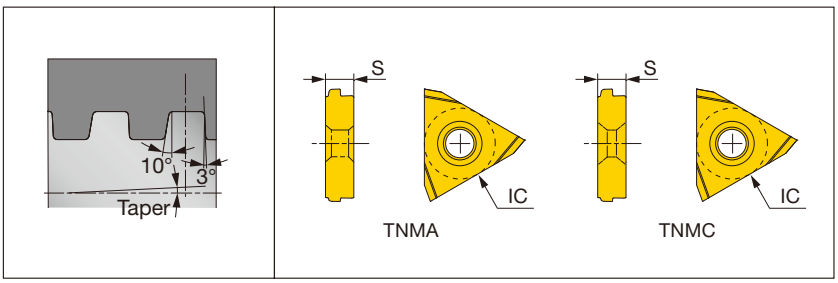
Full-profile insert (single side)

Pitch (Reference) (mm)	TPI	Taper	External insert (mm)				Internal insert (mm)			
		TPF	Designation	Grade Coated AH725	IC	S	Designation	Grade Coated AH725	IC	S
(5.08)	5	0.75	**L535B75EXT-FC**	●	15.875	4.8	**L535B75INT-FC**	●	15.875	4.8
(5.08)	5	1	**L535B1EXT-FC**	●	15.875	4.8	**L535B1INT-FC**	●	15.875	4.8

Reference pages: Toolholders → E032 - E042,
Standard cutting conditions → E054

● : Line up / 5 pieces per package

API Buttress (for Energy industry)

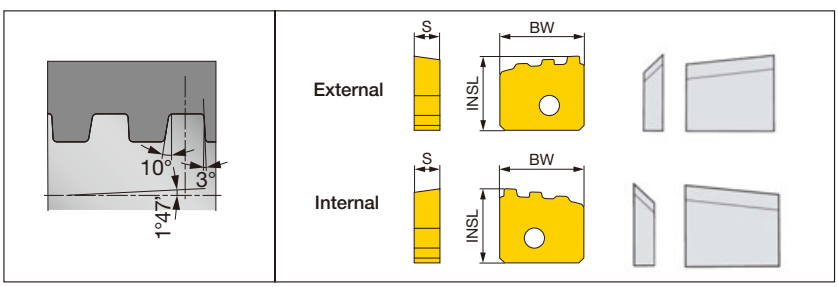


Applicable toolholder

External	Internal
MTHOR...	SI-MTHOR...
MTVOR...	SI-STHOR...
STVOR...	H**-MTHOR...
GTB...	H**M-MTHOR...

On edge

Pitch (Reference) (in)	TPI	Taper TPF	External insert (in) Designation	Grade Coated AH725	IC	S	Internal insert (in) Designation	Grade Coated AH725	IC	S
(0.200)	5	1	**TNMA545B1EXT-FC**	●	0.625	0.252	**TNMA545B1INT-FC**	●	0.625	0.252
(0.200)	5	0.75	**TNMA545B75EXT-FC**	●	0.625	0.252	**TNMA545B75INT-FC**	●	0.625	0.252
(0.200)	5	1	**TNMC545B1EXT-FC**	●	0.625	0.252	**TNMC545B1INT-FC**	●	0.625	0.252
(0.200)	5	0.75	**TNMC545B75EXT-FC**	●	0.625	0.252	**TNMC545B75INT-FC**	●	0.625	0.252

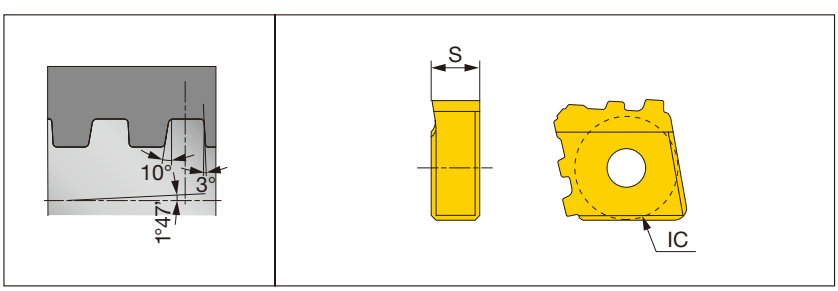


Applicable toolholder

External	Internal
CLVOR...	SI-CLHOR...

Full-profile insert (chaser)

Pitch (Reference) (mm)	TPI	External insert (mm) Designation	Grade Coated AH725	BW	INSL	S	Breakerpiece	Internal insert (mm) Designation	Grade Coated AH725	BW	INSL	S	Breakerpiece
(5.08)	5	**CR-5B75-4E**	●	20.4	15.9	5.1	CR-5B75 / 5B1-4E-CB	**CR-5B75-3I**	●	16	15.8	5.2	CR-8R / 10R-3I / 4I-CB



Applicable toolholder

External
PCFNR...

Full-profile insert (chaser)

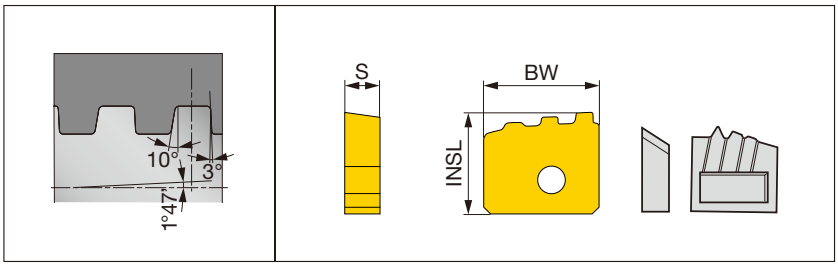
Pitch (Reference) (mm)	TPI	External insert (mm) Designation	Grade Coated AH725	IC	S
(5.08)	5	**CNGA-5B75-3E**	●	19.05	6.4

Toolholders need to be customized for these types of inserts.

Reference pages: Toolholders → E032 - E042,
Standard cutting conditions → E054

● : Line up / 5 pieces per package

API Buttress (for Energy industry)
For tool-rotating machines



Applicable toolholder

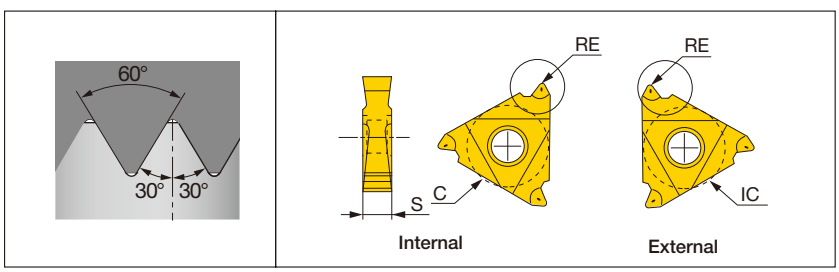
External
CLVOR...

Full-profile insert (chaser)

Pitch (Reference) (mm)	TPI	External insert (mm)						
		Designation	Grade Coated AH725	BW	INSL	S	RE	Breakerpiece
(5.08)	5	**CR-5B75-3E #1**	●	17	14.6	5.2		TD46015B75-1-CBW/CAVITY
(5.08)	5	**CR-5B75-3E #2**	●	17	14.8	5.2		TD46025B75-2-CBW/CAVITY
(5.08)	5	**CR-5B75-3E #3**	●	17	15	5.2		TD46035B75-3-CBW/CAVITY

Toolholders need to be customized for these types of inserts.

API Rotary shoulder connection (for Energy industry)



Applicable toolholder

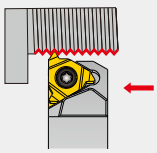
External	Internal
MTVNR...	H**-LNFR... H**M-LNFR... HS**-LNFR...

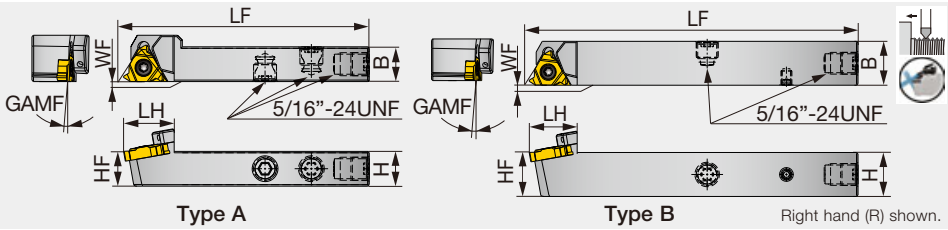
Full-profile insert (Double side)

Pitch (Reference) (in)	TPI	Connection	Taper TPF	Designation	Grade Coated AH725	IC (in)	S (in)	RE (in)
(0.250)	4	V-0.038R	2	**LDS54428FT-CB #1**	●	0.625	0.252	0.038
(0.250)	4	V-0.038R	3	**LDS54438FT-CB #2**	●	0.625	0.252	0.038
(0.250)	4	V-0.050	2	**LDS54425FT-CB #3**	●	0.625	0.252	0.025
(0.250)	4	V-0.050	3	**LDS54435FT-CB #4**	●	0.625	0.252	0.025
(0.200)	5	V-0.040	3	**LDS54530FT-CB #5**	●	0.625	0.252	0.020

● : Line up / 5 pieces per package

External threading toolholder with high pressure coolant capability





Inch	H	B	LF	LH	HF	WF	GAMF	Type	Insert
JSE2R08F16-CHP	0.500	0.500	3.344	0.748	0.500	0.000	1°	A	16ER...
JSE2R08X16-CHP	0.500	0.500	4.750	0.748	0.500	0.000	1°	B	16ER...
JSE2R10X16-CHP	0.625	0.625	4.750	0.748	0.625	0.000	1°	B	16ER...
Metric	**H**	**B**	**LF**	**LH**	**HF**	**WF**	**GAMF**	**Type**	**Insert**
JSE2R1212F16-CHP ※	12	12	85	19	12	0	1°	A	16ER...
JSE2R1212X16-CHP	12	12	120	19	12	0	1°	B	16ER...
JSE2R1616X16-CHP	16	16	120	19	16	0	1°	B	16ER...

※ Connection with external coolant tube

SPARE PARTS

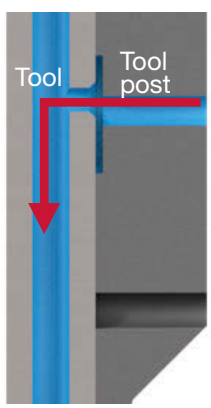

Designation	Clamping screw	Wrench
JSE2R**16-CHP	CSTB-3.5	T-15F

No need for coolant tube setup.
Eliminates chip entanglement on tubes and streamlines tool replacement.

Coolant is supplied from the tool post directly to the tools

Internal thread
Optional connection with external coolant tube

Detailed view of the coolant flow after connection

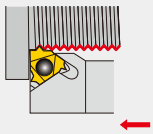


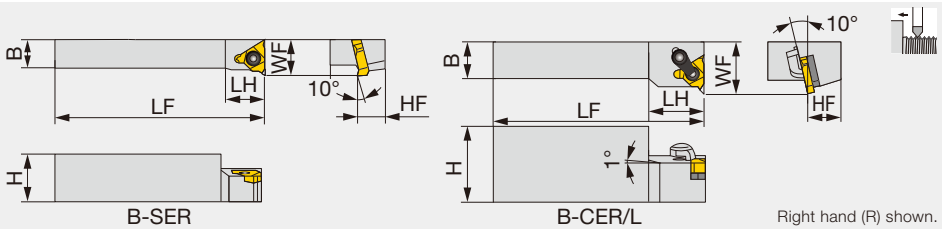
Reference pages: Inserts → E010, E014, E016 - E027, Standard cutting conditions → E054

TUNGTHREAD

B-S/CER/L

External threading toolholder for Swiss lathes





Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	Insert
B-SER10H16	20	10	100	15	10	16	16ER...
B-SER12K16	24	12	125	18	12	18	16ER...
B-CER/L16M16	32	16	150	24	16	22	16ER/L...

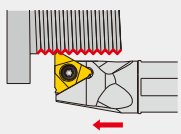
SPARE PARTS

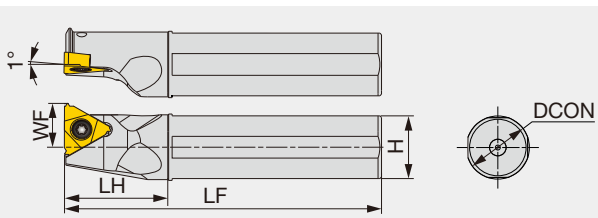
Designation	Clamp set	Shim set	Clamping screw	Wrench
B-SER**16	-	-	CSTB-3.5	T-15F
B-CER/L16M16	CSP16	A16-1	-	T-15F

TUNGTHREAD

JS-SEL16

External threading toolholder for Swiss lathes





Right hand (R) shown.

Inch	DCON	H	LF	LH	WF	Insert
JS16F-SEL16	0.630	0.591	3.346	0.984	0.433	16ER...
JS19G-SEL16	0.750	0.709	3.543	1.181	0.492	16ER...
JS19X-SEL16	0.750	0.709	4.724	1.181	0.492	16ER...
JS20G-SEL16	0.787	0.748	3.543	1.181	0.512	16ER...
JS20X-SEL16	0.787	0.748	4.724	1.181	0.512	16ER...
JS25HSEL16	0.984	0.945	3.937	1.181	0.61	16ER...
JS254X-SEL16	1.000	0.945	4.724	1.181	0.618	16ER...

Metric	DCON	H	LF	LH	WF	Insert
JS16F-SEL16	16	15	85	25	11	16ER...
JS19G-SEL16	19.05	18	90	30	12.5	16ER...
JS19X-SEL16	19.05	18	120	30	12.5	16ER...
JS20G-SEL16	20	19	90	30	13	16ER...
JS20X-SEL16	20	19	120	30	13	16ER...
JS25HSEL16	25	24	100	30	15.5	16ER...
JS254X-SEL16	25.4	24	120	30	15.7	16ER...

Use left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

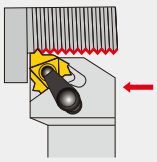
Designation	Clamping screw	Wrench
JS***-SEL16	CSTB-3.5	T-15F

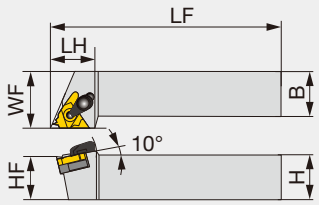
Reference pages: Inserts → E010, E014, E016 - E027, Standard cutting conditions → E054

TUNGTHREAD

CER/L

Clamp-on external threading toolholder (alternative clamping of screw-on or clamp-on only for DT type)





Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	Insert
CER/L123DT	0.750	0.750	5.000	0.870	0.750	1.000	16ER/L...
CER/L163DT	1.000	1.000	6.000	1.000	1.000	1.250	16ER/L...
CER203DT	1.250	1.250	6.000	1.250	1.250	1.500	16ER...
CER164DT	1.000	1.000	6.000	1.000	1.000	1.250	22ER...
CER204DT	1.250	1.250	6.000	1.250	1.250	1.500	22ER...

Metric	H	B	LF	LH	HF	WF	Insert
CER/L1212H16DT	12	12	100	24	12	16	16ER/L...
CER/L1616H16DT	16	16	100	24	16	20	16ER/L...
CER/L2020K16DT	20	20	125	24	20	25	16ER/L...
CER/L2525M16DT	25	25	150	28	25	32	16ER/L...
CER/L2525M22DT	25	25	150	31.3	25	32	22ER/L...
CER3232P16T	32	32	170	32	32	40	16ER...
CER3232P22T	32	32	170	32	32	40	22ER...
CER2525M27T	25	25	150	34	25	32	27ER...
CER3232P27T	32	32	170	34	32	40	27ER...

A clamp set consists of a clamp and a clamping screw. A shim set consists of a shim and a shim screw to secure the shim to the shank.
Standard shims can be used on both right- and left-hand toolholders. Please use either of the sides depending on the tool hand.
When using DT type, please remove either the clamp set or the insert clamping screw.

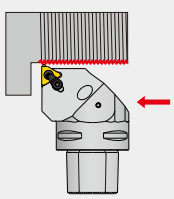
SPARE PARTS

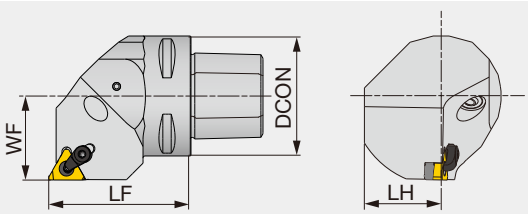
Designation	Clamp set	Clamping screw	Shim screw	Shim	Shim set	Wrench 1	Wrench 2	Wrench 3
CER/L 123-DT	CSP16	CSTB-3.5ST	DTS5 - 3.5	A16 - 1DT	-	P-3.5	T-15F	-
CER/L 163-DT	CSP16	CSTB-3.5ST	DTS5 - 3.5	A16 - 1DT	-	P-3.5	T-15F	-
CER 203-DT	CSP22	CSTB-4ST	DTS6-4	GX22-1DT	-	P-3.5	T-15F	-
CER164-DT	CSP22	CSTB-4ST	DTS6-4	GX22-1DT	-	P-4	T-20F	-
CER 204-DT	CSP22	CSTB-4ST	DTS6-4	GX22-1DT	-	P-4	T-20F	-
CER/L**16DT	CSP22	CSTB-3.5ST	DTS5-3.5	A16-1DT	-	P-3.5	T-15F	-
CER/L2525M22DT	CSP22	CSTB-4ST	DTS6-4	GX22-1DT	-	P-4	T-15F	T-20F
CER3232P16T	CSP16	-	-	-	A16-1	-	T-15F	-
CER3232P22T	CSP22	-	-	-	NXE22-1	-	T-20F	-
CER**27T	CSP27	-	-	-	NXE27-1	P-4	-	-

TUNGCAP

C-CER/L

Clamp-on external threading toolholder





Right hand (R) shown.

Metric	DCON	LF	LH	WF	RE	Insert
C4CER/L27050-16ERN(2)	40	50	25	27	0.8	16ER/L...
C5CER/L35060-16ER(1)	50	60	32	35	0.8	16ER/L...
C5CER/L35060-16ERN(2)	50	60	32	35	0.8	16ER/L...
C6CER/L45065-16ER(1)	63	65	41	45	0.8	16ER/L...
C6CER/L45065-16ERN(2)	63	65	41	45	0.8	16ER/L...

(1) Applicable for 3 MPa coolant (2) Applicable for 7 MPa coolant

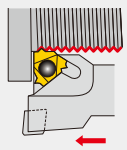
SPARE PARTS

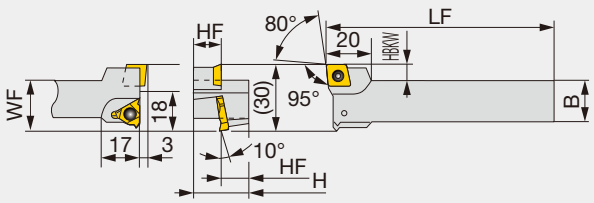
Designation	Clamp set	Clamping screw	Coolant parts	Shim screw	Shim	Wrench 1	Wrench 2
C5CE*35060-16ER	CSP16	CSTB-3.5ST	EZ104	DTS5-3.5	A16-1DT	P-3.5	T-15F
C5CE*35060-16ERN	CSP16	CSTB-3.5ST	SATZ-M10X1-M5	DTS5-3.5	A16-1DT	P-3.5	T-15F
C6CE*45065-16ER	CSP16	CSTB-3.5ST	EZ104	DTS5-3.5	A16-1DT	P-3.5	T-15F
C6CE*45065-16ERN	CSP16	CSTB-3.5ST	SATZ-M10X1-M5	DTS5-3.5	A16-1DT	P-3.5	T-15F

TUNGTHREAD

BC-SER

External threading toolholder for multi-functional Swiss lathes





Right hand (R) shown.

Metric	H	B	LF	HF	WF	HBKW	Insert
BC-SER12K16	24	16	125	12	23	7	16ER..., CC*T09T3...

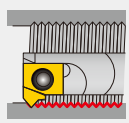
SPARE PARTS

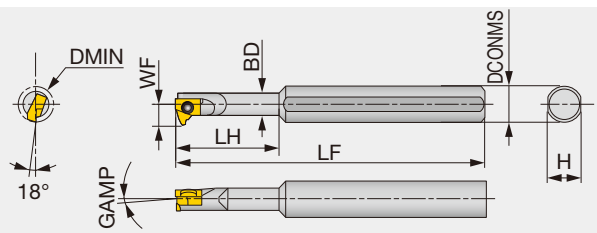
Designation	Clamping screw	Wrench
BC-SER12K16	CSTB-3.5	T-15F

TUNGTHREAD

SNR/L-2/3

Screw-on internal threading toolholder





Right hand (R)
Carbide shank

Metric	Material	DMIN	DCONMS	BD	WF	LF	LH	H	GAMP	Insert
SNR0006H06-2	Steel	8	8	6	4.7	100	18	7	2°	6IR...
SNR0006H06-3	Steel	8	8	6	4.7	100	18	7	3°	6IR...
SNR0008H06-2	Steel	10	8	7.8	5.7	100	18	7	2°	6IR...
SNR0008H06-3	Steel	10	8	7.8	5.7	100	18	7	3°	6IR...
SNR0006K06SC-2	Carbide	8	8	6	4.7	125	30	7	2°	6IR...
SNR0006K06SC-3	Carbide	8	8	6	4.7	125	30	7	3°	6IR...
SNR0008K06SC-2	Carbide	10	8	7.8	5.7	125	18	7	2°	6IR...
SNR0008K06SC-3	Carbide	10	8	7.8	5.7	125	18	7	3°	6IR...

Use right-hand toolholders (R) with right-hand inserts (R).

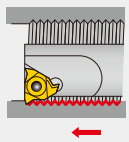
SPARE PARTS

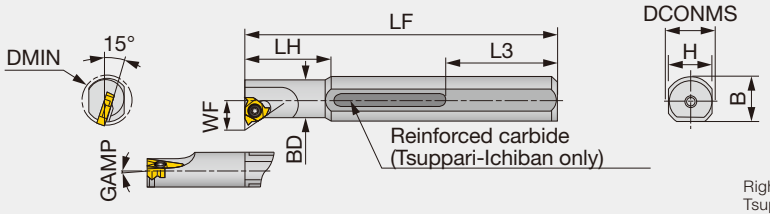
Designation	Clamping screw	Wrench
SNR0006H06...	CSTB-2L040	T-6F
SNR0008H06...	CSTB-2L	T-6F
SNR0006K06SC...	CSTB-2L040	T-6F
SNR0008K06SC...	CSTB-2L	T-6F

Reference pages: C-CER/L: Inserts → E010, E014, E016 - E027
BC-SER/L: Inserts → B111 - (CC*T09T3...), E010, E014, E016 - E027 (16ER...)
SNR/L-2/3: Inserts → E016, E020 - E022
Standard cutting conditions → E054

SNR/L

Screw-on internal threading toolholder





Right hand (R) shown.
Tsuppari-Ichiban shank.

Metric	Material	DMIN	DCONMS	BD	WF	LF	LH	L3	H	B	GAMP	Insert
TSNR0016Q16	Reinforced	19	16	15.5	10.6	180	40	59	15	-	1°	16IR...
TSNR0020R22	Reinforced	24	20	19.5	13.9	200	50	49	18	-	1°	22IR...
SNR/L0010K11	Steel	12	16	10	6.6	125	25	-	15	15.5	1°	11IR/L...
SNR0010K11-2	Steel	12	16	10	6.6	125	25	-	15	15.5	2°	11IR...
SNR0010K11-3	Steel	12	16	10	6.6	125	25	-	15	15.5	3°	11IR...
SNR/L0013L11	Steel	15	16	13	8.2	140	32.5	-	15	15.5	1°	11IR/L...
SNR0013L11-2	Steel	15	16	13	8.2	140	32.5	-	15	15.5	2°	11IR...
SNR0013L11-3	Steel	15	16	13	8.2	140	32.5	-	15	15.5	3°	11IR...
SNR/L0016M16	Steel	19	16	15.5	10.6	150	40	-	15	15.5	1°	16IR/L...
SNR0016M16-2	Steel	19	16	15.5	10.6	150	40	-	15	15.5	2°	16IR...
SNR0016M16-3	Steel	19	16	15.5	10.6	150	40	-	15	15.5	3°	16IR...
SNR/L0020Q22	Steel	24	20	19.5	13.9	180	50	-	18	19	1°	22IR/L...
SNR0020Q22-2	Steel	24	20	19.5	13.9	180	50	-	18	19	2°	22IR...
SNR0020Q22-3	Steel	24	20	19.5	13.9	180	50	-	18	19	3°	22IR...
SNR0010M11SC	Carbide	13	10	10.5	7.4	150	24	-	9	-	1°	11IR...
SNR0010M11SC-2	Carbide	13	10	10.5	7.4	150	24	-	9	-	2°	11IR...
SNR0010M11SC-3	Carbide	13	10	10.5	7.4	150	24	-	9	-	3°	11IR...
SNR0012P11SC	Carbide	15	12	12.4	8.5	170	28	-	11	-	1°	11IR...
SNR0012P11SC-2	Carbide	15	12	12.4	8.5	170	28	-	11	-	2°	11IR...
SNR0012P11SC-3	Carbide	15	12	12.4	8.5	170	28	-	11	-	3°	11IR...
SNR/L0016R16SC	Carbide	20	16	16.2	11.9	200	35	-	15	-	1°	16IR/L...
SNR0016R16SC-2	Carbide	20	16	16.2	11.9	200	35	-	15	-	2°	16IR...

Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).

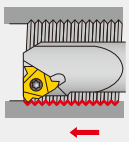
SPARE PARTS

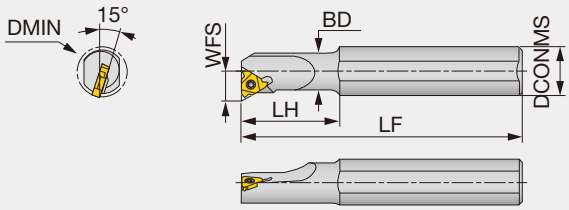

Designation	Clamping screw	Wrench
TSNR0016Q16	CSTB-3.5	T-15F
TSNR0020R22	CSTB-4	T-15F
SNR/L00**11...	CSTB-2.5	T-8F
SNR/L0016M16...	CSTB-3.5	T-15F
SNR/L0020Q22...	CSTB-4	T-15F
SNR00**11SC...	CSTB-2.5	T-8F
SNR/L0016R16SC...	CSTB-3.5	T-15F

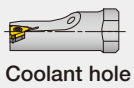
Reference pages: Inserts → E010, E014, E016 - E027, Standard cutting conditions → E054

SIR/L

Internal threading bars, Screw-on clamp







Right hand (R) shown.

Inch	Material	DMIN	DCONMS	BD	WFS	LF	LH	Coolant	Insert
SIR0500M16B	Steel	0.640	0.625	0.500	0.390	6.000	1.260	Y	16IR...
SIR0625P16B	Steel	0.750	0.750	0.625	0.450	7.000	1.570	Y	16IR...
SIR0750P16	Steel	1.000	0.750	0.750	0.510	7.000	-	N	16IR...
SIR0750P16B	Steel	0.900	0.750	0.750	0.900	7.000	-	Y	16IR...
SIR0750P22	Steel	0.950	0.750	0.750	0.510	7.000	-	N	22IR...
SIR1000R16B	Steel	1.160	1.000	1.000	0.650	8.000	-	Y	16IR...
SIR1000R22	Steel	1.200	1.000	1.000	0.710	8.000	-	N	22IR...
SIR1250S16	Steel	1.420	1.250	1.250	0.770	10.000	-	N	16IR...
SIR1250S22	Steel	1.500	1.250	1.250	0.850	10.000	-	N	22IR...
SIR 1500 T27	Steel	1.800	1.500	1.500	1.000	12.000	-	N	27IR...

SPARE PARTS

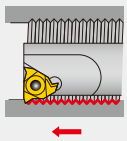
Designation	Clamping screw	Shim	Shim screw	Wrench	Seal cap
SIR0500M16B	SR5-40-L9.7-S16S	-	-	T-10/5	PL062
SIR0625P16B	SR 5-40-L9.7-S16S	-	-	T-10/5	PL 075
SIR0750P16	SR5-40-L12.2S16	AI16	SR5-40-L6.8-A16	T-10/5	-
SIR0750P16B	SR 5-40-L12.2-S16	AI16	SR 5-40-L6.8-A16	T-10/5	PL 075
SIR0750P22	SR8-32-L12-S22S	-	-	T-20/5	-
SIR1000R16B	SR 5-40-L12.2-S16	AI16	SR 5-40-L6.8-A16	T-10/5	PL 100
SIR1000R22	SR8-32-L15-S22	AI22	SR8-32-L5.8-A22	T-20/5	-
SIR1250S16	SR 5-40-L12.2-S16	AI16	SR 5-40-L6.8-A16, SR 8-32-L5.8-A22	T-10/5	-
SIR1250S22	SR8-32-L15-S22	AI22	SR8-32-L5.8-A22	T-20/5	-
SIR 1500 T27	SRM5-L22-S40	AI27	SRM5-L5.8-A27	T-25/3	-

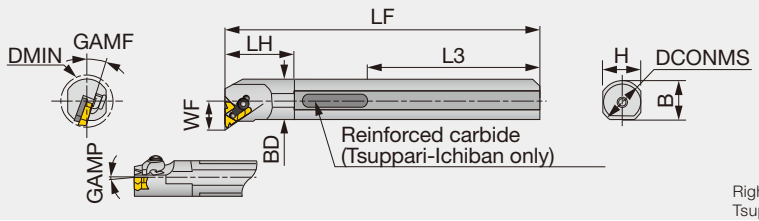
Reference pages: Inserts → E010, E014, E016 - E027, Standard cutting conditions → E054

TUNGTHREAD

CNR/L

Clamp-on internal threading toolholder (alternative clamping of screw-on or clamp-on only for DT type)





Right hand (R) shown.
Tsuppari-Ichiban shank.

Metric	Material	DMIN	DCONMS	BD	WF	LF	LH	L3	H	B	GAMF	GAMP	Insert
TCNR0020R16DT	Reinforced	24	20	19.5	14	200	30	49	18	-	15°	1°	16IR...
TCNR0025S16DT	Reinforced	29	25	24.5	16.5	250	38	64	23	-	15°	1°	16IR...
TCNR0025S22DT	Reinforced	30	25	24.5	18.2	250	38	64	23	-	15°	1°	22IR...
CNR/L0020P16	Steel	24	20	19.5	14	170	30	-	18	19	15°	1°	16IR/L...
CNR/L0025R16	Steel	29	25	24.5	16.5	200	38	-	23	24	15°	1°	16IR/L...
CNR/L0032S16	Steel	37	32	31.5	20.1	250	48	-	30	31	15°	1°	16IR/L...
CNR/L0025R22	Steel	30	25	24.5	18.2	200	38	-	23	24	15°	1°	22IR/L...
CNR/L0032S22	Steel	38	32	31.5	21.9	250	48	-	30	31	15°	1°	22IR/L...
CNR0040T27	Steel	46	40	39.5	26.9	300	60	-	37	38.5	10°	1°	27IR ...

A clamp set consists of a clamp and a clamping screw.
A shim set consists of a shim and a shim screw to secure the shim to the shank.
Standard shims can be used on both right- and left-hand toolholders. Please use either of the sides depending on the tool hand.
When using DT type, please remove either the clamp set or the insert clamping screw.

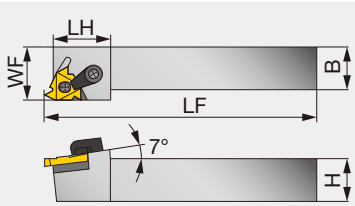
SPARE PARTS

Designation	Clamp set	Clamping screw	Shim screw	Shim	Shim set R	Shim set L	Wrench 1	Wrench 2	Wrench 3
TCNR002**16DT	CSP16	CSTB-3.5ST	DTS5-3.5	A16-1DT	-	-	P-3.5	T-15F	-
TCNR0025S22DT	CSP22	CSTB-4ST	DTS6-4	GX22-1DT	-	-	P-4	T-15F	T-20F
CNR/L**16	CSP16	-	-	-	A16-1	A16-1	-	T-15F	-
CNR/L**22	CSP22	-	-	-	NXN22-1	NXE22-1	-	T-20F	-
CNR0040T27	CSP27	-	-	-	NXN27-1	NXE27-1	P-4	-	-

TUNGTHREAD

MTVNR/L-5

External threading toolholder, for single-sided lay down inserts



Right hand (R) shown.

Inch	B	H	LF	LH	WF	Insert
MTVNR-2054	1-1/4	1-1/4	7.000	1.530	1.500	L535B**EXT-FC
MTVNR-2454	1.500	1.500	7.084	1.429	1.750	L535B**EXT-FC

Metric	B	H	LF	LH	WF	Insert
MTVNR-2525M5	25	25	152	39	31.8	L535B**EXT-FC
MTVNR-3232M5	32	32	178	39	38.1	L535B**EXT-FC

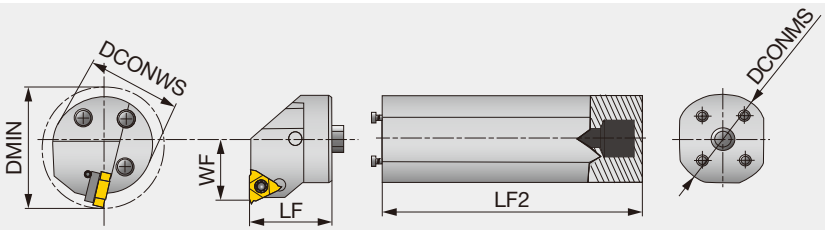
SPARE PARTS

Designation	Shim	Lock pin	Clamp	Clamping screw	Wrench
MTVNR...	LS53NOFORMEXT	NL-58	TC-250	STC-11	1/8HEX

Reference pages: Inserts → E010, E014, E016 - E027, Standard cutting conditions → E054

TUNGTHREAD
HS-LNFR/L-53

Head exchangeable internal threading, for single-sided lay down inserts



Right hand (R) shown.

Metric	DMIN	DCONWS	WF	LF	Insert
HS40-LNFR-53	50	40	28.7	41.3	L535B**INT-FC
HS50-LNFR-53	63	50	32.7	41.3	L535B**INT-FC

SPARE PARTS

Designation	Lock pin	Clamp	Clamping screw	Wrench
HS**-LNFR-53	NL-56	TC-250	STC-11	1/8HEX

Shank

Inch	DCONMS	LF2
S-570-32-50	2.000	14.410

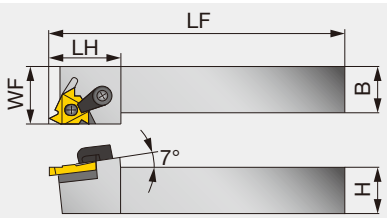
Metric	DCONMS	LF2
S-570-40M-40	40	273
S-570-50M-50	50	366

SPARE PARTS

Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4EX

TUNGTHREAD
MTVNR/L-54

External threading toolholder, for double-sided lay down inserts



Right hand (R) shown.

Metric	H	B	LF	LH	WF	Insert
MTVNR-3232M54	32	32	178	39	38.1	LDS54**FT-CB#...

SPARE PARTS

Designation	Shim	Lock pin	Clamp	Clamping screw	Wrench
MTVNR-3232M54	LS53NOFORMEXT	NL-58	TC-250	STC-11	1/8HEX

External, right hand

Both external and internal

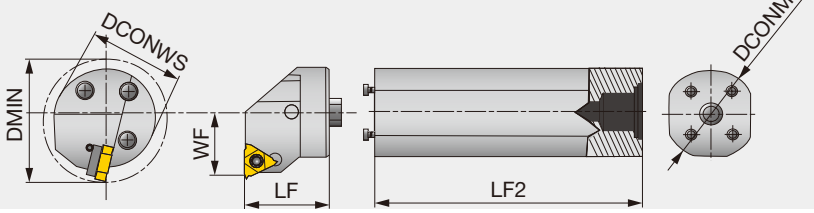
Internal, right hand

Reference pages: HS-LNFR/L-53: Inserts → E029, Standard cutting conditions → E054

TUNGTHREAD

HS-LNFR/L-54API

Head exchangeable internal threading toolholder, for double-sided lay down inserts



Right hand (R) shown.

Inch	DMIN	DCONWS	WF	LF	Insert
HS40-LNFR-54API	1.970	1.57	1.063	1.26	LDS54**FT-CB#...
HS50-LNFR-54API	2.480	1.97	1.378	1.57	LDS54**FT-CB#...

SPARE PARTS

Designation	Lock pin	Clamp	Clamping screw	Wrench
HS40-LNFR-54API	H410-1	TC-250	STC-11	1/8HEX
HS50-LNFR-54API	NL-56	TC-250	STC-11	1/8HEX

Shank

Inch	DCONMS	LF2
S-570-32-50	2.000	14.410
S-570-40M-40	1.575	10.750
S-570-50M-50	1.969	14.410

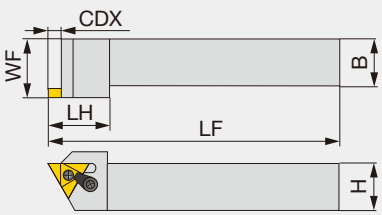
SPARE PARTS

Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4EX

TUNGTHREAD

MTVOR/L

Multi-clamp external threading toolholder, for on edge inserts



Right hand (R) shown.

Inch	H	B	LF	LH	WF	CDX	Insert
MTVOR-164	1.000	1.000	6.000	1.230	1.250	0.230	TNM*43...
MTVOR-204	1-1/4	1-1/4	7.000	1.230	1.500	0.230	TNM*43...
MTVOR-205	1-1/4	1-1/4	7.000	1.430	1.500	0.290	TNM*54...
MTVOR-206	1-1/4	1-1/4	7.000	1.620	1.500	0.370	TNM*66...
MTVOR-2069	1-1/4	1-1/4	7.000	1.620	1.500	0.370	TNM*69...

Metric	H	B	LF	LH	WF	CDX	Insert
MTVOR-2525M4	25	25	150	31	31.7	5.8	TNM*43...
MTVOR-3232M4	32	32	178	31	38.1	5.8	TNM*43...
MTVOR-2525M5	25	25	150	36	31.7	7.3	TNM*54...
MTVOR-3232M5	32	32	178	36	38.1	7.3	TNM*54...

STVOR/L is recommended for TNMC insert although the insert can be used on multi-clamp (M type) toolholder.

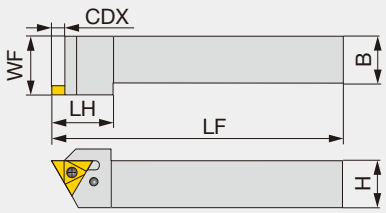
SPARE PARTS

Designation	Lock pin	Clamp	Clamping screw	Wrench
MTVOR-164/204, MTVOR-**M4	NL-44	TC-190	STC-5	3/32HEX
MTVOR-205, MTVOR-**M5	NL-56	TC-250	STC-11	1/8HEX
MTVOR-206	NL-66L	TC-310	STC-4	5/32HEX
MTVOR-2069	NL-66L	TC-311	STC-4	5/32HEX

Reference pages: Inserts → E031, Standard cutting conditions → E054

TUNGTHREAD
STVOR/L

Screw-on external threading toolholder, for on edge inserts



Right hand (R) shown.

Inch	H	B	LF	LH	WF	CDX	Insert
STVOR-165	1.000	1.000	6.000	1.430	1.250	0.290	TNMC54...
STVOR-206	1-1/4	1-1/4	7.000	1.620	1.500	0.370	TNMC66...

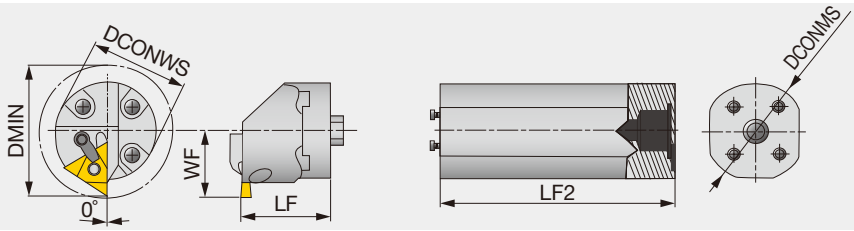
Metric	H	B	LF	LH	WF	CDX	Insert
STVOR-2525M4	25	25	150	31	31.7	5.8	TNMC43...
STVOR-3232M4	32	32	178	31	38.1	5.8	TNMC43...
STVOR-2525M5	25	25	150	36	31.7	7.3	TNMC54...
STVOR-3232M5	32	32	178	36	38.1	7.3	TNMC54...

SPARE PARTS

Designation	Clamping screw	Clamp (Optional parts)	Clamping screw (Optional parts)	Wrench	
STVOR-**M4	SD2	TC-190	STC-9	T-20TORX	3/32HEX
STVOR-165 STVOR-**M5	SD3	TC-250	STC-11	T-20TORX	1/8HEX
STVOR-206	SD4	TC-310	STC-8	-	1/8HEX, 5/32HEX

TUNGTHREAD
HS-MTHOR/L

Multi-clamp internal threading toolholder, for on edge inserts



Right hand (R) shown.

Metric	DMIN	DCONWS	WF	LF	Insert
HS40-MTHOR-4	66.7	40	25.9	32	TNM*43...
HS50-MTHOR-4	73	50	35.9	40	TNM*43...
HS40-MTHOR-5	81.3	40	30.6	32	TNM*54...
HS50-MTHOR-5	82.6	50	35.9	40	TNM*54...

SPARE PARTS

Designation	Lock pin	Clamp	Clamping screw	Wrench
HS**-MTHOR-4	NL-44	TC-190	STC-5	3/32HEX
HS**-MTHOR-5	NL-56	TC-250	STC-11	1/8HEX

Shank

Designation	DCONMS	LF2
S-570-40M-40	40	273
S-570-50M-50	50	366

SPARE PARTS

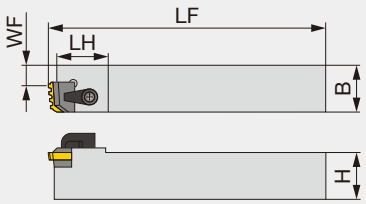
Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4EX

Reference pages: Inserts → E026 - E030, Standard cutting conditions → E054

TUNGTHREAD

CLVOR

External threading toolholder, for chaser inserts



Right hand (R) shown.

Inch	WF	LF	LH	H	B	Insert
CLVOR-208	0.800	7.000	1.250	1-1/4	1-1/4	CR***

Metric	WF	LF	LH	H	B	Insert
CLVOR-25M6	16.1	177	32	25	25	CR***
CLVOR-32M6	16.1	177	32	32	32	CR***
CLVOR-40M8	29.8	179	32	40	40	CR-5B75-4E

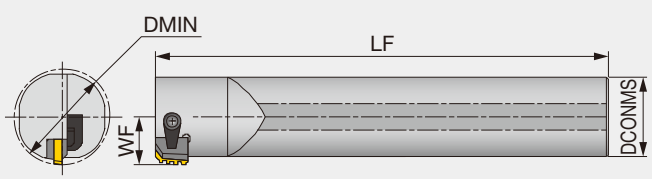
SPARE PARTS

Designation	Shim	Shim screw	Clamp	Clamping screw	Wrench	
CLVOR-25M6	TF1207	SF80	TC-311	STC-4	T-25TORX	5/32HEX
CLVOR-32M6	TF1207	SF85	TC-311	STC-4	T-25TORX	5/32HEX
CLVOR-208 CLVOR-40M8	TF8132-E	SF60	TC-311	STC-4	T-20TORX	5/32HEX

TUNGTHREAD

SI-CLHOR

Internal threading toolholder, for chaser inserts

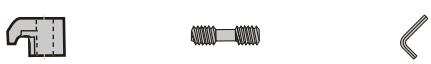


Right hand (R) shown.

Inch	DMIN	DCONMS	WF	LF	Insert
SI-CLHOR-326	2.250	2.000	1.125	14.000	CR-**I

Metric	DMIN	DCONMS	WF	LF	Insert
SI-CLHOR-40M6	50.8	40	23.16	400	CR-**I

SPARE PARTS

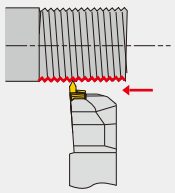


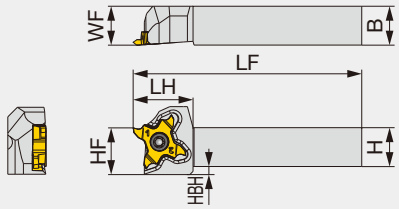
Designation	Clamp	Clamping screw	Wrench
SI-CLHOR-40M6	TC-311	STC-8	5/32HEX

Reference pages: Inserts → E028 - E031, Standard cutting conditions → E054

STCR/L-18

External grooving and threading toolholder





Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	HBH	Insert
STCR/L06-18	0.375	0.375	4.750	0.730	0.375	0.375	0.177	TC*18...
STCR/L08-18	0.500	0.500	4.750	0.730	0.500	0.500	0.098	TC*18...
STCR/L10-18	0.625	0.625	4.750	0.730	0.625	0.625	-	TC*18...
STCR/L12-18	0.750	0.750	4.750	0.900	0.750	1.000	-	TC*18...
STCR/L16-18	1.000	1.000	5.500	0.900	1.000	1.250	-	TC*18...

Metric	H	B	LF	LH	HF	WF	HBH	Insert
STCR/L1010X18	10	10	120	18.5	10	10	4.5	TC*18...
STCR/L1212F18	12	12	85	18.5	12	12	2.5	TC*18...
STCR/L1212X18	12	12	120	18.5	12	12	2.5	TC*18...
STCR/L1616X18	16	16	120	18.5	16	16	-	TC*18...
STCR/L2020H18	20	20	100	18.5	20	20	-	TC*18...
STCR/L2020X18	20	20	120	23	20	25	-	TC*18...
STCR/L2525Z18	25	25	135	23	25	30	-	TC*18...

Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).

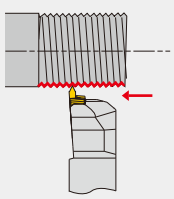
SPARE PARTS


Designation	Clamping screw	Wrench
STCR...	CSTC-4L100DL	T-1008/5
STCL...	CSTC-4L100DR	T-1008/5

STCR/L-18-CHP

TUNGTJET

External grooving and threading toolholder, with high pressure coolant capability



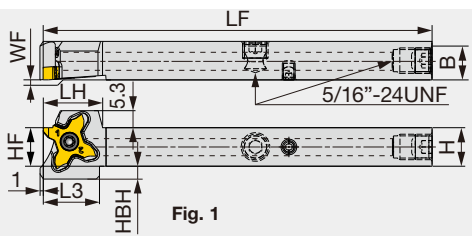


Fig. 1 Fig. 2

Right hand (R) shown.

Inch	H	B	LF	LH	*L3*	HF	WF	HBH	Fig.	Insert	Torque
STCR/L08F18-CHP	0.500	0.500	3.344	0.728	0.689	0.500	0/0.500	0.130	2	TC*18...	0.890
STCR/L08X18-CHP (1)	0.500	0.500	4.750	0.728	0.689	0.500	0/0.500	0.130	1	TC*18...	0.890
STCR/L10X18-CHP (1)	0.625	0.625	4.750	0.728	-	0.625	0/0.625	-	1	TC*18...	0.890
STCR/L12-18-CHP	0.750	0.750	4.750	0.900	-	0.750	-	-	2	TC*18...	0.890
STCR/L16-18-CHP	1.000	1.000	5.500	0.900	-	1.000	-	-	2	TC*18...	0.890

Metric	H	B	LF	LH	*L3*	HF	WF	HBH	Fig.	Insert	Torque*
STCR/L1212F18-CHP	12	12	85	18.5	17.5	12	0/12	4	2	TC*18...	1.2
STCR/L1212X18-CHP	12	12	120	18.5	17.5	12	0/12	4	1	TC*18...	1.2
STCR/L1616X18-CHP	16	16	120	18.5	-	16	0/16	0	1	TC*18...	1.2

This toolholder can be used with threading and grooving inserts.
Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

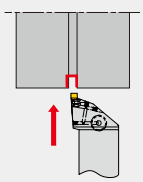

Designation	Clamping screw	Wrench
STCL**18-CHP	CSTC-4L100DR	T-1008/5
STCR**18-CHP	CSTC-4L100DL	T-1008/5

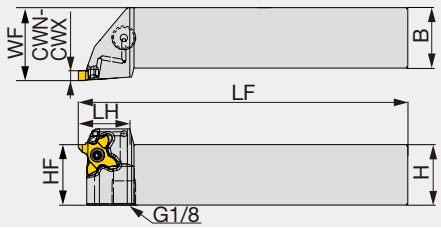
Groove width : 0.013" - 0.118"
Pitch : 0.031" - 0.118"

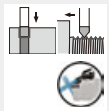
Reference pages: Inserts → E011, Standard cutting conditions → E055

STCR/L-18-CHP

Threading tool - for external theading with high pressure coolant capability







Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF	HBH	Insert	Torque
STCR/L12-18-CHP	0.013	0.118	0.750	0.750	4.750	0.900	-	0.750	1.000	-	TC*18...	0.890
STCR/L16-18-CHP	0.013	0.118	1.000	1.000	5.500	.900	-	1.000	1.250	-	TC*18...	0.890

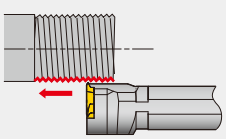
Use the right hand insert (TC*18R...) with the right hand toolholders (STCR...). Use the left hand insert (TC*18L) with the left hand holder (STCL...).
Torque: Recommended clamping torque: lbs·ft

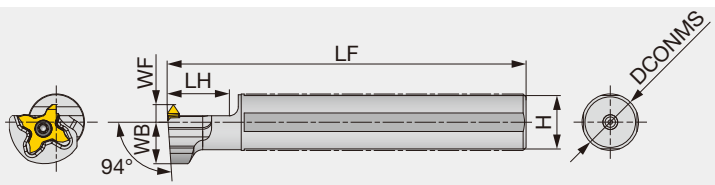
SPARE PARTS

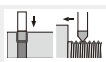
Designation	Clamping screw	Wrench
STCL**18-CHP	CSTC-4L100DR	T-1008/5
STCR**18-CHP	CSTC-4L100DL	T-1008/5

JS-STCL18

External grooving and threading toolholder with round shank







Left hand (L) shown.

Metric	DCONMS	LF	LH	H	WB	WF	Insert
JS14H-STCL18	14	100	20	13	14	6	TC*18R...
JS159F-STCL18	15.875	85	20	15	14	6	TC*18R...
JS16F-STCL18	16	85	20	15	14	6	TC*18R...
JS19G-STCL18	19.05	90	20	18	14	6	TC*18R...
JS19X-STCL18	19.05	120	20	18	14	6	TC*18R...
JS20G-STCL18	20	90	20	19	14	6	TC*18R...
JS20X-STCL18	20	120	20	19	14	6	TC*18R...
JS22X-STCL18	22	120	20	21	12.25	10	TC*18R...
JS25H-STCL18	25	100	20	24	12.25	10	TC*18R...
JS254X-STCL18	25.4	120	20	24	12.25	10	TC*18R...

Use left-hand toolholders (L) with right-hand inserts (R).

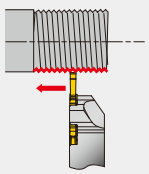
SPARE PARTS

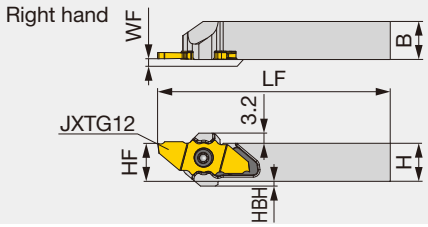
Designation	Clamping screw	Wrench
JS**STCL18	CSTC-4L100DL	T-1008/5

Reference pages: Inserts → E011, Standard cutting conditions → E055

JSXXR/L

Threading and parting toolholder, for Swiss lathes





Right hand (R) shown.

Inch	H	B	WF (R/L)	LF*	HF	HBH	Insert
JSXXR/L063	0.375	0.375	0.008 / 0.386	4.646	0.375	0.12	JX...
JSXXR/L083	0.500	0.500	0.008 / 0.386	3.268	0.500	0.06	JX...
JSXXR/L103	0.625	0.625	0.008 / 0.386	4.646	0.625	0.06	JX...

Metric	H	B	WF (R/L)	LF*	HF	HBH	Insert
JSXXR/L1010X09	10	10	0.2 / 9.8	118	10	3	JX...
JSXXR/L1212F09	12	12	0.2 / 9.8	83	12	1.5	JX...
JSXXR/L1212X09	12	12	0.2 / 9.8	118	12	1.5	JX...
JSXXR/L1616X09	16	16	0.2 / 9.8	118	16	0	JX...
JSXXR/L2020H09	20	20	0.2 / 9.8	98	20	0	JX...

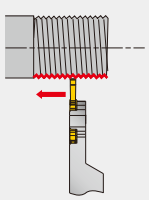
*This toolholder can be used with threading and grooving inserts. With parting inserts, the dimension of LF will be different depending on the insert shape.
Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)

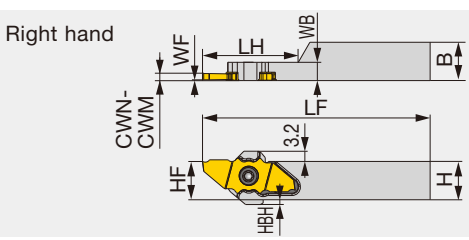
SPARE PARTS

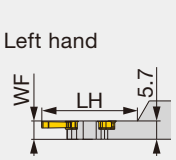
Designation	Clamping screw	Wrench
JSXXR*****	CSTC-4L100DL	T-1008/5
JSXXL*****	CSTC-4L100DR	T-1008/5

JSXXR/L-S

Parting toolholder, for Swiss lathes (for sub spindle)







Inch	CWN	CWM	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque
JSXXR/L063-S	0.039	0.079	0.375	0.375	4.750	1.030	0.383	0.008/0.217	0.120	JX*G06...,12...,16..., 20...	0.89
JSXXR/L083-S	0.039	0.079	0.500	0.500	4.750	1.030	0.500	0.008/0.217	0.060	JX*G06...,12...,16..., 20...	0.89

Metric	CWN	CWM	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque*
JSXXR/L1010X09-S	1	2	10	10	120	26	10	0.2/5.5	3	JX*G06...,12...,16...	1.2
JSXXR/L1212F09-S	1	2	12	12	85	26	12	0.2/5.5	1.5	JX*G06...,12...,16...	1.2
JSXXR/L1212X09-S	1	2	12	12	120	30	12	0.2/5.5	1.5	JX*G06...,12...,16...	1.2
JSXXR/L1616X09-S	1	2	16	16	120	30	16	0.2/5.5	-	JX*G06...,12...,16...,20...	1.2

**LF (Functional Length) and LH (Head Length) values shown above are true with JXPG16... insert. LF and LH will be 0.079" shorter than the above values with JX*G12... insert, and 0.157" shorter for JXPG06... insert. LF, LH, and HBL will all be 0.079" shorter with JXPG20... insert.
JXPG20... insert will not fit.
Use the right-hand insert (JX*G**R...) for a right-hand holder (JSXXR...); the left-hand insert (JX*G**L...) for a left-hand holder (JSXXL...).
Torque: Recommended clamping torque: lbs·ft (*N·m)

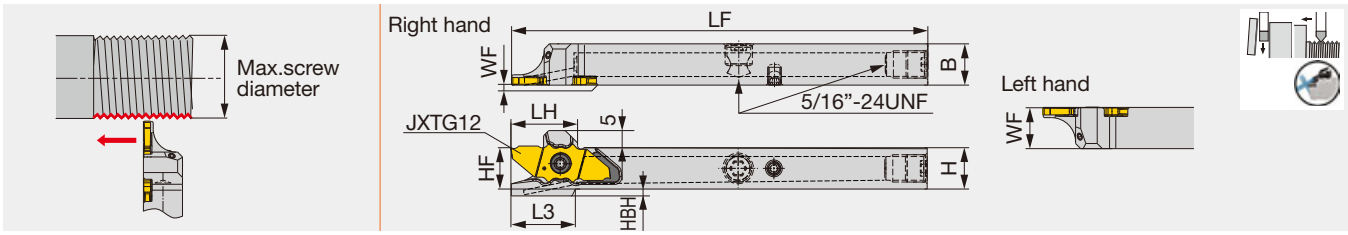
SPARE PARTS

Designation	Clamping screw	Wrench
JSXXR***-S	CSTC-4L055DL	T-1008/5
JSXXL***-S	CSTC-4L055DR	T-1008/5

Reference pages: Inserts → E011, Standard cutting conditions → E055

JSXXR/L-X-CHP

Parting and threading toolholder, with high pressure coolant capability



Inch	H	B	WF (R/L)	LF*	HF	HBH	LH*	L3	Insert
JSXXR/L083X-CHP	0.500	0.500	0.008/0.492	4.750	0.500	0.051	≤ 0.764	0.740	JX**06...,12...,16...
JSXXR/L103X-CHP	0.625	0.625	0.008/0.617	4.750	0.625	0	≤ 0.764	0.736	JX**06...,12...,16...

Metric	H	B	WF (R/L)	LF*	HF	HBH	LH*	L3	Insert
JSXXR/L1212X09-CHP	12	12	0.2/11.8	118	12	2	≤ 19.4	18.8	JX**06...,12...,16...
JSXXR/L1616X09-CHP***	16	16	0.2/15.8	118	16	2.5	≤ 19.4	18.7	JX**06...,12...,16...
JSXXR/L1616X09B-CHP	16	16	0.2/15.8	118	16	-	≤ 19.4	-	JX**06...,12...,16...

*This toolholder can be used with threading and grooving inserts. With parting inserts, the dimensions of LF and LH will be different depending on the insert shape.
***To be replaced with the new design
Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)

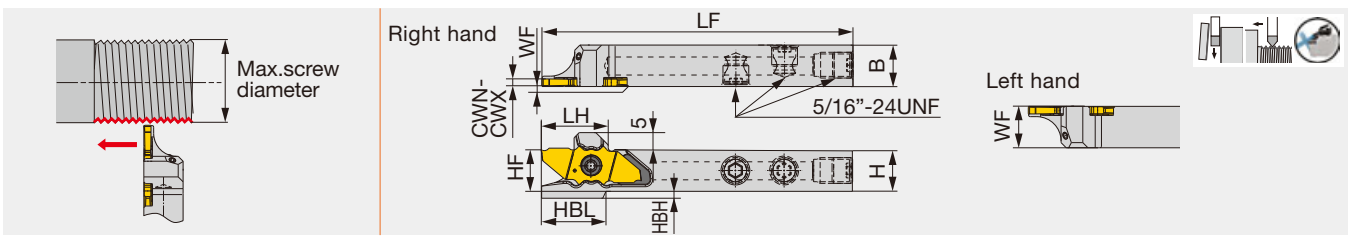
SPARE PARTS

Designation	Clamping screw	Wrench
JSXXR...	CSTC-4L100DL	T-1008/5
JSXXL...	CSTC-4L100DR	T-1008/5

Parting-off widths : 0.039" and 0.059" (for a max parting diameter of ø0.236")
: 0.059" and 0.079" (for max parting diameters of ø0.472", ø0.630" and ø0.787")

JSXXR/L-F-CHP

Parting-off tool for swiss lathes



Inch	CWN	CWX	H	B	LF**	LH**	HF	WF	HBL**	HBH	Insert	Torque
JSXXR/L083F-CHP	0.039	0.079	0.500	0.500	3.344	≤ 0.764	0.5	0.008/0.492	0.736	0.051	JX*G06...,12...,16..., 20...	0.890

Metric	CWN	CWX	H	B	LF**	LH**	HF	WF	HBL**	HBH	Insert	Torque*
JSXXR/L1212F09-CHP	1	2	12	12	85	≤19.4	12	0.2/11.8	-	2	JX*G06...,12...,16..., 20...	1.2

**LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JXPG16... insert. LF, LH, and HBL will all be 0.079" shorter than the above values with JX*G12... and JXPG20... inserts, and 0.157" shorter for JXPG06... insert.
Use the right-hand insert (JX*G**R...) for a right-hand holder (JSXXR...); the left-hand insert (JX*G**L...) for a left-hand holder (JSXXL...).
Torque: Recommended clamping torque: lb·ft (*N·m)

SPARE PARTS

Designation	Clamping screw	Wrench	Coolant plug	Wrench
JSXXR...	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4
JSXXL...	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4

Parting-off widths:
0.039" and 0.059" (for a max parting diameter of ø0.236")
0.059" and 0.079" (for max parting diameters of ø0.472", ø0.630" and ø0.787")

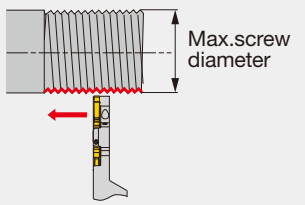
Range of threads machined pitch

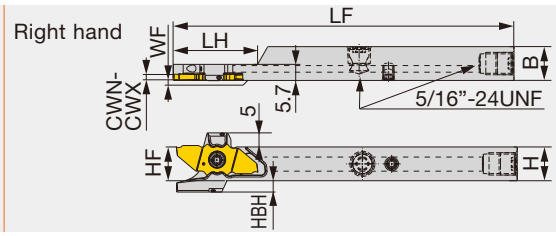
Insert designation	Pitch (in)	Max.screw diameter
JXTG12FR/L-60A-000	0.008 - 0.016	Metric: M26, Unified: 1"
JXTG12FR/L-60B-000	0.008 - 0.016	Metric: M26, Unified: 1"
JXTG12FR/L-60A-005	0.016 - 0.039	Metric: M24, Unified: 15/16"
JXTG12FR/L-60B-005	0.016 - 0.039	Metric: M24, Unified: 15/16"
JXTG12FR/L-60N-010	0.039 - 0.059	Metric: M22, Unified: 7/8"

Reference pages: Inserts → E011, Standard cutting conditions → E055

JSXXR/L-X-S-CHP

Parting-off tool for sub spindle in swiss lathes with high pressure coolant capability





Inch	CWN	CWX	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque
JSXXR/L083X-S-CHP	0.039	0.079	0.500	0.500	4.750	1.181	0.500	0.008/0.217	0.051	JX*G06...,12...,16..., 20...	0.890
JSXXR/L103X-S-CHP	0.039	0.079	0.625	0.625	4.750	1.181	0.625	0.008/0.217	0	JX*G06...,12...,16..., 20...	0.890

Metric	CWN	CWX	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque*
JSXXR/L1212X09-S-CHP***	1	2	12	12	120	30	12	0.2/5.5	4	JX*G06...,12...,16..., 20...	1.2
JSXXR/L1212X09B-S-CHP	1	2	12	12	120	30	12	0.2/5.5	2	JX*G06...,12...,16..., 20...	1.2
JSXXR/L1616X09-S-CHP***	1	2	16	16	120	30	16	0.2/5.5	1.5	JX*G06...,12...,16..., 20...	1.2
JSXXR/L1616X09B-S-CHP	1	2	16	16	120	30	16	0.2/5.5	-	JX*G06...,12...,16..., 20...	1.2

**LF (Overall Tool Length) and LH (Head Length) values shown above are true with JXPG16... insert. Both LF and LH will be 0.079" shorter than the above value with JX*G12... and JXPG20... inserts; 0.157" shorter with JXPG06... insert.
***To be replaced with the new design
Use the right-hand insert (JX*G**R...) for a right-hand holder (JSXXR...); the left-hand insert (JX*G**L...) for a left-hand holder (JSXXL...).
Torque: Recommended clamping torque: lbs·ft (*N·m)

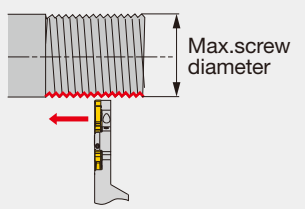
SPARE PARTS

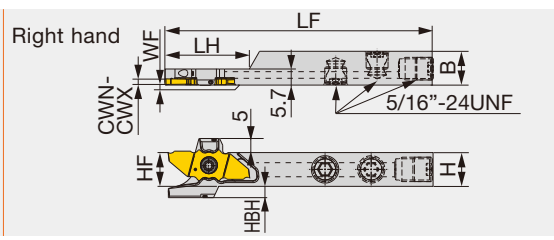
Designation	Clamping screw	Wrench	Coolant plug	Wrench	DirectJet plug	Wrench
JSXXR***-S-CHP	CSTC-4L055DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSXXL***-S-CHP	CSTC-4L055DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Parting-off widths : 0.039" and 0.059" (for a max parting diameter of ø0.236")
: 0.059" and 0.079" (for max parting diameters of ø0.472", ø0.630" and ø0.787")

JSXXR/L-F-S-CHP

Parting-off tool for sub spindle in swiss lathes





Inch	CWN	CWX	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque
JSXXR/L083F-S-CHP	0.039	0.079	0.500	0.500	3.344	1.024	0.500	0.008/0.217	0.051	JX*G06...,12...,16..., 20...	0.890

Metric	CWN	CWX	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque*
JSXXR/L1212F09-S-CHP***	1	2	12	12	85	26	12	0.2/5.5	4	JX*G06...,12...,16..., 20...	1.2
JSXXR/L1212F09B-S-CHP	1	2	12	12	85	30	12	0.2/5.5	2	JX*G06...,12...,16..., 20...	1.2

**LF (Overall Tool Length) and LH (Head Length) values shown above are true with JXPG16... insert. Both LF and LH will be 0.079" shorter than the above value with JX*G12... and JXPG20... inserts; 0.157" shorter with JXPG06... insert.
***To be replaced with the new design
Use the right-hand insert (JX*G**R...) for a right-hand holder (JSXXR...); the left-hand insert (JX*G**L...) for a left-hand holder (JSXXL...).
Torque: Recommended clamping torque: lb·ft (*N·m)

SPARE PARTS

Designation	Clamping screw	Wrench
JSXXR/L083F-S-CHP	CSTC-4L055DL	T-1008/5

Parting-off widths : 0.039" and 0.059" (for a max parting diameter of ø0.236")
: 0.059" and 0.079" (for max parting diameters of ø0.472", ø0.630" and ø0.787")

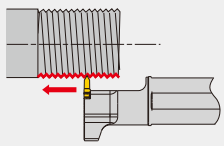
Range of threads machined pitch

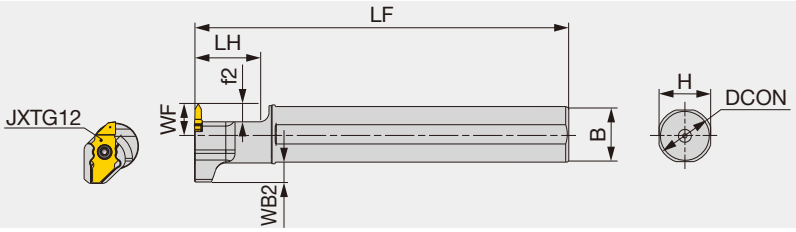
Insert designation	Pitch (in)	Max.screw diameter
JXTG12FR/L-60A-000	0.008 - 0.016	Metric: M26, Unified: 1"
JXTG12FR/L-60B-000	0.008 - 0.016	Metric: M26, Unified: 1"
JXTG12FR/L-60A-005	0.016 - 0.039	Metric: M24, Unified: 15/16"
JXTG12FR/L-60B-005	0.016 - 0.039	Metric: M24, Unified: 15/16"
JXTG12FR/L-60N-010	0.039 - 0.059	Metric: M22, Unified: 7/8"

Reference pages: Inserts → E011, Standard cutting conditions → E055

JS-SXXL09

External threading toolholder, for 2 corner inserts





Metric	DCON	H	B	WB2	LF	LH	WF**	f2**	Insert
JS19G-SXXL09	19.05	18	18	5.9	90	21	10	6	JX*G06,12*R
JS19X-SXXL09	19.05	18	18	5.9	120	21	10	6	JX*G06,12*R
JS20G-SXXL09	20	19	19	5.4	90	21	10	6	JX*G06,12*R
JS20X-SXXL09	20	19	19	5.4	120	21	10	6	JX*G06,12*R
JS22X-SXXL09	22	21	21	4.4	120	21	10	6	JX*G06,12*R
JS25H-SXXL09	25	24	24	2.9	100	21	10	6	JX*G06,12*R
JS254X-SXXL09	25.4	24	24	2.7	120	21	10	6	JX*G06,12*R

This toolholder can be used with threading and parting inserts.
** When using JX..06... insert, both WF and f2 sizes will be 2 mm shorter than the values provided above.

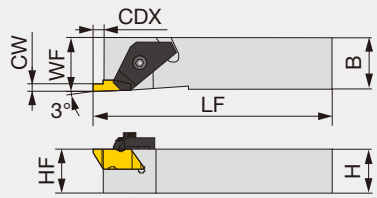
SPARE PARTS


Designation	Clamping screw	Wrench
JS***-SXXL09	CSTC-4L055L	T-1008/5

Reference pages: Inserts → E011, Standard cutting conditions → E051

TUNGT-CLAMP
FLASR/L

External grooving and threading toolholder, for Swiss lathes



Right hand (R) shown.

Inch	CW	CDX	HF	H	B	LF	WF	Insert	Torque
FLASR/L-082B	0.031 - 0.125	0.138	1/2	1/2	1/2	6.000	0.500	FL*-3**R/L...	2.21
FLASR-102B	0.031 - 0.125	0.138	5/8	5/8	5/8	4-1/2	0.625	FL*-3**R...	2.21
FLASR/L-103B	0.031 - 0.250	0.210	0.625	0.625	0.625	4.500	0.625	FL*-3**R/L...	2.21

Metric	CW	CDX	HF	H	B	LF	WF	Insert	Torque*
FLASR/L-1212M2	1 - 3.25	3.51	12	12	12	150	12	FL*-2**R/L...	3
FLASR/L-1616M2	1 - 3.25	5.31	16	16	16	125	16	FL*-3**R/L...	3
FLASR/L-1616M3	1 - 4	5.31	16	16	16	125	16	FL*-3**R/L...	3

Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)
Torque: Recommended clamping torque: lbs·ft (*N·m)

Inch SPARE PARTS

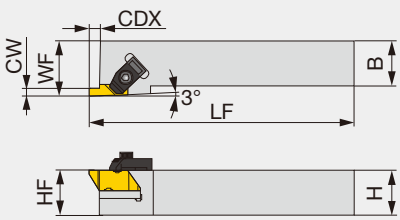
Designation	Clamp	Clamping screw	Wrench
FLASR-102B, FLASR-103B	TF-184	S-412	5/32HEX
FLASL-103B	TF-185	S-412	5/32HEX

Metric SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLASR-1212M2	TF-182	S-310	7/64HEX
FLASL-1212M2	TF-183	S-310	7/64HEX
FLASR-1616M2, FLASR-1616M3	TF-184	S-412	5/32HEX
FLASL-1616M2, FLASL-1616M3	TF-185	S-412	5/32HEX

TUNGT-CLAMP
FLSR/L

External grooving and threading toolholder



Right hand (R) shown.

Inch	CW	CDX	HF	H	B	LF	WF	Insert	Torque
FLSR/L-122B	0.031 - 0.128	0.140	0.750	0.750	0.750	4.500	1.000	FL*-3**R/L...	2.21
FLSR/L-162C	0.031 - 0.128	0.140	1.000	1.000	1.000	5.000	1.250	FL*-3**R/L...	2.21
FLSR/L-123B	0.031 - 0.250	0.210	0.750	0.750	0.750	4.500	1.000	FL*-3**R/L...	2.21
FLSR/L-163C	0.031 - 0.250	0.210	1.000	1.000	1.000	5.000	1.250	FL*-3**R/L...	2.21
FLSR/L-164D	0.125 - 0.312	0.210	1.000	1.000	1.000	6.000	1.250	FL*-3**R/L...	2.21
FLSR/L-203D	0.031 - 0.250	0.290	1.250	1.250	1.250	6.000	1.500	FL*-4**R/L...	2.21
FLSR/L-204D	0.125 - 0.312	0.290	1.250	1.250	1.250	6.000	1.500	FL*-4**R/L...	2.21
FLSR/L-206D	0.281 - 0.375	0.290	1.250	1.250	1.250	6.000	1.500	FL*-4**R/L...	2.21
FLSR/L-82V	0.031 - 0.128	0.140	0.750	1/2	1/2	3-1/2	0.750	FL*-4**R/L...	2.21

Metric	CW	CDX	HF	H	B	LF	WF	Insert	Torque*
FLSR/L-2020M3	1 - 3	4.5	20	20	20	125	32	FL*-3**R/L...	3
FLSR/L-2525M3	1 - 3	4.5	25	25	25	150	32	FL*-3**R/L...	3

Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L)
Torque: Recommended clamping torque: lbs·ft (*N·m)

Inch SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLSR-122B, FLSR-162C, FLSR-82V	TF-74	S-310	7/64HEX
FLSL-122B, FLSL-162C, FLSL-82V	TF-75	S-310	7/64HEX
FLSR-123B, FLSR-163C, FLSR-164D, FLSR-204D	TF-72	S-412	5/32HEX
FLSL-123B, FLSL-163C, FLSR-203D	TF-73	S-412	5/32HEX

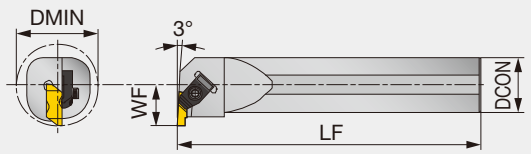
Metric SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLSR-****M3	TF-72	S-412	5/32HEX
FLSL-****M3	TF-73	S-412	5/32HEX

Reference pages: Inserts → E012, Standard cutting conditions → E051

TUNGT-CLAMP
A_M-FLER/L

Internal grooving and threading toolholder



Right hand (R) shown.

Inch	Pitch	DMIN	DCON	LF	WF	Insert
A08-FLER/L2	0.031 - 0.125	0.730	0.500	8.000	0.437	FL*-2**L/R...
A10-FLER2	0.031 - 0.125	1.000	0.625	10.000	0.500	FL*-2**L...
A12-FLER/L2	0.031 - 0.128	1.125	0.750	10.000	0.562	FL*-2**L/R...
A16-FLER/L2	0.031 - 0.128	1.375	1.000	12.000	0.688	FL*-2**L/R...
A16-FLER/L3	0.031 - 0.250	1.375	1.000	12.000	0.688	FL*-3**L/R...

Metric	Pitch	DMIN	DCON	LF	WF	Insert
A25M-FLER/L3	2.11 - 5.08	34.9	25	300	17.7	FL*-3**L/R...
A32M-FLER/L3	2.11 - 5.08	44.5	32	350	22.1	FL*-3**L/R...
A40M-FLER3	2.11 - 5.08	50.8	40	350	24.5	FL*-3**L...

Inch SPARE PARTS

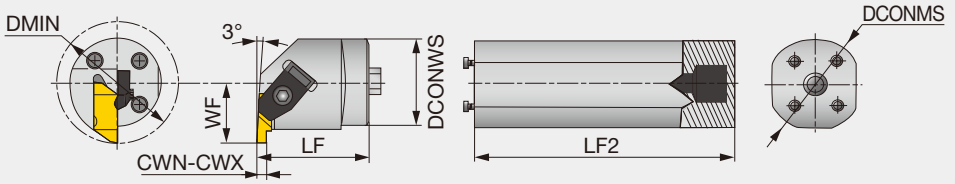
Designation	Clamp	Clamping screw	Wrench
A08-FLER2	TF-146	S-310	7/64HEX
A08-FLEL2	TF-147	S-310	7/64HEX
A10-FLER2, A12-FLER2, A16-FLER2	TF-75	S-310	7/64HEX
A12-FLEL2, A16-FLEL2	TF-74	S-310	7/64HEX
A16-FLER3	TF-73	S-412	5/32HEX
A16-FLEL3	TF-72	S-412	5/32HEX

Metric SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
A**M-FLER3	TF-73	S-412	5/32HEX
A**M-FLEL3	TF-72	S-412	5/32HEX

TUNGT-CLAMP
HS-FLER/L

Head exchangeable internal grooving and threading toolholder



Right hand (R) shown.

Metric	CWN	CWX	DMIN	DCONWS	LF	WF	Insert	Torque
HS40-FLER3W	1	3	56.1	40	40.1	28	FL*-3**L...	3
HS50-FLER3W	1	3	70.1	50	41.9	35	FL*-3**L...	3

Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).
Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
HS40-FLER3W	TF-73	S-412	5/32HEX
HS50-FLER3W	TF-73	S-412	5/32HEX

Shank

Inch	DCONMS	LF2
S-570-32-50	2.000	14.410

Metric	DCONMS	LF2
S-570-40M-40	40	273
S-570-50M-50	50	366

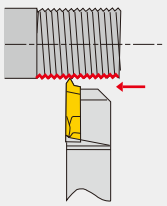
SPARE PARTS

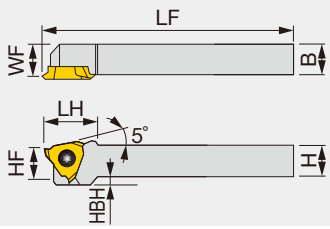
Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4EX

Reference pages: Inserts → E012, Standard cutting conditions → E055

JSTTR/L

External toolholder for Swiss lathes





Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	HBH	Insert
JSTTR/L063	0.375	0.375	5.000	0.6875	0.375	0.375	0.100	JTTR/L30...
JSTTR/L083	0.500	0.500	5.000	0.6875	0.500	0.500	-	JTTR/L30...
JSTTR/L103	0.625	0.625	5.000	0.6875	0.625	0.625	-	JTTR/L30...

Metric	H	B	LF	LH	HF	WF	HBH	Insert
JSTTR/L1010X3	10	10	120	18.5	10	9.5	2	JTTR/L30...
JSTTR/L1212F3	12	12	85	18.5	12	11.5	-	JTTR/L30...
JSTTR/L1212X3	12	12	120	18.5	12	11.5	-	JTTR/L30...
JSTTR/L1616X3	16	16	120	16.5	16	15.5	-	JTTR/L30...

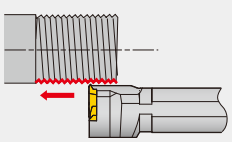
Recommended clamping torque: 0.89 lbs·ft (1.2 N·m)

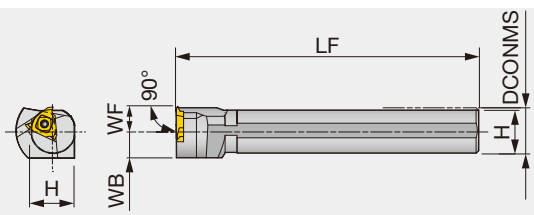
SPARE PARTS

Designation	Clamping screw	Wrench
JSTTR/L...	CSTB-4SD	T-8F

JS-TTL3

External toolholder for Swiss lathes





Left hand (L) shown.

Metric	DCONMS	WF	LF	H	WB	Insert
JS19K-TTL3	19.05	10	125	18	11.5	JTTR30...
JS20K-TTL3	20	10	125	19	11.5	JTTR30...
JS22K-TTL3	22	10	125	21	11.5	JTTR30...
JS25K-TTL3	25.4	10	125	24	12.7	JTTR30...

Recommended clamping torque: 3.5 N·m

SPARE PARTS

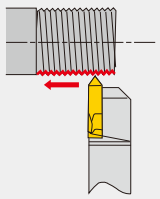
Designation	Clamping screw	Wrench
JS**-TTL3	CSTB-4S	T-15F

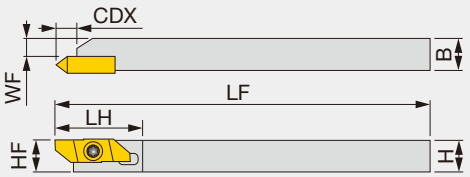
Reference pages: Inserts → E012 - E013

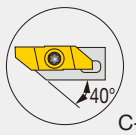
J-SERIES

JSXBR/L

External threading toolholder for Swiss lathes







C-type

Right hand (R) shown.

Metric	H	B	LF	LH	CDX	HF	WF	Insert
JSXBR1010K8-C	10	10	125	29	6.4	10	5.7	JXT*R...
JSXBR1212K8-C	12	12	125	29	6.4	12	7.7	JXT*R...
JSXBR1616K8	16	16	125	29	6.4	16	11.7	JXT*R...
JSXBR2020K8	20	20	125	29	6.4	20	15.7	JXT*R...
JSXBR2525K8	25	25	125	29	6.4	25	20.7	JXT*R...

Can be wrenched also from the back with a double-head screw.
This toolholder can be used for JXB back-turning insert and JXT threading insert.

SPARE PARTS

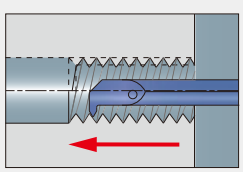


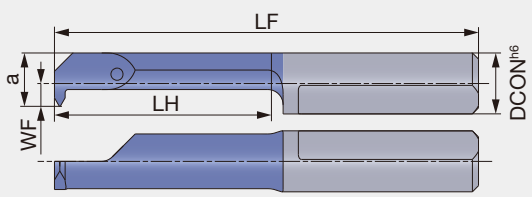
Designation	Clamping screw	Wrench 1	Wrench 2 (Optional parts)
JSXBR...	CSTB-4SD	T-8F	(T-8L)

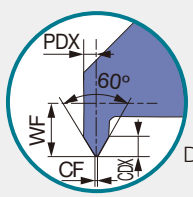
TINY MINI TURN

TinyMini-Turn JBIR

Solid boring bar for internal threading







Details of edge

Right hand (R) shown.

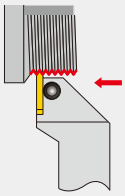
Metric	Grade SH730	Pitch	DMIN	CF $^{0}_{-0.02}$	DCON	WF	a	LF	LH	CDX	PDX
JBIR04140050-D040	●	0.8 - 0.5	4	0.06	4	1.5	3.5	30	14	0.3	0.35
JBIR07140050-D050	●	1.0 - 0.5	5	0.06	7	0.9	4.4	30	14	0.3	0.35
JBIR07140075-D050	●	1.0 - 0.75	5	0.09	7	0.9	4.4	30	14	0.4	0.45
JBIR07140100-D048	●	1.0	4.8	0.12	7	0.9	4.4	30	14	0.6	0.55
JBIR07140100-D060	●	1.5 - 1.0	6	0.12	7	1.8	5.3	30	14	0.6	0.55
JBIR07140125-D060	●	1.5 - 1.25	6	0.15	7	1.8	5.3	30	14	0.7	0.65
JBIR07140150-D060	●	1.5	6	0.18	7	1.8	5.3	30	14	0.8	0.75
JBIR07140150-D070	●	1.5 - 1.0	7	0.18	7	2.8	6.3	30	14	0.8	0.75

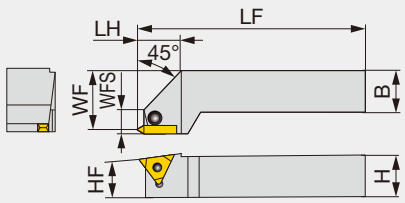
● : Line up

Reference pages: JSXBR/L: Inserts → E012 - E013
Standard cuttings → E056

TUNGTHREAD
TT-R/LE

TT-type pin-lock external threading toolholder





Right hand (R) shown.

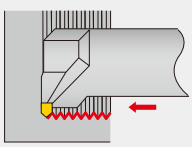
Metric	H	B	LF	LH	HF	WF	WFS	Insert
TT-2525R/LE	25	25	150	25	25	32	15	TTR/L42...

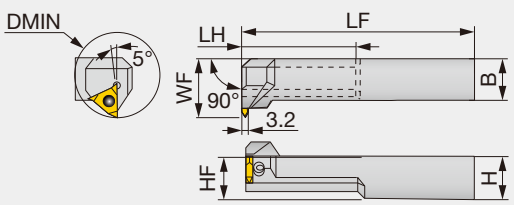
SPARE PARTS

Designation	Clamp	Right-left screw	Wrench
TT-2525R/LE	CP91	DS-6	P-3

TUNGTHREAD
TT-R/LI

TT-type pin-lock internal threading toolholder





Right hand (R) shown.

Metric	DMIN	H	B	LF	LH	HF	WF	Insert
TT-2525RI	50	25	25	200	70	25	35	TTL42...

Use left-hand toolholders (L) with right-hand inserts (R).

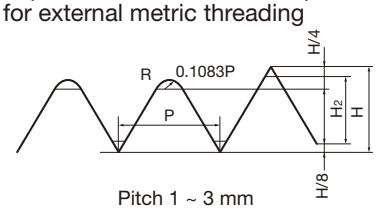
SPARE PARTS

Designation	Clamp	Right-left screw	Wrench
TT-2525RI	CP91	DS-6	P-3

Reference pages: TungThread : Inserts → E013, E015
Standard cuttings → E054

Technical Guide

• Relationship between pitch, depth of cut and number of passes for external metric threading

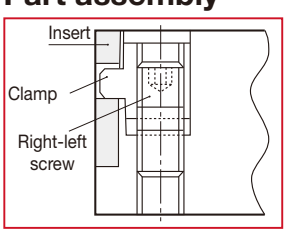


Pitch 1 ~ 3 mm

Note: Maximum machinable pitch is 3 mm.

	P	1	1.25	1.5	1.75	2	2.5	3
	H_2	0.6	0.76	0.92	1.09	1.25	1.57	1.9
	H	0.866	1.083	1.299	1.516	1.732	2.165	2.598
Number of passes	1	0.25	0.3	0.3	0.3	0.35	0.4	0.4
	2	0.15	0.2	0.25	0.25	0.25	0.3	0.35
	3	0.1	0.1	0.15	0.2	0.2	0.25	0.28
	4	0.05	0.06	0.1	0.1	0.16	0.2	0.2
	5	0.05	0.06	0.05	0.1	0.1	0.15	0.2
	6		0.06	0.05	0.07	0.07	0.1	0.13
	7			0.02	0.05	0.05	0.07	0.1
	8				0.02	0.02	0.05	0.1
	9					0.02	0.03	0.05
	10						0.02	0.05
	11							0.02
	12							0.02

Part assembly



Designation system for TT-type insert

Insert

TT R 42 M -005

① Hand	
R	Right
L	Left

② Insert size (mm)	
Inscribed circle	12.7
Thickness	3.2

③ Thread type	
M	60° thread angle
W	55° thread angle

④ Corner radius (mm)	
Blank	0
-005	0.05

Toolholder

TT- 20 20 R E

① Shank height (mm) — ② Shank width (mm)

③ Hand	
R	Right
L	Left

④ External or Internal	
E	External
I	Internal

Designation system for ST-type insert

16 I R 175 ISO - B

① Insert size	
Symbol	I. C. dia (mm)
6	-
11	6.35
16	9.525
22	12.7
27	15.875

② External or Internal	
E	External
I	Internal

③ Hand of cut	
R	Right hand
L	Left hand

④ Thread type	
Partial-profile inserts	
A	Pitch: 0.5 ~ 1.5 mm TPI: 48 ~ 16
AG	Pitch: 0.5 ~ 3 mm TPI: 48 ~ 8
G	Pitch: 1.75 ~ 3 mm TPI: 14 ~ 8
N	Pitch: 3.5 ~ 5 mm TPI: 7 ~ 5
Z	Pitch: 4 ~ 6 mm TPI: 6 ~ 4
Full-profile inserts	
Pitch (mm)×10 or 100 TPI (Thread Per Inch) (Examples) 05: 0.5 mm pitch×10 175: 1.75 mm pitch×100 14: 14 TPI	

⑤ Thread type	
Partial-profile inserts	
60°	60° thread angle
55°	55° thread angle
TR	30° trapezoidal
ACME	29° trapezoidal
Full-profile inserts	
ISO	Metric
UN	Unified
W	Whitworth
PT	Taper pipe
NPT	National taper pipe
NPTF	National taper pipe
RAPI	API round
RD	API round
BAPI	API buttress
RD	Round (DIN405)
UNJ	UNJ
MJ	UNJ

⑥ Chipbreaker	
B	With (Basic selection)
M	With
CB	With
-	Without

Note: Please identify new designation system for internal inserts.
-i.e."N" "I"
(Example) Conventional: 16NR15ISO
New: 16IR15ISO

TUNGTHREAD

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Cutting speed: *Vc* (sfm)			
			AH725	T313V	NS9530	TH10
P	Carbon steel	< 200HB	262 - 591	328 - 656	492 - 656	-
		> 200HB	197 - 525	328 - 492	656 - 558	-
M	Stainless steel	-	164 - 427	230 - 427	-	-
K	Cast iron	-	-	230 - 492	-	70 - 90
N	Non-ferrous metals	-	-	-	-	100 - 500
S	Heat-resistant alloys	-	-	-	-	10 - 40
H	Hard materials	50 ~ 60HRC	-	-	-	10 - 30

TUNGT-CLAMP
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Application	Cutting speed *Vc* (sfm)	Pitch (in)	Threads per inch (TPI)
P	High carbon steel 1045, etc.	AH725	Threading	262 - 591	Internal 0.083 - 0.200 External 0.050 - 0.167	Internal 5 - 12 External 6- 20
P	Alloy steel 4140, etc.	AH725	Threading	197 - 525	Internal 0.083 - 0.200 External 0.050 - 0.167	Internal 5 - 12 External 6- 20
M	Stainless steel S30400, etc.	AH725	Threading	164 - 427	Internal 0.083 - 0.200 External 0.050 - 0.167	Internal 5 - 12 External 6- 20

TETRAMINI-CUT
STANDARD CUTTING CONDITIONS

TCT18R/L / TCT18FR

ISO	Workpiece material	Priority	Grade	Cutting speed *Vc* (sfm)	Pitch (in)	Threads per inch (TPI)
P	Low carbon steel 1015, etc.	First choice	SH725	197 - 492	0.016 - 0.079	64 - 12
		Fracture resistance	AH725	197 - 492	0.031 - 0.118	32 - 8
P	Carbon steel, Alloy steel 1055, etc.	First choice	SH725	197 - 492	0.016 - 0.079	64 - 12
		Fracture resistance	AH725	197 - 492	0.031 - 0.118	32 - 8
P	Prehardened steel NAK80, PX5, etc.	First choice	SH725	197 - 492	0.016 - 0.079	64 - 12
		Fracture resistance	AH725	197 - 492	0.031 - 0.118	32 - 8
M	Stainless steel S30400, etc.	First choice	SH725	164 - 262	0.016 - 0.079	64 - 12
		Fracture resistance	AH725	164 - 262	0.031 - 0.118	32 - 8
K	Gray cast iron No.250B, No.300B, etc.	First choice	AH725	164 - 328	0.031 - 0.118	32 - 8
		Sharpness	SH725	164 - 328	0.016 - 0.079	64 - 12
K	Ductile cast iron 60-40-18, 80-55-06, etc.	First choice	AH725	164 - 328	0.031 - 0.118	32 - 8
		Sharpness	SH725	164 - 328	0.016 - 0.079	64 - 12
S	Titanium alloys Ti-6Al-4V, etc.	First choice	SH725	98 - 328	0.016 - 0.079	64 - 12
		Fracture resistance	AH725	98 - 328	0.031 - 0.118	32 - 8
S	Heat-resistant alloys Inconel718, etc.	First choice	SH725	98 - 328	0.016 - 0.079	64 - 12
		Fracture resistance	AH725	98 - 328	0.031 - 0.118	32 - 8

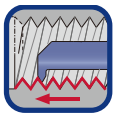
DUOJUST-CUT
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Pitch (in)	Threads per inch (TPI)
P	Low carbon steel 1015, etc.	SH725	164 - 656	0.008 - 0.059	127 - 16
P	Carbon steel, Alloy steel 1055, etc.	SH725	164 - 656	0.008 - 0.059	127 - 16
P	Prehardened steel NAK80, PX5, etc.	SH725	164 - 656	0.008 - 0.059	127 - 16
M	Stainless steel S30400, etc.	SH725	164 - 656	0.008 - 0.059	127 - 16
N	Aluminum alloys 5056, 6061, etc.	SH725	490 - 660	0.008 - 0.059	127 - 16
N	Copper alloys C2600, C280C, etc.	SH725	330 - 660	0.008 - 0.059	127 - 16
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.008 - 0.059	127 - 16
S	Superalloys Inconel718, etc.	SH725	98 - 262	0.008 - 0.059	127 - 16

Reference pages: TungThread : Inserts → E010, E013 - E031, Toolholders → E032 - E042
TungT-Clamp : Inserts → E012, Toolholders → E049 - E050
TetraMini-Cut: Inserts → E011, Toolholders → E043 - E044
DuoJust-Cut : Inserts → E011, Toolholders → E045 - E048

TINY MINI TURN

STANDARD CUTTING CONDITIONS

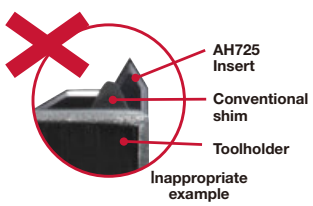


Internal threading

ISO	Workpiece materia	Grade	Cutting speed *Vc* (m/min)	Cutting speed *Vc* (sfm)	Number of passes Pitch (mm) / (in) 0.5 (0.020)	0.75 (0.029)	1 (0.039)	1.25 (0.049)	1.5 (0.059)
P	Low carbon steel C15, C20, etc.	SH730	40 - 140	131 - 459	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
P	Carbon steel, Alloy steel C55, 42CrMoS4, etc.	SH730	40 - 140	131 - 459	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
P	Prehardened steel NAK80, PX5, etc.	SH730	40 - 140	131 - 459	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
M	Stainless steel X5CrNi18-9, X5CrNiMo17-12-2, etc.	SH730	40 - 140	131 - 459	8	10	12	15	18
K	Gray cast iron 250, 300, etc.	SH730	30 - 100	98 - 328	7	9	12	14	17
K	Ductile cast iron 400-15, 600-3, etc.	SH730	30 - 100	98 - 328	7	9	12	14	17
N	Aluminum alloys, copper alloys Si < 12%	SH730	90 - 200	295 - 656	6	8	10	12	15

IMPORTANT - Replacement of shim

AH 725 insert has 2 types of shims according to the chipbreaker geometry. Please find an appropriate shim in the table below. When using a wrong shim, the insert seating may become unstable or the tool life may be shortened.



Interchangeable shim (Insert size: 16)

Toolholder screw type	Lead angle	External ① Conventional shim	External ❶ Standard (New)	Internal ② Conventional shim	Internal ❷ Standard (New)
Dual clamping methods of screw-on and clamp-on	4°	GXE16-4DT	AE16-4DT	GXN16-4DT	AN16-4DT
	3°	GXE16-3DT	AE16-3DT	GXN16-3DT	AN16-3DT
	2°	GXE16-2DT	AE16-2DT	GXN16-2DT	AN16-2DT
	1° (Standard)	GX16-1DT	A16-1DT	GX16-1DT	A16-1DT
	0°	GXE16-0DT	AE16-0DT	GXN16-0DT	AN16-0DT
	-1°	GXE16-99DT	AE16-99DT	GXN16-99DT	AN16-99DT
	-2°	GXE16-98DT	AE16-98DT	GXN16-98DT	AN16-98DT
Clamp-on	4°	GXE16-4	AE16-4	GXN16-4	AN16-4
	3°	GXE16-3	AE16-3	GXN16-3	AN16-3
	2°	GXE16-2	AE16-2	GXN16-2	AN16-2
	1° (Standard)	GXE16-1	A16-1	GXN16-1	A16-1
	0°	GXE16-0	AE16-0	GXN16-0	AN16-0
	-1°	GXE16-99	AE16-99	GXN16-99	AN16-99
	-2°	GXE16-98	AE16-98	GXN16-98	AN16-98

Shim to be replaced (Insert size: 16)

Thread	External Designation	External Grade	External Replacement	Internal Designation	Internal Grade	Internal Replacement
ISO			① Conventional shim → ❶ Standard (New)	16IR15ISO-B	AH725	② Conventional shim → ❷ Standard (New)
				16IR175ISO-B	AH725	
				16IR20ISO-B	AH725	
55°	16ERAG55-B	AH725		16IRAG55-B	AH725	
				16IRG55-B	AH725	
60°	16ERA60-B	AH725		16IRAG60-B	AH725	
				16IRA60-B	AH725	
				16IRG60-B	AH725	
UN				16IR18UN-B	AH725	
				16IR16UN-B	AH725	
				16IR14UN-B	AH725	
W				16IR16W-B	AH725	
				16IR14W-B	AH725	
PT				16IR14PT-B	AH725	
NPT	16ER8NPT-B	AH725		16IR14NPT-B	AH725	
				16IR115NPT-B	AH725	

Reference pages: TinyMini-Turn: Toolholders → E052, Replacement of shim →E010, E014, E017 - E022

Parting, Grooving

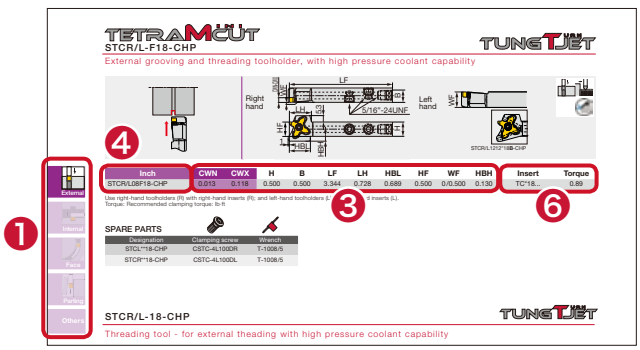
Parting, Grooving - Content structure

- Products are listed by application.
- Each item is listed by product series.
- Internal grooving tools are listed according to the order of the minimum machining diameter (from small to larger).

How to use the page

Method ①

Select the application (❶) at the left end of each page and choose a designation you need (❹) in the dimension table (❸). Applicable inserts are shown in (❻).

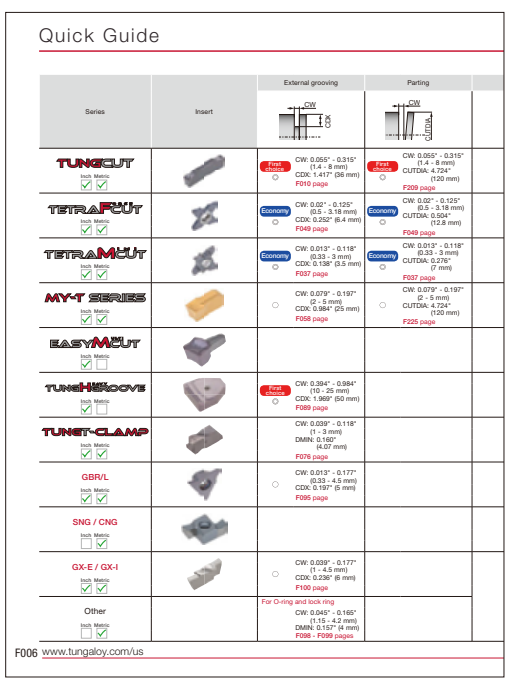


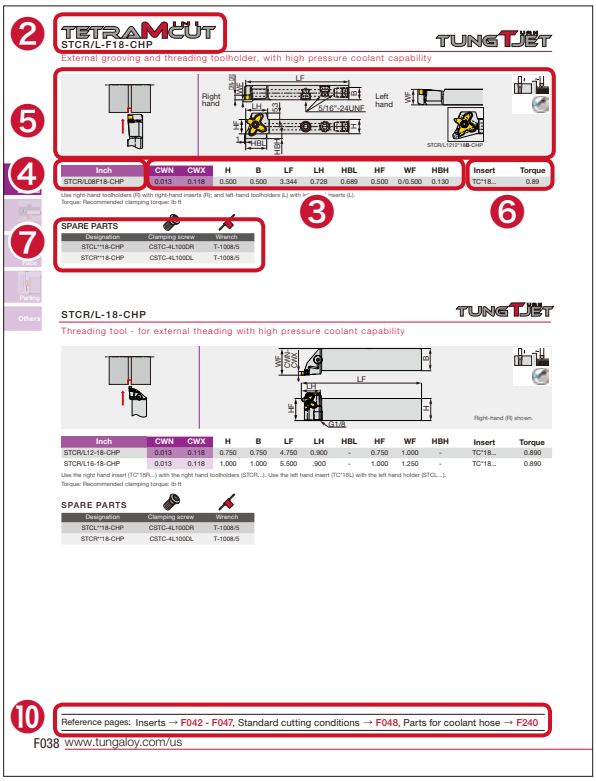
Method ②

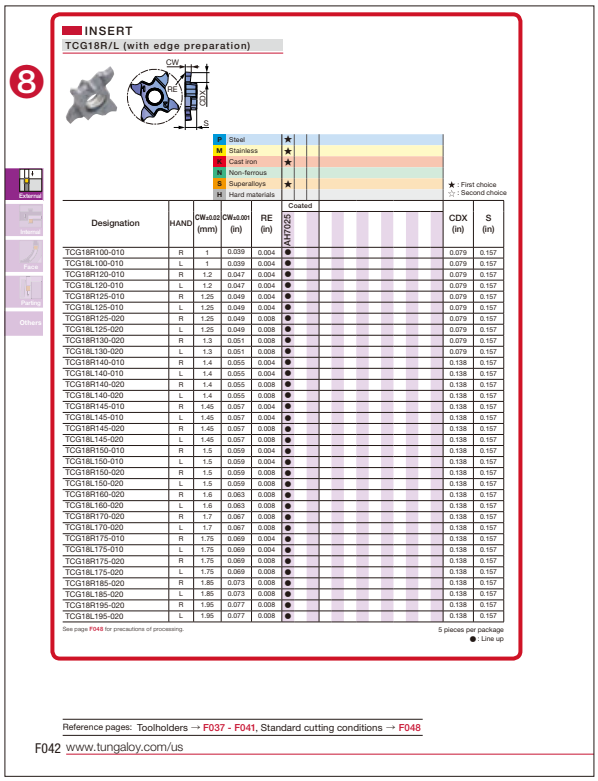
Select the tool series name on F004 - F005 and check the details on the product page.

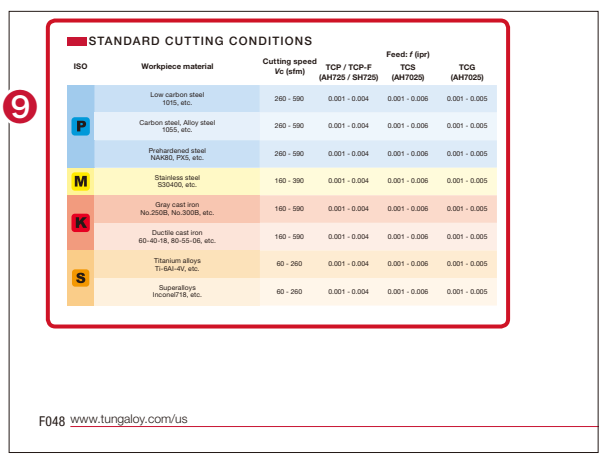
Method ③

Select the tool series or the tool specification from Quick Guide on F006 - F007 and see the details on each page.









❶ : Application
❷ : Tool series name
❸ : Dimension table
❹ : Toolholder designation
e.g. right-hand, 08 square shank

→ **STCR 08 F18-CHP**

R/L in the designation means the stock either right or left hand respectively.

❺ : Dimension (conforming to ISO13399)
❻ : Applicable insert
❼ : Spare parts
❽ : Insert
❾ : Standard cutting conditions
❿ : Reference pages

When ordering
- Please specify the designation and quantity for toolholders.
  e.g. **CTER10-2T08 ...** 1
- Please specify the designation and quantity for shank and blade set when ordering both.
  e.g. **CHSR12-CHP ...** 1, **CAER-2T20-CHP...** 1 (one shank per package, one blade per package)
  * Clamp screw for blade is included.
- Please specify the designation, grade, and quantity for inserts.
  e.g. **DGS3-020 AH7025 ...** 10 (10 inserts per package)
  *You will find a note if the number per package is not 10.

External grooving

F010 page

Max. groove depth: 0.252" (6.4 mm)

Economy TETRAMINICUT F037 page

Economy TETRAFORCECUT F049 page

GBR/L32 F095 page

GBR/L42 F096 page

GX-E F100 page

Max. groove depth: 1.969" (50 mm)

First choice TUNGCUT F010 page

TUNGHEAVYGROOVE F089 page

MY-T SERIES

Flex, CGD, G series , CDT F058 page

For Swiss lathes

Economy TETRAMINICUT F037 page

Economy TETRAFORCECUT F049 page

TUNGCUT F014 page

J-SERIES (JTGR/L) F103 page

TUNGHEAVYGROOVE F089 page

Internal grooving

F116 page

General internal grooving and turning

First choice TUNGCUT F116 page

MY-T SERIES

G series F136 page

GBR/L32 F155 page

Small-diameter internal grooving

TINYMINITURN G070 page

SNG F158 page

Face grooving

F167 page

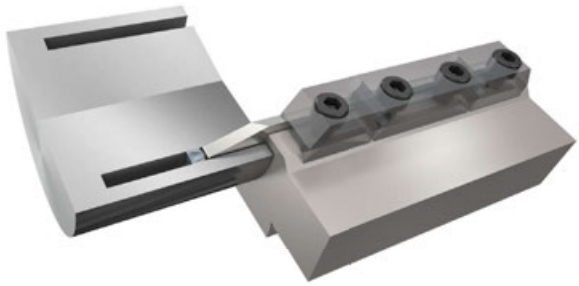
First choice TUNGCUT F171 page

EASYMCUT F167 page

Economy TETRAMINICUT F037 page

MY-T SERIES F194 page

GX-F F206 page



Parting

F209 page

General parting

First choice TUNGCUT F209 page

Economy TETRAFORCECUT F049 page

MY-T SERIES F225 page

For Swiss lathes

First choice DUOJUSTCUT G111 page

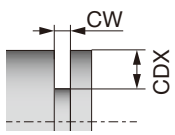
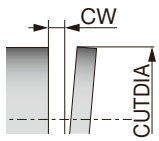
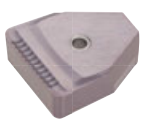
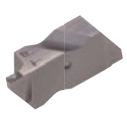
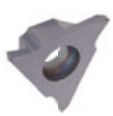
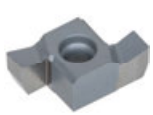
TUNGCUT F014 page

Economy TETRAFORCECUT F049 page

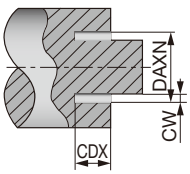
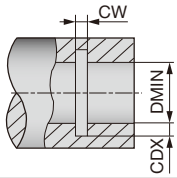
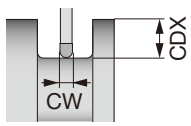
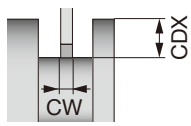
Economy TETRAMINICUT F037 page

J-SERIES F103 page

Quick Guide

Series	Insert	External grooving	Parting
			
TUNGCUT Inch ✓ Metric ✓		First choice ◎ CW: 0.055" - 0.315" (1.4 - 8 mm) CDX: 1.417" (36 mm) F010 page	First choice ◎ CW: 0.055" - 0.315" (1.4 - 8 mm) CUTDIA: 4.724" (120 mm) F209 page
TETRAFORCECUT Inch ✓ Metric ✓		Economy ◎ CW: 0.02" - 0.125" (0.5 - 3.18 mm) CDX: 0.252" (6.4 mm) F049 page	Economy ◎ CW: 0.02" - 0.125" (0.5 - 3.18 mm) CUTDIA: 0.504" (12.8 mm) F049 page
TETRAMINICUT Inch ✓ Metric ✓		Economy ◎ CW: 0.013" - 0.118" (0.33 - 3 mm) CDX: 0.138" (3.5 mm) F037 page	Economy ◎ CW: 0.013" - 0.118" (0.33 - 3 mm) CUTDIA: 0.276" (7 mm) F037 page
MY-T SERIES Inch ✓ Metric ✓		○ CW: 0.079" - 0.197" (2 - 5 mm) CDX: 0.984" (25 mm) F058 page	○ CW: 0.079" - 0.197" (2 - 5 mm) CUTDIA: 4.724" (120 mm) F225 page
EASYMULTICUT Inch ✓ Metric ☐			
TUNGHEAVYGROOVE Inch ✓ Metric ☐		First choice ◎ CW: 0.394" - 0.984" (10 - 25 mm) CDX: 1.969" (50 mm) F089 page	
TUNGT-CLAMP Inch ✓ Metric ✓		CW: 0.039" - 0.118" (1 - 3 mm) DMIN: 0.160" (4.07 mm) F076 page	
GBR/L Inch ✓ Metric ✓		○ CW: 0.013" - 0.177" (0.33 - 4.5 mm) CDX: 0.197" (5 mm) F095 page	
SNG / CNG Inch ☐ Metric ✓			
GX-E / GX-I Inch ✓ Metric ✓		○ CW: 0.039" - 0.177" (1 - 4.5 mm) CDX: 0.236" (6 mm) F100 page	
Other Inch ☐ Metric ✓		For O-ring and lock ring CW: 0.045" - 0.165" (1.15 - 4.2 mm) DMIN: 0.157" (4 mm) F098 - F099 pages	

◎ : First choice
○ : Usable

	Face grooving	Internal grooving	Profiling (Full-R)	Turning
				
	First choice ◎ CW: 0.118" - 0.236" (3 - 6 mm) CDX: 0.984" (25 mm) DAXN: 0.984" (25 mm) **F171** page	First choice ◎ CW: 0.079" - 0.315" (2 - 8 mm) CDX: 0.394" (10 mm) DMIN: 0.984" (25 mm) **F116** page	First choice ◎ CW: 0.118" - 0.315" (3 - 8 mm) CDX: 1.417" (36 mm) **F010** page	First choice ◎ CW: 0.118" - 0.315" (3 - 8 mm) CDX: 1.417" (36 mm) **F010** page
			Economy ◎ CW: 0.062" - 0.118" (1.57 - 3 mm) CDX: 0.252" (6.4 mm) **F049** page	
	○ CW: 0.013" - 0.118" (0.33 - 3 mm) CDX: 0.118" (3 mm) DAXN: 2.559" (65 mm) **F037** page			
	○ CW: 0.118" - 0.197" (3 - 5 mm) CDX: 0.866" (22 mm) DAXN: 1.181" (30 mm) **F194** page	○ CW: 0.118" - 0.197" (3 - 5 mm) CDX: 0.236" (6 mm) DMIN: 0.984" (25 mm) **F136** page	○ CW: 0.118" - 0.197" (3 - 5 mm) CDX: 0.984" (25 mm) **F058** page	○ CW: 0.118" - 0.197" (3 - 5 mm) CDX: 0.984" (25 mm) **F058** page
	◎ CW: 0.157" - 0.236" (4 - 6 mm) CDX: 2.559" (65 mm) DAXN: 1.181" (30 mm) **F167** page			
		CW: 0.039" - 0.118" (1 - 3 mm) CDX: 0.160"(4.07 mm) DMIN: 1.374"(34.9 mm) **F143** page		
		◎ CW: 0.013" - 0.177" (0.33 - 4.5 mm) CDX: 0.098" (2.5 mm) DMIN: 1.378" (35 mm) **F155** page	◎ CW: 0.039" - 0.157" (1 - 4 mm) CDX: 0.197" (5 mm) **F093** page	
		○ CW: 0.039" - 0.197" (1 - 5 mm) CDX: 0.197" (5 mm) DMIN: 0.315" (8 mm) **F158** page		
		○ CW: 0.039" - 0.177" (1 - 4.5 mm) CDX: 0.236" (6 mm) DMIN: 2.165" (55 mm) **F164** page		
		・CGXR/L CW: 0.039" - 0.197" (1 - 5 mm) DMIN: 0.787" (20 mm) **F162** page		

Multi-functional grooving tool series with excellent versatility

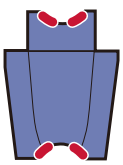
New modular holder system enhances versatility of existing monoblock holder and TungCap (PSC) lines.

High-pressure coolant system improves chip flow and tool life.

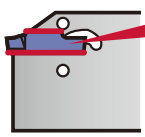
High clamping rigidity

For stable tool life and accuracy

Clamping system

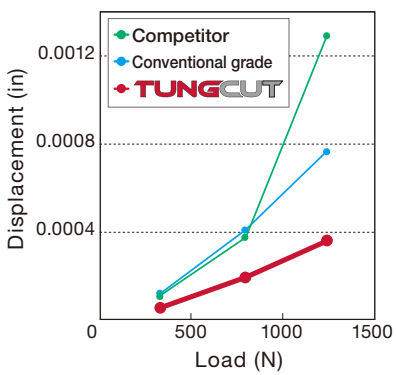


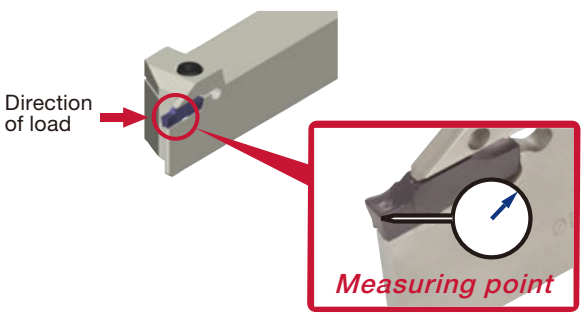
● ***Stable and safe contact areas!***



High repeatability and durability due to long pocket!

Minimizes cutting edge displacement





Excellent chip control at low feed rates

P **Mild steel (SUJ2)**

First choice chipbreaker for low carbon (soft) steel. Excellent chip control at low feed rates.

New

DGL

Workpiece material : SUJ2
Toolholder : CTER16-3T09
Insert : DGL3-025
Groove width : 0.118"

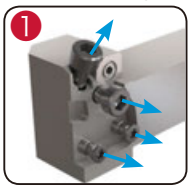
	f = 0.001 ipr	*f* = 0.002 ipr	*f* = 0.003 ipr	*f* = 0.004 ipr
Vc = 164 sfm				
Vc = 328 sfm				

Reference pages: F010, F116, F171, F209

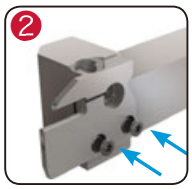
How to install and remove the blade and insert

TUNGMODULAR SYSTEM

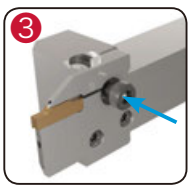
Assembly



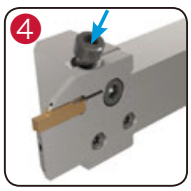
Remove all 4 screws and ensure the O rings are all in place.



Place the blade and tighten 2 bottom clamping screws.



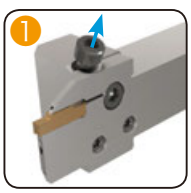
Place the insert in the pocket and tighten the fixing screw in the center.



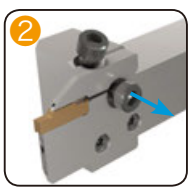
Place the long screw in the angular direction and tighten to clamp the insert.

Please follow the installation order as shown above.
When the screws are tightened in the ❹→❸ order, the insert clamping may be insufficient and unstable.

Disassembly

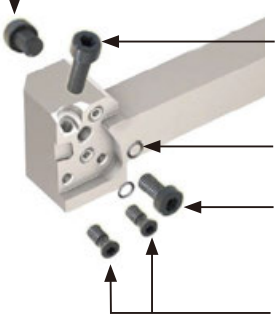


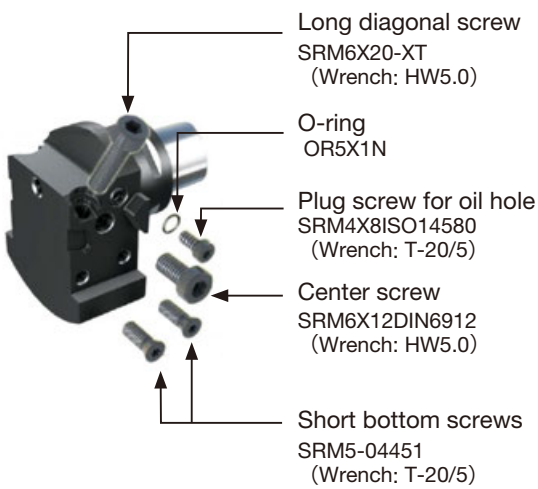
First loosen the long screw in the angular direction.



Loosen the Fixing screw in the center and remove the insert.

Loosing the long screw alone may not release the insert.

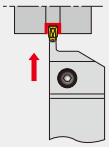


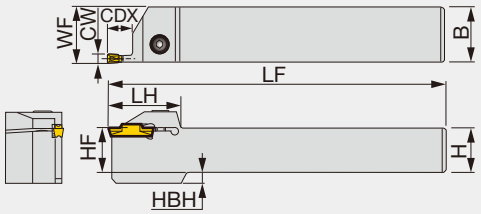


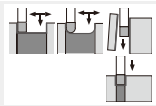
All parts listed here are included in the tool holder.

CTER/L

External grooving, parting and turning toolholder







Right hand (R) shown.

Inch	CW (in)	CW (mm)	Seat size	CDX	H	B	LF	LH	HF	WF (1)	HBH	Torque
CTER/L10-2T08	0.079	2	2	0.315	0.625	0.625	4.500	1.299	0.625	0.629	0.157	3.69
CTER/L12-2T08	0.079	2	2	0.315	0.750	0.750	5.000	1.299	0.750	0.754	-	3.69
CTER/L16-2T08	0.079	2	2	0.315	1.000	1.000	6.000	1.299	1.000	1.004	-	3.69
CTER/L10-2T12	0.079	2	2	0.472	0.625	0.625	4.500	1.260	0.625	0.629	0.157	3.69
CTER/L12-2T12	0.079	2	2	0.472	0.750	0.750	5.000	1.260	0.750	0.754	-	3.69
CTER/L16-2T12	0.079	2	2	0.472	1.000	1.000	6.000	1.260	1.000	1.004	-	3.69
CTER/L10-2T17	0.079	2	2	0.669	0.625	0.625	4.500	1.457	0.625	0.629	0.157	3.69
CTER/L12-2T17	0.079	2	2	0.669	0.750	0.750	5.000	1.457	0.750	0.754	-	3.69
CTER/L16-2T17	0.079	2	2	0.669	1.000	1.000	6.000	1.457	1.000	1.004	-	3.69
CTER/L10-3T09	0.118	3	3	0.354	0.625	0.625	4.500	1.260	0.625	0.637	0.157	3.69
CTER/L12-3T09	0.118	3	3	0.354	0.750	0.750	5.000	1.260	0.750	0.762	-	3.69
CTER/L16-3T09	0.118	3	3	0.354	1.000	1.000	6.000	1.260	1.000	1.012	-	3.69
CTER/L12-3T12	0.118	3	3	0.472	0.750	0.750	5.000	1.260	0.750	0.763	-	3.69
CTER/L16-3T12	0.118	3	3	0.472	1.000	1.000	6.000	1.260	1.000	1.012	-	3.69
CTER/L10-3T20	0.118	3	3	0.787	0.625	0.625	4.500	1.516	0.625	0.637	0.157	3.69
CTER/L12-3T20	0.118	3	3	0.787	0.750	0.750	5.000	1.516	0.750	0.762	-	3.69
CTER/L16-3T20	0.118	3	3	0.787	1.000	1.000	6.000	1.516	1.000	1.012	-	3.69
CTER/L16-3T25	0.118	3	3	0.984	1.000	1.000	6.000	1.752	1.000	1.012	-	3.69
CTER/L10-4T10	0.157	4	4	0.394	0.625	0.625	4.500	1.260	0.625	0.645	0.157	6.27
CTER/L12-4T10	0.157	4	4	0.394	0.750	0.750	5.000	1.260	0.750	0.770	-	6.27
CTER/L16-4T10	0.157	4	4	0.394	1.000	1.000	6.000	1.260	1.000	1.020	-	6.27
CTER/L12-4T15	0.157	4	4	0.590	0.750	0.750	5.000	1.299	0.750	0.770	-	6.27
CTER/L16-4T15	0.157	4	4	0.590	1.000	1.000	6.000	1.299	1.000	1.020	-	6.27
CTER/L10-4T25	0.157	4	4	0.984	0.625	0.625	4.500	1.772	0.625	0.645	0.157	6.27
CTER/L12-4T25	0.157	4	4	0.984	0.750	0.750	5.000	1.772	0.750	0.770	-	6.27
CTER/L16-4T25	0.157	4	4	0.984	1.000	1.000	6.000	1.772	1.000	1.020	-	6.27
CTER/L20-4T25	0.157	4	4	0.984	1.250	1.250	7.000	1.772	1.250	1.270	-	6.27
CTER/L12-5T12	0.197	5	5	0.472	0.750	0.750	5.000	1.457	0.750	0.774	-	6.27
CTER/L16-5T12	0.197	5	5	0.472	1.000	1.000	6.000	1.457	1.000	1.024	-	6.27
CTER/L16-5T20	0.197	5	5	0.787	1.000	1.000	6.000	1.457	1.000	1.024	-	6.27
CTER/L16-5T32	0.197	5	5	1.260	1.000	1.000	6.000	2.205	1.000	1.024	-	6.27
CTER/L20-5T32	0.197	5	5	1.260	1.250	1.250	7.000	2.205	1.250	1.274	-	8.85
CTER/L12-6T12	0.236	6	6	0.472	0.750	0.750	5.000	1.457	0.750	0.770	-	8.85
CTER/L16-6T12	0.236	6	6	0.472	1.000	1.000	6.000	1.457	1.000	1.020	0.276	8.85
CTER/L16-6T20	0.236	6	6	0.787	1.000	1.000	6.000	1.614	1.000	1.023	0.276	8.85
CTER/L16-6T32	0.236	6	6	1.260	1.000	1.000	6.000	2.205	1.000	1.020	0.276	8.85
CTER/L20-6T32	0.236	6	6	1.260	1.250	1.250	7.000	2.205	1.250	1.270	-	8.85
CTER/L16-8T16	0.315	8	8	0.630	1.000	1.000	6.000	1.850	1.000	1.039	0.276	8.85
CTER/L16-8T25	0.315	8	8	0.984	1.000	1.000	6.000	1.850	1.000	1.039	0.276	8.85
CTER/L20-8T25	0.315	8	8	0.984	1.250	1.250	7.000	1.850	1.250	1.289	-	8.85
CTER/L16-8T36	0.315	8	8	1.417	1.000	1.000	6.000	2.362	1.000	1.039	0.276	8.85
CTER/L20-8T36	0.315	8	8	1.417	1.250	1.250	7.000	2.362	1.250	1.289	-	8.85

When groove depth is larger than (insert length - 0.059"), please use 1-cornered insert.
(1) "WF" value is calculated with groove width "CW" shown in the table.
Torque: Recommended clamping torque: lbs·ft

Reference pages: Inserts → F023 - F036, Standard cutting conditions → F032

Metric	CW	Seat size	CDX	H	B	LF	LH	HF	WF (1)	HBH	Torque*
CTER/L1616-2T08	2	2	8	16	16	110	33	16	16.1	4	5
CTER/L2020-2T08	2	2	8	20	20	125	33	20	20.1	-	5
CTER/L2525-2T08	2	2	8	25	25	150	33	25	25.1	-	5
CTER/L1616-2T12	2	2	12	16	16	110	32	16	16.1	4	5
CTER/L2020-2T12	2	2	12	20	20	125	32	20	20.1	-	5
CTER/L2525-2T12	2	2	12	25	25	150	32	25	25.1	-	5
CTER/L1616-2T17	2	2	17	16	16	110	37	16	16.1	4	5
CTER/L2020-2T17	2	2	17	20	20	125	37	20	20.1	-	5
CTER/L2525-2T17	2	2	17	25	25	150	37	25	25.1	-	5
CTER/L1616-3T09	3	3	9	16	16	110	32	16	16.3	4	5
CTER/L2020-3T09	3	3	9	20	20	125	32	20	20.3	-	5
CTER/L2525-3T09	3	3	9	25	25	150	32	25	25.3	-	5
CTER/L2020-3T12	3	3	12	20	20	125	32	20	20.3	-	5
CTER/L2525-3T12	3	3	12	25	25	150	32	25	25.3	-	5
CTER/L1616-3T20	3	3	20	16	16	110	38.5	16	16.3	4	5
CTER/L2020-3T20	3	3	20	20	20	125	38.5	20	20.3	-	5
CTER/L2525-3T20	3	3	20	25	25	150	38.5	25	25.3	-	5
CTER/L2525-3T25	3	3	25	25	25	150	44.5	25	25.3	-	5
CTER/L1616-4T10	4	4	10	16	16	110	32	16	16.5	4	8.5
CTER/L2020-4T10	4	4	10	20	20	125	32	20	20.5	-	8.5
CTER/L2525-4T10	4	4	10	25	25	150	32	25	25.5	-	8.5
CTER/L2020-4T15	4	4	15	20	20	125	33	20	20.5	-	8.5
CTER/L2525-4T15	4	4	15	25	25	150	33	25	25.5	-	8.5
CTER/L1616-4T25	4	4	25	16	16	110	45	16	16.5	4	8.5
CTER/L2020-4T25	4	4	25	20	20	125	45	20	20.5	-	8.5
CTER/L2525-4T25	4	4	25	25	25	150	45	25	25.5	-	8.5
CTER/L3232-4T25	4	4	25	32	32	170	45	32	32.5	-	8.5
CTER/L2020-5T12	5	5	12	20	20	125	37	20	20.6	-	8.5
CTER/L2525-5T12	5	5	12	25	25	150	37	25	25.6	-	8.5
CTER/L2525-5T20	5	5	20	25	25	150	37	25	25.6	-	8.5
CTER/L2525-5T32	5	5	32	25	25	150	56	25	25.6	-	8.5
CTER/L3232-5T32	5	5	32	32	32	170	56	32	32.6	-	8.5
CTER/L2020-6T12	6	6	12	20	20	125	37	20	20.6	-	12
CTER/L2525-6T12	6	6	12	25	25	150	37	25	25.6	7	12
CTER/L2525-6T20	6	6	20	25	25	150	41	25	25.6	-	12
CTER/L2525-6T32	6	6	32	25	25	150	56	25	25.6	7	12
CTER/L3232-6T32	6	6	32	32	32	170	56	32	32.6	-	12
CTER/L2525-8T16	8	8	16	25	25	150	47	25	26.1	7	12
CTER/L2525-8T25	8	8	25	25	25	150	47	25	26.1	7	12
CTER/L3232-8T25	8	8	25	32	32	170	47	32	33.1	-	12
CTER/L2525-8T36	8	8	36	25	25	150	60	25	26.1	7	12
CTER/L3232-8T36	8	8	36	32	32	170	60	32	33.1	-	12

When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert. (1) "WF" value is calculated with groove width "CW" shown in the table.
Torque: Recommended clamping torque: N·m

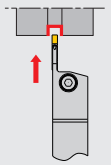
SPARE PARTS

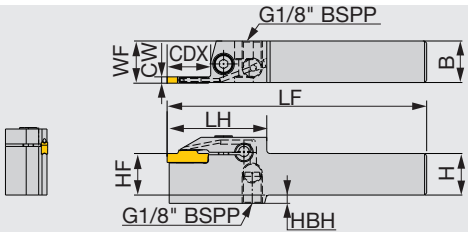

Designation	Clamping screw	Wrench
CTER/L10-2T08, CTER/L1616-2T08	CM5X0.8X16-A	P-4
CTER/L12-2T08, CTER/L2020-2T08	CM5X0.8X20-A	P-4
CTER/L16-2T08, CTELR/L2525-2T08	CM5X0.8X25-A	P-4
CTER/L10-2T12, CTER/L1616-2T12	CM5X0.8X16-A	P-4
CTER/L12-2T12, CTER/L2020-2T12	CM5X0.8X20-A	P-4
CTER/L16-2T12, CTER/L2525-2T12	CM5X0.8X25-A	P-4
CTER/L10-2T17, CTER/L1616-2T17	CM5X0.8X16-A	P-4
CTER/L12-2T17, CTER/L2020-2T17	CM5X0.8X20-A	P-4
CTER/L16-2T17, CTER/L2525-2T17	CM5X0.8X25-A	P-4
CTER/L10-3T09, CTER/L1616-3T09	CM5X0.8X16-A	P-4
CTER/L12-3T09, CTER/L2020-3T09	CM5X0.8X20-A	P-4
CTER/L12-3T12, CTER/L2525-3T09	CM5X0.8X25-A	P-4
CTER/L16-3T12, CTER/L2020-3T12	CM5X0.8X20-A	P-4
CTER/L10-3T20, CTER/L2525-3T12	CM5X0.8X25-A	P-4
CTER/L12-3T20, CTER/L1616-3T20	CM5X0.8X16-A	P-4
CTER/L16-3T20, CTER/L2020-3T20	CM5X0.8X20-A	P-4
CTER/L16-3T25, CTER/L2525-3T20.25	CM5X0.8X25-A	P-4
CTER/L10-4T10, CTER/L1616-4T10	CM6X1X16-A	P-5
CTER/L12-4T10, CTER/L2020-4T10	CM6X1X20-A	P-5
CTER/L16-4T10, CTER/L2525-4T10	CM6X1X25-A	P-5

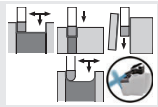
SPARE PARTS


Designation	Clamping screw	Wrench
CTER/L12-4T15, CTER/L2020-4T15	CM6X1X20-A	P-5
CTER/L16-4T15, CTER/L2525-4T15	CM6X1X25-A	P-5
CTER/L10-4T25, CTER/L1616-4T25	CM6X1X16-A	P-5
CTER/L12-4T25, CTER/L2020-4T25	CM6X1X20-A	P-5
CTER/L16-4T25, CTER/L2525-4T25	CM6X1X25-A	P-5
CTER/L20-4T25, CTER/L3232-4T25	CM6X1X25-A	P-5
CTER/L12-5T12, CTER/L2020-5T12	CM6X1X20-A	P-5
CTER/L16-5T12, CTER/L2525-5T12	CM6X1X25-A	P-5
CTER/L16-5T20, CTER/L2525-5T20	CM6X1X25-A	P-5
CTER/L16-5T32, CTER/L2525, 3232-5T32	CM6X1X25-A	P-5
CTER/L20-5T32, CTER/L2020-6T12	CM8X1.25X20-A	P-6
CTER/L12-6T12, CTER/L16-6T12, CTER/L2525-6T12	CM8X1.25X25-A	P-6
CTER/L16-6T20, CTER/L2525-6T20	CM8X1.25X25-A	P-6
CTER/L16-6T32, CTER/L20-6T32, CTER/L2525, 3232-6T32	CM8X1.25X25-A	P-6
CTER/L16-8T16, CTER/L2525-8T16	CM8X1.25X25-A	P-6
CTER/L16-8T25, CTER/L20-8T25, CTER/L2525, 3232-8T25	CM8X1.25X25-A	P-6
CTER/L16-8T36, CTER/L20-8T36, CTER/L2525, 3232-8T36	CM8X1.25X25-A	P-6

Mono-block external grooving and parting toolholder, with high pressure coolant capability







Right hand (R) shown.

Inch	CW (in)	CW (mm)	Seat size	CDX	H	B	LF	LH	HF	WF (1)	HBH	Torque
CTER/L12-2T17-CHP	0.079	2	2	0.669	0.750	0.750	5.000	1.772	0.750	0.791	0.157	4.06
CTER/L16-2T17-CHP	0.079	2	2	0.669	1.000	1.000	6.000	1.772	1.000	0.988	-	4.06
CTER/L12-3T25-CHP	0.118	3	3	0.984	0.750	0.750	5.000	2.008	0.750	0.799	0.157	4.06
CTER/L16-3T25-CHP	0.118	3	3	0.984	1.000	1.000	6.000	2.008	1.000	0.996	-	4.06
CTER/L16-4T25-CHP	0.157	4	4	0.984	1.000	1.000	6.000	2.170	1.000	1.004	-	5.90
CTER/L16-5T32-CHP	0.197	5	5	1.260	1.000	1.000	6.000	2.323	1.000	1.007	-	5.90
CTER/L16-6T32-CHP	0.236	6	6	1.260	1.000	1.000	6.000	2.441	1.000	1.007	0.276	8.85

Metric	CW	Seat size	CDX	H	B	LF	LH	HF	WF (1)	HBH	Torque*
CTER/L2020-2T17-CHP	2	2	17	20	20	125	45	20	20.1	4	5.5
CTER/L2525-2T17-CHP	2	2	17	25	25	150	45	25	25.1	-	5.5
CTER/L2020-3T20-CHP	3	3	20	20	20	125	48	20	20.3	4	5.5
CTER/L2525-3T20-CHP	3	3	20	25	25	150	48	25	25.3	-	5.5
CTER/L2525-3T25-CHP	3	3	25	25	25	150	51	25	25.3	-	5.5
CTER/L2525-4T25-CHP	4	4	25	25	25	150	55	25	25.5	-	8
CTER/L2525-5T20-CHP	5	5	20	25	25	150	49	25	25.58	-	8
CTER/L2525-6T20-CHP	6	6	20	25	25	150	52	25	25.58	7	12

When groove depth is larger than (insert length - 0.059"/1.5 mm), please use 1-cornered insert.
(1) "WF" value is calculated with groove width "CW" shown in the table.
Torque: Recommended clamping torque: lbs·ft (*N·m)

Inch SPARE PARTS


Designation	Clamping screw	Wrench
CTER/L12-2T17-CHP	CM5x0.8x20-A	P-4
CTER/L16-2T17-CHP	CM5x0.8x20-A	P-4
CTER/L12-3T25-CHP	CM5x0.8x25-A	P-4
CTER/L16-3T25-CHP	CM5x0.8x25-A	P-4
CTER/L16-4T25-CHP	CM6x1x16-A	P-5
CTER/L16-5T32-CHP	CM6x1x16-A	P-5
CTER/L16-6T32-CHP	CM8x1.25x20-A	P-6

Metric SPARE PARTS

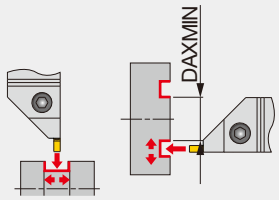

Designation	Clamping screw	Wrench
CTER/L2020-2T17-CHP	CM5x0.8x20-A	P-4
CTER/L2525-2T17-CHP	CM5x0.8x25-A	P-4
CTER/L2020-3T20-CHP	CM5x0.8x20-A	P-4
CTER/L2525-3T20-CHP	CM5x0.8x25-A	P-4
CTER/L2525-3T25-CHP	CM5x0.8x25-A	P-4
CTER/L2525-4T25-CHP	CM6x1x16-A	P-5
CTER/L2525-5T20-CHP	CM6x1x16-A	P-5
CTER/L2525-6T20-CHP	CM8x1.25x20-A	P-6

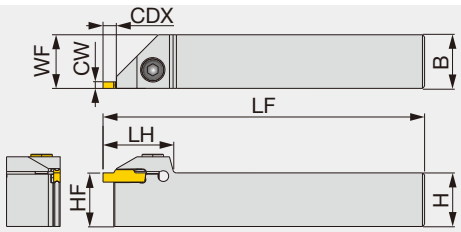
External
Internal
Face
Parting
Others

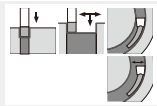
Reference pages: Inserts → F023 - F036, Standard cutting conditions → F032
Parts for coolant hose → F240, Technical Reference → L043

CTEFR/L

External face grooving and turning toolholder







Right hand (R) shown.

Inch	CW (in)	CW (mm)	Seat size	CDX	HF	B	H	LF	WF (1)	LH	Torque
CTEFR/L12-4T04	0.157	4	2, 3, 4	0.189	0.750	0.750	0.750	5.000	0.770	1.300	6.27
CTEFR/L16-4T04	0.157	4	2, 3, 4	0.189	1.000	1.000	1.000	6.000	1.020	1.300	6.27
CTEFR/L12-6T04	0.236	6	5, 6	0.189	0.750	0.750	0.750	5.000	0.236	1.460	6.27
CTEFR/L16-6T04	0.236	6	5, 6	0.189	1.000	1.000	1.000	6.000	1.020	1.460	6.27

(1) "WF" value is calculated with groove width "CW" shown in the table.
Use the right-hand insert for the right-hand holder with DTF insert.
Torque: Recommended clamping torque: lbs·ft

SPARE PARTS

Designation	Clamping screw	Wrench
CTEFR/L12-4T04	CM6X1X20-A	P-5
CTEFR/L16-4T04	CM6X1X25-A	P-5
CTEFR/L12-6T04	CM6X1X20-A	P-5
CTEFR/L16-6T04	CM6X1X25-A	P-5

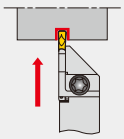
Insert	Groove width CW (in)	Face grooving Min. machining dia. DAXMIN (in)
DGM / DGS / SGN	0.079	11.614
DGM / DGS / SGN / DGL	0.118	3.622
DGM / DGS / SGN / DGL	0.157	1.457
DGM / DGS / DGL	0.197	2.362
DGM / DGS / DGL	0.236	2.244
DTE / DGG / DTM	0.118	2.441
DTE / DGG / DTM	0.157	1.654
DTE / DGG / DTM	0.197	2.520
DTE / DGG / DTM	0.236	2.402

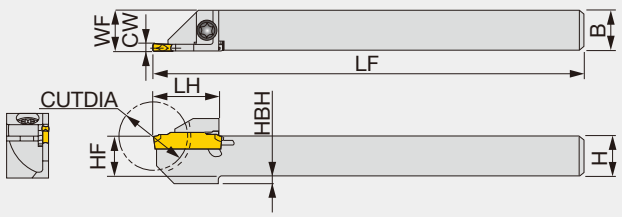
Insert	Groove width CW (in)	Face grooving Min. machining dia. DAXMIN (in)
DTR	0.118	1.732
DTR	0.157	1.260
DTR	0.197	1.890
DTR	0.236	1.890
DTX	0.118	0.866
DTX	0.157	0.787
DTX	0.197	0.787
DTX	0.236	0.906
DTF	0.118	0.787
DTF	0.157	0.787

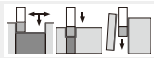
Reference pages: Inserts → F023 - F036, Standard cutting conditions → F032

JCTER/L

External grooving and parting toolholder, for Swiss lathes







Right hand (R) shown.

Inch	CW (in)	CW (mm)	Seat size	CUTDIA	H	B	LF	LH	HF	WF (1)	HBH	Torque
JCTER/L08-2T12	0.079	2	2	0.945	0.500	0.500	4.750	0.748	0.500	0.504	0.079	2.21
JCTER/L08-3T12	0.118	3	3	0.945	0.500	0.500	4.750	0.748	0.500	0.512	0.079	2.21
JCTER/L10-2T16	0.079	2	2	1.260	0.625	0.625	4.750	0.945	0.625	0.629	-	2.21
JCTER/L10-3T16	0.118	3	3	1.260	0.625	0.625	4.750	0.945	0.625	0.637	-	2.21

Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF (1)	HBH	Torque*
JCTER/L1010X1.4T10	1.4	1	20	10	10	120	18	10	10.2	-	3
JCTER1010-1.4T10	1.4	1	20	10	10	125	18	10	10.2	-	3
JCTER/L1212F1.4T12	1.4	1	24	12	12	85	19.5	12	12.2	-	3
JCTER/L1212X1.4T12	1.4	1	24	12	12	120	19.5	12	12.2	-	3
JCTER1212-1.4T12	1.4	1	24	12	12	125	19.5	12	12.2	-	3
JCTER/L1414-1.4T12	1.4	1	24	14	14	125	19.5	14	14.2	-	3
JCTER/L1616X1.4T16	1.4	1	32	16	16	120	24	16	16.2	-	3
JCTER/L1010X2T10	2	2	20	10	10	120	19	10	10.1	2	3
JCTER/L1212F2T12	2	2	24	12	12	85	19	12	12.1	2	3
JCTER/L1212X2T12	2	2	24	12	12	120	19	12	12.1	2	3
JCTER/L1414-2T12	2	2	24	14	14	125	19	14	14.1	-	3
JCTER/L1616X2T16	2	2	32	16	16	120	24	16	16.1	-	3
JCTER/L1212F3T12	3	3	24	12	12	85	19	12	12.3	2	3
JCTER/L1212X3T12	3	3	24	12	12	120	19	12	12.3	2	3
JCTER/L1616X3T16	3	3	32	16	16	120	24	16	16.3	-	3
JCTER/L2020H3T16	3	3	32	20	20	100	24	20	20.3	-	3

(1) "WF" value is calculated with groove width "CW" shown in the table.
CUTDIA: Max. parting diameter
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

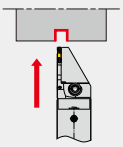
Designation	Clamping screw	Wrench
JCTER/L...	CSHB-4-A	T-15F

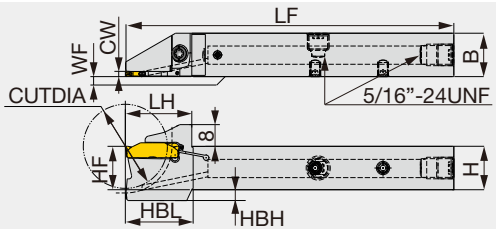
External
Internal
Face
Parting
Others

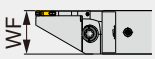
Reference pages: Inserts → F023 - F036, Standard cutting conditions → F032

JCTER/L-CHP

External grooving and parting toolholder with high pressure coolant capability







Right hand (R) shown.

Inch	CW (in)	CW (mm)	Seat size	CUTDIA	H	B	LF	LH	HBL	HF	WF (1)	HBH	Torque
JCTER/L08X2T12-CHP	0.079	2	2	0.984	0.500	0.500	4.750	0.972	0.965	0.500	0.000/0.500	0.169	2.21
JCTER/L10X2T12-CHP	0.079	2	2	0.984	0.625	0.625	4.750	0.972	0.965	0.625	0.000/0.625	0.039	2.21
JCTER/L10X2T16-CHP	0.079	2	2	1.260	0.625	0.625	4.750	0.972	0.965	0.625	0.000/0.625	0.157	2.21
JCTER/L12X2T16-CHP	0.079	2	2	1.260	0.750	0.750	4.750	0.972	0.965	0.750	0.000/0.750	0.037	2.21

Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF (1)	HBH	HBL	Torque*
JCTER/L1212X2T12-CHP	2	2	25	12	12	120	24.7	12	0/12	5	24.7	3
JCTER/L1616X2T12-CHP	2	2	25	16	16	120	24.7	16	0/16	1	24.5	3
JCTER/L1616X2T16-CHP	2	2	32	16	16	120	24.7	16	0/16	4	24.7	3
JCTER/L2020X2T16-CHP	2	2	32	20	20	120	24.7	20	0/20	-	-	3

(1) "WF" value is calculated with groove width "CW" shown in the table. "WF" value depends on the tool hand. With 0.000/0.500 (0/12), WF is 0" (0 mm) for the right hand and 0.5" (12 mm) for the left hand.
CUTDIA: Max. parting diameter
Torque: Recommended clamping torque: lbs·ft (*N·m)

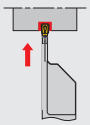
SPARE PARTS

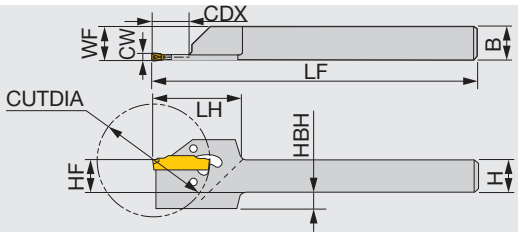
Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JCTER/L...	CSHB-4-A	T-15F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

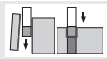
Reference pages: Inserts → F023 - F036, Standard cutting conditions → F032

CGER/L

External deep grooving and parting toolholder, for Swiss lathes







Right hand (R) shown.

Metric	CW	Seat size	CUTDIA(1)	CDX	H	B	LF	LH	HF	WF (2)	HBH
CGER/L2020-1.4T14	1.4	1	29/29	9.7	20	20	125	31	20	20.2	-
CGER/L1212-2T17	2	2	35/35	11.8	12	12	150	31	12	12.1	6
CGER/L1616-2T17	2	2	35/35	11.8	16	16	150	31	16	16.1	2
CGER/L2020-2T17	2	2	35/35	9.8	20	20	125	31	20	20.1	-
CGER/L1212-3T19	3	3	38/40	12	12	12	150	31	12	12.3	6
CGER/L1616-3T19	3	3	38/45	14.9	16	16	150	31	16	16.3	2
CGER/L2020-3T19	3	3	38/45	13.2	20	20	125	31	20	20.3	-
CGER/L2020-4T19	4	4	38/55	20.3	20	20	125	33	20	20.4	-

Wrench (CRW**) is not included. Please order it separately. Insert is clamped by the elastic deformation of the upper jaw.
(1) DG*/SG* maximum parting diameter will depend on the insert.
(2) "WF" value is calculated with groove width "CW" shown in the table.

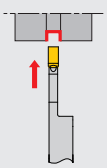
SPARE PARTS

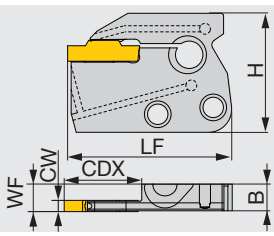
Designation	Wrench (Option)
CGER/L2020-1.4T14	CRW23
CGER/L****-2T17 - 4T19	CRW33

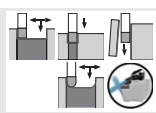
CAER/L-CHP

TUNGMODULAR SYSTEM

Modular-type external grooving and parting blade, with high pressure coolant capability







Insert
DGS,SGS,DGM, SGM,DTX,DTE, DGG,DTR,SGN, DTM,DGL

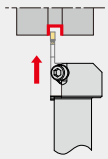
Right hand (R) shown.

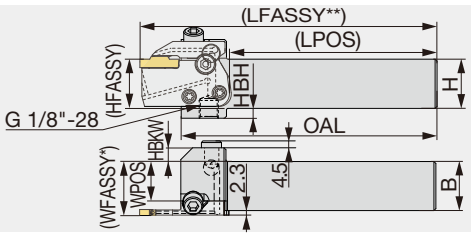
Inch	CW (in)	CW (mm)	Seat size	CDX	H	B	LF	WF(1)
CAER/L-2T16-CHP	0.079	2	2	0.630	1.299	0.283	1.634	0.287
CAER/L-2T20-CHP	0.079	2	2	0.787	1.299	0.283	1.791	0.287
CAER/L-3T16-CHP	0.118	3	3	0.630	1.299	0.283	1.634	0.291
CAER/L-3T20-CHP	0.118	3	3	0.787	1.299	0.283	1.791	0.295
CAER/L-4T16-CHP	0.157	4	4	0.630	1.299	0.283	1.634	0.303
CAER/L-4T20-CHP	0.157	4	4	0.787	1.299	0.283	1.791	0.303
CAER/L-5T20-CHP	0.197	5	5	0.787	1.299	0.283	1.823	0.307
CAER/L-6T20-CHP	0.236	6	6	0.787	1.299	0.283	1.823	0.307

When groove depth is larger than (insert length - 0.059"), please use 1-cornered insert.
(1) "WF" value is calculated with groove width "CW" shown in the table.

Reference pages: Inserts → F023 - F036, Standard cutting conditions → F032
Technical Reference → L043

Shank for CAER/L-CHP blades with high pressure coolant capability





Right hand (R)
with right-hand blade shown.

Inch	H	B	OAL	LPOS	WPOS	HBKW	HFASSY	HBH	Blade (Option)	Torque
CHSR/L12-CHP	0.750	0.750	5.000	4.035	0.560	0.510	0.750	0.190	CAER/L-CHP	3.69
CHSR/L16-CHP	1.000	1.000	5.000	4.035	0.810	0.260	1.000	0.200	CAER/L-CHP	3.69

Metric	H	B	OAL	LPOS	WPOS	HBKW	HFASSY	HBH	Blade (Option)	Torque*
CHSR/L2020-CHP	20	20	130	105.5	15.1	12	20	10	CAER/L-CHP	5
CHSR/L2525-CHP	25	25	130	105.5	20.1	7	25	5	CAER/L-CHP	5

*WFASSY :Shank (WPOS) + blade (WF)
**LFASSY : Shank (LPOS) + blade (LF)

Please see the page **L043** for the instruction on installing and removing the blade or the insert.
Torque: Recommended clamping torque: lbs·ft (*N·m)
Use right-hand blades (R) with right-hand shanks (R); and left-hand blades (L) with left-hand shanks (L).
Applicable for 30 MPa coolant

SPARE PARTS

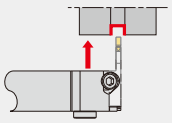
Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHSR/L...-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N	PLUGG1/8ISO1179

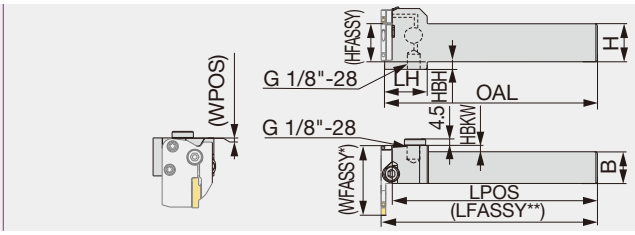
Recommended clamping torque (lbs·ft, N·m)

Clamping screw	Torque (lbs·ft)	Torque (N·m)
SRM5-04451	3.69	5
SRM6X12DIN6912	6.27	8.5
SRM6X20-XT	6.27	8.5

Reference pages: Inserts → F023 - F036, Standard cutting conditions → F032
Parts for coolant hose → F240, Technical Reference → L043

Shank for CAER/L-CHP blades with high pressure coolant capability





Right hand (R)
with left-hand blade shown.

Inch	H	B	OAL	LH	LPOS	WPOS	HBKW	HFASSY	HBH	Blade (Option)	Torque
CHFVR/L12-CHP	0.750	0.750	5.500	1.100	5.307	0.020	0.234	0.750	0.431	CAER/L-CHP	3.69
CHFVR/L16-CHP	1.000	1.000	5.500	1.100	5.307	0.020	-	1.000	0.200	CAER/L-CHP	3.69

Metric	H	B	OAL	LH	LPOS	WPOS	HBKW	HFASSY	HBH	Blade (Option)	Torque*
CHFVR/L2020-CHP	20	20	140	28	135.1	0.5	5	20	10	CAER/L-CHP	5
CHFVR/L2525-CHP	25	25	140	28	135.1	0.5	0	25	5	CAER/L-CHP	5

*WFASSY : Shank (WPOS) + blade (LF)
**LFASSY : Shank (LPOS) + blade (WF)

Torque: Recommended clamping torque: lbs·ft (*N·m)
Use right-hand blades (R) with left-hand shanks (L); and left-hand blades (L) with right-hand shanks (R).
Applicable for 30 MPa coolant
Please see the page L043 for the instruction on installing and removing the blade or the insert.

SPARE PARTS







Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHFVR/L...	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N	PLUGG1/8ISO1179

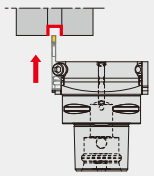
Recommended clamping torque (lbs·ft, N·m)

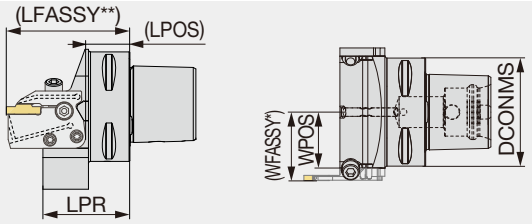
Clamping screw	Torque (lbs·ft)	Torque (N·m)
SRM5-04451	3.69	5
SRM6X12DIN6912	6.27	8.5
SRM6X20-XT	6.27	8.5

External
Internal
Face
Parting
Others

Reference pages: Inserts → F023 - F036, Standard cutting conditions → F032
Parts for coolant hose → F240, Technical Reference → L043

TungCap shank for CAER/L-CHP blades with high pressure coolant capability





Right-hand (R) blade shown.

Metric	DCONMS	LPR	LPOS	WPOS	Blade (Option)	Torque
C3CHSN19045-CHP	32	45	17.5	18.5	CAER/L...-CHP	5
C4CHSN21047-CHP	40	46.5	21.5	21	CAER/L...-CHP	5
C5CHSN26047-CHP	50	47	22.5	26	CAER/L...-CHP	5
C6CHSN33050-CHP	63	50	24.5	32.5	CAER/L...-CHP	5

*WFASSY : Shank (WPOS) + blade (WF)
**LFASSY : Shank (LPOS) + blade (LF)

Torque: Recommended clamping torque: N·m, Applicable for 30 MPa coolant
Please see the page **L043** for the instruction on installing and removing the blade or the insert.

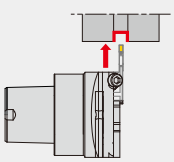
SPARE PARTS

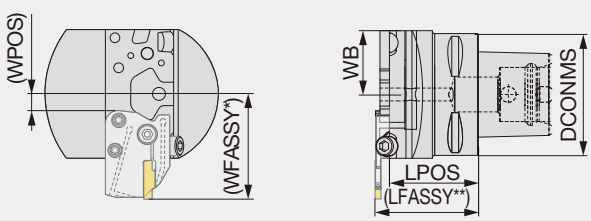
Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring
C*CHSN...-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N

Recommended clamping torque (N·m)

Clamping screw	Torque (N·m)
SRM5-04451	5
SRM6X12DIN6912	8.5
SRM6X20-XT	8.5

TungCap shank for CAER/L-CHP blades with high pressure coolant capability





Left-hand (L) blade shown.

Metric	DCONMS	LPOS	WB	WPOS	Blade (Option)	Torque
C3CHFVN26040-CHP	32	40	26	1.5	CAER/L...-CHP	5
C4CHFVN26046-CHP	40	46	26	1.5	CAER/L...-CHP	5
C5CHFVN26046-CHP	50	46	26	1.5	CAER/L...-CHP	5
C6CHFVN33046-CHP	63	46	33	8.5	CAER/L...-CHP	5

*WFASSY : Shank (WPOS) + blade (LF)
**LFASSY : Shank (LPOS) + blade (WF)

Torque: Recommended clamping torque: N·m. Applicable for 30 MPa coolant
Please see the page **L043** for the instruction on installing and removing the blade or the insert.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring
C*CHFVN...-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N

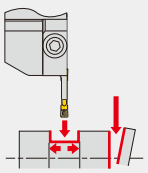
Recommended clamping torque (N·m)

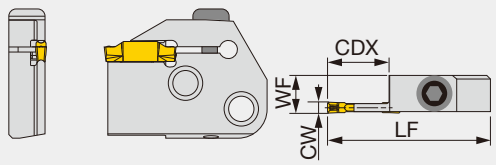
Clamping screw	Torque (N·m)
SRM5-04451	5
SRM6X12DIN6912	8.5
SRM6X20-XT	8.5

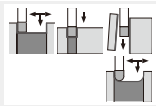
Reference pages: Inserts → F023 - F036, Standard cutting conditions →F032, Technical Reference → L043

TUNGCUT
CAER/L

External grooving, parting, and turning blade







Insert

Right hand (R) shown.

Inch	CW (in)	CW (mm)	Seat size	CDX	LF	WF	Shank	Torque
CAER/L-3T16	0.118	2	2	0.630	1.772	0.409	CHFVL/R...,CHSR/L...	3.69
CAER/L-4T16	0.157	2	2	0.630	1.772	0.413	CHFVL/R...,CHSR/L...	3.69
CAER/L-5T20	0.197	3	3	0.787	1.929	0.413	CHFVL/R...,CHSR/L...	3.69
CAER/L6T20	0.236	3	3	0.787	1.929	0.413	CHFVL/R...,CHSR/L...	3.69

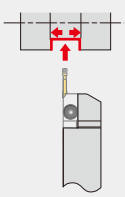
Torque: Recommended clamping torque: lbs·ft
Not compatible with TungModularSystem
When groove depth is larger than insert length - 0.059", please use 1-cornered insert.

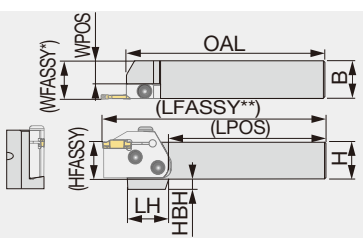
SPARE PARTS

Designation	Clamping screw	Wrench
CAER/L...	BHM6-20-A	P-4

TUNGCUT
CHSR/L

Shank for CAER/L and CAFR/L blades





Right hand (R)
with right-hand blade shown.

Inch	H	B	OAL	LPOS	LH	WPOS	HFASSY	HBH	Blade (Option)
CHSR/L12-U	0.750	0.750	5.330	4.227	1.380	0.356	0.750	0.502	CAER/L...
CHSR/L16-U	1.000	1.000	5.330	4.227	1.100	0.606	1.000	0.280	CAER/L...
CHSR/L20-U	1.250	1.250	6.330	5.227	-	0.856	1.250	-	CAER/L...

Metric	H	B	OAL	LPOS	LH	WPOS	HFASSY	HBH	Blade (Option)
CHSR/L2020	20	20	133	105	35	10	20	12	CAER/L...
CHSR/L2525	25	25	133	105	28	15	25	7	CAER/L...
CHSR/L3232	32	32	153	105	-	22	32	-	CAER/L...

*WFASSY : Shank (WPOS) + blade (WF)
**LFASSY : Shank (LPOS) + blade (LF)
Not compatible with TungModularSystem

SPARE PARTS

Designation	Clamping screw	Wrench
CHSR/L...	CSHB-6-A	P-4

Combination of blade and toolholder

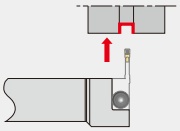
Toolholder	Blade			
	CAER...	CAEL...	CAFR...	CAFL...
CHSR...	●			●
CHSL...		●	●	

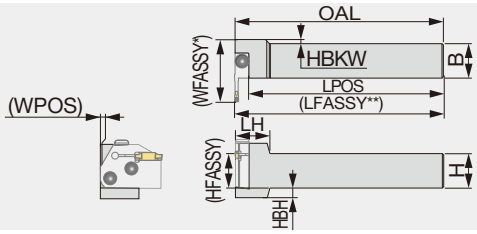
● : Corresponding

Reference pages: Inserts → F023 - F036, Standard cutting conditions → F032

CHFVR/L

Shank for CAER/L and CAFR/L blades





Right hand (R)
with left-hand blade shown.

Inch	H	B	OAL	LPOS	LH	WPOS	HBKW	HFASSY	HBH	Blade (Option)
CHFVR/L12-U	0.750	0.750	6.000	5.606	0.984	-0.001	0.352	0.750	0.502	CAEL/R...
CHFVR/L16-U	1.000	1.000	6.000	5.606	0.984	-0.001	0.102	1.000	0.276	CAEL/R...
CHFVR/L20-U	1.250	1.250	7.000	6.606	0.984	0.147	-	1.250	-	CAEL/R...

Metric	H	B	OAL	LPOS	LH	WPOS	HBKW	HFASSY	HBH	Blade (Option)
CHFVR/L2020	20	20	150	140	25	0	8	20	12	CAEL/R...
CHFVR/L2525	25	25	150	140	25	0	3	25	7	CAEL/R...
CHFVR/L3232	32	32	170	160	25	4	-	32	-	CAEL/R...

*WFASSY : Shank (WPOS) + blade (LF)
**LFASSY : Shank (LPOS) + blade (WF)

Not compatible with TungModularSystem

SPARE PARTS


Designation	Clamping screw	Wrench
CHFVR/L...	CSHB-6-A	P-4

Combination of blade and toolholder

Toolholder	Blade			
	CAER...	CAEL...	CAFR...	CAFL...
CHFVR...		●	●	
CHFVL...	●			●

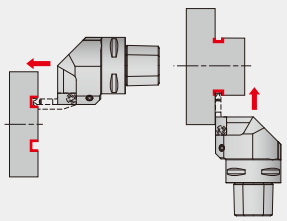
● : Corresponding

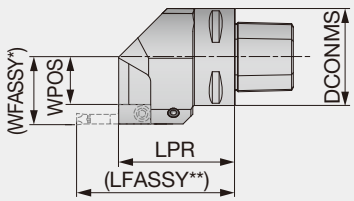
Reference pages: Inserts → F023 - F036, Standard cutting conditions → F032

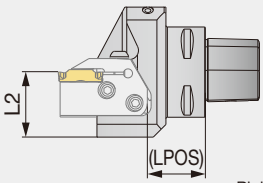
C-CHSR/L

TUNGCAP

TungCap shank for CAER/L and CAFR/L blades







Right hand (R)
with right-hand blade shown.

Metric	DCONMS	LPR	LPOS	L2	WPOS	Blade (Option)
C3CHSR/L22050N	32	50	22.1	35	11.5	CAER/L...
C4CHSR/L27050N	40	50	22.1	36	16.5	CAER/L...
C5CHSR/L35060N	50	60	32.1	36	24.5	CAER/L...
C6CHSR/L45065N	63	65	32.1	41	34.5	CAER/L...

*WFASSY : Shank (WPOS) + blade (WF)
**LFASSY : Shank (LPOS) + blade (LF)

Applicable for 7 MPa coolant.
Not compatible with TungModularSystem

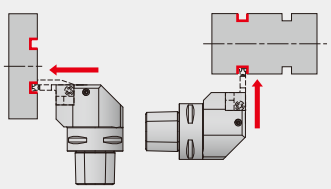
SPARE PARTS

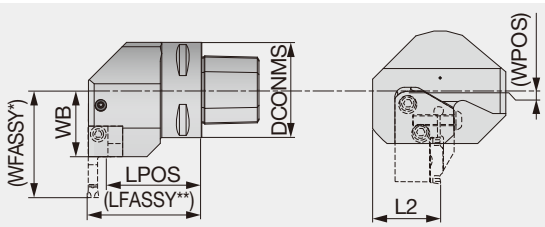
Designation	Coolant parts	Clamping screw	Wrench
C3CHSR/L22050N	SATZ-M8X1-M3	CSHB-6-A	P-4
C4CHSR/L27050N	SATZ-M8X1-M3	CSHB-6-A	P-4
C5CHSR/L35060N	SATZ-M10X1-M5	CSHB-6-A	P-4
C6CHSR/L45065N	SATE-M10X1-M5	CSHB-6-A	P-4

C-CHFVR/L

TUNGCAP

TungCap shank for CAER/L and CAFR/L blades





Right hand (R)
with left-hand blade shown.

Metric	DCONMS	LPOS	L2	WB	WPOS	Blade (Option)
C3CHFVR/L22040N	32	32.5	35	22	-5.9	CAEL/R...
C4CHFVR/L27050N	40	42.5	36	27	-0.9	CAEL/R...
C5CHFVR/L35060N	50	49.5	36	35	7.1	CAEL/R...
C6CHFVR/L45065N	63	54.5	41	45	17.1	CAEL/R...

*WFASSY : Shank (WPOS) + blade (LF)
**LFASSY : Shank (LPOS) + blade (WF)

Applicable for 7 MPa coolant.
Not compatible with TungModularSystem

SPARE PARTS

Designation	Coolant parts	Clamping screw	Wrench
C3CHFVR/L22040N	SATZ-M8X1-M3	CSHB-6-A	P-4
C4CHFVR/L27050N	SATZ-M8X1-M3	CSHB-6-A	P-4
C5CHFVR/L35060N	SATZ-M10X1-M5	CSHB-6-A	P-4
C6CHFVR/L45065N	SATZ-M10X1-M5	CSHB-6-A	P-4

Combination of blade and toolholder

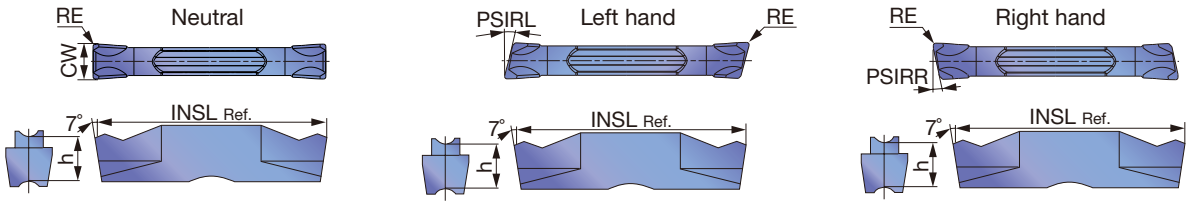
Toolholder	Blade			
	CAER...	CAEL...	CAFR...	CAFL...
C*CHSR...	●			●
C*CHSL...		●	●	
C*CHFVR...		●	●	
C*CHFVL...	●			●

● : Corresponding

Reference pages: Inserts → F023 - F036, Standard cutting conditions → F032

DGM

External grooving and parting, 2 corners



P	Steel	★	★	★	☆		☆			★			
M	Stainless	★		★	☆		★						
K	Cast iron	☆		★		☆	☆			☆			
N	Non-ferrous												
S	Superalloys			★	☆	★							
H	Hard materials												

★ : First choice
☆ : Second choice

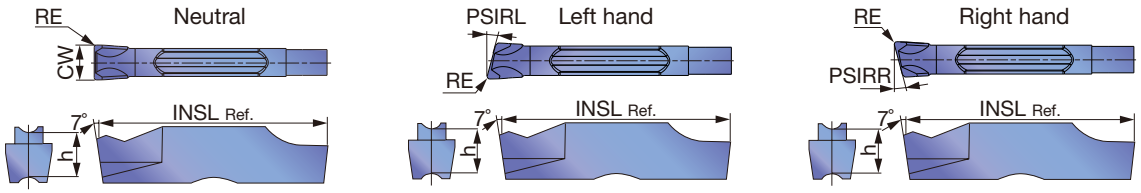
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet			INSL (in)	h (in)	PSIRL	PSIRR
						T9225	T9125	AH7025	AH725	AH905	GH130		NS9530						
DGM2-020	2	N	2	0.079	0.008	●	▲	●	●		●		●			0.787	0.197	0°	0°
DGM2-020-6R	2	R	2	0.079	0.008			●	●		●					0.787	0.197	0°	6°
DGM2-020-6L	2	L	2	0.079	0.008			●	●		●					0.787	0.197	6°	0°
DGM2-020-8R	2	R	2	0.079	0.008			●	●		●					0.787	0.197	0°	8°
DGM2-020-8L	2	L	2	0.079	0.008			●	●		●					0.787	0.197	8°	0°
DGM2-020-15R	2	R	2	0.079	0.008			●	●		●					0.787	0.197	0°	15°
DGM2-020-15L	2	L	2	0.079	0.008			●	●		●					0.787	0.197	15°	0°
DGM2-002-15R	2	R	2	0.079	0.0008				●		●					0.762	0.197	0°	15°
DGM2-002-15L	2	L	2	0.079	0.0008				●		●					0.762	0.197	15°	0°
DGM3-020	3	N	3	0.118	0.008	●	▲	●	●	●	●		●			0.787	0.197	0°	0°
DGM3-020-6R	3	R	3	0.118	0.008			●	●		●					0.787	0.197	0°	6°
DGM3-020-6L	3	L	3	0.118	0.008			●	●		●					0.787	0.197	6°	0°
DGM3-002-6R	3	R	3	0.118	0.0008				●		●					0.766	0.197	0°	6°
DGM3-002-6L	3	L	3	0.118	0.0008				●		●					0.766	0.197	6°	0°
DGM3-020-15R	3	R	3	0.118	0.008			●	●		●					0.787	0.197	0°	15°
DGM3-020-15L	3	L	3	0.118	0.008			●	●		●					0.787	0.197	15°	0°
DGM4-030	4	N	4	0.157	0.012	●	▲	●	●	●	●		●			0.787	0.197	0°	0°
DGM4-030-4R	4	R	4	0.157	0.012			●	●		●					0.787	0.197	0°	4°
DGM4-030-4L	4	L	4	0.157	0.012			●	●		●					0.787	0.197	4°	0°
DGM4-030-15R	4	R	4	0.157	0.012			●	●		●					0.787	0.197	0°	15°
DGM4-030-15L	4	L	4	0.157	0.012			●	●		●					0.787	0.197	15°	0°
DGM5-030	5	N	5	0.197	0.012	●	▲	●	●	●	●		●			0.984	0.217	0°	0°
DGM5-030-4R	5	R	5	0.197	0.012			●	●		●					0.984	0.217	0°	4°
DGM6-030	6	N	6	0.236	0.012	●	▲	●	●	●	●					0.984	0.217	0°	0°
DGM8-040	8	N	8	0.315	0.016	●	▲	●	●		●					1.181	0.264	0°	0°

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F010 - F022, Standard cutting conditions → F032

SGM

External deep grooving and parting, 1corner



P	Steel	★	☆	☆			
M	Stainless	★	☆	★			
K	Cast iron	★		☆			
N	Non-ferrous						
S	Superalloys	★	☆				
H	Hard materials						

★ : First choice
☆ : Second choice

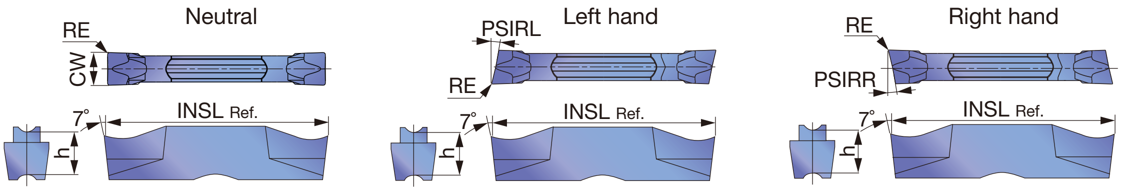
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	Coated AH725	Coated GH130	INSL (in)	h (in)	PSIRL	PSIRR
SGM2-020	2	N	2	0.079	0.008	●	●	●	0.787	0.197	0°	0°
SGM2-020-6R	2	R	2	0.079	0.008	●	●	●	0.787	0.197	0°	6°
SGM2-020-6L	2	L	2	0.079	0.008	●	●	●	0.787	0.197	6°	0°
SGM3-020	3	N	3	0.118	0.008	●	●	●	0.787	0.197	0°	0°
SGM3-020-6R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	6°
SGM3-020-6L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	6°	0°
SGM3-020-15R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	15°
SGM3-020-15L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	15°	0°
SGM4-030	4	N	4	0.157	0.012	●	●	●	0.787	0.197	0°	0°
SGM4-030-4R	4	R	4	0.157	0.012	●	●	●	0.787	0.197	0°	4°
SGM4-030-4L	4	L	4	0.157	0.012	●	●	●	0.787	0.197	4°	0°
SGM5-030	5	N	5	0.197	0.012	●	●	●	0.984	0.217	0°	0°
SGM6-030	6	N	6	0.236	0.012	●	●	●	0.984	0.217	0°	0°

● : Line up

Reference pages: Toolholders → F010 - F022, Standard cutting conditions → F032

DGS

External grooving and parting, 2 corners



		T9225	T9125	AH7025	AH725	GH130	NS9530
P	Steel	★	★	★	☆	☆	★
M	Stainless	★		★	☆	★	
K	Cast iron	☆		★		☆	☆
N	Non-ferrous						
S	Superalloys			★	☆		
H	Hard materials						

★ : First choice
☆ : Second choice

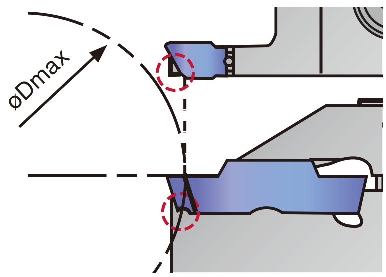
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated T9225	Coated T9125	Coated AH7025	Coated AH725	Coated GH130	Cermet NS9530	INSL (in)	h (in)	PSIRL	PSIRR
DGS1.4-016	1	N	1.4	0.055	0.006			●	●	●		0.630	0.169	0°	0°
DGS2-020	2	N	2	0.079	0.008	●	▲	●	●	●	●	0.787	0.197	0°	0°
DGS2-020-6R	2	R	2	0.079	0.008			●	●	●		0.787	0.197	0°	6°
DGS2-020-6L	2	L	2	0.079	0.008			●	●	●		0.787	0.197	6°	0°
DGS2-002-6R	2	R	2	0.079	0.0008				●	●		0.768	0.197	0°	6°
DGS2-002-6L	2	L	2	0.079	0.0008				●	●		0.768	0.197	6°	0°
DGS2-020-15R	2	R	2	0.079	0.008			●	●	●		0.787	0.197	0°	15°
DGS2-020-15L	2	L	2	0.079	0.008			●	●	●		0.787	0.197	15°	0°
DGS2-002-15R	2	R	2	0.079	0.0008				●	●		0.768	0.197	0°	15°
DGS2-002-15L	2	L	2	0.079	0.0008				●	●		0.768	0.197	15°	0°
DGS3-020	3	N	3	0.118	0.008	●	▲	●	●	●	●	0.787	0.197	0°	0°
DGS3-020-6R	3	R	3	0.118	0.008			●	●	●		0.787	0.197	0°	6°
DGS3-020-6L	3	L	3	0.118	0.008			●	●	●		0.787	0.197	6°	0°
DGS3-002-6R	3	R	3	0.118	0.0008				●	●		0.766	0.197	0°	6°
DGS3-002-6L	3	L	3	0.118	0.0008				●	●		0.766	0.197	6°	0°
DGS3-020-15R	3	R	3	0.118	0.008			●	●	●		0.787	0.197	0°	15°
DGS3-020-15L	3	L	3	0.118	0.008			●	●	●		0.787	0.197	15°	0°
DGS3-002-15R	3	R	3	0.118	0.0008				●	●		0.766	0.197	0°	15°
DGS3-002-15L	3	L	3	0.118	0.0008				●	●		0.766	0.197	15°	0°
DGS4-030	4	N	4	0.157	0.012	●	▲	●	●	●	●	0.787	0.197	0°	0°
DGS4-030-4R	4	R	4	0.157	0.012			●	●	●		0.787	0.197	0°	4°
DGS4-030-4L	4	L	4	0.157	0.012			●	●	●		0.787	0.197	4°	0°
DGS5-030	5	N	5	0.197	0.012	●	▲	●	●	●	●	0.984	0.217	0°	0°
DGS6-030	6	N	6	0.236	0.012	●	▲	●	●	●		0.984	0.217	0°	0°

● : Line up
▲ : To be discontinued

Caution

The tool will interfere with the workpiece when grooving larger diameter than øDmax.

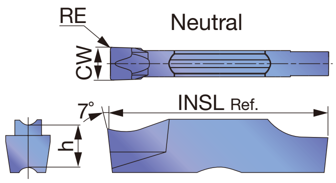
Designation	øDmax (in)	Designation	øDmax (in)
DGM2-002-15R/L	1.102	DGS2-002-15R/L	1.102
DGM3-002-15R/L	1.141	DGS3-002-15R/L	1.141
DGM4-030-15R/L	1.181	SGS3-020-15R/L	4.055
SGM3-020-15R/L	4.055	SGS3-002-15R/L	1.338

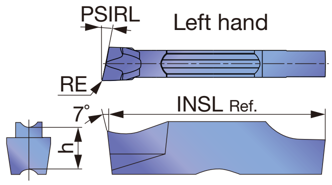


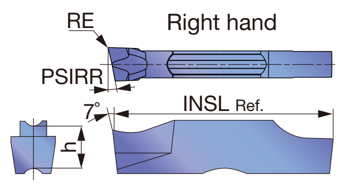
Reference pages: Toolholders → F010 - F022, Standard cutting conditions → F032

SGS

External deep grooving and parting, 1corner







		AH7025	AH725	GH130
P	Steel	★	☆	☆
M	Stainless	★	☆	★
K	Cast iron	★		☆
N	Non-ferrous			
S	Superalloys	★	☆	
H	Hard materials			

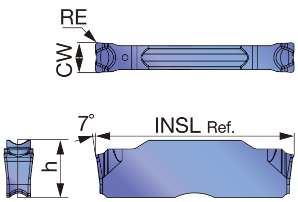
★ : First choice
☆ : Second choice

Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	Coated AH725	Coated GH130	INSL (in)	h (in)	PSIRL	PSIRR
SGS2-020	2	N	2	0.079	0.008	●	●	●	0.787	0.197	0°	0°
SGS2-020-6R	2	R	2	0.079	0.008	●	●	●	0.787	0.197	0°	6°
SGS2-020-6L	2	L	2	0.079	0.008	●	●	●	0.787	0.197	6°	0°
SGS2-020-15R	2	R	2	0.079	0.008	●	●	●	0.787	0.197	0°	15°
SGS2-020-15L	2	L	2	0.079	0.008	●	●	●	0.787	0.197	15°	0°
SGS3-020	3	N	3	0.118	0.008	●	●	●	0.787	0.197	0°	0°
SGS3-020-6R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	6°
SGS3-020-6L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	6°	0°
SGS3-002-6R	3	R	3	0.118	0.0008		●	●	0.780	0.197	0°	6°
SGS3-002-6L	3	L	3	0.118	0.0008		●	●	0.780	0.197	6°	0°
SGS3-020-15R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	15°
SGS3-020-15L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	15°	0°
SGS3-002-15R	3	R	3	0.118	0.0008		●	●	0.780	0.197	0°	15°
SGS3-002-15L	3	L	3	0.118	0.0008		●	●	0.780	0.197	15°	0°
SGS4-030	4	N	4	0.157	0.012	●	●	●	0.787	0.197	0°	0°
SGS5-030	5	N	5	0.197	0.012	●	●	●	0.984	0.217	0°	0°
SGS6-030	6	N	6	0.236	0.012	●	●	●	0.984	0.217	0°	0°

● : Line up

DGL

External grooving and parting



		AH7025
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

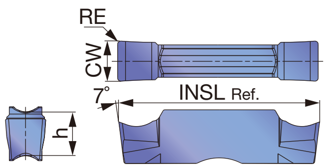
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	INSL (in)	h (in)
DGL3-025	3	3	0.118	0.010	●	0.787	0.197
DGL4-030	4	4	0.157	0.012	●	0.787	0.197
DGL5-030	5	5	0.197	0.012	●	0.984	0.217
DGL6-080	6	6	0.236	0.031	●	0.984	0.217

● : Line up

Reference pages: Toolholders → F010 - F022, Standard cutting conditions → F032

DGG
External grooving (for high precision)



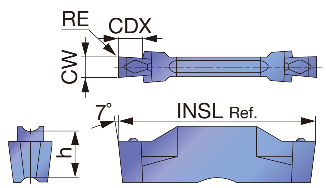
		AH7025	NS9530	KS05F
P	Steel	★	★	
M	Stainless	★		
K	Cast iron	★	☆	☆
N	Non-ferrous			★
S	Superalloys	★		☆
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated: AH7025	Cermet: NS9530	Uncoated: KS05F	INSL (in)	h (in)
DGG200-020	2	2	0.079	0.008	●	●	●	0.787	0.197
DGG300-020	3	3	0.118	0.008	●	●	●	0.787	0.197
DGG400-040	4	4	0.157	0.016	●	●	●	0.787	0.197
DGG500-040	5	5	0.197	0.016	●	●	●	0.984	0.217
DGG600-040	6	6	0.236	0.016	●	●	●	0.984	0.217

● : Line up

DGE
External grooving (for high precision)



		AH7025	AH725	GH130	NS9530
P	Steel	★	☆	☆	★
M	Stainless	★	☆	★	
K	Cast iron	★		☆	☆
N	Non-ferrous				
S	Superalloys	★	☆		
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.0008 (in)	RE (in)	Coated: AH7025	Coated: AH725	Coated: GH130	Cermet: NS9530	CDX (in)	INSL (in)	h (in)
DGE100-000	2	1	0.039	0		●	●	●	0.098	0.787	0.197
DGE130-000	2	1.3	0.051	0		●	●	●	0.098	0.787	0.197
DGE160-010	2	1.6	0.063	0.004	●	●	●	●	0.098	0.787	0.197
DGE185-010	2	1.85	0.073	0.004	●	●	●	●	0.138	0.787	0.197
DGE215-015	2	2.15	0.085	0.006	●	●	●	●	0.138	0.787	0.197

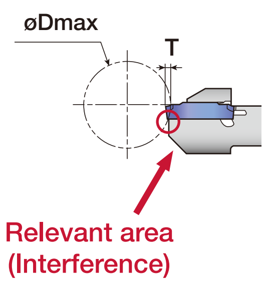
● : Line up

Caution

øDmax is limited as shown in the picture to the right according to the groove depth, T Please refer to the following table.

T = Groove depth

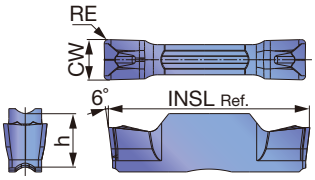
Designation	Max. groove depth (in)	øDmax (in) T = 0.039	T = 0.059	T = 0.079	T = 0.098	T = 0.118
DGE100-000	0.079	∞	0.73	0.45	-	-
DGE130-000						
DGE160-010						
DGE185-010	0.118				0.35	0.28
DGE215-015						



Reference pages: Toolholders → F010 - F022, Standard cutting conditions → F032

DTM

External face grooving and turning



P	Steel	★				
M	Stainless	★				
K	Cast iron	★				
N	Non-ferrous					
S	Superalloys	★				
H	Hard materials					

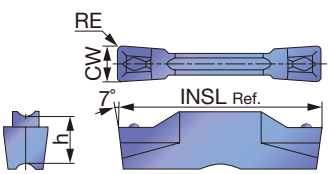
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated										INSL (in)	h (in)
					AH7025											
DTM3-030	3	3	0.118	0.012	●										0.787	0.197
DTM4-040	4	4	0.157	0.016	●										0.787	0.197
DTM4-080	4	4	0.157	0.031	●										0.787	0.197
DTM5-080	5	5	0.197	0.031	●										0.984	0.217
DTM6-080	6	6	0.236	0.031	●										0.984	0.217
DTM8-080	8	8	0.315	0.031	●										1.181	0.264

● : Line up

DTE

External face grooving and turning (for high precision)



P	Steel	★	★	★	☆	☆			★									
M	Stainless	★		★	☆	★												
K	Cast iron	☆		★		☆												
N	Non-ferrous																	
S	Superalloys			★	☆													
H	Hard materials																	

★ : First choice
☆ : Second choice

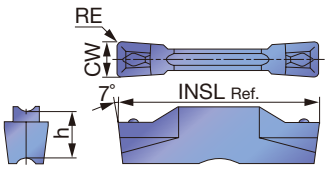
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated										Cermet								INSL (in)	h (in)
					T9225	T9125	AH7025	AH725	GH130						NS9530									
DTE265-015	3	2.65	0.104	0.006	●	▲	●	●	●						●								0.787	0.197
DTE300-020	3	3	0.118	0.008	●	▲	●	●	●						●								0.787	0.197
DTE300-040	3	3	0.118	0.016	●	▲	●	●	●						●								0.787	0.197
DTE315-015	3	3.15	0.124	0.006	●	▲	●	●	●						●								0.787	0.197
DTE400-040	4	4	0.157	0.016	●	▲	●	●	●						●								0.787	0.197
DTE400-080	4	4	0.157	0.031	●	▲	●	●	●						●								0.787	0.197
DTE415-015	4	4.15	0.163	0.006	●	▲	●	●	●						●								0.787	0.197
DTE478-055	5	4.78	0.188	0.022	●	▲	●	●	●						●								0.984	0.217
DTE500-040	5	5	0.197	0.016	●	▲	●	●	●						●								0.984	0.217
DTE500-080	5	5	0.197	0.031	●	▲	●	●	●						●								0.984	0.217
DTE515-015	5	5.15	0.203	0.006	●	▲	●	●	●														0.984	0.217
DTE600-080	6	6	0.236	0.031	●	▲	●	●	●														0.984	0.217
DTE600-120	6	6	0.236	0.047	●	▲	●	●	●														0.984	0.217
DTE800-080	8	8	0.315	0.031	●	▲	●	●	●														1.181	0.264
DTE800-120	8	8	0.315	0.047	●	▲	●	●	●														1.181	0.264

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F010 - F022, Standard cutting conditions → F032

DTE

External face grooving and turning



P	Steel	★	★		★	☆	☆			★			
M	Stainless	★			★	☆	★						
K	Cast iron	☆		★	★		☆						
N	Non-ferrous												
S	Superalloys				★	☆							
H	Hard materials												

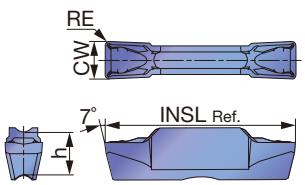
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet				INSL (in)	h (in)
					T9225	T9125	T515	AH7025	AH725	GH130		NS9530					
DTE3-040	3	3	0.118	0.016	●	▲	●	●	●	●		●				0.787	0.197
DTE4-040	4	4	0.157	0.016	●	▲	●	●	●	●		●				0.787	0.197
DTE5-040	5	5	0.197	0.016			●	●								0.984	0.217
DTE6-080	6	6	0.236	0.031			●	●								0.984	0.217

● : Line up
▲ : To be discontinued

DTX

External/Internal face grooving and turning



P	Steel	★	★	★	☆	☆			★				
M	Stainless	★		★	☆	★							
K	Cast iron	☆		★		☆			☆				
N	Non-ferrous												
S	Superalloys			★	☆								
H	Hard materials												

★ : First choice
☆ : Second choice

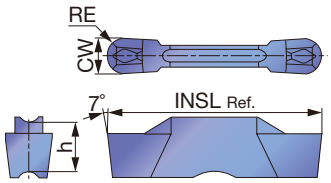
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet				INSL (in)	h (in)
					T9225	T9125	AH7025	AH725	GH130			NS9530					
DTX3-030	3	3	0.118	0.012	●	▲	●	●	●			●				0.787	0.197
DTX4-040	4	4	0.157	0.016	●	▲	●	●	●			●				0.787	0.197
DTX5-040	5	5	0.197	0.016	●	▲	●	●	●			●				0.984	0.217
DTX6-080	6	6	0.236	0.031			●	●	●							0.984	0.197

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F010 - F022, Standard cutting conditions → F032

DTR

Profiling and undercutting (for high precision)



P	Steel	★	★	★	☆	☆			★				
M	Stainless	★		★	☆	★							
K	Cast iron	☆		★		☆			☆				
N	Non-ferrous												
S	Superalloys			★	☆								
H	Hard materials												

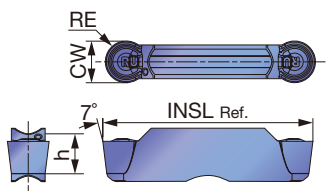
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated							Cermet				INSL (in)	h (in)
					T9225	T9125	AH7025	AH725	GH130			NS9530					
DTR300-150	3	3	0.118	0.059	●	▲	●	●	●			●				0.787	0.197
DTR400-200	4	4	0.157	0.079	●	▲	●	●	●			●				0.787	0.197
DTR478-239	5	4.78	0.188	0.094	●	▲	●	●	●			●				0.984	0.217
DTR500-250	5	5	0.197	0.098	●	▲	●	●	●			●				0.984	0.217
DTR600-300	6	6	0.236	0.118	●	▲	●	●	●							0.984	0.217

● : Line up
▲ : To be discontinued

DTR

Profiling and undercutting



P	Steel	★	★	★	☆		☆			★			
M	Stainless	★		★	☆		★						
K	Cast iron	☆		★		☆	☆			☆			
N	Non-ferrous												
S	Superalloys			★	☆	★							
H	Hard materials												

★ : First choice
☆ : Second choice

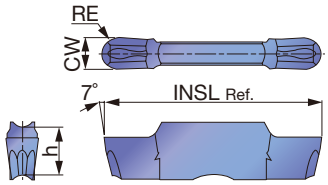
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet				INSL (in)	h (in)
					T9225	T9125	AH7025	AH725	AH905	GH130		NS9530					
DTR3-150	3	3	0.118	0.059	●	▲	●	●	●	●		●				0.787	0.197
DTR4-200	4	4	0.157	0.079	●	▲	●	●	●	●		●				0.787	0.197
DTR5-250	5	5	0.197	0.098	●	▲	●	●	●	●		●				0.984	0.217
DTR6-300	6	6	0.236	0.118	●	▲	●	●		●						0.984	0.217
DTR8-400	8	8	0.315	0.157	●	▲	●	●		●						1.181	0.264

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F010 - F022, Standard cutting conditions → F032

DTIU

Profiling and undercutting (for high precision)



P	Steel	★	☆	☆				
M	Stainless	★	☆	★				
K	Cast iron	★		☆				
N	Non-ferrous							
S	Superalloys	★	☆					
H	Hard materials							

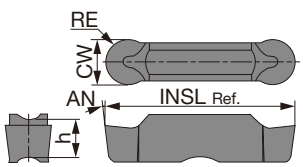
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated AH7025	Coated AH725	Coated GH130	INSL (in)	h (in)
DTIU300-150	3	3	0.118	0.059	●	●	●	0.787	0.197
DTIU400-200	4	4	0.157	0.079	●	●	●	0.787	0.197
DTIU500-250	5	5	0.197	0.098	●	●	●	0.984	0.217
DTIU600-300	6	6	0.236	0.118	●	●	●	0.984	0.217

● : Line up

DTA

Aluminum wheel machining (for high precision)



P	Steel							
M	Stainless							
K	Cast iron							
N	Non-ferrous	★						
S	Superalloys							
H	Hard materials							

★ : First choice
☆ : Second choice

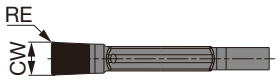
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Uncoated TH10	INSL (in)	h (in)	AN
DTA600-300	6	6	0.236	0.118	●	0.984	0.217	7°
DTA800-400	8	8	0.315	0.157	●	1.181	0.264	10°

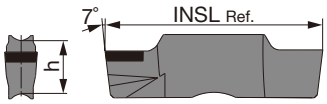
● : Line up

Reference pages: Toolholders → F010 - F022, Standard cutting conditions → F032

SGN

External grooving of hardened steel





P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloys
H	Hard materials ★

★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	CBN BX360	INSL (in)	h (in)
SGN200-020	2	2	0.079	0.008	●	0.787	0.197
SGN300-020	3	3	0.118	0.008	●	0.787	0.197
SGN400-020	4	4	0.157	0.008	●	0.787	0.197

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 4135, etc.	< 300 HB	First choice	AH7025, AH725	164 - 591
		< 300 HB	Priority for wear resistance	T9225	262 - 984
		< 300 HB	Priority for impact resistance	GH130	164 - 394
		< 300 HB	Priority for surface finish	NS9530	262 - 722
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	< 200 HB	First choice	AH7025, AH725	164 - 394
		< 200 HB	Priority for impact resistance	GH130	164 - 394
K	Gray cast iron No.250B, No.300B, etc.	-	First choice	T515, AH7025	164 - 591
		-	Priority for impact resistance	GH130	164 - 591
	Ductile cast iron 60-40-18, 60-55-06, etc.	-	First choice	T515, AH7025	164 - 394
		-	Priority for impact resistance	GH130	164 - 394
N	Aluminum alloys Si < 12%	-	First choice	TH10	328 - 1640
		-	First choice	KS05F	328 - 1969
S	Superalloys Inconel 718, etc.	< HRC 40	First choice	AH7025	66 - 197
		< HRC 40	Priority for wear resistance	AH905	66 - 262
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	First choice	AH905	66 - 262
		< HRC 40	Priority for impact resistance	AH7025, AH725	66 - 262
		< HRC 40	Priority for surface finish	KS05F	66 - 197
H	Hardened steel 4137, etc.	> HRC 50	First choice	BX360	262 - 492

*See page F033 - F035 for feed: *f* (ipr).

Reference pages: Toolholders → F010 - F022

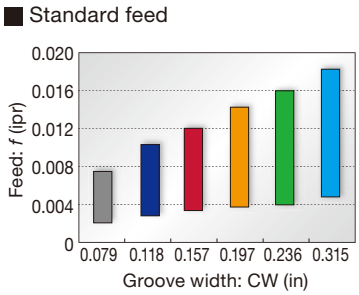
External grooving and parting

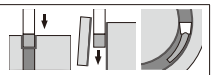
DGM type (2 corners) SGM type (1 corner)

F023, F024 page

1st choice for grooving and parting

Smooth chip evacuation
Well-designed edge with high strength
Handed insert available
CW = 0.079" - 0.315"



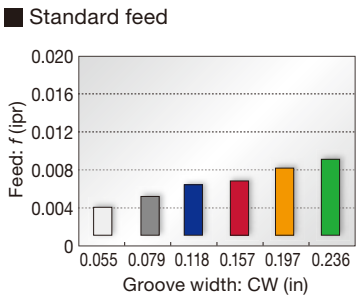


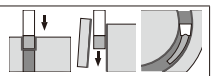
DGS type (2 corners) SGS type (1 corner)

F025, F026 page

Lower cutting force and superior sharpness

Unique-designed edge and chipbreaker
Handed insert available
CW = 0.055" - 0.236"



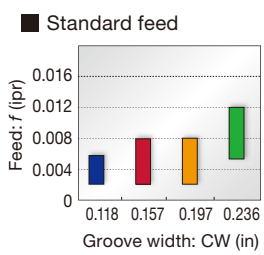


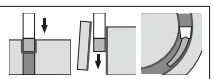
DGL type (2 corners)

F026 page

1st choice for mild steel

Chipbreaker with excellent chip control at low feed
Suitable for mild steel that often has difficulties with chip control
CW = 0.118" - 0.236"



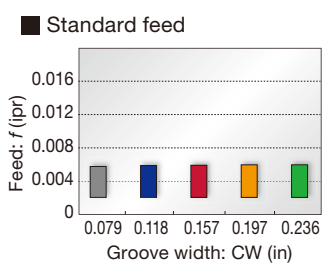


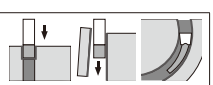
DGG type (2 corners)

F027 page

For non-ferrous materials and titanium

Chipbreaker with low cutting force
Sharp cutting edge that prevents vibration and delivers fine surface finish
CW = 0.079" - 0.236"



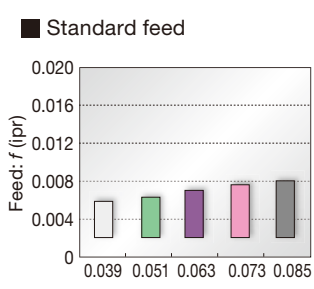


DGE type (2 corners)

F027 page

For high accurate and shallow groove

Excellent chip control
CW = 0.039" - 0.085"



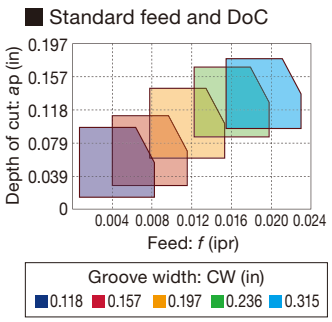
External grooving and turning

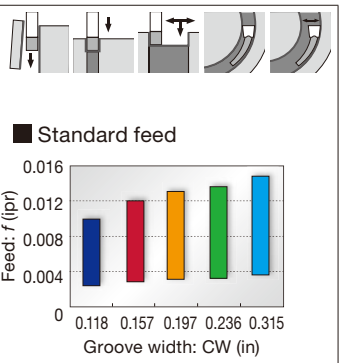
DTM type (2 corners)

F028 page

General purpose

1st choice for grooving and turning
Suitable for light to medium cutting
Excellent chip control in machining steel, alloy steel, stainless steel, and heat-resistant alloy
CW = 0.118" - 0.315"



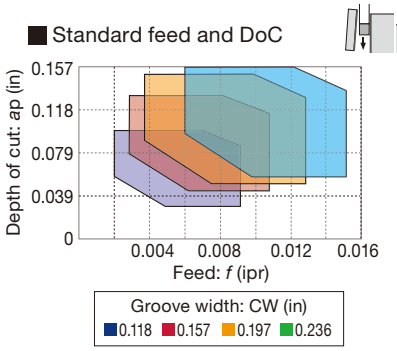


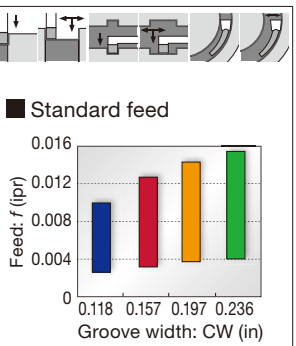
DTX type (2 corners)

F029 page

Multi-functional type

Well balanced sharpness and strength
Multi-functional insert
CW = 0.118" - 0.236"



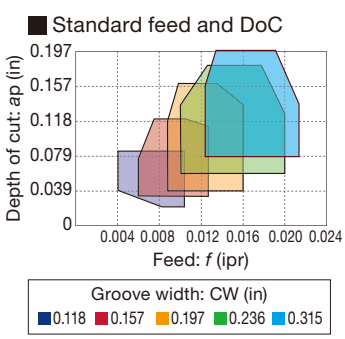


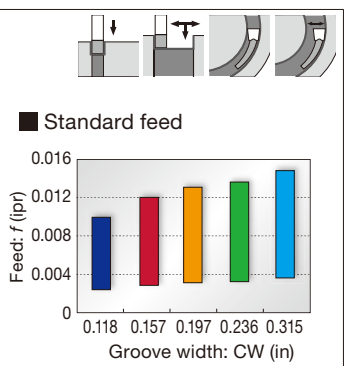
DTE type (2 corners)

F028, F029 page

General purpose

Unique chipbreaker makes chips shorter
Molded and ground insert available
CW = 0.118" - 0.315"





Profiling and undercutting

DTR type (2 corners)

Molded

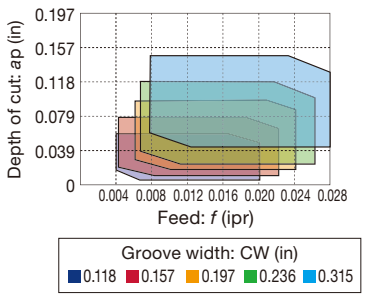
Ground

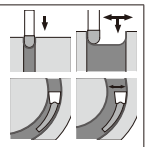
F030 page

Full radius type

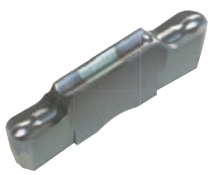
Excellent chip control
Molded and ground inserts available
CW = 0.118" - 0.315"

Standard feed and DoC





DTIU type (2 corners)

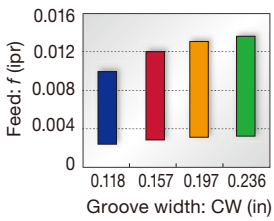


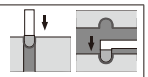
F031 page

Full radius type

Excellent chip control
For undercutting
CW = 0.118" - 0.236"

Standard feed and DoC





Aluminum wheel machining

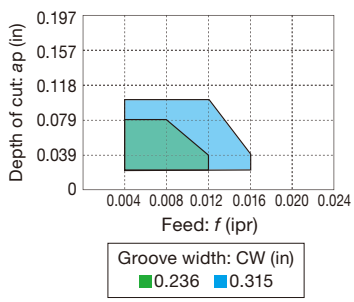
DTA type (2 corners)

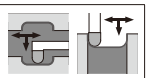
F031 page

Full radius type

Excellent chip control
For aluminum wheel profiling
Ground insert
CW = 0.236" - 0.315"

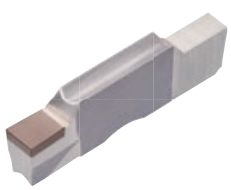
Standard feed and DoC





External grooving of hardened steel

SGN-CBN type (1 corner)

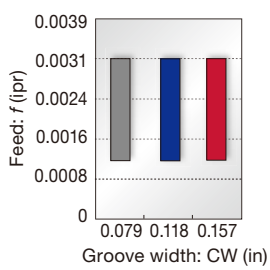


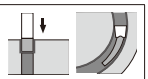
F032 page

For hardened steel cutting

Optimum cutting edge shape for grooving of hardened steels
High tolerance width for finishing
CW = 0.079" - 0.157"
(CW = ±0.001")

Standard feed



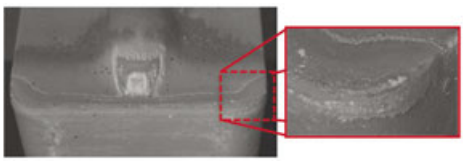


AH7025 Cutting performance

First choice grade for grooving
AH7025 grade: Tungaloy's unique coating technology for drastically improved reliability

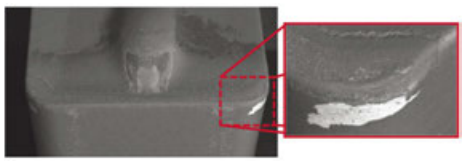
Tool life comparison

AH7025



Tool wear after 60 grooves

Conventional grade



Tool wear after 30 grooves

P Alloy steel (4140)

Insert : DTE3-040 AH7025
Cutting speed : *Vc* = 492 sfm
Feed : *f* = 0.007 ipr
Groove depth : 0.669"
Machining : External grooving
Coolant : Wet

AH7025 provides stability, while preventing coating from peeling off even after machining twice the number of passes compared to the conventional grade.

→ **The combination of Nano-multi-layered AlTiN Coating with high Al content and tough substrate provides highly efficient machining in various grooving operations.**

Grades

AH7025 P M K S

- First choice for various applications
- New PVD coating with high Al content provides excellent adhesion strength
- Improved wear and chipping resistance

AH725 P M S

- Recommended for various applications
- Newly developed coating with well controlled crystal structure and fracture resistance
- Improved adhesion strength

T515 K

- First recommended grade for cast iron
- Excellent wear resistance in high-speed machining

T9225 P

- Suitable for steel machining at high speeds
- New CVD coating and substrate deliver an outstanding balance of wear and chipping resistance

NS9530 P

- Advanced cermet for finish cutting of steel
- Innovative grade with incredible fracture and high wear resistance

GH130 P M K

- Recommended for interrupted machining
- TiCNO PVD coating layer with high wear resistance
- High hardness wear resistance

AH905 S

- Remarkable for machining of heat resistant alloys
- Exclusive coating layer improves adhesion strength and wear resistance

KS05F N S

- Recommended for non-ferrous materials and titanium

TH10 N

- Recommended for non-ferrous materials

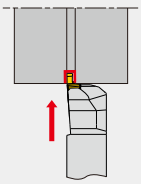
BX360 H

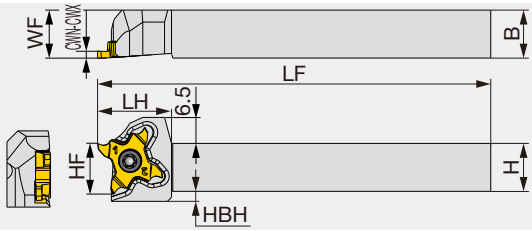
- Suitable for hardened steel machining
- Ideal balance of wear and chipping resistance due to the optimum CBN content and grain size

TETRAMINI CUT

STCR/L-18

External grooving and threading toolholder





Right hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HF	WF	HBH	Insert	Torque
STCR/L06-18	0.013	0.118	0.375	0.375	4.750	0.740	0.375	0.375	0.177	TC*18...	0.89
STCR/L08-18	0.013	0.118	0.500	0.500	4.750	0.740	0.500	0.500	0.098	TC*18...	0.89
STCR/L10-18	0.013	0.118	0.625	0.625	4.750	0.740	0.625	0.625	-	TC*18...	0.89
STCR/L12-18	0.013	0.118	0.750	0.750	4.750	0.900	0.750	1.000	-	TC*18...	0.89
STCR/L16-18	0.013	0.118	1.000	1.000	5.500	0.900	1.000	1.250	-	TC*18...	0.89

Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
Torque: Recommended clamping torque: lbs·ft

SPARE PARTS

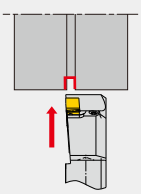
Designation	Clamping screw	Wrench
STCR**-18	CSTC-4L100DL	T-1008/5
STCL**-18	CSTC-4L100DR	T-1008/5

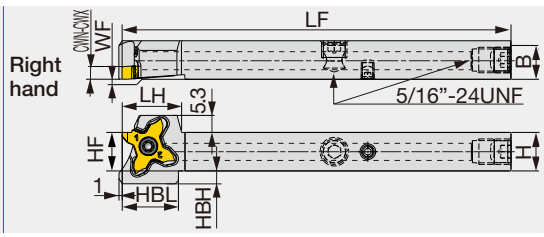
TETRAMINI CUT

TUNGTURN TJET

STCR/L-X18-CHP

External grooving and threading toolholder with high pressure coolant capability





Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF	HBH	Insert	Torque
STCR/L08X18-CHP (1)	0.013	0.118	0.500	0.500	4.750	0.728	0.689	0.500	0/0.500	0.130	TC*18...	0.89
STCR/L10X18-CHP (1)	0.013	0.118	0.625	0.625	4.750	0.728	-	0.625	0/0.625	-	TC*18...	0.89

Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
(1) Compatible to the direct internal coolant supply system without the use of external coolant hose.
Torque: Recommended clamping torque: lbs·ft

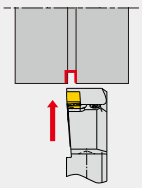
SPARE PARTS

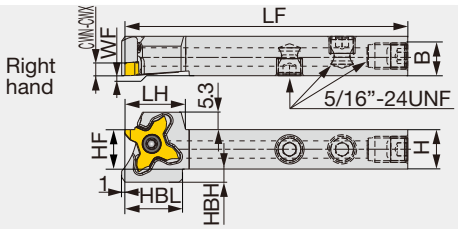
Designation	Clamping screw	Wrench
STCL**18-CHP	CSTC-4L100DR	T-1008/5
STCR**18-CHP	CSTC-4L100DL	T-1008/5

Reference pages: Inserts → F042 - F047, Standard cutting conditions → F048, Parts for coolant hose → F240

STCR/L-F18-CHP

External grooving and threading toolholder, with high pressure coolant capability





Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF	HBH	Insert	Torque
STCR/L08F18-CHP	0.013	0.118	0.500	0.500	3.344	0.728	0.689	0.500	0/0.500	0.130	TC*18...	0.89

Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
Torque: Recommended clamping torque: lb·ft

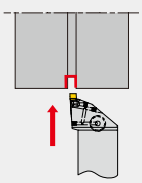
SPARE PARTS

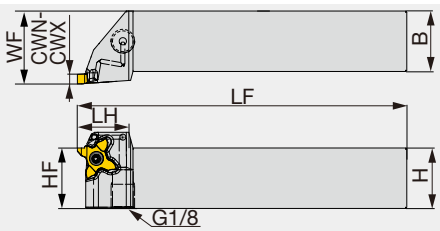
Designation	Clamping screw	Wrench
STCL**18-CHP	CSTC-4L100DR	T-1008/5
STCR**18-CHP	CSTC-4L100DL	T-1008/5

STCR/L-18-CHP

TUNGTJET URN

Threading tool - for external theading with high pressure coolant capability





Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF	HBH	Insert	Torque
STCR/L12-18-CHP	0.013	0.118	0.750	0.750	4.750	0.900	-	0.750	1.000	-	TC*18...	0.890
STCR/L16-18-CHP	0.013	0.118	1.000	1.000	5.500	.900	-	1.000	1.250	-	TC*18...	0.890

Use the right hand insert (TC*18R...) with the right hand toolholders (STCR...). Use the left hand insert (TC*18L) with the left hand holder (STCL...).
Torque: Recommended clamping torque: lb·ft

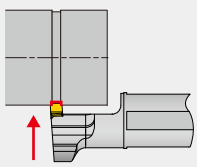
SPARE PARTS

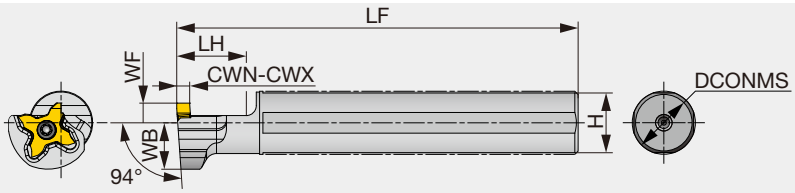
Designation	Clamping screw	Wrench
STCL**18-CHP	CSTC-4L100DR	T-1008/5
STCR**18-CHP	CSTC-4L100DL	T-1008/5

Reference pages: Inserts → F042 - F047, Standard cutting conditions → F048, Parts for coolant hose → F240

JS-STCL18

External grooving and threading toolholder with round shank, for Swiss lathes





Left hand (L) shown.

Metric	CWN	CWX	DCONMS	H	LF	LH	WB	WF	Insert	Torque
JS14H-STCL18	0.33	3	14	13	100	20	14	6	TC*18R...	1.2
JS159F-STCL18	0.33	3	15.875	15	85	20	14	6	TC*18R...	1.2
JS16F-STCL18	0.33	3	16	15	85	20	14	6	TC*18R...	1.2
JS19G-STCL18	0.33	3	19.05	18	90	20	14	6	TC*18R...	1.2
JS19X-STCL18	0.33	3	19.05	18	120	20	14	6	TC*18R...	1.2
JS20G-STCL18	0.33	3	20	19	90	20	14	6	TC*18R...	1.2
JS20X-STCL18	0.33	3	20	19	120	20	14	6	TC*18R...	1.2
JS22X-STCL18	0.33	3	22	21	120	20	12.25	10	TC*18R...	1.2
JS25H-STCL18	0.33	3	25	24	100	20	12.25	10	TC*18R...	1.2
JS254X-STCL18	0.33	3	25.4	24	120	20	12.25	10	TC*18R...	1.2

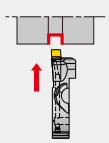
Please use right-hand inserts.
Torque: Recommended clamping torque: N·m

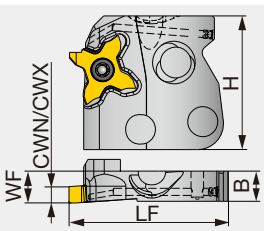
SPARE PARTS


Designation	Clamping screw	Wrench
JS****-STCL18	CSTC-4L100DL	T-1008/5

STCAR/L18-CHP

Modular-type external grooving and parting blade, with high pressure coolant capability





Right hand (R) shown.

Inch	CWN	CWX	WF	H	LF	B	Insert	Torque
STCAR/L18-CHP	0.013	0.118	0.295	1.299	1.496	0.283	TC*18...	0.89

Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
Torque: Recommended clamping torque: lb·ft

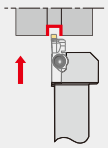
SPARE PARTS

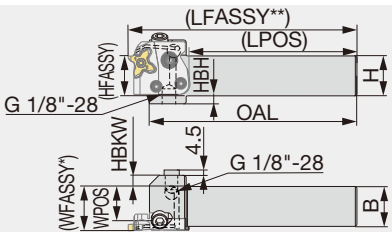

Designation	Clamping screw	Wrench
STCAL18-CHP	CSTC-4L100DR	T-1008/5
STCAR18-CHP	CSTC-4L100DL	T-1008/5

Reference pages: Inserts → F042 - F047, Standard cutting conditions → F048, Parts for coolant hose → F240

CHSR/L-CHP

Shank for blades with high pressure coolant capability





Right hand (R) shown.

Inch	H	B	OAL	LPOS	WPOS	HBKW	HFASSY	HBH
CHSR/L12-CHP	0.750	0.750	5.000	4.035	0.560	0.510	0.750	0.190
CHSR/L16-CHP	1.000	1.000	5.000	4.035	0.810	0.260	1.000	0.200

*WFASSY : shank (WPOS) + blade (WF)
**LFASSY : shank (LPOS) + blade (LF)

Use right-hand blades (R) with right-hand shanks (R); and left-hand blades (L) with left-hand shanks (L).
Applicable for 30 MPa coolant
Please see the page **L043** for the instruction on installing and removing the blade.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHSR/L**-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N	PLUGG1/8ISO1179

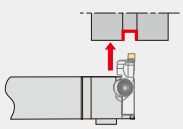
Recommended clamping torque (lbs·ft, N·m)

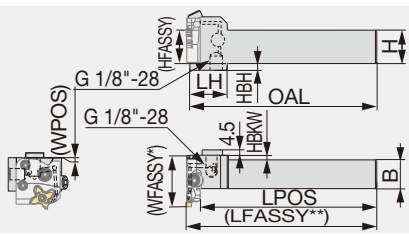
Clamping screw	Torque (lbs·ft)	Torque (N·m)
SRM5-04451	3.69	5
SRM6X12DIN6912	6.27	8.5
SRM6X20-XT	6.27	8.5

CHFVR/L-CHP

TUNGMODULAR SYSTEM

Shank for blades with high pressure coolant capability





Right hand (R)
with left-hand blade shown.

Inch	H	B	OAL	LH	LPOS	WPOS	HBKW	HFASSY	HBH
CHFVR/L12-CHP	0.750	0.750	5.500	1.100	5.307	0.020	0.234	0.750	0.431
CHFVR/L16-CHP	1.000	1.000	5.500	1.100	5.307	0.020	-	1.000	0.200

*WFASSY : shank (WPOS) + blade (LF)
**LFASSY : shank (LPOS) + blade (WF)

Use left-hand blades (L) with right-hand shanks (R); and right-hand blades (R) with left-hand shanks (L).
Applicable for 30 MPa coolant
Please see the page **L043** for the instruction on installing and removing the blade.

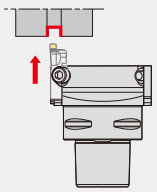
SPARE PARTS

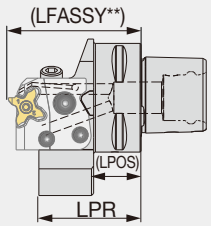
Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHFVR/L**-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N	PLUGG1/8ISO1179

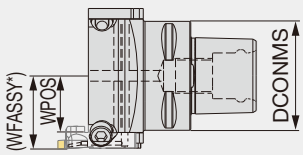
Reference pages: Inserts → F042 - F047, Standard cutting conditions → F048, Parts for coolant hose → F240

C*CHSN-CHP

TungCap shank for CAER/L-CHP blades with high pressure coolant capability







Right-hand (R) blade shown.

Metric	DCONMS	LPR	LPOS	WPOS
C3CHSN19045-CHP	32	45	17.5	18.5
C4CHSN21047-CHP	40	46.5	21.5	21
C5CHSN26047-CHP	50	47	22.5	26
C6CHSN33050-CHP	63	50	24.5	32.5

*WFASSY : shank (WPOS) + blade (WF)
**LFASSY : shank (LPOS) + blade (LF)

Applicable for 30 MPa coolant
Please see the page **L043** for the instruction on installing and removing the blade.

SPARE PARTS

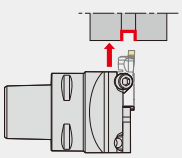
Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring
C*CHSN**-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N

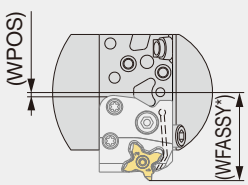
Recommended clamping torque (lbs·ft, N·m)

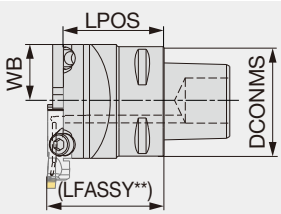
Clamping screw	Torque (lbs·ft)	Torque (N·m)
SRM5-04451	3.69	5
SRM6X12DIN6912	6.27	8.5
SRM6X20-XT	6.27	8.5

C*CHFVN-CHP

TungCap shank for CAER/L-CHP blades with high pressure coolant capability







Left-hand (L) blade shown.

Inch	DCONMS	LPOS	WB	WPOS
C3CHFVN26040-CHP	1.260	1.575	1.024	0.059
C4CHFVN26046-CHP	1.575	1.811	1.024	0.059
C5CHFVN26046-CHP	1.969	1.811	1.024	0.059
C6CHFVN33046-CHP	2.480	1.811	1.299	0.335

*WFASSY : shank (WPOS) + blade (LF)
**LFASSY : shank (LPOS) + blade (WF)

Applicable for 30 MPa coolant
Please see the page **L043** for the instruction on installing and removing the blade.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring
C*CHFVN**-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N

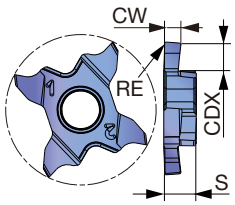
Recommended clamping torque (lbs·ft, N·m)

Clamping screw	Torque (lbs·ft)	Torque (N·m)
SRM5-04451	3.69	5
SRM6X12DIN6912	6.27	8.5
SRM6X20-XT	6.27	8.5

Reference pages: Inserts → **F042 - F047**, Standard cutting conditions →**F048**, Parts for coolant hose → **F240**

INSERT

TCG18R/L (with edge preparation)



P	Steel	★			
M	Stainless	★			
K	Cast iron	★			
N	Non-ferrous				
S	Superalloys	★			
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)	S (in)
TCG18R100-010	R	1	0.039	0.004	●	0.079	0.157
TCG18L100-010	L	1	0.039	0.004	●	0.079	0.157
TCG18R120-010	R	1.2	0.047	0.004	●	0.079	0.157
TCG18L120-010	L	1.2	0.047	0.004	●	0.079	0.157
TCG18R125-010	R	1.25	0.049	0.004	●	0.079	0.157
TCG18L125-010	L	1.25	0.049	0.004	●	0.079	0.157
TCG18R125-020	R	1.25	0.049	0.008	●	0.079	0.157
TCG18L125-020	L	1.25	0.049	0.008	●	0.079	0.157
TCG18R130-020	R	1.3	0.051	0.008	●	0.079	0.157
TCG18L130-020	L	1.3	0.051	0.008	●	0.079	0.157
TCG18R140-010	R	1.4	0.055	0.004	●	0.138	0.157
TCG18L140-010	L	1.4	0.055	0.004	●	0.138	0.157
TCG18R140-020	R	1.4	0.055	0.008	●	0.138	0.157
TCG18L140-020	L	1.4	0.055	0.008	●	0.138	0.157
TCG18R145-010	R	1.45	0.057	0.004	●	0.138	0.157
TCG18L145-010	L	1.45	0.057	0.004	●	0.138	0.157
TCG18R145-020	R	1.45	0.057	0.008	●	0.138	0.157
TCG18L145-020	L	1.45	0.057	0.008	●	0.138	0.157
TCG18R150-010	R	1.5	0.059	0.004	●	0.138	0.157
TCG18L150-010	L	1.5	0.059	0.004	●	0.138	0.157
TCG18R150-020	R	1.5	0.059	0.008	●	0.138	0.157
TCG18L150-020	L	1.5	0.059	0.008	●	0.138	0.157
TCG18R160-020	R	1.6	0.063	0.008	●	0.138	0.157
TCG18L160-020	L	1.6	0.063	0.008	●	0.138	0.157
TCG18R170-020	R	1.7	0.067	0.008	●	0.138	0.157
TCG18L170-020	L	1.7	0.067	0.008	●	0.138	0.157
TCG18R175-010	R	1.75	0.069	0.004	●	0.138	0.157
TCG18L175-010	L	1.75	0.069	0.004	●	0.138	0.157
TCG18R175-020	R	1.75	0.069	0.008	●	0.138	0.157
TCG18L175-020	L	1.75	0.069	0.008	●	0.138	0.157
TCG18R185-020	R	1.85	0.073	0.008	●	0.138	0.157
TCG18L185-020	L	1.85	0.073	0.008	●	0.138	0.157
TCG18R195-020	R	1.95	0.077	0.008	●	0.138	0.157
TCG18L195-020	L	1.95	0.077	0.008	●	0.138	0.157

See page F048 for precautions of processing.

5 pieces per package
● : Line up

Reference pages: Toolholders → F037 - F041, Standard cutting conditions → F048

P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated	CDX (in)	S (in)
					AH7025		
TCG18R200-010	R	2	0.079	0.004	●	0.138	0.157
TCG18L200-010	L	2	0.079	0.004	●	0.138	0.157
TCG18R200-020	R	2	0.079	0.008	●	0.138	0.157
TCG18L200-020	L	2	0.079	0.008	●	0.138	0.157
TCG18R225-020	R	2.25	0.089	0.008	●	0.138	0.157
TCG18L225-020	L	2.25	0.089	0.008	●	0.138	0.157
TCG18R230-020	R	2.3	0.091	0.008	●	0.138	0.157
TCG18L230-020	L	2.3	0.091	0.008	●	0.138	0.157
TCG18R250-010	R	2.5	0.098	0.004	●	0.138	0.157
TCG18L250-010	L	2.5	0.098	0.004	●	0.138	0.157
TCG18R250-020	R	2.5	0.098	0.008	●	0.138	0.157
TCG18L250-020	L	2.5	0.098	0.008	●	0.138	0.157
TCG18R250-030	R	2.5	0.098	0.012	●	0.138	0.157
TCG18L250-030	L	2.5	0.098	0.012	●	0.138	0.157
TCG18R265-030	R	2.65	0.104	0.012	●	0.138	0.157
TCG18L265-030	L	2.65	0.104	0.012	●	0.138	0.157
TCG18R280-030	R	2.8	0.110	0.012	●	0.138	0.157
TCG18L280-030	L	2.8	0.110	0.012	●	0.138	0.157
TCG18R300-010	R	3	0.118	0.004	●	0.138	0.157
TCG18L300-010	L	3	0.118	0.004	●	0.138	0.157
TCG18R300-020	R	3	0.118	0.008	●	0.138	0.157
TCG18L300-020	L	3	0.118	0.008	●	0.138	0.157
TCG18R300-030	R	3	0.118	0.012	●	0.138	0.157
TCG18L300-030	L	3	0.118	0.012	●	0.138	0.157

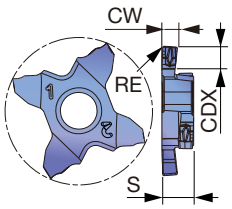
Please see the page F048 for precautions of processing.

5 pieces per package
● : Line up

Reference pages: Toolholders → F037 - F041, Standard cutting conditions → F048

INSERT

TCS18R (3D chipbreaker, honed edge)



P	Steel	★			
M	Stainless	★			
K	Cast iron	★			
N	Non-ferrous				
S	Superalloys	★			
H	Hard materials				

★ : First choice
☆ : Second choice

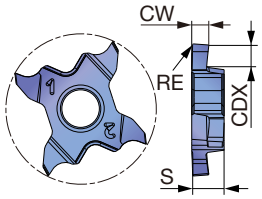
Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)	S (in)
TCS18R100-010	R	1	0.039	0.004	●	0.079	0.157
TCS18R120-010	R	1.2	0.047	0.004	●	0.079	0.157
TCS18R125-010	R	1.25	0.049	0.004	●	0.079	0.157
TCS18R125-020	R	1.25	0.049	0.008	●	0.079	0.157
TCS18R130-020	R	1.3	0.051	0.008	●	0.138	0.157
TCS18R140-010	R	1.4	0.055	0.004	●	0.138	0.157
TCS18R140-020	R	1.4	0.055	0.008	●	0.138	0.157
TCS18R145-010	R	1.45	0.057	0.004	●	0.138	0.157
TCS18R150-010	R	1.5	0.059	0.004	●	0.138	0.157
TCS18R150-020	R	1.5	0.059	0.008	●	0.138	0.157
TCS18R160-020	R	1.6	0.063	0.008	●	0.138	0.157
TCS18R170-020	R	1.7	0.067	0.008	●	0.138	0.157
TCS18R175-010	R	1.75	0.069	0.004	●	0.138	0.157
TCS18R175-020	R	1.75	0.069	0.008	●	0.138	0.157
TCS18R185-020	R	1.85	0.073	0.008	●	0.138	0.157
TCS18R195-020	R	1.95	0.077	0.008	●	0.138	0.157
TCS18R200-010	R	2	0.079	0.004	●	0.138	0.157
TCS18R200-020	R	2	0.079	0.008	●	0.138	0.157
TCS18R225-020	R	2.25	0.089	0.008	●	0.138	0.157
TCS18R230-020	R	2.3	0.091	0.008	●	0.138	0.157
TCS18R250-010	R	2.5	0.098	0.008	●	0.138	0.157
TCS18R250-020	R	2.5	0.098	0.008	●	0.138	0.157
TCS18R250-030	R	2.5	0.098	0.012	●	0.138	0.157
TCS18R265-030	R	2.65	0.104	0.012	●	0.138	0.157
TCS18R280-030	R	2.8	0.110	0.012	●	0.138	0.157
TCS18R300-010	R	3	0.118	0.004	●	0.138	0.157
TCS18R300-020	R	3	0.118	0.008	●	0.138	0.157
TCS18R300-030	R	3	0.118	0.012	●	0.138	0.157

Please see the page F048 for precautions of processing.

5 pieces per package
● : Line up

Reference pages: Toolholders → F037 - F041, Standard cutting conditions → F048

TCP18R/L (lightly honed edge)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	S (in)
TCP18R033-005	R	0.33	0.013	0.002	●	0.031	0.157
TCP18L033-005	L	0.33	0.013	0.002	●	0.031	0.157
TCP18R043-005	R	0.43	0.017	0.002	●	0.047	0.157
TCP18L043-005	L	0.43	0.017	0.002	●	0.047	0.157
TCP18R050-005	R	0.50	0.020	0.002	●	0.047	0.157
TCP18L050-005	L	0.50	0.020	0.002	●	0.047	0.157
TCP18R075-005	R	0.75	0.030	0.002	●	0.079	0.157
TCP18L075-005	L	0.75	0.030	0.002	●	0.079	0.157
TCP18R095-005	R	0.95	0.037	0.002	●	0.079	0.157
TCP18L095-005	L	0.95	0.037	0.002	●	0.079	0.157
TCP18R100-010	R	1	0.039	0.004	●	0.079	0.157
TCP18L100-010	L	1	0.039	0.004	●	0.079	0.157
TCP18R120-010	R	1.2	0.047	0.004	●	0.079	0.157
TCP18L120-010	L	1.2	0.047	0.004	●	0.079	0.157
TCP18R125-010	R	1.25	0.049	0.004	●	0.079	0.157
TCP18L125-010	L	1.25	0.049	0.004	●	0.079	0.157
TCP18R140-010-35	R	1.4	0.055	0.004	●	0.138	0.157
TCP18L140-010-35	L	1.4	0.055	0.004	●	0.138	0.157
TCP18R145-010	R	1.45	0.057	0.004	●	0.079	0.157
TCP18L145-010	L	1.45	0.057	0.004	●	0.079	0.157
TCP18R145-010-35	R	1.45	0.057	0.004	●	0.138	0.157
TCP18L145-010-35	L	1.45	0.057	0.004	●	0.138	0.157
TCP18R150-010	R	1.5	0.059	0.004	●	0.079	0.157
TCP18L150-010	L	1.5	0.059	0.004	●	0.079	0.157
TCP18R150-010-35	R	1.5	0.059	0.004	●	0.138	0.157
TCP18L150-010-35	L	1.5	0.059	0.004	●	0.138	0.157
TCP18R175-010	R	1.75	0.069	0.004	●	0.079	0.157
TCP18L175-010	L	1.75	0.069	0.004	●	0.079	0.157
TCP18R175-010-35	R	1.75	0.069	0.004	●	0.138	0.157
TCP18L175-010-35	L	1.75	0.069	0.004	●	0.138	0.157
TCP18R200-010	R	2	0.079	0.004	●	0.098	0.157
TCP18L200-010	L	2	0.079	0.004	●	0.098	0.157
TCP18R200-010-35	R	2	0.079	0.004	●	0.138	0.157
TCP18L200-010-35	L	2	0.079	0.004	●	0.138	0.157
TCP18R250-010	R	2.5	0.098	0.004	●	0.098	0.157
TCP18L250-010	L	2.5	0.098	0.004	●	0.098	0.157
TCP18R250-010-35	R	2.5	0.098	0.004	●	0.138	0.157
TCP18L250-010-35	L	2.5	0.098	0.004	●	0.138	0.157
TCP18R300-010	R	3	0.118	0.004	●	0.098	0.157
TCP18L300-010	L	3	0.118	0.004	●	0.098	0.157
TCP18R300-010-35	R	3	0.118	0.004	●	0.138	0.157
TCP18L300-010-35	L	3	0.118	0.004	●	0.138	0.157

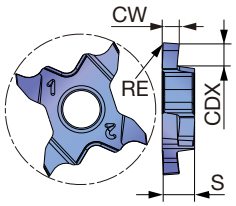
Please see the page F048 for precautions of processing.

5 pieces per package
● : Line up

Reference pages: Toolholders → F037 - F041, Standard cutting conditions → F048

INSERT

TCP18R/L-F (sharp edge)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated SH725	CDX (in)	S (in)
TCP18R033F-005	R	0.33	0.013	0.002	●	0.031	0.157
TCP18L033F-005	L	0.33	0.013	0.002	●	0.031	0.157
TCP18R043F-005	R	0.43	0.017	0.002	●	0.047	0.157
TCP18L043F-005	L	0.43	0.017	0.002	●	0.047	0.157
TCP18R050F-005	R	0.5	0.020	0.002	●	0.047	0.157
TCP18L050F-005	L	0.5	0.020	0.002	●	0.047	0.157
TCP18R075F-005	R	0.75	0.030	0.002	●	0.079	0.157
TCP18L075F-005	L	0.75	0.030	0.002	●	0.079	0.157
TCP18R095F-005	R	0.95	0.037	0.002	●	0.079	0.157
TCP18L095F-005	L	0.95	0.037	0.002	●	0.079	0.157
TCP18R100F-005	R	1	0.039	0.002	●	0.079	0.157
TCP18R100F-010	R	1	0.039	0.004	●	0.079	0.157
TCP18L100F-010	L	1	0.039	0.004	●	0.079	0.157
TCP18R120F-005	R	1.2	0.047	0.002	●	0.079	0.157
TCP18R120F-010	R	1.2	0.047	0.004	●	0.079	0.157
TCP18L120F-010	L	1.2	0.047	0.004	●	0.079	0.157
TCP18R125F-005	R	1.25	0.049	0.002	●	0.079	0.157
TCP18R125F-010	R	1.25	0.049	0.004	●	0.079	0.157
TCP18L125F-010	L	1.25	0.049	0.004	●	0.079	0.157
TCP18R140F-010-35	R	1.4	0.055	0.004	●	0.138	0.157
TCP18R145F-005-35	R	1.45	0.057	0.002	●	0.138	0.157
TCP18R145F-010	R	1.45	0.057	0.004	●	0.079	0.157
TCP18L145F-010	L	1.45	0.057	0.004	●	0.079	0.157
TCP18R145F-010-35	R	1.45	0.057	0.004	●	0.138	0.157
TCP18L145F-010-35	L	1.45	0.057	0.004	●	0.138	0.157
TCP18R150F-005-35	R	1.5	0.059	0.002	●	0.138	0.157
TCP18R150F-010	R	1.5	0.059	0.004	●	0.079	0.157
TCP18L150F-010	L	1.5	0.059	0.004	●	0.079	0.157
TCP18R150F-010-35	R	1.5	0.059	0.004	●	0.138	0.157
TCP18L150F-010-35	L	1.5	0.059	0.004	●	0.138	0.157
TCP18R175F-005-35	R	1.75	0.069	0.002	●	0.138	0.157
TCP18R175F-010	R	1.75	0.069	0.004	●	0.079	0.157
TCP18L175F-010	L	1.75	0.069	0.004	●	0.079	0.157
TCP18R175F-010-35	R	1.75	0.069	0.004	●	0.138	0.157
TCP18L175F-010-35	L	1.75	0.069	0.004	●	0.138	0.157

Please see the page F048 for precautions of processing.

5 pieces per package
● : Line up

Reference pages: Toolholders → F037 - F041, Standard cutting conditions → F048

P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

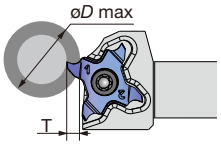
Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated	CDX (in)	S (in)
					SH725		
TCP18R200F-005-35	R	2	0.079	0.002	●	0.138	0.157
TCP18R200F-010	R	2	0.079	0.004	●	0.098	0.157
TCP18L200F-010	L	2	0.079	0.004	●	0.098	0.157
TCP18R200F-010-35	R	2	0.079	0.004	●	0.138	0.157
TCP18L200F-010-35	L	2	0.079	0.004	●	0.138	0.157
TCP18R250F-010	R	2.5	0.098	0.004	●	0.098	0.157
TCP18L250F-010	L	2.5	0.098	0.004	●	0.098	0.157
TCP18R250F-010-35	R	2.5	0.098	0.004	●	0.138	0.157
TCP18L250F-010-35	L	2.5	0.098	0.004	●	0.138	0.157
TCP18R300F-010	R	3	0.118	0.004	●	0.098	0.157
TCP18L300F-010	L	3	0.118	0.004	●	0.098	0.157
TCP18R300F-010-35	R	3	0.118	0.004	●	0.138	0.157
TCP18L300F-010-35	L	3	0.118	0.004	●	0.138	0.157

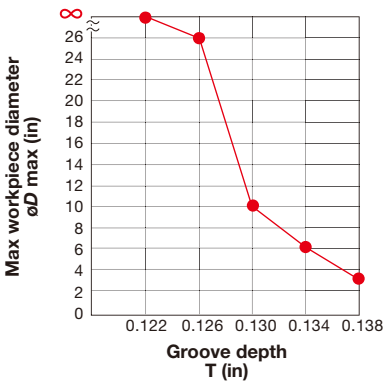
Please see the page F048 for precautions of processing.

5 pieces per package
● : Line up

Reference pages: Toolholders → F037 - F041, Standard cutting conditions → F048

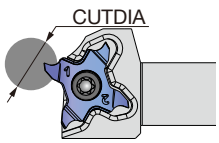
PRECAUTIONS OF PROCESSING





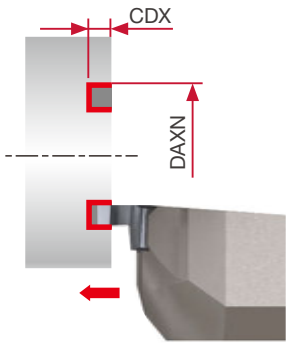
*Groove depth and max workpiece diameter (ø*D* max)

Maximum workpiece diameter is limited relative to depth of cut in order to avoid collision between insert and workpiece.



Max workpiece diameter CUTDIA (in)
0.276

Minimum diameter for face grooving



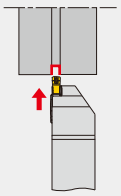
Minimum face diameter DAXN (in)	Maximum groove depth CDX (in)
2.559	0.118

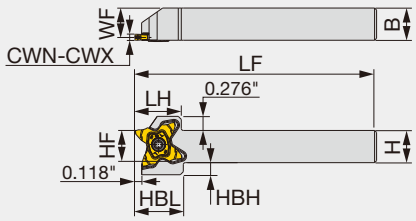
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) TCP / TCP-F (AH725 / SH725)	TCS (AH7025)	TCG (AH7025)
P	Low carbon steel 1015, etc.	260 - 590	0.001 - 0.004	0.001 - 0.006	0.001 - 0.005
P	Carbon steel, Alloy steel 1055, etc.	260 - 590	0.001 - 0.004	0.001 - 0.006	0.001 - 0.005
P	Prehardened steel NAK80, PX5, etc.	260 - 590	0.001 - 0.004	0.001 - 0.006	0.001 - 0.005
M	Stainless steel S30400, etc.	160 - 390	0.001 - 0.004	0.001 - 0.006	0.001 - 0.005
K	Gray cast iron No.250B, No.300B, etc.	160 - 590	0.001 - 0.004	0.001 - 0.006	0.001 - 0.005
K	Ductile cast iron 60-40-18, 80-55-06, etc.	160 - 590	0.001 - 0.004	0.001 - 0.006	0.001 - 0.005
S	Titanium alloys Ti-6Al-4V, etc.	60 - 260	0.001 - 0.004	0.001 - 0.006	0.001 - 0.005
S	Superalloys Inconel718, etc.	60 - 260	0.001 - 0.004	0.001 - 0.006	0.001 - 0.005

STCR/L-27

External grooving toolholder





Right hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF	HBH	Insert	Torque
STCR/L06-27	0.02	0.125	0.375	0.375	5.000	0.906	0.945	0.375	0.315	0.374	TC*27...	1.84
STCR/L08-27	0.02	0.125	0.500	0.500	5.000	0.906	0.945	0.500	0.440	0.287	TC*27...	1.84
STCR/L10-27	0.02	0.125	0.625	0.625	5.000	0.906	0.945	0.625	0.570	0.236	TC*27...	1.84
STCR/L12-27	0.02	0.125	0.750	0.750	5.000	0.906	0.945	0.750	0.690	0.118	TC*27...	1.84
STCR/L16-27	0.02	0.125	1.000	1.000	5.000	0.906	-	1.000	0.940	-	TC*27...	1.84

Torque: Recommended clamping torque: lbs·ft

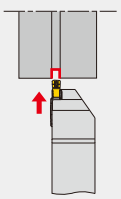
SPARE PARTS

Designation	Screw	Wrench
STCR**-27	SR16-212-01397L	T-2010/5
STCL**-27	SR16-212-01397	T-2010/5

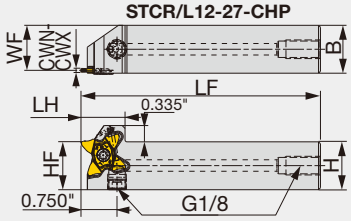
STCR/L-27-CHP

TUNGTJET URN

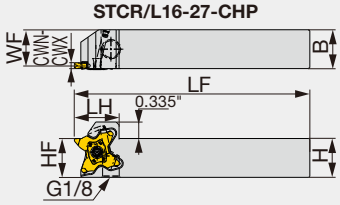
Precision grooving tools with uniquely shaped insert with 4 cutting edges and channel for high pressure coolant supply

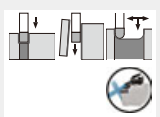


STCR/L12-27-CHP



STCR/L16-27-CHP





Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HF	WF	Insert	Torque
STCR/L12-27-CHP	0.020	0.125	0.750	0.750	5.000	0.906	0.750	0.690	TC*27...	1.84
STCR/L16-27-CHP	0.020	0.125	1.000	1.000	4.920	0.906	1.000	0.940	TC*27...	1.84

Metric	CWN	CWX	H	B	LF	LH	HF	WF	Insert	Torque*
STCR/L2020-27-CHP	0.5	3.18	20	20	120	23	20	18.5	TC*27...	2.5
STCR/L2525-27-CHP	0.5	3.18	25	25	125	23	25	23.5	TC*27...	2.5

Torque: Recommended clamping torque: lbs·ft (*N·m)

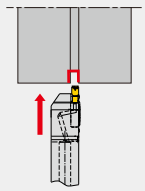
SPARE PARTS

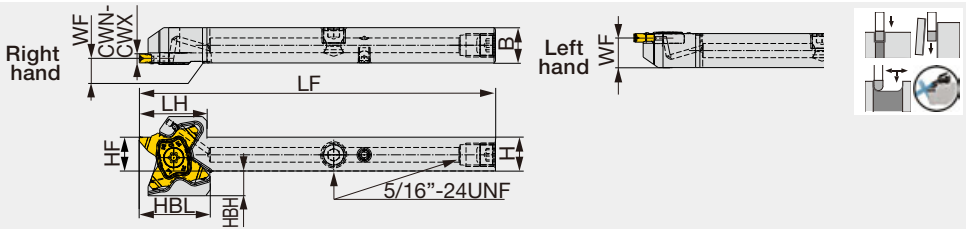
Designation	Screw	Wrench
STCR...-27-CHP	SR16-212-01397L	T-2010/5
STCL...-27-CHP	SR16-212-01397	T-2010/5

Reference pages: Inserts → F053 - F056, Standard cutting conditions → F057
Parts for coolant hose → F240

STCR/L-27-CHP

Grooving and parting-off tool with high pressure coolant capability



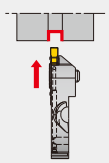


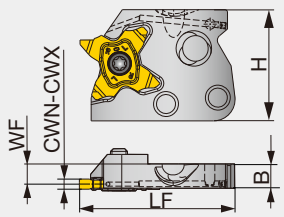
Inch	CWN	CWX	H	B	LF	LH	HF	WF(1)	HBH	HBL	Insert	Torque
STCR/L08-27-CHP	0.200	0.125	0.500	0.500	4.750	0.906	0.500	0.590/0.441	0.287	0.945	TC*27...	1.84

Make sure to avoid tool interferences when used on Swiss machines
Torque: Recommended clamping torque: lb·ft
(1) The above WF value is valid when an insert width of CW=3 is mounted.

STCAR/L27-CHP

Modular-type external grooving and parting blade, with high pressure coolant capability





Right hand (R) shown.

Inch	CWN	CWX	WF	H	LF	B	Insert	Torque
STCAR/L27-CHP	0.020	0.125	0.236	1.299	1.811	0.283	TC*27...	1.84

Torque: Recommended clamping torque: lb·ft

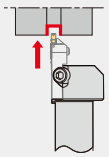
SPARE PARTS

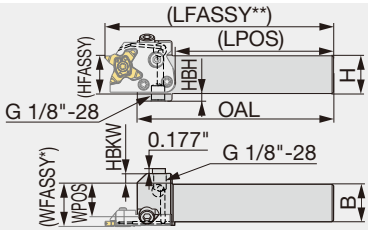
Designation	Screw	Wrench
STCAR27-CHP	SR16-212-01397L	T-2010/5
STCAL27-CHP	SR16-212-01397	T-2010/5

Reference pages: Inserts → F053 - F056, Standard cutting conditions → F057
Parts for coolant hose → F240

CHSR/L-CHP

Shank for blades with high pressure coolant capability





Right hand (R) shown.

Inch	H	B	OAL	LPOS	WPOS	HBKW	HFASSY	HBH
CHSR/L12-CHP	0.750	0.750	5.000	4.035	0.560	0.510	0.750	0.190
CHSR/L16-CHP	1.000	1.000	5.000	4.035	0.810	0.260	1.000	0.200

*WFASSY : shank (WPOS) + blade (WF)
**LFASSY : shank (LPOS) + blade (LF)

Use right-hand blades (R) with right-hand shanks (R); and left-hand blades (L) with left-hand shanks (L).
Applicable for 30 MPa coolant
Please see the page **L043** for the instruction on installing and removing the blade.

SPARE PARTS

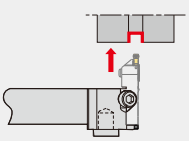
Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHSR/L**-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N	PLUGG1/8ISO1179

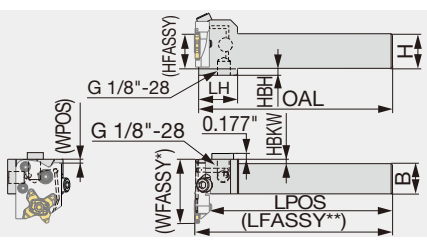
Recommended clamping torque (lbf·ft, N·m)

Clamping screw	Torque (lbf·ft)	Torque (N·m)
SRM5-04451	3.69	5
SRM6X12DIN6912	6.27	8.5
SRM6X20-XT	6.27	8.5

CHFVR/L-CHP

Shank for blades with high pressure coolant capability





Right hand (R)
with left-hand blade shown.

Inch	H	B	OAL	LPOS	WPOS	LH	HBKW	HFASSY	HBH
CHFVR/L12-CHP	0.750	0.750	5.500	5.307	0.020	1.100	0.234	0.750	10
CHFVR/L16-CHP	1.000	1.000	5.500	5.307	0.020	1.100	-	1.000	5

*WFASSY : shank (WPOS) + blade (LF)
**LFASSY : shank (LPOS) + blade (WF)

Use left-hand blades (L) with right-hand shanks (R); and right-hand blades (R) with left-hand shanks (L).
Applicable for 30 MPa coolant
Please see the page **L043** for the instruction on installing and removing the blade.

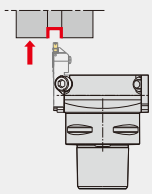
SPARE PARTS

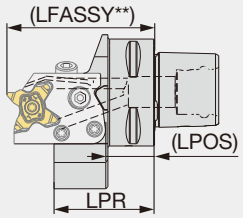
Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring	Plug
CHFVR/L**-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N	PLUGG1/8ISO1179

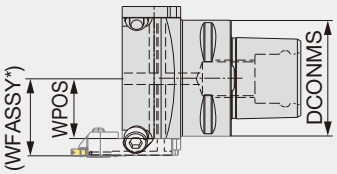
Reference pages: Inserts → **F053 - F056**, Standard cutting conditions → **F057**
Parts for coolant hose → **F240**

C*CHSN-CHP

TungCap shank for CAER/L-CHP blades with high pressure coolant capability







Right-hand (R) blade shown.

Metric	DCONMS	LPR	LPOS	WPOS
C3CHSN19045-CHP	32	45	17.5	18.5
C4CHSN21047-CHP	40	46.5	21.5	21
C5CHSN26047-CHP	50	47	22.5	26
C6CHSN33050-CHP	63	50	24.5	32.5

*WFASSY : shank (WPOS) + blade (WF)
**LFASSY : shank (LPOS) + blade (LF)
Applicable for 30 MPa coolant
Please see the page **L043** for the instruction on installing and removing the blade.

SPARE PARTS

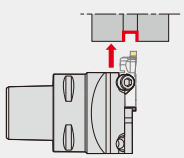
Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring
C*CHSN**-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N

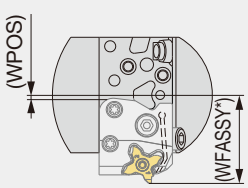
Recommended clamping torque (lbs·ft, N·m)

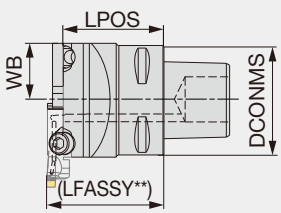
Clamping screw	Torque (lbs·ft)	Torque (N·m)
SRM5-04451	3.69	5
SRM6X12DIN6912	6.27	8.5
SRM6X20-XT	6.27	8.5

C*CHFVN-CHP

TungCap shank for CAER/L-CHP blades with high pressure coolant capability







Left-hand (L) blade shown.

Inch	DCONMS	LPOS	WB	WPOS
C3CHFVN26040-CHP	1.260	1.575	1.024	0.059
C4CHFVN26046-CHP	1.575	1.811	1.024	0.059
C5CHFVN26046-CHP	1.969	1.811	1.024	0.059
C6CHFVN33046-CHP	2.480	1.811	1.299	0.335

*WFASSY : shank (WPOS) + blade (LF)
**LFASSY : shank (LPOS) + blade (WF)
Applicable for 30 MPa coolant
Please see the page **L043** for the instruction on installing and removing the blade.

SPARE PARTS

Designation	Clamping screw 1	Wrench 1	Clamping screw 2	Clamping screw 3	Wrench 2	O-ring
C*CHFVN**-CHP	SRM5-04451	T-20/5	SRM6X12DIN6912	SRM6X20-XT	HW5.0	OR5X1N

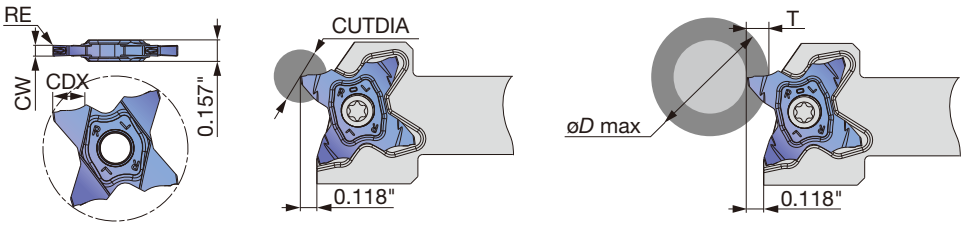
Recommended clamping torque (lbs·ft, N·m)

Clamping screw	Torque (lbs·ft)	Torque (N·m)
SRM5-04451	3.69	5
SRM6X12DIN6912	6.27	8.5
SRM6X20-XT	6.27	8.5

Reference pages: Inserts → F053 - F026, Standard cutting conditions → F057

INSERT - FOR GROOVING AND PARTING OFF

TCS27



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

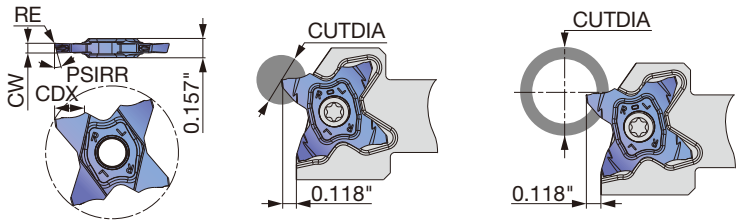
Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)											
							T≤0.039	T≤0.079	T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCS27-050-000	0.5	0.020	0	●	0.039	0.079	∞	-	-	-	-	-	-	-	-	-	-	-
TCS27-050-004	0.5	0.020	0.0016	●	0.098	0.197	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-075-010	0.75	0.030	0.004	●	0.098	0.197	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-080-000	0.8	0.031	0	●	0.063	0.126	∞	-	-	-	-	-	-	-	-	-	-	-
TCS27-100-006	1	0.039	0.0024	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-100-010	1	0.039	0.004	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-104-000	1.04	0.041	0	●	0.079	0.157	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-120-000	1.2	0.047	0	●	0.079	0.157	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-125-010	1.25	0.049	0.004	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-125-020	1.25	0.049	0.008	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-140-000	1.4	0.055	0	●	0.079	0.157	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-147-000	1.47	0.058	0	●	0.098	0.197	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-150-010	1.5	0.059	0.004	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-150-020	1.5	0.059	0.008	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-157-015	1.57	0.062	0.006	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-170-010	1.7	0.067	0.004	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-175-010	1.75	0.069	0.004	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-175-020	1.75	0.069	0.008	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-178-018	1.78	0.070	0.007	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-185-020	1.85	0.073	0.008	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-196-015	1.96	0.077	0.006	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-200-010	2	0.079	0.004	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCS27-200-020	2	0.079	0.008	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCS27-222-015	2.22	0.087	0.006	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-230-020	2.3	0.091	0.008	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-239-015	2.39	0.094	0.006	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-247-020	2.47	0.097	0.008	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-250-010	2.5	0.098	0.004	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-250-030	2.5	0.098	0.012	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-270-010	2.7	0.106	0.004	●	0.244	0.488	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	-
TCS27-287-020	2.87	0.113	0.008	●	0.244	0.488	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	-
TCS27-300-000	3	0.118	0	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCS27-300-020	3	0.118	0.008	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCS27-300-030	3	0.118	0.012	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCS27-300-040	3	0.118	0.016	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCS27-315-015	3.15	0.124	0.006	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.677
TCS27-318-020	3.18	0.125	0.008	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.677

5 pieces per package
● : Line up

Reference pages: Toolholders → F049 - F052, Standard cutting conditions → F057

INSERT- FOR PARTING OFF

TCS27-R/L



Right hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

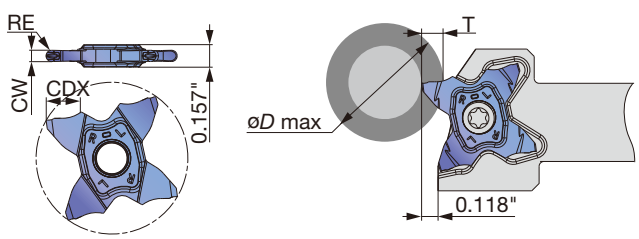
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	PSIRL	PSIRR	Max. parting off dia. CUTDIA (in) Solid bar	Max. parting off dia. CUTDIA (in) Tube
TCS27-100-15R	R	1	0.039	0.0024	●	0.138	0°	15°	0.276	23.622
TCS27-100-15L	L	1	0.039	0.0024	●	0.138	15°	0°	0.276	23.622
TCS27-150-6R	R	1.5	0.059	0.0024	●	0.224	0°	6°	0.449	1.378
TCS27-150-6L	L	1.5	0.059	0.0024	●	0.224	6°	0°	0.449	1.378
TCS27-150-15R	R	1.5	0.059	0.0024	●	0.224	0°	15°	0.449	1.378
TCS27-150-15L	L	1.5	0.059	0.0024	●	0.224	15°	0°	0.449	1.378
TCS27-200-6R	R	2	0.079	0.004	●	0.252	0°	6°	0.504	1.181
TCS27-200-6L	L	2	0.079	0.004	●	0.252	6°	0°	0.504	1.181
TCS27-200-15R	R	2	0.079	0.004	●	0.252	0°	15°	0.504	1.181
TCS27-200-15L	L	2	0.079	0.004	●	0.252	15°	0°	0.504	1.181

5 pieces per package
● : Line up

INSERT- FOR GROOVING AND PROFILING

TCS27 (Full R)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

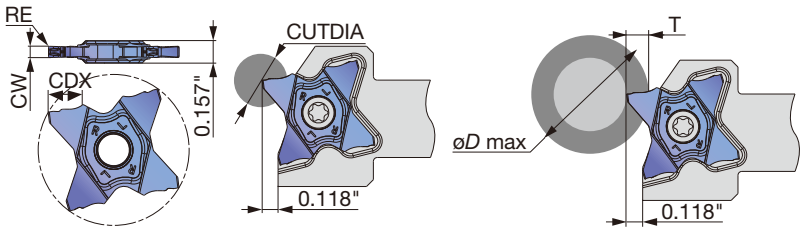
Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	Relation of groove depth (T) and Max. diameter (øD max) (in) T≤0.039 T≤0.079 T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCS27-157-079	1.57	0.062	0.031	●	0.118	∞	-	-	-	-	-	-	-	-	-
TCS27-200-100	2	0.079	0.039	●	0.118	∞	-	-	-	-	-	-	-	-	-
TCS27-239-120	2.39	0.094	0.047	●	0.224	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-300-150	3	0.118	0.059	●	0.252	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165

5 pieces per package
● : Line up

Reference pages: Toolholders → F049 - F052, Standard cutting conditions → F057

INSERT- FOR GROOVING AND PARTING OFF

TCM27



P	Steel	★			
M	Stainless	★			
K	Cast iron	★			
N	Non-ferrous				
S	Superalloys	★			
H	Hard materials				

★ : First choice
☆ : Second choice

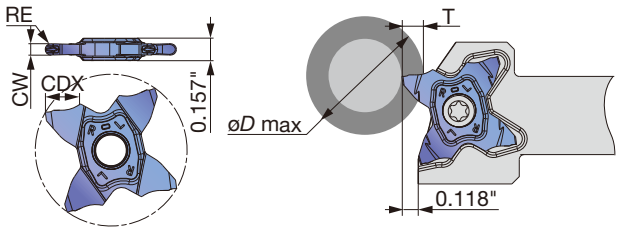
Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated			CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)									
				AH725					T≤0.039 T≤0.079 T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCM27-150-010	1.5	0.059	0.004	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-150-020	1.5	0.059	0.008	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-157-015	1.57	0.062	0.006	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-170-010	1.7	0.067	0.004	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-175-010	1.75	0.069	0.004	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-175-020	1.75	0.069	0.008	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-178-018	1.78	0.070	0.007	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-185-020	1.85	0.073	0.008	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-196-015	1.96	0.077	0.006	●			0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-200-010	2	0.079	0.004	●			0.252	0.504	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCM27-200-020	2	0.079	0.008	●			0.252	0.504	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCM27-222-015	2.22	0.087	0.006	●			0.138	0.276	∞	23.622	-	-	-	-	-	-	-	-
TCM27-230-020	2.3	0.091	0.008	●			0.138	0.276	∞	23.622	-	-	-	-	-	-	-	-
TCM27-239-015	2.39	0.094	0.006	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-247-020	2.47	0.097	0.008	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-250-010	2.5	0.098	0.004	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-250-030	2.5	0.098	0.012	●			0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-270-010	2.7	0.106	0.004	●			0.244	0.488	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	-
TCM27-287-020	2.87	0.113	0.008	●			0.244	0.488	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	-
TCM27-300-000	3	0.118	0	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCM27-300-020	3	0.118	0.008	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCM27-300-030	3	0.118	0.012	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCM27-300-040	3	0.118	0.016	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCM27-315-015	3.15	0.124	0.006	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.677
TCM27-318-020	3.18	0.125	0.008	●			0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.677

5 pieces per package
● : Line up

Reference pages: Toolholders → F049 - F052, Standard cutting conditions → F057

INSERT - FOR GROOVING AND PROFILING

TCM27 (Full R)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

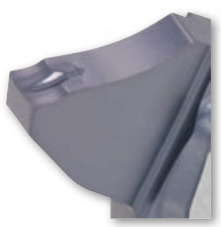
★ : First choice
☆ : Second choice

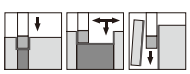
Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in) T≤0.039 T≤0.079 T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCM27-157-079	1.57	0.059	0.031	●	0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-200-100	2	0.059	0.039	●	0.118	0.236	∞	23.622	-	-	-	-	-	-	-	-
TCM27-239-120	2.39	0.062	0.047	●	0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-300-150	3	0.125	0.059	●	0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165

5 pieces per package
● : Line up

CHIPBREAKER

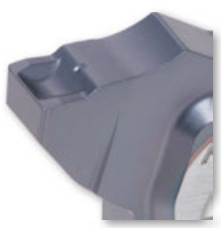
TCS27

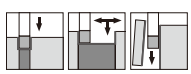




CW = 0.020" - 0.125" (0.5 mm – 3.18 mm)
For general machining, lower cutting force and superior sharpness.

TCM27





CW = 0.059" - 0.125" (1.5 mm – 3.18 mm)
For high feed machining. Well-designed edge with high strength and fracture resistance.

Reference pages: Toolholders → F049 - F052

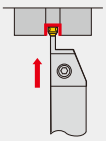
STANDARD CUTTING CONDITIONS

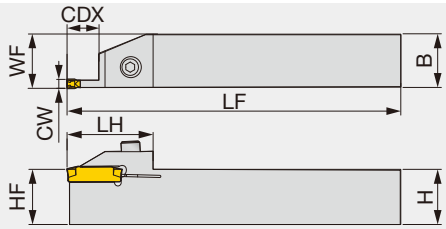
ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)					Depth of cut for profiling Turning (full radius)
				Grooving, Parting		Parting (with hand)	Turning (full radius)		
				TCS	TCM	TCS	TCS	TCM	
P	Steel 1045, etc.	AH725	330 - 660	0.002 - 0.006	0.002 - 0.010	0.0016 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
	Alloy steel 4137, etc.	AH725	165 - 590	0.002 - 0.006	0.002 - 0.010	0.0016 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
M	Stainless steel 304, etc.	AH725	165 - 490	0.002 - 0.006	0.002 - 0.008	0.0016 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
K	Gray cast iron No.250, etc.	AH725	165 - 590	0.002 - 0.006	0.002 - 0.010	0.0016 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
	Ductile cast iron 60-40-18, etc.	AH725	165 - 390	0.002 - 0.006	0.002 - 0.008	0.0016 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
S	Titanium alloys Ti-6Al-4V, etc.	AH725	100 - 200	0.002 - 0.006	0.002 - 0.006	0.0016 - 0.005	0.002 - 0.004	0.002 - 0.004	0.020
	Superalloys Inconel718, etc.	AH725	65 - 165	0.002 - 0.006	0.002 - 0.006	0.0016 - 0.005	0.002 - 0.004	0.002 - 0.004	0.020

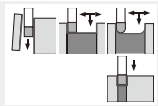
MY-T SERIES

CGWSR/L-W

External grooving, parting and turning toolholder, for 2 corner inserts







Right hand (R) shown.

Metric	CW	CDX	H	B	LF	LH	HF	WF	Insert	Torque
CGWSR/L1616-W30	3	12	16	16	125	34	16	16.4	WG*30, WGE30R/L	5
CGWSR/L2020-W30	3	12	20	20	150	34	20	20.4	WG*30, WGE30R/L	5
CGWSR/L2525-W30	3	12	25	25	150	34	25	25.4	WG*30, WGE30R/L	5
CGWSR/L2020-W40	4	13	20	20	150	39	20	20.4	WG*40, WGE40R/L	5
CGWSR/L2525-W40	4	13	25	25	150	39	25	25.4	WG*40, WGE40R/L	5
CGWSR/L2020-W50	5	13	20	20	150	39	20	20.4	WG*50, WGE50R/L	5
CGWSR/L2525-W50	5	13	25	25	150	39	25	25.4	WG*50, WGE50R/L	5

Torque: Recommended clamping torque: N·m

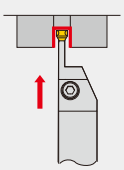
SPARE PARTS

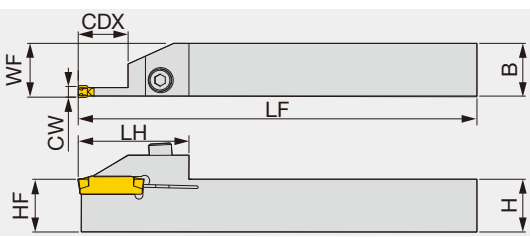
Designation	Clamping screw	Wrench
CGWSR/L****-W...	CHHM5-18	P-4

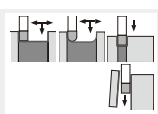
MY-T SERIES

CGWSR/L-W-L

External deep grooving, parting and turning toolholder, for 2 corner inserts







Right hand (R) shown.

Metric	CW	CDX	H	B	LF	LH	HF	WF	Insert	Torque
CGWSR/L1616-W20-L	2	15	16	16	125	37	16	16.2	WGE20, WGE20R/L	5
CGWSR/L2020-W20-L	2	15	20	20	150	37	20	20.2	WGE20, WGE20R/L	5
CGWSR/L2525-W20-L	2	15	25	25	150	37	25	25.2	WGE20, WGE20R/L	5
CGWSR/L1616-W30-L	3	16.5, 17.5	16	16	125	37	16	16.4	WG*30, WGE30R/L	5
CGWSR/L2020-W30-L	3	16.5, 17.5	20	20	150	37	20	20.4	WG*30, WGE30R/L	5
CGWSR/L2525-W30-L	3	16.5, 17.5	25	25	150	37	25	25.4	WG*30, WGE30R/L	5
CGWSR/L2020-W40-L	4	21, 21.5	20	20	150	42	20	20.4	WG*40, WGE40R/L	5
CGWSR/L2525-W40-L	4	21, 21.5	25	25	150	42	25	25.4	WG*40, WGE40R/L	5
CGWSR/L2020-W50-L	5	21	20	20	150	42	20	20.4	WG*50, WGE50R/L	5
CGWSR/L2525-W50-L	5	21	25	25	150	42	25	25.4	WG*50, WGE50R/L	5

Torque: Recommended clamping torque: N·m

SPARE PARTS

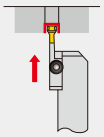
Designation	Clamping screw	Wrench
CGWSR/L****-W**-L	CHHM5-18	P-4

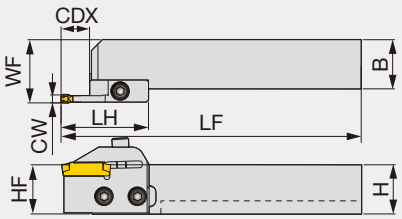
Reference pages: Inserts → F065 - F066, Standard cutting conditions → F067

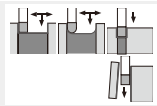
MY-T SERIES

CGWSR/L-WG

External grooving, parting and turning toolholder, for 2 corner inserts







Right hand (R) shown.
Dashed line: 20mm square shank.

Metric	CW	CDX	H	B	LF	LH	HF	WF	Insert	Shank	Blade	Torque
CGWSR/L2020-W30GR/L	3	12	20	20	150.5	43.5	20	26.9	WG*30, WGE30R/L	CGWSR/L2020	W30GR/L	5
CGWSR/L2525-W30GR/L	3	12	25	25	150.5	43.5	25	31.9	WG*30, WGE30R/L	CGWSR/L2525	W30GR/L	5
CGWSR/L2020-W40GR/L	4	13	20	20	151.5	44.5	20	26.9	WG*40, WGE40R/L	CGWSR/L2020	W40GR/L	5
CGWSR/L2525-W40GR/L	4	13	25	25	151.5	44.5	25	31.9	WG*40, WGE40R/L	CGWSR/L2525	W40GR/L	5
CGWSR/L2020-W50GR/L	5	13	20	20	151.5	44.5	20	26.9	WG*50, WGE50R/L	CGWSR/L2020	W50GR/L	5
CGWSR/L2525-W50GR/L	5	13	25	25	151.5	44.5	25	31.9	WG*50, WGE50R/L	CGWSR/L2525	W50GR/L	5

Use right-hand blades (R) with right-hand shanks (R); and left-hand blades (L) with left-hand shanks (L).
Blade sold separately.
Torque: Recommended clamping torque: N·m

SPARE PARTS

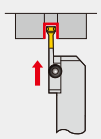


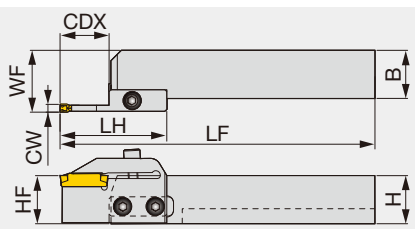
Designation	Clamping screw	Blade screw	Wrench
CGWSR/L****-W**GR/L	CHHM5-18	CSHB-6	P-4

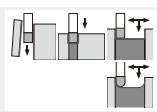
MY-T SERIES

CGWSR/L-WG-L

External deep grooving, parting and turning toolholder, for 2 corner inserts







Right hand (R) shown.
Dashed line: 20mm square shank.

Metric	CW	CDX	H	B	LF	LH	HF	WF	Insert	Shank	Blade	Torque
CGWSR/L2020-W20GR/L-L	2	15	20	20	153.5	46.5	20	26.7	WGE20, WGE20R/L	CGWSR/L2020	W20GR/L-L	5
CGWSR/L2525-W20R/LR-L	2	15	25	25	153.5	46.5	25	31.7	WGE20, WGE20R/L	CGWSR/L2525	W20GR/L-L	5
CGWSR/L2020-W30GR/L-L	3	16.5 - 17.5	20	20	157.5	50.5	20	26.9	WG*30, WGE30R/L	CGWSR/L2020	W30GR/L-L	5
CGWSR/L2525-W30GR/L-L	3	16.5 - 17.5	25	25	157.5	50.5	25	31.9	WG*30, WGE30R/L	CGWSR/L2525	W30GR/L-L	5
CGWSR/L2020-W40GR/L-L	4	21 - 21.5	20	20	162.5	55.5	20	26.9	WG*40, WGE40R/L	CGWSR/L2020	W40GR/L-L	5
CGWSR/L2525-W40GR/L-L	4	21 - 21.5	25	25	162.5	55.5	25	31.9	WG*40, WGE40R/L	CGWSR/L2525	W40GR/L-L	5
CGWSR/L2020-W50GR/L-L	5	21	20	20	162.5	55.5	20	26.9	WG*50, WGE50R/L	CGWSR/L2020	W50GR/L-L	5
CGWSR/L2525-W50GR/L-L	5	21	25	25	162.5	55.5	25	31.9	WG*50, WGE50R/L	CGWSR/L2525	W50GR/L-L	5

Use right-hand blades (R) with right-hand shanks (R); and left-hand blades (L) with left-hand shanks (L).
Blade sold separately.
Torque: Recommended clamping torque: N·m

SPARE PARTS

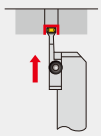


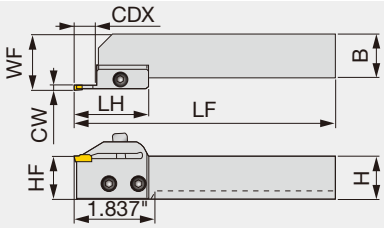
Designation	Clamping screw	Blade screw	Wrench
CGWSR/L****-W**GR/L-L	CHHM5-18	CSHB-6	P-4

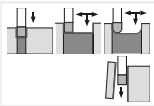
Reference pages: Inserts → F065 - F066, Standard cutting conditions → F067

CGWSR/L-G

External grooving, parting and turning toolholder, for 1 corner inserts







Right hand (R) shown.
The dashed line shows
20 mm-square shank tools.

Inch	CW	CDX	H	B	LF	LH	HF	WF	Insert	Shank	Blade	Torque
CGWSR/L12-20GR/L	0.079	0.472	0.750	0.750	5.913	1.699	0.787	1.055	GE20, GE20-AL	CGWSR/L12	20GR/L	3.69
CGWSR/L16-20GR/L	0.079	0.472	1.000	1.000	5.913	1.699	0.984	1.252	GE20, GE20-AL	CGWSR/L16	20GR/L	3.69
CGWSR/L12-30GR/L	0.118	0.472	0.750	0.750	5.913	1.699	0.787	1.063	G*30,GE30R/L,GE30-AL	CGWSR/L12	30GR/L	3.69
CGWSR/L16-30GR/L	0.118	0.472	1.000	1.000	5.913	1.699	0.984	1.260	G*30,GE30R/L,GE30-AL	CGWSR/L16	30GR/L	3.69
CGWSR/L12-40GR/L	0.157	0.472	0.750	0.750	5.913	1.699	0.787	1.067	G*40,GE40R/L,GE40-AL	CGWSR/L12	40GR/L	3.69
CGWSR/L16-40GR/L	0.157	0.472	1.000	1.000	5.913	1.699	0.984	1.264	G*40,GE40R/L,GE40-AL	CGWSR/L16	40GR/L	3.69
CGWSR/L12-50GR/L	0.197	0.472	0.750	0.750	5.913	1.699	0.787	1.071	G*50,GE50R	CGWSR/L12	50GR	3.69

Metric	CW	CDX	H	B	LF	LH	HF	WF	Insert	Shank	Blade	Torque*
CGWSR/L2020-20GR/L	2	12	20	20	150.2	43.15	20	26.8	GE20, GE20-AL	CGWSR/L2020	20GR/L	5
CGWSR/L2525-20GR/L	2	12	25	25	150.2	43.15	25	31.8	GE20, GE20-AL	CGWSR/L2525	20GR/L	5
CGWSR/L2020-30GR/L	3	12	20	20	150.2	43.15	20	27	G*30,GE30R/L,GE30-AL	CGWSR/L2020	30GR/L	5
CGWSR/L2525-30GR/L	3	12	25	25	150.2	43.15	25	32	G*30,GE30R/L,GE30-AL	CGWSR/L2525	30GR/L	5
CGWSR/L2020-40GR/L	4	12	20	20	150.2	43.15	20	27.1	G*40,GE40R/L,GE40-AL	CGWSR/L2020	40GR/L	5
CGWSR/L2525-40GR/L	4	12	25	25	150.2	43.15	25	32.1	G*40,GE40R/L,GE40-AL	CGWSR/L2525	40GR/L	5
CGWSR/L2020-50GR/L	5	12	20	20	150.2	43.15	20	27.2	G*50,GE50R	CGWSR/L2020	50GR	5

For diameter compensation values in traversing, see page F111.
Use right-hand blades (R) with right-hand shanks (R); and left-hand blades (L) with left-hand shanks (L).
Blade sold separately.
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

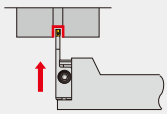


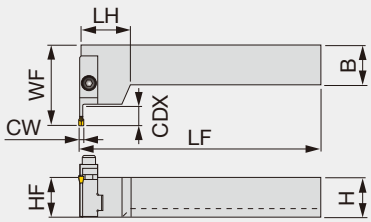
Designation	Clamping screw	Blade screw	Wrench
CGWSR/L**-**GR/L	CHHM5-18	CSHB-6	P-4

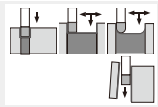
Reference pages: Inserts → F069 - F072, Standard cutting conditions → F075

CGWTR/L-G

External grooving, parting and turning toolholder, for 1 corner inserts







Right hand (R) shown.
The dashed line shows
20 mm-square shank tools.

Inch	CW	CDX	H	B	LF	LH	HF	WF	Insert	Shank	Blade	Torque
CGWTR/L12-30GL/R	0.118	0.472	0.750	0.750	5.911	0.508	0.750	1.960	G*30,GE30R/L,GE30-AL	CGWTR/L12	30GL/R	3.69
CGWTR/L16-30GL/R	0.118	0.472	1.000	1.000	5.911	0.508	1.000	1.960	G*30,GE30R/L,GE30-AL	CGWTR/L16	30GL/R	3.69
CGWTR/L12-40GL/R	0.157	0.472	0.750	0.750	5.911	0.508	0.750	1.960	G*40,GE40R/L,GE40-AL	CGWTR/L12	40GL/R	3.69
CGWTR/L16-40GL/R	0.157	0.472	1.000	1.000	5.911	0.508	1.000	1.960	G*40,GE40R/L,GE40-AL	CGWTR/L16	40GL/R	3.69
CGWTR/L12-50GL/R	0.197	0.472	0.750	0.750	5.911	0.508	0.750	1.960	G*50,GE50R/L,GE50-AL	CGWTR/L12	50GL/R	3.69
CGWTR/L16-50GL/R	0.197	0.472	1.000	1.000	5.911	0.508	1.000	1.960	G*50,GE50R/L,GE50-AL	CGWTR/L16	50GL/R	3.69

Metric	CW	CDX	H	B	LF	LH	HF	WF	Insert	Shank	Blade	Torque*
CGWTR/L2020-30GL/R	3	12	20	20	150	12.9	20	49.9	G*30,GE30R/L,GE30-AL	CGWTR/L2020	30GL/R	5
CGWTR/L2525-30GL/R	3	12	25	25	150	12.9	25	49.9	G*30,GE30R/L,GE30-AL	CGWTR/L2525	30GL/R	5
CGWTR/L2020-40GL/R	4	12	20	20	150.1	12.9	20	49.9	G*40,GE40R/L,GE40-AL	CGWTR/L2020	40GL/R	5
CGWTR/L2525-40GL/R	4	12	25	25	150.1	12.9	25	49.9	G*40,GE40R/L,GE40-AL	CGWTR/L2525	40GL/R	5
CGWTR/L2020-50GL/R	5	12	20	20	150.2	12.9	20	49.9	G*50,GE50R/L,GE50-AL	CGWTR/L2020	50GL/R	5
CGWTR/L2525-50GL/R	5	12	25	25	150.2	12.9	25	49.9	G*50,GE50R/L,GE50-AL	CGWTR/L2525	50GL/R	5

For diameter compensation values in traversing, see page F111.
Use left-hand blades (L) with right-hand shanks (R); and right-hand blades (R) with left-hand shanks (L).
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS



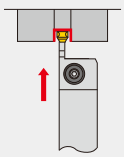
Designation	Clamping screw	Blade screw	Wrench
CGWTR/L**-**GL/R	CHHM5-18	CSHB-6	P-4

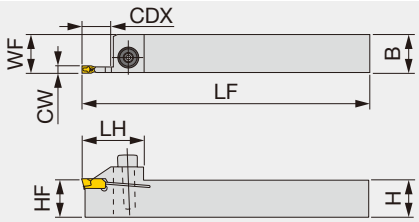
Reference pages: Inserts → F069 - F072, Standard cutting conditions → F075

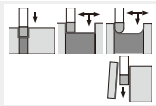
MY-T SERIES

CGSSR/L

External grooving, parting and turning toolholder, for 1 corner inserts







Right hand (R) shown.

Metric	CW	CDX	H	B	LF	LH	HF	WF	Insert	Torque
CGSSR/L1616-20	2	16	16	16	125	27	16	16.2	GE20, GE20-AL	5
CGSSR/L2020-20	2	16	20	20	150	27	20	20.2	GE20, GE20-AL	5
CGSSR/L2525-20	2	16	25	25	150	27	25	25.2	GE20, GE20-AL	5
CGSSR/L1616-30	3	12	16	16	125	27	16	16.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2020-30	3	12	20	20	150	27	20	20.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2525-30	3	12	25	25	150	27	25	25.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2020-40	4	12	20	20	150	27	20	20.6	G*40,GE40R/L,GE40-AL	5
CGSSR/L2525-40	4	12	25	25	150	27	25	25.6	G*40,GE40R/L,GE40-AL	5
CGSSR/L2020-50	5	12	20	20	150	27	20	20.7	G*50,GE50R/L,GE50-AL	5
CGSSR/L2525-50	5	12	25	25	150	27	25	25.7	G*50,GE50R/L,GE50-AL	5

Torque: Recommended clamping torque: N·m

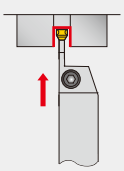
SPARE PARTS

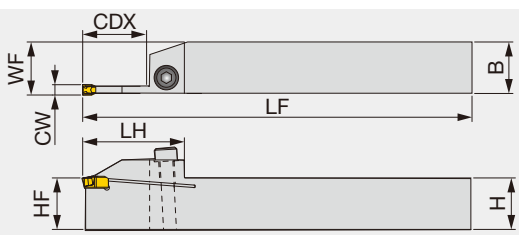
Designation	Clamping screw	Wrench
CGSSR/L...	CHHM5-18	P-4

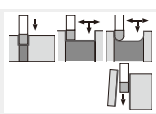
MY-T SERIES

CGSSR/L-D

External grooving, parting and turning toolholder, for 1 corner inserts







Right hand (R) shown.

Metric	CW	CDX	H	B	LF	LH	HF	WF	Insert	Torque
CGSSR/L1616-30D	3	22	16	16	125	36.2	16	16.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2020-30D	3	22	20	20	150	36.2	20	20.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2525-30D	3	22	25	25	150	36.2	25	25.5	G*30,GE30R/L,GE30-AL	5
CGSSR/L2020-40D	4	25	20	20	150	39.5	20	20.6	G*40,GE40R/L,GE40-AL	5
CGSSR/L2525-40D	4	25	25	25	150	39.5	25	25.6	G*40,GE40R/L,GE40-AL	5
CGSSR/L2020-50D	5	25	20	20	150	39.5	20	20.7	G*50,GE50R/L	5
CGSSR/L2525-50D	5	25	25	25	150	39.5	25	25.7	G*50,GE50R/L	5

Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamping screw	Wrench
CGSSR/L****-**D	CHHM5-18	P-4

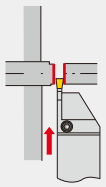
External
Internal
Face
Parting
Others

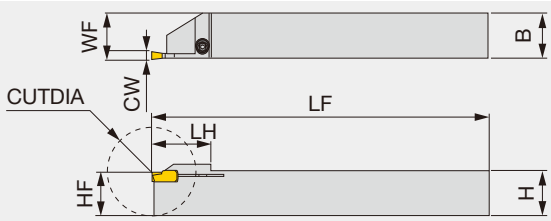
Reference pages: Inserts → F069 - F072, Standard cutting conditions → F075

MY-T SERIES

JCGSSR/L

External grooving and parting toolholder, for Swiss lathes





Right hand (R) shown.

Metric	CW	CUTDIA	H	B	LF	LH	HF	WF	Insert	Torque
JCGSSR/L1010-20	2	20	10	10	125	15	10	10.2	GE20, GE20-AL	2.3
JCGSSR/L1212-20	2	25	12	12	125	19	12	12.2	GE20, GE20-AL	2.3
JCGSSR/L1616-20	2	32	16	16	125	22.5	16	16.2	GE20, GE20-AL	2.3

CUTDIA: Max. parting diameter

Torque: Recommended clamping torque: N·m

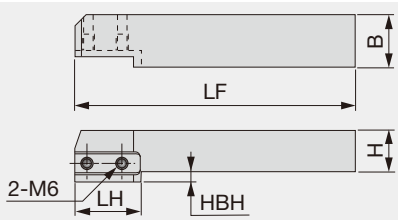
SPARE PARTS

Designation	Clamping screw	Wrench
JCGSSR/L...	CSTB-3	T-9F

MY-T SERIES

CGWSR/L

Shank for CGWSR/L-WG, -WG-L, -G, -CGD, -FL-G/TP, and -#S/D toolholders



Right hand (R) shown.

Inch	H	B	LF	LH	HBH
CGWSR/L12	0.750	0.750	5.400	1.310	0.250
CGWSR/L16	1.000	1.000	5.400	-	-

Metric	H	B	LF	LH	HBH
CGWSR/L2020	20	20	137	32.5	5
CGWSR/L2525	25	25	137	-	-

Right hand tool holders (R) use right hand cartridges (R). Left hand tool holders (L) use left hand cartridges (L).

SPARE PARTS

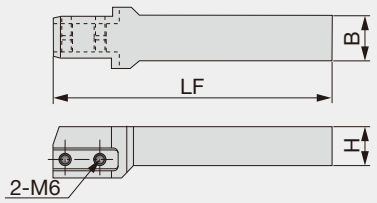
Designation	Blade screw
CGWSR/L...	CSHB-6

Reference pages: Inserts → F069 - F072, Standard cutting conditions → F075

MY-T SERIES

CGWSRL

Shank of toolholders. Vertical type with offset



Inch	H	B	LF
CGWSRL12	0.75	0.75	5.40
CGWSRL16	1.00	1.00	5.40

Right (R) or Left (L) hand cartridges can be used in this toolholder

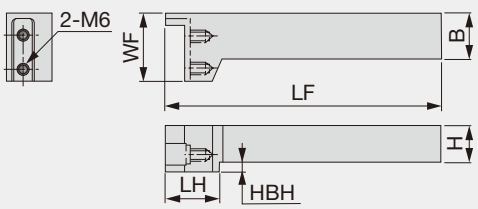
SPARE PARTS

Designation	Blade screw
CGWSRL...	CSHB-6

MY-T SERIES

CGWTR/L

Shank for CGWSR/L-WG, -WG-L, -G, -CGD, -FL-G/TP, and #S/D toolholders



Right hand (R) shown.

Inch	H	B	LF	LH	WF	HBH
CGWTR/L12	0.75	0.75	6.00	1.20	1.50	0.234
CGWTR/L16	1.00	1.00	6.00	-	1.50	-

Metric	H	B	LF	LH	WF	HBH
CGWTR/L2020	20	20	150	30.5	37	5
CGWTR/L2525	25	25	150	-	37	-

Right hand tool holders (R) use left hand cartridges (L). Left hand tool holders (L) use right hand cartridges (R).

SPARE PARTS

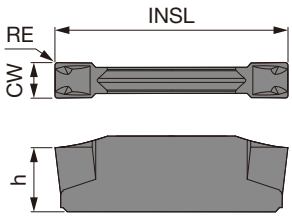
Designation	Blade screw
CGWTR/L...	CSHB-6

Reference pages: Inserts → F069 - F072, Standard cutting conditions → F075

INSERT

WGE

For external grooving and parting



P	Steel	★	☆	★	★			★			
M	Stainless	★		★	★						
K	Cast iron	☆		★	☆			☆			
N	Non-ferrous										
S	Superalloys			☆							
H	Hard materials										

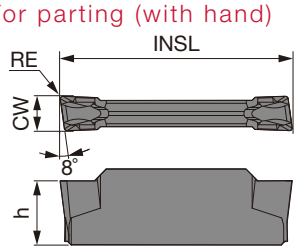
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated					Cermet					INSL (in)	h (in)
				T9225	T9125	AH120	GH730		NS9530						
WGE20	2	0.079	0.008	●	▲	●	●		●					0.787	0.185
WGE30	3	0.118	0.008	●	▲	●	●		●					0.787	0.217
WGE40	4	0.157	0.008	●	▲	●	●		●					0.984	0.224
WGE50	5	0.197	0.008	●	▲	●	●		●					0.984	0.232

● : Line up
▲ : To be discontinued

WGE(R/L)

For parting (with hand)



Right hand (R) shown.

P	Steel	★	★								
M	Stainless	★	★								
K	Cast iron	★	☆								
N	Non-ferrous										
S	Superalloys	☆									
H	Hard materials										

★ : First choice
☆ : Second choice

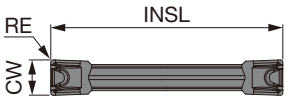
Designation	HAND	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated										INSL (in)	h (in)
					AH120	GH730										
WGE20R	R	2	0.079	0.008		●									0.787	0.185
WGE20L	L	2	0.079	0.008		●									0.787	0.185
WGE30R	R	3	0.118	0.008	●	●									0.787	0.217
WGE30L	L	3	0.118	0.008	●	●									0.787	0.217
WGE40R	R	4	0.157	0.008	●	●									0.984	0.224
WGE40L	L	4	0.157	0.008	●	●									0.984	0.224
WGE50R	R	5	0.197	0.008		●									0.984	0.232
WGE50L	L	5	0.197	0.008		●									0.984	0.232

● : Line up

Reference pages: Toolholders → F058 - F059

WGT

For turning (External grooving and parting)



		T9225	T9125	AH120	GH730	NS9530
P	Steel	★	☆	★	★	★
M	Stainless	★		★	★	
K	Cast iron	☆		★	☆	☆
N	Non-ferrous					
S	Superalloys			☆		
H	Hard materials					

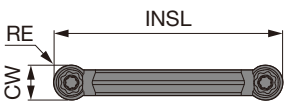
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated T9225	Coated T9125	Coated AH120	Coated GH730	Cermet NS9530	INSL (in)	h (in)
WGT30	3	0.118	0.016	●	▲	●	●	●	0.787	0.217
WGT40	4	0.157	0.016	●	▲	●	●	●	0.984	0.224
WGT50	5	0.197	0.016	●	▲	●	●	●	0.984	0.232

● : Line up
▲ : To be discontinued

WGR

For profiling (full radius)



		T9225	T9125	AH120	GH730	NS9530
P	Steel	★	☆	★	★	★
M	Stainless	★		★	★	
K	Cast iron	☆		★	☆	☆
N	Non-ferrous					
S	Superalloys			☆		
H	Hard materials					

★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated T9225	Coated T9125	Coated AH120	Coated GH730	Cermet NS9530	INSL (in)	h (in)
WGR30	3	0.118	0.059	●	▲	●	●	●	0.787	0.217
WGR40	4	0.157	0.079	●	▲	●	●	●	0.984	0.224
WGR50	5	0.197	0.098			●	●	●	0.984	0.232

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F058 - F059

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)
P	Low carbon steel, Alloy steel (~ HB150)	T9225	262 - 984
		NS9530	328 - 656
		GH730	164 - 591
	Medium carbon steel, Alloy steel (HB150 ~ 250)	T9225	262 - 722
		NS9530	262 - 591
		GH730	164 - 492
	High carbon steel, Alloy steel (HB250 ~)	T9225	262 - 722
		NS9530	262 - 492
		GH730	164 - 492
M	Stainless steel	T9225	262 - 591
		GH730	164 - 394
K	Gray iron, Ductile cast iron	T9225	262 - 820
		GH730	164 - 591

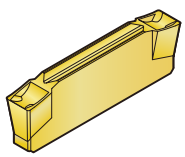
Operation	Feed: *f* (ipr)			
	Groove width: CW (in)			
	2 mm (0.079")	3 mm (0.118")	4 mm (0.157")	5 mm (0.197")
Grooving (WGE**)	0.0024 - 0.008	0.0024 - 0.010	0.0028 - 0.011	0.0028 - 0.012
Parting (WGE**R/L)	0.0016 - 0.004	0.0016 - 0.006	0.0016 - 0.006	0.0016 - 0.006
Turning (WGT**)	-	*ap* = 0.020 - 0.059 *f* = 0.0024 - 0.008	*ap* = 0.020 - 0.079 *f* = 0.0024 - 0.010	*ap* = 0.020 - 0.098 *f* = 0.0024 - 0.011
Profiling (WGR**)	-	*ap* = 0.020 - 0.055 *f* = 0.002 - 0.010	*ap* = 0.020 - 0.059 *f* = 0.002 - 0.010	*ap* = 0.020 - 0.063 *f* = 0.002 - 0.012

Note: For diameter compensation values in traversing, see page F111.

2 corner insert

External grooving and parting

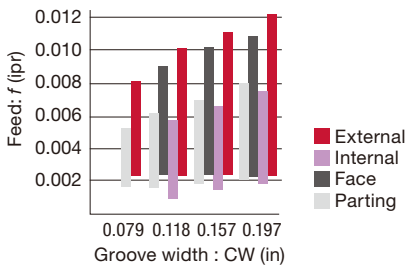
WGE



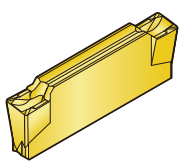
F065 page

1st choice for external grooving and parting
Excellent chip control for grooving

CW = 0.079" - 0.197"



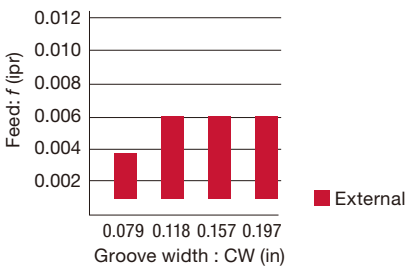
WGE R/L



F065 page

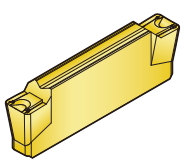
Handed insert
Minimize burr generation when workpiece is cut off

CW = 0.079" - 0.197"



External grooving and turning

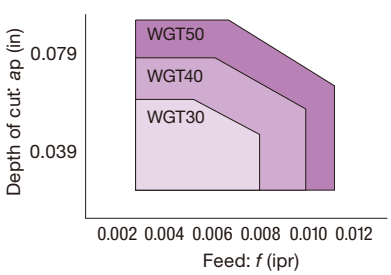
WGT



F066 page

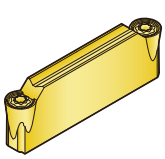
1st choice for turning
Low cutting force and good chip control for traversing

CW = 0.118" - 0.197"



Profiling

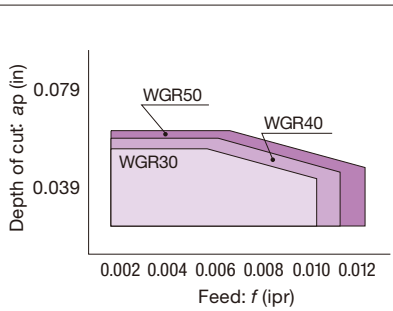
WGR



F066 page

Low cutting force and good chip control for profiling

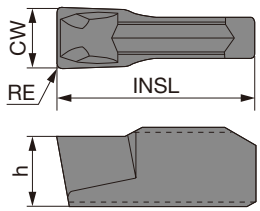
CW = 0.118" - 0.197"



INSERT

GE

For general grooving



P	Steel	★	☆	★	★			★		
M	Stainless	★		★	★					
K	Cast iron	☆		★	☆			☆		
N	Non-ferrous									
S	Superalloys			☆						
H	Hard materials									

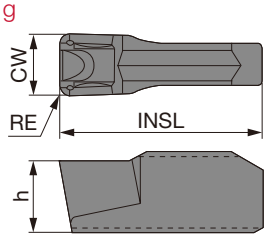
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated				Cermet		INSL (in)	h (in)
				T9225	T9125	AH120	GH730	NS9530			
GE20	2	0.079	0.008			●	●	●		0.394	0.138
GE30	3	0.118	0.008	●	▲	●	●	●		0.394	0.138
GE40	4	0.157	0.008	●	▲	●	●	●		0.394	0.157
GE50	5	0.197	0.008	●	▲	●	●	●		0.472	0.177

● : Line up
▲ : To be discontinued

GT

For turning



P	Steel	★	☆	★	★			★		
M	Stainless	★		★	★					
K	Cast iron	☆		★	☆			☆		
N	Non-ferrous									
S	Superalloys			☆						
H	Hard materials									

★ : First choice
☆ : Second choice

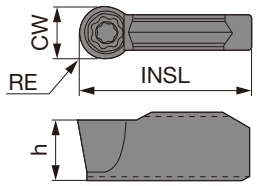
Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated				Cermet		INSL (in)	h (in)
				T9225	T9125	AH120	GH730	NS9530			
GT30	3	0.118	0.016			●	●	●		0.394	0.138
GT40	4	0.157	0.016			●	●	●		0.394	0.157
GT50	5	0.197	0.016	●	▲	●	●	●		0.472	0.177

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F060 - F063, Standard cutting conditions → F075

GR

For profiling (full radius)



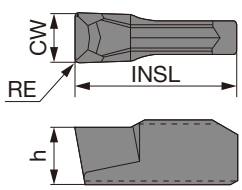
		T9225	T9125	AH120	GH730	NS9530
P	Steel	★	☆	★	★	★
M	Stainless	★		★	★	
K	Cast iron	☆		★	☆	☆
N	Non-ferrous					
S	Superalloys			☆		
H	Hard materials					

★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated T9225	Coated T9125	Coated AH120	Coated GH730	Cermet NS9530	INSL (in)	h (in)
GR30	3	0.118	0.059			●	●	●	0.394	0.138
GR40	4	0.157	0.079	●	▲	●	●	●	0.394	0.157
GR50	5	0.197	0.098	●	▲	●	●	●	0.472	0.177

● : Line up
▲ : To be discontinued

GF



		GH730	NS9530
P	Steel	★	★
M	Stainless	★	
K	Cast iron	☆	☆
N	Non-ferrous		
S	Superalloys		
H	Hard materials		

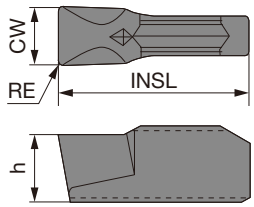
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated GH730	Cermet NS9530	INSL (in)	h (in)
GF30	3	0.118	0.008	●	●	0.394	0.138
GF40	4	0.157	0.008	●	●	0.394	0.157
GF50	5	0.197	0.008	●	●	0.472	0.177

● : Line up

Reference pages: Toolholders → F060 - F063, Standard cutting conditions → F075

GN



P	Steel	★		
M	Stainless	★		
K	Cast iron	☆		
N	Non-ferrous			
S	Superalloys			
H	Hard materials			

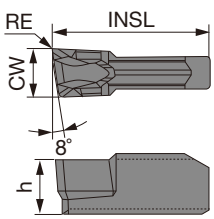
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated GH730	INSL (in)	h (in)
GN30	3	0.118	0.008	●	0.394	0.138
GN40	4	0.157	0.008	●	0.394	0.157
GN50	5	0.197	0.008	●	0.472	0.177

● : Line up

GE-R/L

For parting (with hand)



Right hand (R) shown.

P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	☆
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

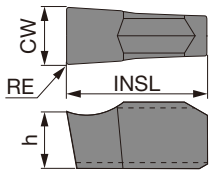
Designation	HAND	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated AH120	Coated GH730	INSL (in)	h (in)
GE30R	R	3	0.118	0.008	●	●	0.394	0.138
GE30L	L	3	0.118	0.008		●	0.394	0.138
GE40R	R	4	0.157	0.008	●	●	0.394	0.157
GE40L	L	4	0.157	0.008		●	0.394	0.157
GE50R	R	5	0.197	0.008		●	0.472	0.177
GE50L	L	5	0.197	0.008	●	●	0.472	0.177

● : Line up

Reference pages: Toolholders → F060 - F063, Standard cutting conditions → F075

GE-AL

For aluminum and non-ferrous metal



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Uncoated KS05F	INSL (in)	h (in)
GE20-AL	2	0.079	0.008	●	0.394	0.138
GE30-AL	3	0.118	0.008	●	0.394	0.138
GE40-AL	4	0.157	0.008	●	0.394	0.157

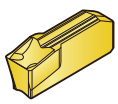
● : Line up

Reference pages: Toolholders → F060 - F063, Standard cutting conditions → F075

1 corner insert

External grooving and parting

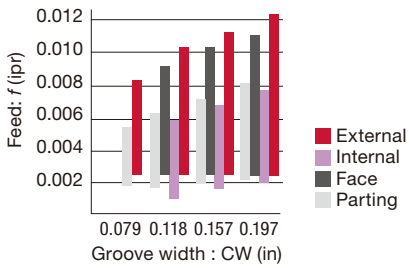
GE



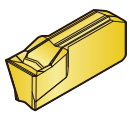
F069 page

1st choice for external grooving and parting
Excellent chip control

CW = 0.079" - 0.197"



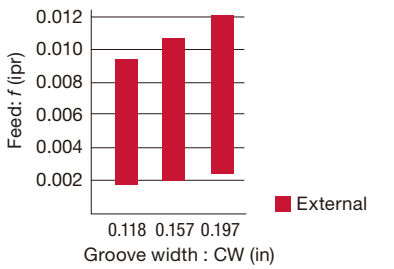
GF



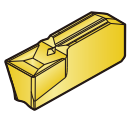
F070 page

1st choice for face grooving
Low cutting force and good chip control for face grooving

CW = 0.118" - 0.197"



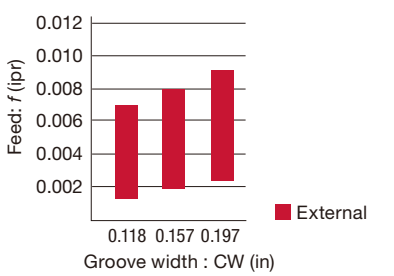
GN



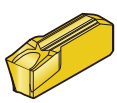
F071 page

1st choice for internal grooving
Low cutting force and good chip control for internal grooving

CW = 0.118" - 0.197"



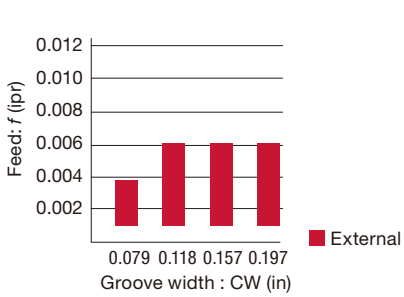
GE R/L



F071 page

Handed insert
Minimize burr generation when workpiece is cut off

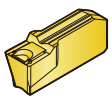
CW = 0.118" - 0.197"



1 corner insert

External grooving and turning

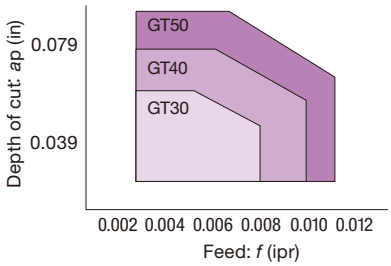
GT

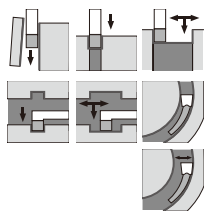


F069 page

1st choice for turning
Low cutting force and good chip control for traversing

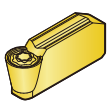
CW = 0.118" - 0.197"





Profiling

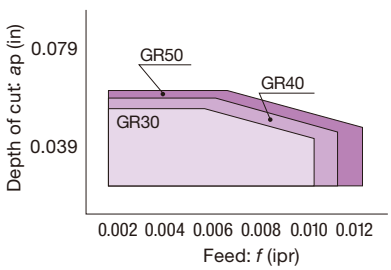
GR

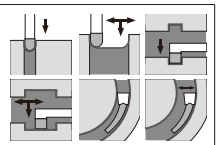


F070 page

Full radius type
Low cutting force and good chip control for profiling

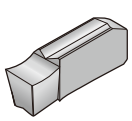
CW = 0.118" - 0.197"





For aluminum and non-ferrous metal

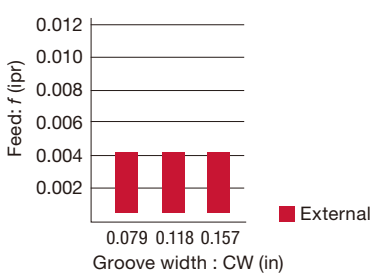
GE-AL

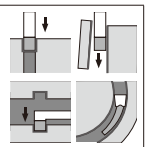


F072 page

Reduce cutting force and welding due to sharp chipbreaker

CW = 0.079" - 0.157"





STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)
P	Low carbon steel, Alloy steel (- HB150)	T9225	262 - 984
		NS9530	328 - 656
		GH730	164 - 591
	Medium carbon steel, Alloy steel (HB150 - 250)	T9225	262 - 722
		NS9530	262 - 591
		GH730	164 - 492
	High carbon steel, Alloy steel (HB250 -)	T9225	262 - 722
		NS9530	262 - 492
		GH730	164 - 394
M	Stainless steel	T9225	262 - 591
		GH730	164 - 394
K	Gray iron, Ductile cast iron	T9225	262 - 820
		GH730	164 - 591
N	Aluminum alloys, Non-ferrous metal	KS05F	656 - 984

For External

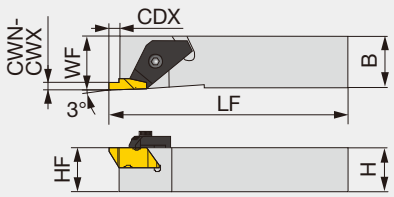
Operation	Feed: *f* (ipr) Groove width: CW (in)			
	2 mm (0.079")	3 mm (0.118")	4 mm (0.157")	5 mm (0.197")
Grooving (GE**)	0.0024 - 0.008	0.0024 - 0.010	0.0028 - 0.011	0.0028 - 0.012
Parting off (GE**R/L)	0.0016 - 0.004	0.0016 - 0.006	0.0016 - 0.006	0.0016 - 0.006
Traversing (GT**)	-	Depth of cut *ap* = 0.020 - 0.059 *f* = 0.0024 - 0.008	Depth of cut *ap* = 0.020 - 0.079 *f* = 0.0024 - 0.010	Depth of cut *ap* = 0.020 - 0.098 *f* = 0.0024 - 0.011
Profiling (GR**)	-	Depth of cut *ap* = 0.020 - 0.055 *f* = 0.002 - 0.010	Depth of cut *ap* = 0.020 - 0.059 *f* = 0.002 - 0.010	Depth of cut *ap* = 0.020 - 0.063 *f* = 0.002 - 0.012
Grooving for Aluminum alloys (GE**-AL)	0.0012 - 0.004	0.0012 - 0.004	0.0012 - 0.004	-

For diameter compensation values in traversing, see page F111.

TUNGT-CLAMP

FLASR/L

External grooving and threading toolholder, for Swiss lathes



Right hand (R) shown.

Inch	CWN	CWX	CDX	HF	H	B	LF	WF	Insert	Torque
FLASR/L-082D	0.031	0.128	0.138	0.500	0.500	0.500	6.000	0.500	FL*-2**R/L...	2.21
FLASR-102B	0.031	0.128	0.138	0.625	0.625	0.625	4.500	0.625	FL*-2**R...	2.21
FLASR/L-103B	0.031	0.250	0.210	0.625	0.625	0.625	4.500	0.625	FL*-3**R/L...	2.21

Metric	CWN	CWX	CDX	HF	H	B	LF	WF	Insert	Torque*
FLASR/L-1616M3	1	3	5.31	16	16	16	125	16	FL*-3**R/L...	3

Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
Torque: Recommended clamping torque: lbs·ft (*N·m)

Inch SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLASR-082D	TF-182	S-310	7/64HEX
FLASL-082D	TF-183	S-310	7/64HEX
FLASR-102B, FLASR-103B	TF-184	S-412	5/32HEX
FLASL-103B	TF-185	S-412	5/32HEX

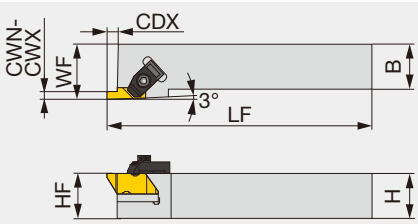
Metric SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLASR-1616M3	TF-184	S-412	5/32HEX
FLASL-1616M3	TF-185	S-412	5/32HEX

TUNGT-CLAMP

FLSR/L

External grooving and threading toolholder, for Swiss lathes



Right hand (R) shown.

Inch	CWN	CWX	CDX	HF	H	B	LF	WF	Insert	Torque
FLSR/L-122B	0.031	0.128	0.140	0.750	0.750	0.750	4.500	1.000	FL*-2**R/L...	2.21
FLSR/L-162C	0.031	0.128	0.140	1.000	1.000	1.000	5.000	1.250	FL*-2**R/L...	2.21
FLSR/L-123B	0.031	0.250	0.210	0.750	0.750	0.750	4.500	1.000	FL*-3**R/L...	2.21
FLSR/L-163C	0.031	0.250	0.210	1.000	1.000	1.000	5.000	1.250	FL*-3**R/L...	2.21

Metric	CWN	CWX	CDX	HF	H	B	LF	WF	Insert	Torque*
FLSR/L-2020M3	1	3	4.5	20	20	20	125	32	FL*-3**R/L...	3
FLSR/L-2525M3	1	3	4.5	25	25	25	150	32	FL*-3**R/L...	3

Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
Torque: Recommended clamping torque: lbs·ft (*N·m)

Inch SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLSR-122B, FLSR-162C	TF-74	S-310	7/64HEX
FLSL-122B, FLSL-162C	TF-75	S-310	7/64HEX
FLSR-123B, FLSR-163C	TF-72	S-412	5/32HEX
FLSL-123B, FLSL-163C	TF-73	S-412	5/32HEX

Metric SPARE PARTS

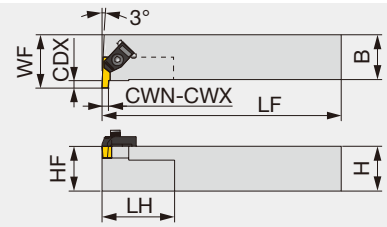
Designation	Clamp	Clamping screw	Wrench
FLSR-****M3	TF-72	S-412	5/32HEX
FLSL-****M3	TF-73	S-412	5/32HEX

Reference pages: Inserts → F079 - F086, Standard cutting conditions → F078

TUNGT-CLAMP

FLER/L

External toolholders for grooving & threading



Right hand (R) shown.

Inch	CWN	CWX	CDX	HF	H	B	LF	LH	WF	Insert	Torque
FLER/L-122B	0.031	0.128	0.140	0.750	0.750	0.750	4.500	1.000	1.000	FL*-2**L/R...	2.21
FLER/L-162C	0.031	0.128	0.140	1.000	1.000	1.000	5.000	1.000	1.250	FL*-2**L/R...	2.21
FLER/L-123B	0.031	0.250	0.210	0.750	0.750	0.750	4.500	2.000	1.125	FL*-3**L/R...	2.21
FLER/L-163D	0.031	0.250	0.210	1.000	1.000	1.000	6.000	2.000	1.250	FL*-3**L/R...	2.21

The right hand toolholders use right hand inserts, and the left hand toolholders use left hand inserts.
Torque: Recommended clamping torque: lbs·ft

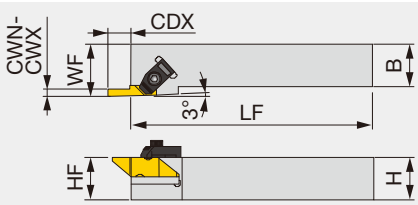
SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLER-122B, FLER-162C	TF-75	S-310	7/64HEX
FLEL-122B, FLEL-162C	TF-74	S-310	7/64HEX
FLER-123B, FLER-163D	TF-73	S-412	5/32HEX
FLEL-123B, FLEL-163D	TF-72	S-412	5/32HEX

TUNGT-CLAMP

FLSR/LT

External toolholders for grooving & threading



Right hand (R) shown.

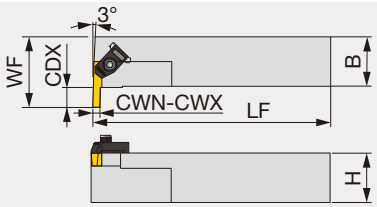
Inch	CWN	CWX	CDX	HF	H	B	LF	WF	Insert	Torque
FLSR/LT-163D	0.094	0.189	0.440	1.000	1.000	1.000	6.000	1.250	FLGT-3R/L...	2.21
FLSR/LT-203D	0.094	0.189	0.440	1.250	1.250	1.250	6.000	1.500	FLGT-3R/L...	2.21

The right hand toolholders use right hand inserts, and the left hand toolholders use left hand inserts.
Torque: Recommended clamping torque: lbs·ft

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLSRT-163D, FLSRT-203D	TF-72	S-412	5/32HEX
FLSLT-163D, FLSLT-203D	TF-73	S-412	5/32HEX

Reference pages: Inserts → F079 - F086, Standard cutting conditions → F078



Right hand (R) shown.

Inch	CWN	CWX	CDX	HF	H	B	LF	WF	Insert	Torque
FLER/LT-163D	0.094	0.189	0.440	1.000	1.000	1.000	6.000	1.250	FLGT-3R/L...	2.21
FLER/LT-203D	0.094	0.189	0.440	1.250	1.250	1.250	6.000	1.500	FLGT-3R/L...	2.21

The right hand toolholders use right hand inserts, and the left hand toolholders use left hand inserts.
Torque: Recommended clamping torque: lbs·ft

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
FLERT-163D, FLERT-203D	TF-72	S-412	5/32HEX
FLELT-163D, FLELT-203D	TF-73	S-412	5/32HEX

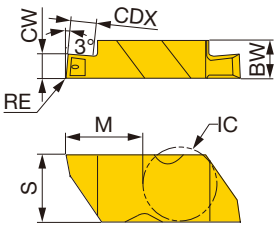
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Application	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	High carbon steel 1045, etc.	AH110	Grooving	328 - 656	0.005 - 0.014
		AH725	Threading	262 - 591	-
	Alloy steel 4137, etc.	AH110	Grooving	164 - 262	0.005 - 0.012
		AH725	Threading	197 - 525	-
M	Stainless steel S30400, etc.	AH110	Grooving	164 - 492	0.004 - 0.008
		AH725	Threading	164 - 427	-
K	Gray cast iron No.250B, etc.	AH110	Grooving	164 - 591	0.004 - 0.010
	Ductile cast iron 60-40-18, etc.	AH110	Grooving	164 - 394	0.004 - 0.010

Reference pages: Inserts → F079 - F086

INSERT

FLG-CB (With chipbreaker, metric width)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

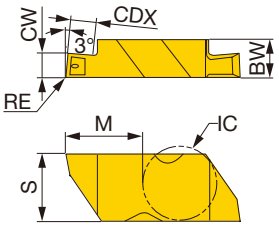
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLG-3M100R-CB	R	1	0.039	0.005 - 0.010	●	0.055	0.3750	0.195	0.344	0.4050
FLG-3M100L-CB	L	1	0.039	0.005 - 0.010	●	0.055	0.3750	0.195	0.344	0.4050
FLG-3M150R-CB	R	1.5	0.059	0.005 - 0.010	●	0.100	0.3750	0.195	0.344	0.4050
FLG-3M150L-CB	L	1.5	0.059	0.005 - 0.010	●	0.100	0.3750	0.195	0.344	0.4050
FLG-3M200R-CB	R	2	0.079	0.005 - 0.010	●	0.100	0.3750	0.195	0.344	0.4050
FLG-3M200L-CB	L	2	0.079	0.005 - 0.010	●	0.100	0.3750	0.195	0.344	0.4050
FLG-3M250R-CB	R	2.5	0.098	0.005 - 0.010	●	0.160	0.3750	0.195	0.344	0.4050
FLG-3M250L-CB	L	2.5	0.098	0.005 - 0.010	●	0.160	0.3750	0.195	0.344	0.4050
FLG-3M300R-CB	R	3	0.118	0.005 - 0.010	●	0.160	0.3750	0.195	0.344	0.4050
FLG-3M300L-CB	L	3	0.118	0.005 - 0.010	●	0.160	0.3750	0.195	0.344	0.4050

● : Line up

Reference pages: Toolholders → F076 - F078

FLG-CB (With chipbreaker)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

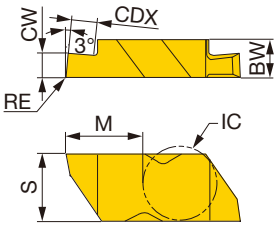
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLG-2047R-CB	R	1.2	0.047	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2047L-CB	L	1.2	0.047	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2062R-CB	R	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2062L-CB	L	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2078R-CB	R	1.98	0.078	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2078L-CB	L	1.98	0.078	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2094R-CB	R	2.39	0.094	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2094L-CB	L	2.39	0.094	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2125R-CB	R	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2125L-CB	L	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-3031R-CB	R	0.79	0.031	0.002 - 0.005	●	0.050	0.3750	0.195	0.344	0.4050
FLG-3031L-CB	L	0.79	0.031	0.002 - 0.005	●	0.050	0.3750	0.195	0.344	0.4050
FLG-3047R-CB	R	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLG-3047L-CB	L	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLG-3062R-CB	R	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3062L-CB	L	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3072R-CB	R	1.83	0.072	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3072L-CB	L	1.83	0.072	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3078R-CB	R	1.98	0.078	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3078L-CB	L	1.98	0.078	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3088R-CB	R	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3088L-CB	L	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3094R-CB	R	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3094L-CB	L	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3097R-CB	R	2.46	0.097	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3097L-CB	L	2.46	0.097	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3125R-CB	R	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3125L-CB	L	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3189R-CB	R	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3189L-CB	L	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050

● : Line up

Reference pages: Toolholders → F076 - F078

FLG



P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	★		
H	Hard materials			

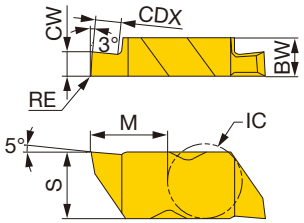
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLG-2031R	R	0.79	0.031	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2031L	L	0.79	0.031	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2041R	R	1.04	0.041	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2041L	L	1.04	0.041	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2047R	R	1.19	0.047	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2047L	L	1.19	0.047	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2058R	R	1.47	0.058	0.005 - 0.010	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2058L	L	1.47	0.058	0.005 - 0.010	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2062R	R	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2062L	L	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2094R	R	2.39	0.094	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2094L	L	2.39	0.094	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2125R	R	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2125L	L	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-3031R	R	0.79	0.031	0.002 - 0.005	●	0.050	0.3750	0.195	0.344	0.4050
FLG-3031L	L	0.79	0.031	0.002 - 0.005	●	0.050	0.3750	0.195	0.344	0.4050
FLG-3047R	R	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLG-3047L	L	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLG-3062R	R	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3062L	L	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3072R	R	1.83	0.072	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3072L	L	1.83	0.072	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3078R	R	1.98	0.078	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3078L	L	1.98	0.078	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3088R	R	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3088L	L	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3094R	R	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3094L	L	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3097R	R	2.46	0.097	0.010 - 0.015	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3097L	L	2.46	0.097	0.010 - 0.015	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3105R	R	2.67	0.105	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3105L	L	2.67	0.105	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3110R	R	2.79	0.110	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3110L	L	2.79	0.110	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3122R	R	3.1	0.122	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3122L	L	3.1	0.122	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3125R	R	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3125L	L	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3142R	R	3.61	0.142	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3142L	L	3.61	0.142	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3156R	R	3.96	0.156	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3156L	L	3.96	0.156	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3178R	R	4.52	0.178	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3178L	L	4.52	0.178	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3185R	R	4.7	0.185	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3185L	L	4.7	0.185	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3189R	R	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3189L	L	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3250R	R	6.35	0.250	0.020 - 0.025	●	0.180	0.3750	0.250	0.344	0.4050
FLG-3250L	L	6.35	0.250	0.020 - 0.025	●	0.180	0.3750	0.250	0.344	0.4050

● : Line up

Reference pages: Toolholders → F076 - F078

FLGP (Positive rake)



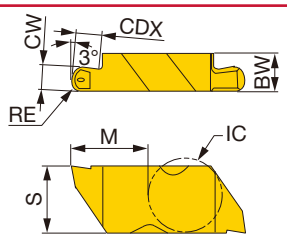
P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLGP-2031R	R	0.79	0.031	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLGP-2031L	L	0.79	0.031	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLGP-2062R	R	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLGP-2062L	L	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLGP-2125R	R	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLGP-2125L	L	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLGP-3047R	R	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLGP-3047L	L	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLGP-3062R	R	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLGP-3062L	L	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLGP-3088R	R	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3088L	L	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3094R	R	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3094L	L	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3125R	R	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3125L	L	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3156R	R	3.96	0.156	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3156L	L	3.96	0.156	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3189R	R	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3189L	L	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050

● : Line up

FLR-CB (Full nose radius, with chipbreaker)



P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

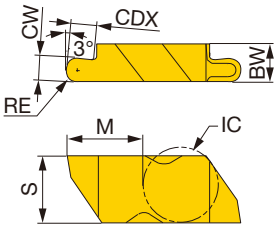
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLR-3031R-CB	R	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLR-3031L-CB	L	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLR-3047R-CB	R	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLR-3047L-CB	L	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLR-3062R-CB	R	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLR-3062L-CB	L	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017

● : Line up

Reference pages: Toolholders → F076 - F078

FLR (Full nose radius)



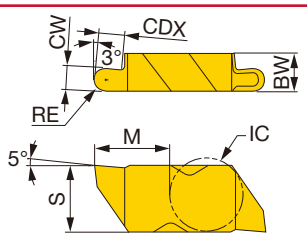
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLR-2031R	R	1.57	0.062	0.031	●	0.110	0.1875	0.150	0.219	0.2683
FLR-2031L	L	1.57	0.062	0.031	●	0.110	0.1875	0.150	0.219	0.2683
FLR-2047R	R	2.39	0.094	0.047	●	0.110	0.1875	0.150	0.219	0.2675
FLR-2047L	L	2.39	0.094	0.047	●	0.110	0.1875	0.150	0.219	0.2675
FLR-2062R	R	3.18	0.125	0.062	●	0.110	0.1875	0.150	0.219	0.2667
FLR-2062L	L	3.18	0.125	0.062	●	0.110	0.1875	0.150	0.219	0.2667
FLR-3031R	R	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLR-3031L	L	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLR-3047R	R	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLR-3047L	L	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLR-3062R	R	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLR-3062L	L	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLR-3078R	R	3.96	0.156	0.078	●	0.180	0.3750	0.195	0.344	0.4008
FLR-3078L	L	3.96	0.156	0.078	●	0.180	0.3750	0.195	0.344	0.4008
FLR-3094R	R	4.8	0.189	0.094	●	0.180	0.3750	0.195	0.344	0.4000
FLR-3094L	L	4.8	0.189	0.094	●	0.180	0.3750	0.195	0.344	0.4000

● : Line up

FLRP (Full nose radius and positive rake)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

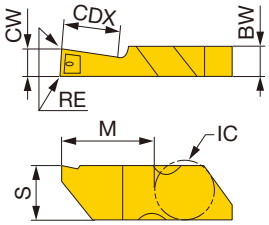
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLRP-3031R	R	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLRP-3031L	L	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLRP-3047R	R	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLRP-3047L	L	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLRP-3062R	R	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLRP-3062L	L	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLRP-3078R	R	3.96	0.156	0.078	●	0.180	0.3750	0.195	0.344	0.4008
FLRP-3078L	L	3.96	0.156	0.078	●	0.180	0.3750	0.195	0.344	0.4008
FLRP-3094R	R	4.8	0.189	0.094	●	0.180	0.3750	0.195	0.344	0.4000
FLRP-3094L	L	4.8	0.189	0.094	●	0.180	0.3750	0.195	0.344	0.4000

● : Line up

Reference pages: Toolholders → F076 - F078

FLGD-CB (Single edge deep, with chipbreaker)



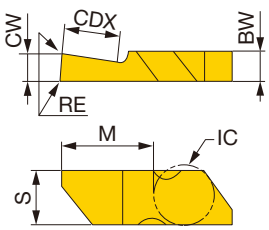
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLGD-3094R-CB	R	2.39	0.094	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3094L-CB	L	2.39	0.094	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3125R-CB	R	3.18	0.125	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3125L-CB	L	3.18	0.125	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3189R-CB	R	4.8	0.189	0.020 - 0.025	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3189L-CB	L	4.8	0.189	0.020 - 0.025	●	0.250	0.3750	0.195	0.344	0.5050

● : Line up

FLGD (Single edge deep)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

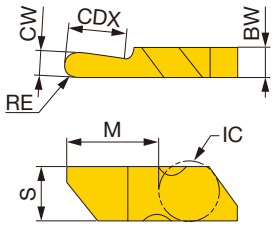
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLGD-3062R	R	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.5050
FLGD-3062L	L	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.5050
FLGD-3094R	R	2.39	0.094	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3094L	L	2.39	0.094	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3125R	R	3.18	0.125	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3125L	L	3.18	0.125	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3189R	R	4.8	0.189	0.020 - 0.025	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3189L	L	4.8	0.189	0.020 - 0.025	●	0.250	0.3750	0.195	0.344	0.5050

● : Line up

Reference pages: Toolholders → F076 - F078

FLRD (Full nose radius, single edge deep)



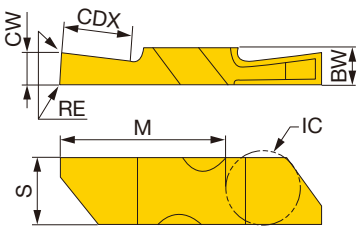
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLRD-3062R	R	3.19	0.125	0.062	●	0.250	0.3750	0.195	0.344	0.5016
FLRD-3062L	L	3.19	0.125	0.062	●	0.250	0.3750	0.195	0.344	0.5016
FLRD-3094R	R	4.8	0.189	0.094	●	0.250	0.3750	0.195	0.344	0.5016
FLRD-3094L	L	4.8	0.189	0.094	●	0.250	0.3750	0.195	0.344	0.5016

● : Line up

FLGT (Double end deep)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

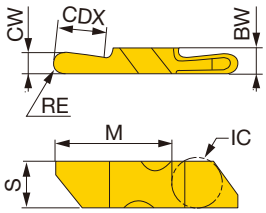
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLGT-3094R	R	2.39	0.094	0.005 - 0.010	●	0.275	0.3750	0.195	0.344	0.8550
FLGT-3094L	L	2.39	0.094	0.005 - 0.010	●	0.275	0.3750	0.195	0.344	0.8550
FLGT-3125R	R	3.18	0.125	0.005 - 0.010	●	0.437	0.3750	0.195	0.344	0.8550
FLGT-3125L	L	3.18	0.125	0.005 - 0.010	●	0.437	0.3750	0.195	0.344	0.8550
FLGT-3189R	R	4.8	0.189	0.020 - 0.025	●	0.437	0.3750	0.195	0.344	0.8550
FLGT-3189L	L	4.8	0.189	0.020 - 0.025	●	0.437	0.3750	0.195	0.344	0.8550

*Fits FLSLT/RT toolholders

● : Line up

Reference pages: Toolholders → F076 - F078

FLRT (Double end deep FNR)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

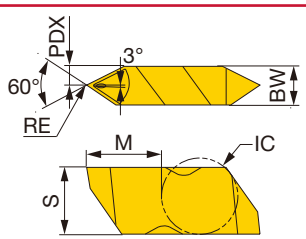
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLRT-3062R	R	3.18	0.125	0.062	●	0.437	0.3750	0.195	0.344	0.8550
FLRT-3062L	L	3.18	0.125	0.062	●	0.437	0.3750	0.195	0.344	0.8550
FLRT-3094R	R	4.8	0.189	0.094	●	0.437	0.3750	0.195	0.344	0.8550
FLRT-3094L	L	4.8	0.189	0.094	●	0.437	0.3750	0.195	0.344	0.8550

*Fits FLSLT/RT toolholders

● : Line up

FLT-CB (For threading)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

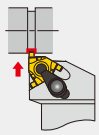
Designation	HAND	RE (in)	Coated AH110	TPI Internal	TPI External	IC (in)	PDX (in)	BW (in)	S (in)	M (in)
FLT-3R-HCB	R	0.005 - 0.008	●	5-12	6-20	0.3750	0.098	0.195	0.344	0.3999
FLT-3L-HCB	L	0.005 - 0.008	●	5-12	6-20	0.3750	0.098	0.195	0.344	0.3999
FLT-3RC-HCB	R	0.012 - 0.015	●	5-6	6-11	0.3750	0.098	0.195	0.344	0.3999
FLT-3LC-HCB	L	0.012 - 0.015	●	5-6	6-11	0.3750	0.098	0.195	0.344	0.3999
FLT-3R-CB	R	0.005 - 0.008	●	8-12	8-20	0.3750	0.098	0.195	0.344	0.3999
FLT-3L-CB	L	0.005 - 0.008	●	8-12	8-20	0.3750	0.098	0.195	0.344	0.3999

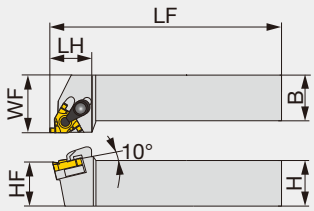
● : Line up

Reference pages: Toolholders → F076 - F078

CER/L

Clamp-on external grooving and threading toolholder (alternative clamping of screw-on or clamp-on only for DT type)





Right hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HF	WF	Insert	Torque
CER/L123DT	0.039	0.089	0.750	0.750	5.000	0.870	0.750	1.000	GTGN16...	2.58
CER/L163DT	0.039	0.089	1.000	1.000	6.000	1.000	1.000	1.250	GTGN16...	2.58
CER203DT	0.039	0.089	1.250	1.250	6.000	1.250	1.250	1.500	GTGN16...	2.58

Metric	CWN	CWX	H	B	LF	LH	HF	WF	Insert	Torque*
CER/L1212H16DT	1	2.25	12	12	100	24	12	16	GTGN16...	3.5
CER/L1616H16DT	1	2.25	16	16	100	24	16	20	GTGN16...	3.5
CER/L2020K16DT	1	2.25	20	20	125	24	20	25	GTGN16...	3.5
CER/L2525M16DT	1	2.25	25	25	150	28	25	32	GTGN16...	3.5
CER3232P16T	1	2.25	32	32	170	32	32	40	GTGN16...	3.5

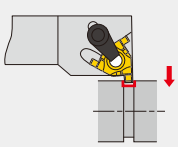
A clamp set consists of a clamp and a clamping screw. A shim set consists of a shim and a shim screw to secure the shim to the shank.
Standard shims can be used on both right- and left-hand toolholders. Please use either of the sides depending on the tool hand.
When using grooving inserts, please use shims for grooving. Shims for grooving inserts are sold separately.
Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
Torque: Recommended clamping torque: lbs·ft (*N·m)

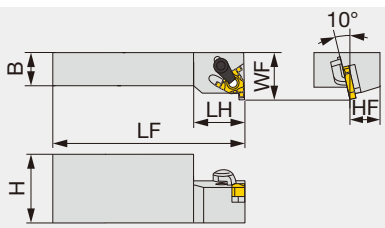
SPARE PARTS

Designation	Clamp set	Clamp screw	Shim screw	*Optional: Shim for grooving	Wrench 1	Wrench 2
CER/L123DT, CER/L163DT, CER203DT	CSP16	CSTB-3.5ST	DTS5-3.5	G16ER/IL-DT	P-3.5	T-15F
CER*****16DT	CSP16	CSTB-3.5ST	DTS5-3.5	G16ER/IL-DT	P-3.5	T-15F
CEL*****16DT	CSP16	CSTB-3.5ST	DTS5-3.5	G16EL/IR-DT	P-3.5	T-15F
CER3232P16T	CSP16	-	-	G16ER/IR-S	-	T-15F

B-CER/L

External threading toolholder, for Swiss lathes





Right hand (R) shown.

Metric	CWN	CWX	H	B	LF	LH	HF	WF	Insert	Torque
B-CER/L16M16	1	2.25	32	16	150	24	16	22	GTGN16...	3.5

When using grooving inserts, please use shims for grooving. Shims for grooving inserts are sold separately.
Use right-hand toolholders (R) with right-hand inserts (R); and left-hand toolholders (L) with left-hand inserts (L).
Torque: Recommended clamping torque: N·m

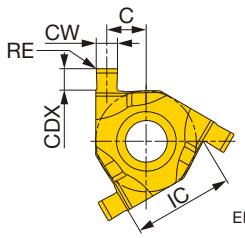
SPARE PARTS

Designation	Clamp set	Clamp screw	Wrench	*Optional: Shim for grooving
B-CER16M16	CSP16	-	T-15F	G16ER/IL-S
B-CEL16M16	CSP16	-	T-15F	G16EL/IR-S

Reference pages: Inserts, Standard cutting conditions → F088

INSERT

GTGN16



ER/IL shown.

P	Steel	★	
M	Stainless	★	
K	Cast iron		
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND (External)	CW±0.03 (mm)	CW±0.001 (in)	RE (in)	Coated SH730	Insert size	CDX (in)	IC (in)	C (in)	Shim: Dual-clamp toolholder: screw-on and clamp-on	Shim: Clamp-on toolholder
GTGN-16ER/IL100	R	1	0.039	0.004	●	16	0.049	0.375	0.166	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR100	L	1	0.039	0.004	●	16	0.049	0.375	0.166	G16ER/IL-DT	G16ER/IL-S
GTGN-16ER/IL120	R	1.2	0.047	0.004	●	16	0.051	0.375	0.162	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR120	L	1.2	0.047	0.004	●	16	0.051	0.375	0.162	G16ER/IL-DT	G16ER/IL-S
GTGN-16ER/IL140	R	1.4	0.055	0.004	●	16	0.059	0.375	0.158	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR140	L	1.4	0.055	0.004	●	16	0.059	0.375	0.158	G16ER/IL-DT	G16ER/IL-S
GTGN-16ER/IL170	R	1.7	0.067	0.004	●	16	0.067	0.375	0.144	G16EL/IR-DT	G16EL/IR-S
GTGN-16EL/IR170	L	1.7	0.067	0.004	●	16	0.067	0.375	0.144	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL195	R	1.95	0.077	0.004	●	16	0.067	0.375	0.148	G16EL/IR-DT	G16EL/IR-S
GTGN-16EL/IR195	L	1.95	0.077	0.004	●	16	0.067	0.375	0.148	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL225	R	2.25	0.089	0.004	●	16	0.071	0.375	0.142	G16EL/IR-DT	G16EL/IR-S
GTGN-16EL/IR225	L	2.25	0.089	0.004	●	16	0.071	0.375	0.142	G16EL/IR-DT	G16EL/IR-S

GTGN insert can be used for both external and internal machining, but the tool hand is reversed.
Shim for GTGN depends on the toolholder type.

● : Line up

STANDARD CUTTING CONDITIONS

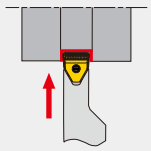
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Steel 1045, 4140, etc.	SH730	160 - 490	0.002 - 0.004
M	Stainless steel 304, 316, etc.	SH730	100 - 490	0.002 - 0.004
S	Heat-resistant alloys, Titanium alloys, etc. Ti-6Al-4V, etc.	SH730	100 - 330	0.002 - 0.004

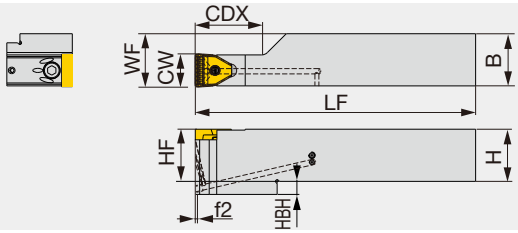
Reference pages: Toolholders → F087

TUNGHEAVY GROOVE

FPGR

Lever-lock external wide grooving toolholder





Inch	CW	CDX	H	B	LF	HF	WF	HBH	f2	Insert (1)	Torque
FPGR16-10T20	0.394	0.787	1.000	1.000	7.000	1.000	1.020	-	0.019	PSG*10...	1.62
FPGR20-10T36	0.394	1.417	1.250	1.250	8.000	1.250	1.270	-	0.019	PSG*10...	1.62
FPGR16-15T20	0.590	0.787	1.000	1.000	7.000	1.000	1.020	-	0.019	PSG*15...	1.62
FPGR20-15T40	0.590	1.574	1.250	1.250	8.000	1.250	1.270	-	0.015	PSG*15...	1.62
FPGR20-20T40	0.787	1.574	1.250	1.250	8.000	1.250	1.270	0.314	0.015	PSG*20...	6.27
FPGR24-20T50	0.787	1.968	1.500	1.500	10.000	1.500	1.520	0.314	0.015	PSG*20...	6.27
FPGR20-25T40	0.984	1.574	1.250	1.250	8.000	1.250	1.270	0.314	0.015	PSG*25...	6.27
FPGR24-25T50	0.984	1.968	1.500	1.500	10.000	1.500	1.520	0.314	0.015	PSG*25...	6.27

(1) Can be used for both wide grooving and wide profile grooving
Torque: Recommended clamping torque: lbs·ft
CDX, LF, f2 are dimensions when PSGM insert is attached. When mounting PSGB insert, the dimensions will be 0.197" (5 mm) longer.

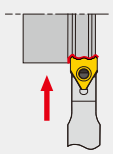
SPARE PARTS

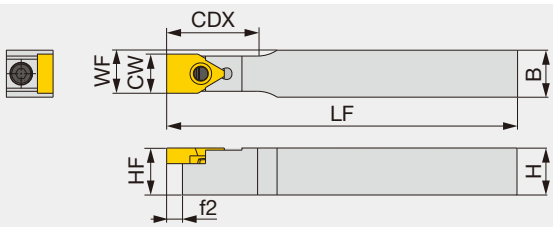
Designation	Lever	Clamping screw	Spring	Wrench
FPGR**-10T..., 15T...	FCL4	FCS3	BP-5	P-2.5
FPGR**-20T..., 25T...	FCL8	FCS6	BP-9	P-5

TUNGHEAVY GROOVE

FPGN

Lever-lock external wide profile grooving toolholder





Inch	CW	CDX	H	B	LF	HF	WF	f2	Insert (1)	Torque
FPGN08-10T20	0.394	0.984	0.500	0.500	4.946	0.500	0.450	0.216	PSG*10...	1.62
FPGN10-10T20	0.394	0.984	0.625	0.625	4.946	0.625	0.510	0.216	PSG*10...	1.62
FPGN12-10T20	0.394	0.984	0.750	0.750	5.196	0.750	0.570	0.216	PSG*10...	1.62
FPGN10-15T25	0.590	1.181	0.625	0.625	4.946	0.625	0.610	0.216	PSG*15...	1.62
FPGN12-15T25	0.590	1.181	0.750	0.750	5.196	0.750	0.670	0.216	PSG*15...	1.62
FPGN12-20T32	0.787	1.456	0.750	0.750	5.196	0.750	0.770	0.216	PSG*20...	6.27
FPGN16-20T32	0.787	1.456	1.000	1.000	6.196	1.000	0.890	0.216	PSG*20...	6.27
FPGN16-25T36	0.984	1.614	1.000	1.000	6.196	1.000	0.990	0.216	PSG*25...	6.27

PSGB insert blank is available for tailored inserts.
(1) Can be used for both wide grooving and wide profile grooving
Torque: Recommended clamping torque: lbs·ft
CDX, LF, f2 are dimensions when PSGB insert is attached. When mounting PSGM insert, the dimensions will be 0.197" (5 mm) shorter.

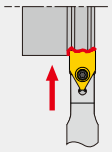
SPARE PARTS

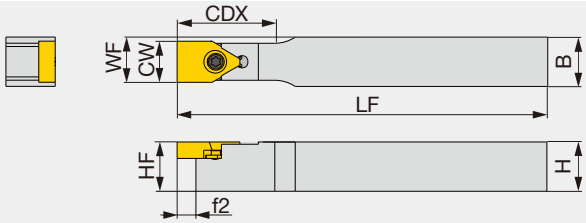
Designation	Lever	Clamping screw	Spring	Wrench
FPGN**-10T..., 15T...	FCL4	FCS3	BP-5	P-2.5
FPGN**-20T..., 25T...	FCL8	FCS6	BP-9	P-5

Reference pages: Inserts → F091, Standard cutting conditions → F092

SPGN

Screw-on external wide profile grooving toolholder





Inch	CW	CDX	H	B	LF	HF	WF	f2	Insert (1)	Torque
SPGN08-10T20	0.394	0.984	0.500	0.500	4.946	0.500	0.450	0.216	PSGB10	0.96
SPGN10-10T20	0.394	0.984	0.625	0.625	4.946	0.625	0.510	0.216	PSGB10	0.96
SPGN12-10T20	0.394	0.984	0.750	0.750	5.196	0.750	0.570	0.216	PSGB10	0.96
SPGN10-15T25	0.590	1.181	0.625	0.625	4.946	0.625	0.610	0.216	PSGB15	2.58
SPGN12-15T25	0.590	1.181	0.750	0.750	5.196	0.750	0.670	0.216	PSGB15	2.58
SPGN12-20T32	0.787	1.456	0.750	0.750	5.196	0.750	0.770	0.216	PSGB20	3.69
SPGN16-20T32	0.787	1.456	1.000	1.000	6.196	1.000	0.890	0.216	PSGB20	3.69
SPGN16-25T36	0.984	1.614	1.000	1.000	6.196	1.000	0.990	0.216	PSGB25	3.69

PSGB insert blank is available for tailored inserts.
Torque: Recommended clamping torque: lbs·ft

SPARE PARTS

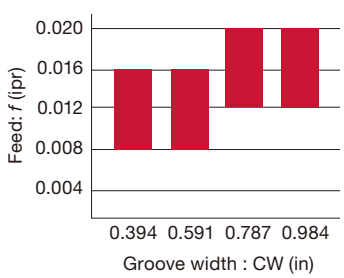
Designation	Clamping screw	Wrench
SPGN**-10T20	CSTB-3L081	T-8F
SPGN**-15T25	CSTB-4	T-15F
SPGN**-20T..., 25T...	CSTB-5	T-20F

TUNGHEAVY GROOVE - Chipbreaker Guide

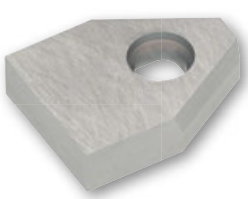
PSGM

For wide grooving
Improved productivity with excellent chip control and the chipbreaker designed for high feed

CW = 0.394" - 0.984"
(10 mm - 25 mm)



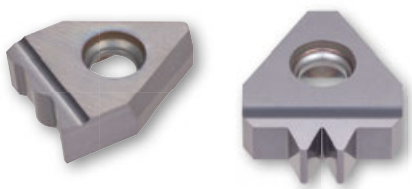
PSGB



Blank for wide profile grooving inserts
Can be prepared for various insert shapes. Shortened cutting time and improved productivity with one-pass operations

CW = 0.394" - 0.984"
(10 mm - 25 mm)

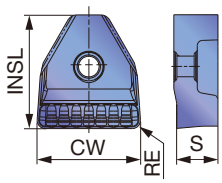
Specially tailored inserts (example)



Reference pages: Inserts → F091, Standard cutting conditions → F092

INSERT

PSGM



P	Steel	★	
M	Stainless	★	
K	Cast iron	☆	
N	Non-ferrous		
S	Superalloys		
H	Hard materials		

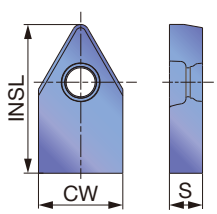
★ : First choice
☆ : Second choice

Designation	CW* (mm)	CW** (in)	RE (in)	Coated AH725	INSL (in)	S (in)
PSGM10-08	10	0.394	0.032	●	0.433	0.157
PSGM15-15	15	0.590	0.059	●	0.591	0.197
PSGM20-20	20	0.787	0.079	●	0.866	0.256
PSGM25-20	25	0.984	0.079	●	0.866	0.256

*Tolerance CW ± 0.08 (CW = 10 mm), ± 0.1 (CW ≥ 15 mm)
**Tolerance CW ± 0.003" (CW = 0.394"), ± 0.004" (CW ≥ 0.591")

● : Line up

PSGB



P	Steel	☆	★
M	Stainless		★
K	Cast iron	★	
N	Non-ferrous	★	
S	Superalloys	☆	
H	Hard materials		

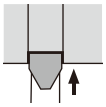
★ : First choice
☆ : Second choice

Designation	CW±0.025 (mm)	CW±0.001 (in)	Uncoated TH10	UX30	INSL (in)	S (in)
PSGB10	10.2	0.402	●	●	0.709	0.157
PSGB15	15.2	0.598	●	●	0.787	0.197
PSGB20	20.2	0.795	●	●	1.062	0.256
PSGB25	25.2	0.992	●	●	1.062	0.256

● : Line up

Reference pages: Toolholders → F089 - F090

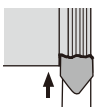
STANDARD CUTTING CONDITIONS



Wide grooving (PSGM insert)

ISO	Workpiece material	Hardness (HB)	Grade	Cutting speed *Vc* (sfm)
P	Alloy steel 4140, 8620, etc.	< 300	AH725	165 - 590
	Alloy steel 4140, 8620, etc.	< 300	UX30	165 - 390

	Groove width: CW (in)			
	0.394	0.590	0.787	0.984
Feed: *f* (ipr)	0.008 - 0.016	0.008 - 0.016	0.012 - 0.020	0.012 - 0.020

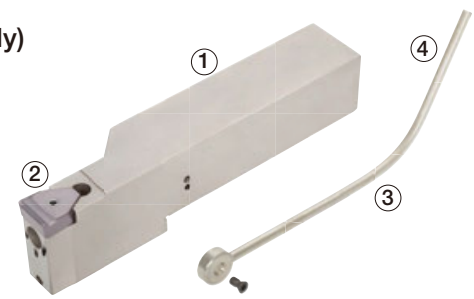


Wide profile grooving (PSGB insert)

ISO	Workpiece material	Hardness (HB)	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 1055, etc.	< 200	UX30	165 - 490
	Alloy steel 4140, 8620, etc.	< 300	UX30	165 - 390
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	< 200	UX30	165 - 390
K	Gray cast iron Class 25, Class 30, etc.	-	TH10	165 - 490
	Ductile cast iron 60-40-18, 60-55-06, etc.	-	TH10	165 - 390
N	Aluminum alloys Si < 12%, etc.	-	TH10	330 - 1640

Spare parts for internal coolant supply attachment (Order separately)

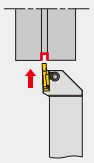
No.	Parts name	Designation	Note
①	Body	FPGR...	-
②	Insert	PSGM...	-
③	Coolant supply attachment	SGCU-341	-
④	Connector	Commercial items can be used	G 1/8 thread
			NPT 1/8 thread

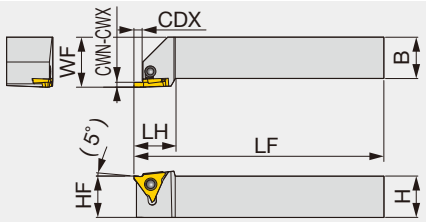


Reference pages: Toolholders → F089 - F090

TGTSR/L

External grooving toolholder, for 3 corner inserts





Right hand (R) shown.

Inch	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Torque
TGTSR16-3	0.013	0.100	0.110	1.00	1.00	6	0.98	1.00	1.00	2.21
TGTSR16-4-1	0.040	0.057	0.100	1.00	1.00	6	1.00	1.00	1.00	2.21
TGTSR16-4-2	0.060	0.090	0.160	1.00	1.00	6	1.00	1.00	1.00	2.21
TGTSR16-4-3	0.100	0.180	0.210	1.00	1.00	6	1.00	1.00	1.00	2.21

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Torque*
TGTSR/L2020K16	0.33	2.5	2.5	20	20	125	25	20	25	3
TGTSR/L2525M16	0.33	2.5	2.5	25	25	150	25	25	30	3
TGTSR/L2020K22-1	1	1.45	2	20	20	125	25	20	25	3
TGTSR/L2020K22-2	1.5	2.3	3.5	20	20	125	25	20	25	3
TGTSR/L2020K22-3	2.5	4.5	5	20	20	125	25	20	25	3
TGTSR/L2525M22-1	1	1.45	2	25	25	150	25	25	30	3
TGTSR/L2525M22-2	1.5	2.3	3.5	25	25	150	25	25	30	3
TGTSR/L2525M22-3	2.5	4.5	5	25	25	150	25	25	30	3

Use right-hand toolholders (TGTSR) with right-hand inserts (GBR); and left-hand toolholders (TGTSL) with left-hand inserts (GBL).
See below insert table.
Torque: Recommended clamping torque: lbs·ft (*N·m)

Designation	Insert
TGTSR16-3	GBR/L32...
TGTSR16-4-1	GBR43050R ~ 145
TGTSR16-4-2	GBR43150 ~ 230
TGTSR16-4-3	GBR43250 ~ 450
TGTSR/L2020K16	GBR/L32...
TGTSR/L2525M16	GBR/L32...
TGTSR/L2020K22-1	GBR/L43125 ~ 145 GBR/L43050R
TGTSR/L2020K22-2	GBR/L43150 ~ 230 GBR/L43075R ~ 100R
TGTSR/L2020K22-3	GBR/L43250 ~ 450 GBR/L43125R ~ 200R
TGTSR/L2525M22-1	GBR/L43125 ~ 145 GBR/L43050R
TGTSR/L2525M22-2	GBR/L43150 ~ 230 GBR/L43075R ~ 100R
TGTSR/L2525M22-3	GBR/L43250 ~ 450 GBR/L43125R ~ 200R

SPARE PARTS

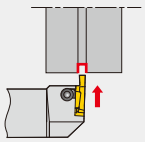


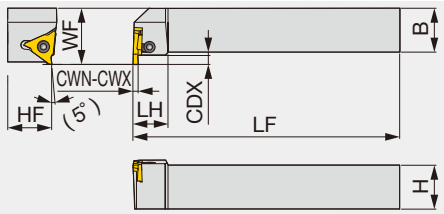
Designation	Clamp	Clamping screw	Wrench
TGTSR16-3	CP900	MCS520-2.5	P-2.5
TGTSR16-4...	CP910	MCS520-2.5	P-2.5
TGTSR/L*****16	CP900	MCS520-2.5	P-2.5
TGTSR/L*****22...	CP910	MCS520-2.5	P-2.5

Reference pages: Inserts → F095 - F097, Standard cutting conditions → F097

TGTTR/L

Perpendicular toolholder for external grooving, for 3 corner inserts





Right hand (R) shown.

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Torque
TGTTR/L2020K16	0.33	2.5	2.5	20	20	125	20	20	27	3
TGTTR/L2525M16	0.33	2.5	2.5	25	25	150	20	25	32	3
TGTTR/L2020K22-1	1	1.45	2	20	20	125	20	20	27	3
TGTTR/L2020K22-2	1.5	2.3	3.5	20	20	125	20	20	27	3
TGTTR/L2020K22-3	2.5	4.5	5	20	20	125	20	20	27	3
TGTTR/L2525M22-1	1	2.3	2	25	25	150	20	25	32	3
TGTTR/L2525M22-2	1.5	2.3	3.5	25	25	150	20	25	32	3
TGTTR/L2525M22-3	2.5	4.5	5	25	25	150	20	25	32	3

Use right-hand toolholders (TGTTR) with left-hand inserts (GBL); and left-hand toolholders (TGTTL) with right-hand inserts (GBR).
See below insert table.
Torque: Recommended clamping torque: N·m

Designation	Insert
TGTTR/L2020K16	GBL/R32...
TGTTR/L2525M16	GBL/R32...
TGTTR/L2020K22-1	GBL/R43125 ~ 145 GBL/R43050R
TGTTR/L2020K22-2	GBL/R43150 ~ 230 GBL/R43075R ~ 100R
TGTTR/L2020K22-3	GBL/R43250 ~ 450 GBL/R43125R ~ 200R
TGTTR/L2525M22-1	GBL/R43125 ~ 145 GBL/R43050R
TGTTR/L2525M22-2	GBL/R43150 ~ 230 GBL/R43075R ~ 100R
TGTTR/L2525M22-3	GBL/R43250 ~ 450 GBL/R43125R ~ 200R

SPARE PARTS

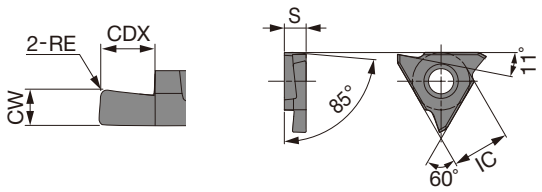


Designation	Clamp	Clamping screw	Wrench
TGTTR/L*****16	CP900	MCS520-2.5	P-2.5
TGTTR/L*****22...	CP910	MCS520-2.5	P-2.5

Reference pages: Inserts → F095 - F097, Standard cutting conditions → F097

INSERT

GBR/L32



Right hand (R) shown.

		Coated			Cermet		Uncoated								
P	Steel	★			★										
M	Stainless	★													
K	Cast iron	★			☆										
N	Non-ferrous						★								
S	Superalloys	☆					☆								
H	Hard materials														

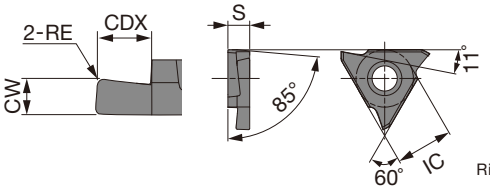
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH710	Cermet NS9530	Uncoated KS05F	CDX (in)	IC (mm)	S (mm)
GBR32033	R	0.33	0.013	0.0012	●	●	●	0.031	9.53	3.18
GBL32033	L	0.33	0.013	0.0012	●			0.031	9.53	3.18
GBR32050	R	0.5	0.020	0.002	●	●	●	0.047	9.53	3.18
GBL32050	L	0.5	0.020	0.002	●			0.047	9.53	3.18
GBR32075	R	0.75	0.030	0.002	●	●	●	0.079	9.53	3.18
GBL32075	L	0.75	0.030	0.002	●	●		0.079	9.53	3.18
GBR32095	R	0.95	0.037	0.002	●	●	●	0.079	9.53	3.18
GBL32095	L	0.95	0.037	0.002	●	●		0.079	9.53	3.18
GBR32100	R	1	0.039	0.002	●	●	●	0.079	9.53	3.18
GBL32100	L	1	0.039	0.002	●	●		0.079	9.53	3.18
GBR32125	R	1.25	0.049	0.008	●	●	●	0.079	9.53	3.18
GBL32125	L	1.25	0.049	0.008	●	●		0.079	9.53	3.18
GBR32145	R	1.45	0.057	0.008	●	●	●	0.079	9.53	3.18
GBL32145	L	1.45	0.057	0.008	●			0.079	9.53	3.18
GBR32150	R	1.5	0.059	0.008	●	●	●	0.079	9.53	3.18
GBL32150	L	1.5	0.059	0.008	●			0.079	9.53	3.18
GBR32200	R	2	0.079	0.008	●	●	●	0.098	9.53	3.18
GBL32200	L	2	0.079	0.008	●			0.098	9.53	3.18
GBR32250	R	2.5	0.098	0.008	●	●	●	0.098	9.53	3.18
GBL32250	L	2.5	0.098	0.008	●			0.098	9.53	3.18

● : Line up

Reference pages: Toolholders → F093 - F094

GBR/L43



Right hand (R) shown.

		Coated			Cermet		Uncoated		
P	Steel	★			★				
M	Stainless	★							
K	Cast iron	★			☆				
N	Non-ferrous						★		
S	Superalloys	☆					☆		
H	Hard materials								

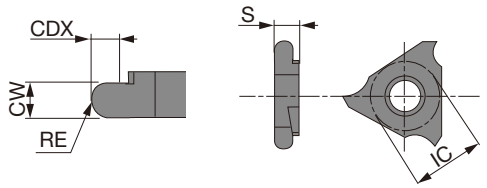
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	AH710	NS9530	KS05F	CDX (in)	IC (mm)	S (mm)
GBR43125	R	1.25	0.049	0.008	●	●	●	0.079	12.7	4.76
GBL43125	L	1.25	0.049	0.008	●			0.079	12.7	4.76
GBR43145	R	1.45	0.057	0.008	●	●	●	0.079	12.7	4.76
GBL43145	L	1.45	0.057	0.008	●			0.079	12.7	4.76
GBR43150	R	1.50	0.059	0.008	●	●	●	0.138	12.7	4.76
GBL43150	L	1.50	0.059	0.008	●	●		0.138	12.7	4.76
GBR43175	R	1.75	0.069	0.008	●	●	●	0.138	12.7	4.76
GBL43175	L	1.75	0.069	0.008	●	●		0.138	12.7	4.76
GBR43185	R	1.85	0.073	0.008	●	●	●	0.138	12.7	4.76
GBL43185	L	1.85	0.073	0.008	●	●		0.138	12.7	4.76
GBR43200	R	2	0.079	0.008	●	●	●	0.138	12.7	4.76
GBL43200	L	2	0.079	0.008	●	●		0.138	12.7	4.76
GBR43230	R	2.3	0.091	0.008	●	●	●	0.138	12.7	4.76
GBL43230	L	2.3	0.091	0.008	●	●		0.138	12.7	4.76
GBR43250	R	2.5	0.098	0.012	●	●	●	0.197	12.7	4.76
GBL43250	L	2.5	0.098	0.012	●			0.197	12.7	4.76
GBR43265	R	2.65	0.104	0.012	●	●	●	0.197	12.7	4.76
GBL43265	L	2.65	0.104	0.012	●			0.197	12.7	4.76
GBR43280	R	2.8	0.110	0.012	●	●	●	0.197	12.7	4.76
GBL43280	L	2.8	0.110	0.012	●			0.197	12.7	4.76
GBR43300	R	3	0.118	0.012	●	●	●	0.197	12.7	4.76
GBL43300	L	3	0.118	0.012	●			0.197	12.7	4.76
GBR43330	R	3.3	0.130	0.012	●	●	●	0.197	12.7	4.76
GBL43330	L	3.3	0.130	0.012	●			0.197	12.7	4.76
GBR43350	R	3.5	0.138	0.012	●	●	●	0.197	12.7	4.76
GBL43350	L	3.5	0.138	0.012	●			0.197	12.7	4.76
GBR43400	R	4	0.157	0.016	●	●	●	0.197	12.7	4.76
GBL43400	L	4	0.157	0.016	●			0.197	12.7	4.76
GBR43430	R	4.3	0.169	0.016	●	●	●	0.197	12.7	4.76
GBL43430	L	4.3	0.169	0.016	●			0.197	12.7	4.76
GBR43450	R	4.5	0.177	0.016	●	●	●	0.197	12.7	4.76
GBL43450	L	4.5	0.177	0.016	●			0.197	12.7	4.76

● : Line up

Reference pages: Toolholders → F093 - F094

GBR/L43-R(full radius)



Right hand (R) shown.

		Coated		Cermet		Uncoated	
P	Steel	★		★			
M	Stainless	★					
K	Cast iron	★		☆			
N	Non-ferrous					★	
S	Superalloys	☆				☆	
H	Hard materials						

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	AH710	NS9530	KS05F	CDX (in)	IC (mm)	S (mm)
GBR43050R	R	1	0.039	0.020	●	●	●	0.079	12.7	4.76
GBL43050R	L	1	0.039	0.020	●		●	0.079	12.7	4.76
GBR43075R	R	1.5	0.059	0.030	●	●	●	0.138	12.7	4.76
GBL43075R	L	1.5	0.059	0.030	●		●	0.138	12.7	4.76
GBR43100R	R	2	0.079	0.039	●	●	●	0.138	12.7	4.76
GBL43100R	L	2	0.079	0.039	●		●	0.138	12.7	4.76
GBR43125R	R	2.5	0.098	0.049	●	●	●	0.197	12.7	4.76
GBL43125R	L	2.5	0.098	0.049	●		●	0.197	12.7	4.76
GBR43150R	R	3	0.118	0.059	●	●	●	0.197	12.7	4.76
GBL43150R	L	3	0.118	0.059	●		●	0.197	12.7	4.76
GBR43200R	R	4	0.157	0.079	●	●	●	0.197	12.7	4.76
GBL43200R	L	4	0.157	0.079	●		●	0.197	12.7	4.76

● : Line up

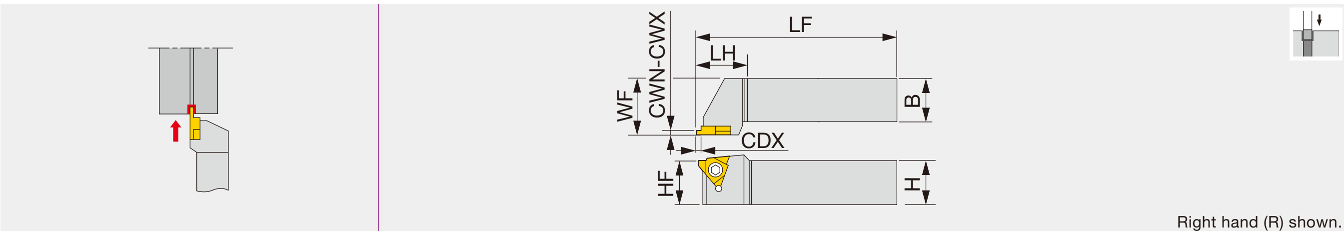
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Grade	Cutting Speed *Vc* (sfm)	Feed *f* (ipr)
P	Carbon steel, Alloy steel 1045 SAE, 4140 SAE, etc.	150 - 240HB	NS9530	330 - 650	0.001 - 0.010
		150 - 240HB	AH710	200 - 500	0.002 - 0.010
M	Stainless steel 303, 304, etc.	≤ 240HB	AH710	200 - 500	0.002 - 0.006
K	Cast irons 250, etc.	Tensile strength ≤ 350 N/mm^2	AH710	200 - 500	0.002 - 0.006
N	Non-ferrous metals Aluminum, etc.	-	KS05F	650 - 980	0.002 - 0.006

Reference pages: Toolholders → F093 - F094

SGTR/L

External grooving toolholder, for 3 corner inserts



Right hand (R) shown.

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque
SGTR1616-3	1.15	2.7	1.5 - 3	16	16	100	20	16	20	GLR/L3...	3.5
SGTR/L2020-3	1.15	2.7	1.5 - 3	20	20	125	20	20	25	GLR/L3...	3.5
SGTR/L2525-3	1.15	2.7	1.5 - 3	25	25	150	20	25	32	GLR/L3...	3.5
SGTR/L2020-4	1.15	4.2	1.5 - 4	20	20	125	30	20	25	GLR/L4...,GOR/L4...	5
SGTR/L2525-4	1.15	4.2	1.5 - 4	25	25	150	30	25	32	GLR/L4...,GOR/L4...	5

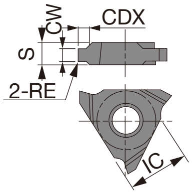
Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamping screw	Wrench
SGTR/L****-3	CSTB-4	T-15F
SGTR/L****-4	CSTB-5	T-20F

INSERT

GOR/L (For O-ring)



Right hand (R) shown.

		NS9530	UX30
P	Steel	★	★
M	Stainless		★
K	Cast iron	☆	
N	Non-ferrous		
S	Superalloys		
H	Hard materials		

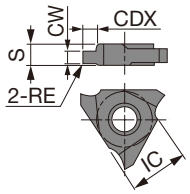
★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.004}_{+0.002}$ (in)	$CW^{+0.1}_{+0.05}$ (mm)	RE (mm)	NS9530 (Cermet)	UX30 (Uncoated)	CDX (mm)	IC (mm)	S (mm)
GOR4190	R	0.098	2.5	0.4	●	●	1.5	12.7	4.76
GOR4240	R	0.126	3.2	0.4	●	●	2	12.7	4.76
GOR4310	R	0.161	4.1	0.7	●	●	2.5	12.7	4.76

● : Line up

Reference pages: Inserts → F098 - F099

GLR/L (For lock ring)



Right hand (R) shown.

P	Steel	★			★				
M	Stainless				★				
K	Cast iron	☆							
N	Non-ferrous								
S	Superalloys								
H	Hard materials								

★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.004}_{+0.002}$ (in)	$CW^{+0.1}_{+0.05}$ (mm)	RE (mm)	Cermet	Uncoated	CDX (mm)	IC (mm)	S (mm)
					NS9530	UX30			
GLR3115	R	0.045	1.15	0.1	●	●	1.5	9.53	3.18
GLL3115	L	0.045	1.15	0.1	●	●	1.5	9.53	3.18
GLR3135	R	0.053	1.35	0.1	●	●	1.5	9.53	3.18
GLL3135	L	0.053	1.35	0.1	●		1.5	9.53	3.18
GLR3165	R	0.065	1.65	0.1	●	●	2	9.53	3.18
GLR3175	R	0.069	1.75	0.1	●	●	2	9.53	3.18
GLL3175	L	0.069	1.75	0.1	●	●	2	9.53	3.18
GLR3195	R	0.077	1.95	0.1	●	●	2.5	9.53	3.18
GLL3195	L	0.077	1.95	0.1	●	●	2.5	9.53	3.18
GLR3220	R	0.087	2.2	0.1	●	●	3	9.53	3.18
GLL3220	L	0.087	2.2	0.1		●	3	9.53	3.18
GLR3270	R	0.106	2.7	0.1	●	●	3	9.53	3.18
GLL3270	L	0.106	2.7	0.1		●	3	9.53	3.18
GLR4115	R	0.045	1.15	0.1	●	●	1.5	12.7	4.76
GLR4135	R	0.053	1.35	0.1	●	●	1.5	12.7	4.76
GLR4165	R	0.065	1.65	0.1	●	●	2	12.7	4.76
GLR4175	R	0.069	1.75	0.1	●	●	2	12.7	4.76
GLR4190	R	0.075	1.9	0.1	●		2.5	12.7	4.76
GLR4195	R	0.077	1.95	0.1	●	●	2.5	12.7	4.76
GLR4220	R	0.087	2.2	0.1	●	●	3.5	12.7	4.76
GLL4220	L	0.087	2.2	0.1		●	3.5	12.7	4.76
GLR4270	R	0.106	2.7	0.1	●	●	3.5	12.7	4.76
GLR4320	R	0.126	3.2	0.1	●	●	4	12.7	4.76
GLL4320	L	0.126	3.2	0.1		●	4	12.7	4.76
GLR4420	R	0.165	4.2	0.1	●	●	4	12.7	4.76
GLL4420	L	0.165	4.2	0.1		●	4	12.7	4.76

● : Line up

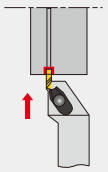
STANDARD CUTTING CONDITIONS

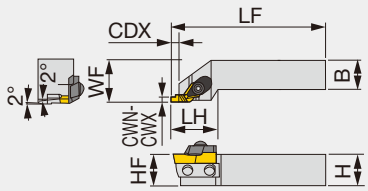
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)		
				CW < 0.079"	CW = 0.079" - 0.157"	CW > 0.157"
P	Carbon steel	NS9530	260 - 650	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010
		UX30	200 - 500	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010

Reference pages: Toolholders → F098

GX-R/LE

External grooving toolholder, for 2 corner inserts





Right hand (R) shown.

Inch	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque
GX-1212REU	0.039	0.177	0.059 - 0.236	0.75	0.75	5.00	1.38	0.75	1.00	XGR63...	3.69
GX-1616REU	0.039	0.177	0.059 - 0.236	1.00	1.00	5.90	1.38	1.00	1.25	XGR63...	3.69

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
GX-2020R/LE	1	4.5	1.5 - 6	20	20	125	40	20	25	XGR/L63...	5
GX-2525R/LE	1	4.5	1.5 - 6	25	25	150	38	25	32	XGR/L63...	5

Use right-hand toolholders (GX-****RE) with right-hand inserts (XGR); and left-hand toolholders (GX-****LE) with left-hand inserts (XGL).
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

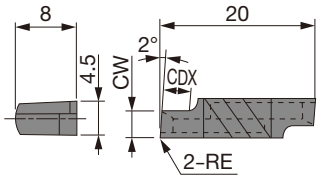
Designation	Clamp set	Clamp screw	Shim	Shim screw	Wrench
GX-1212REU, GX-2020RE	CP81A	RT-1	SL-6R	BHM4-8	P-4
GX-2020LE	CP81A	RT-1	SL-6L	BHM4-8	P-4
GX-1616REU, GX-2525RE	CP81A	RT-1	SL-1R	BHM4-8	P-4
GX-2525LE	CP81A	RT-1	SL-1L	BHM4-8	P-4

Max. groove width and max. groove depth will depend on the insert type.

Reference pages: Inserts → F101 - F102, Standard cutting conditions → F102

INSERT

XGR/L



Right hand (R) shown.

		Cermet			Uncoated			
P	Steel	★			☆	★		
M	Stainless					★		
K	Cast iron	☆			★			
N	Non-ferrous				★			
S	Superalloys				☆			
H	Hard materials							

★ : First choice
☆ : Second choice

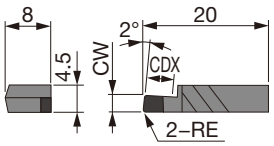
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Cermet NS9530	Uncoated TH10	Uncoated UX30	CDX (in)
XGR6310-02	R	1	0.039	0.008	●	●	●	0.059
XGL6310-02	L	1	0.039	0.008	●	●	●	0.059
XGR6315-02	R	1.5	0.059	0.008	●	●	●	0.091
XGL6315-02	L	1.5	0.059	0.008	●	●	●	0.091
XGR6320-02	R	2	0.079	0.008	●	●	●	0.118
XGL6320-02	L	2	0.079	0.008	●	●	●	0.118
XGR6325-02	R	2.5	0.098	0.008	●	●	●	0.150
XGL6325-02	L	2.5	0.098	0.008	●	●	●	0.150
XGR6330-02	R	3	0.118	0.008	●	●	●	0.177
XGL6330-02	L	3	0.118	0.008	●	●	●	0.177
XGR6335-02	R	3.5	0.138	0.008	●	●	●	0.209
XGL6335-02	L	3.5	0.138	0.008	●	●	●	0.209
XGR6340-02	R	4	0.157	0.008	●	●	●	0.236
XGL6340-02	L	4	0.157	0.008	●	●	●	0.236
XGR6345-02	R	4.5	0.177	0.008	●	●	●	0.236
XGL6345-02	L	4.5	0.177	0.008	●	●	●	0.236

Use right-hand toolholders (GX-****RE) with right-hand inserts (XGR...)
left-hand toolholders (GX-****LE) with left-hand inserts (XGL...).

● : Line up

Reference pages: Toolholders → F100

XGR/L-QBN



Right hand (R) shown.

P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloys
H	Hard materials ★

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	CBN BX360	CDX (in)
XGL6310S-QBN	L	1	0.039	0.008	●	0.059
XGR6315S-QBN	R	1.5	0.059	0.008	●	0.091
XGL6315S-QBN	L	1.5	0.059	0.008	●	0.091
XGR6320S-QBN	R	2	0.079	0.008	●	0.118
XGL6320S-QBN	L	2	0.079	0.008	●	0.118
XGR6325S-QBN	R	2.5	0.098	0.008	●	0.150
XGL6325S-QBN	L	2.5	0.098	0.008	●	0.150
XGR6330S-QBN	R	3	0.118	0.008	●	0.177
XGL6330S-QBN	L	3	0.118	0.008	●	0.177
XGR6335S-QBN	R	3.5	0.138	0.008	●	0.209
XGL6335S-QBN	L	3.5	0.138	0.008	●	0.209
XGR6340S-QBN	R	4	0.157	0.008	●	0.236
XGL6340S-QBN	L	4	0.157	0.008	●	0.236
XGR6345S-QBN	R	4.5	0.177	0.008	●	0.236
XGL6345S-QBN	L	4.5	0.177	0.008	●	0.236

Use right-hand toolholders (GX-****RE) with right-hand inserts (XGR...)
left-hand toolholders (GX-****LE) with left-hand inserts (XGL...).

● : Line up

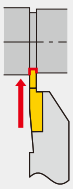
STANDARD CUTTING CONDITIONS

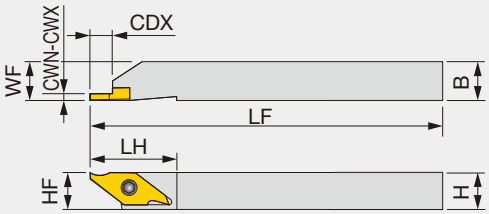
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)		
				CW < 0.079"	CW = 0.079" - 0.157"	CW > 0.157"
P	Carbon steel	NS9530	262 - 656	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010
		UX30	197 - 492	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010
K	Cast irons , Light alloys	TH10	197 - 492	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010
H	Hardened steel	BX360	164 - 591	0.002 - 0.006	0.002 - 0.006	0.002 - 0.006

Reference pages: Toolholders → F100

JSVGR/L

External grooving toolholder, for Swiss lathes





Right hand (R) shown.

Inch	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque
JSVGR/L062.5	0.013	0.079	0.028 - 0.217	0.375	0.375	5	0.875	0.375	0.375	JVGR/L...	1.70
JSVGR/L082.5	0.013	0.079	0.028 - 0.217	0.500	0.500	5	0.875	0.500	0.500	JVGR/L...	1.70
JSVGR/L102.5	0.013	0.079	0.028 - 0.217	0.625	0.625	5	0.875	0.625	0.625	JVGR/L...	1.70

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
JSVGR/L1010K-C	0.33	2	0.7 - 5.5	10	10	125	23	10	10	JVGR/L...	2.3
JSVGR/L1212K-C	0.33	2	0.7 - 5.5	12	12	125	23	12	12	JVGR/L...	2.3
JSVGR/L1616K	0.33	2	0.7 - 5.5	16	16	125	23	16	16	JVGR/L...	2.3

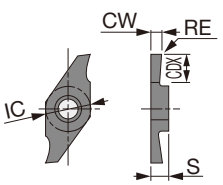
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

Designation	Clamping screw	Wrench
JSVGR/L...	CSTB-3S	T-9F (Optional T-9L)

INSERT

JVG (with hand, sharp edge)



Right hand (R) shown.

		Coated			Cermet		Uncoated		
		SH725	J740		NS9530		TH10		
P	Steel	★	★		★		☆		
M	Stainless	★	★						
K	Cast iron				☆		☆		
N	Non-ferrous						★		
S	Superalloys						★		
H	Hard materials								

★ : First choice
☆ : Second choice

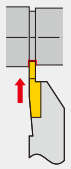
Designation	HAND	CW$^{+0.05}_{0}$ (mm)	CW$^{+0.002}_{0}$ (in)	RE (in)	Coated SH725	Coated J740	Cermet NS9530	Uncoated TH10	CDX (in)	IC (mm)	S (mm)
JVGR033F	R	0.33	0.013	0	●	●		●	0.028	7.94	3.18
JVGL033F	L	0.33	0.013	0	●				0.028	7.94	3.18
JVGR050F	R	0.5	0.020	0	●	●		●	0.043	7.94	3.18
JVGL050F	L	0.5	0.020	0	●				0.043	7.94	3.18
JVGR075F	R	0.75	0.030	0	●	●		●	0.075	7.94	3.18
JVGL075F	L	0.75	0.030	0	●				0.075	7.94	3.18
JVGR095F	R	0.95	0.037	0	●	●		●	0.075	7.94	3.18
JVGL095F	L	0.95	0.037	0	●				0.075	7.94	3.18
JVGR100F	R	1	0.039	0	●	●	●	●	0.217	7.94	3.18
JVGL100F	L	1	0.039	0	●		●	●	0.217	7.94	3.18
JVGR125F	R	1.25	0.049	0	●	●		●	0.197	7.94	3.18
JVGL125F	L	1.25	0.049	0	●				0.197	7.94	3.18
JVGR150F	R	1.5	0.059	0	●	●	●	●	0.217	7.94	3.18
JVGL150F	L	1.5	0.059	0	●		●	●	0.217	7.94	3.18
JVGR200F	R	2	0.079	0	●	●	●	●	0.217	7.94	3.18
JVGL200F	L	2	0.079	0	●				0.217	7.94	3.18

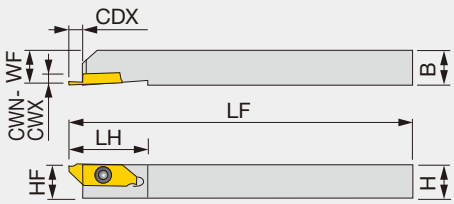
● : Line up

Reference pages: Standard cutting conditions → F110

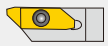
JSXGR/L

Screw-on toolholder for front turning, reverse turning, and external grooving, for Swiss lathes





Without offset



1010, 1212 Shank

Right hand (R) shown.

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque
JSXGR/L1010K8-C	0.7	2	4.5 - 6	10	10	125	29	10	9.9	JXG...	1.3
JSXGR/L1212K8-C	0.7	2	4.5 - 6	12	12	125	29	12	11.9	JXG...	1.3
JSXGR/L1616K8	0.7	2	4.5 - 6	16	16	125	29	16	15.9	JXG...	1.3
JSXGR/L2020K8	0.7	2	4.5 - 6	20	20	125	29	20	19.9	JXG...	1.3
JSXGR/L2525K8	0.7	2	4.5 - 6	25	25	125	29	25	24.9	JXG...	1.3

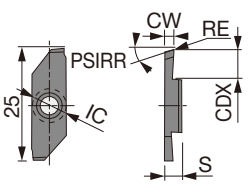
Access to insert clamping screw is available from both sides of the tool for ease of insert indexing/changing.
This toolholder can be used for JXF front-turning insert, JXR reverse-turning insert, and JXG parting and grooving insert.
Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamping screw	Wrench
JSXGR/L...	CSTB-4SD	T-8F

INSERT

JXG (with hand, sharp edge)



Right hand (R) shown.

		Coated	Uncoated
P	Steel	★	☆
M	Stainless	★	
K	Cast iron		☆
N	Non-ferrous		★
S	Superalloys		★
H	Hard materials		

★ : First choice
☆ : Second choice

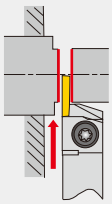
Designation	HAND	CW±0.001 (in)	CW±0.025 (mm)	RE (mm)	Coated J740	Uncoated TH10	CDX (mm)	IC (mm)	PSIRR	S (mm)
JXGR8070FA	R	0.028	0.7	0	●	●	4.5	8	15°	3.97
JXGL8070FA	L	0.028	0.7	0	●	●	4.5	8	15°	3.97
JXGR8070FA-005	R	0.028	0.7	0.05	●		4.5	8	15°	3.97
JXGR8100FA	R	0.039	1	0	●	●	6	8	15°	3.97
JXGL8100FA	L	0.039	1	0	●	●	6	8	15°	3.97
JXGR8100FA-005	R	0.039	1	0.05	●		6	8	15°	3.97
JXGR8100FA45	R	0.039	1	0	●	●	4.5	8	15°	3.97
JXGR8100FA45-005	R	0.039	1	0.05	●		4.5	8	15°	3.97
JXGR8150FA	R	0.059	1.5	0	●	●	6	8	15°	3.97
JXGL8150FA	L	0.059	1.5	0	●	●	6	8	15°	3.97
JXGR8150FA-005	R	0.059	1.5	0.05	●		6	8	15°	3.97
JXGR8150FA50	R	0.059	1.5	0	●	●	5	8	15°	3.97
JXGR8150FA50-005	R	0.059	1.5	0.05	●		5	8	15°	3.97
JXGR8180FA	R	0.071	1.8	0	●	●	6	8	15°	3.97
JXGR8180FA-005	R	0.071	1.8	0.05	●		6	8	15°	3.97
JXGR8200FA	R	0.079	2	0	●	●	6	8	15°	3.97
JXGL8200FA	L	0.079	2	0	●	●	6	8	15°	3.97
JXGR8200FA-005	R	0.079	2	0.05	●		6	8	15°	3.97
JXGR8200FN	R	0.079	2	0	●	●	6	8	0°	3.97
JXGL8200FN	L	0.079	2	0	●	●	6	8	0°	3.97
JXGR8200FN-005	R	0.079	2	0.05	●		6	8	0°	3.97

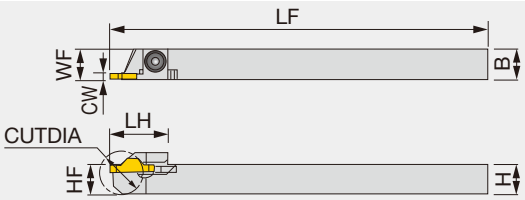
● : Line up

Reference pages: Standard cutting conditions → F110

JCCWSR/L

External grooving and parting toolholder, for Swiss lathes





Right hand (R) shown.

Inch	CW	CUTDIA	H	B	LF	LH	HF	WF	Insert	Torque
JCCWSR/L062	0.079	0.787	0.375	0.375	5	0.748	0.375	0.1875	JCC*200...	2.58
JCCWSR/L082	0.079	0.787	0.500	0.500	5	0.748	0.500	0.250	JCC*200...	2.58
JCCWSR/L102	0.079	0.787	0.625	0.625	5	0.748	0.625	0.3125	JCC*200...	2.58

Metric	CW	CUTDIA	H	B	LF	LH	HF	WF	Insert	Torque*
JCCWSR/L1010K2	2	20	10	10	125	19	10	10	JCC*200...	3.5
JCCWSR/L1212K2	2	20	12	12	125	19	12	12	JCC*200...	3.5
JCCWSR/L1616K2	2	20	16	16	125	19	16	16	JCC*200...	3.5
JCCWSR/L2020K2	2	20	20	20	125	19	20	20	JCC*200...	3.5
JCCWSR/L2525K2	2	20	25	25	125	19	25	25	JCC*200...	3.5

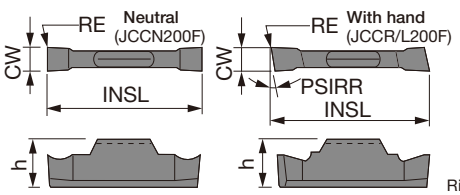
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

Designation	Clamping screw	Wrench
JCCWSR/L...	CSTB-4S	T-15F

INSERT

JCC (Sharp edge)



Right hand (R) shown.

P	Steel	★			☆			
M	Stainless	★						
K	Cast iron				☆			
N	Non-ferrous				★			
S	Superalloys				★			
H	Hard materials							

★ : First choice
☆ : Second choice

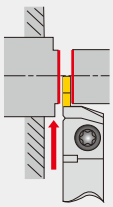
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated	Uncoated			PSIRR	INSL (mm)	h (mm)
					J740	TH10					
JCCN200F	N	2	0.079	0	●	●			0°	15	4.8
JCCN200F-005	N	2	0.079	0.002	●				0°	15	4.8
JCCR200F	R	2	0.079	0	●	●			15°	15	4.8
JCCL200F	L	2	0.079	0	●	●			15°	15	4.8
JCCR200F-005	R	2	0.079	0.002	●				15°	15	4.8
JCCL200F-005	L	2	0.079	0.002	●				15°	15	4.8

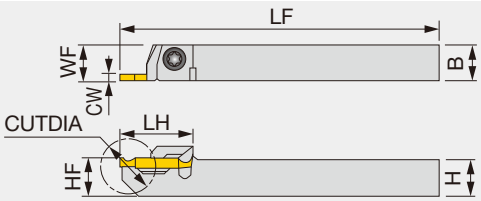
● : Line up

Reference pages: Standard cutting conditions → F110

JCGWSR/L

External grooving and parting toolholder, for Swiss lathes





Right hand (R) shown.

Metric	CW	CUTDIA	H	B	LF	LH	HF	WF	Insert	Torque
JCGWSR/L1010K2	2	20	10	10	125	20	10	10	JCGN200F...	3.5
JCGWSR/L1212K2	2	20	12	12	125	20	12	12	JCGN200F...	3.5
JCGWSR/L1616K2	2	20	16	16	125	20	16	16	JCGN200F...	3.5

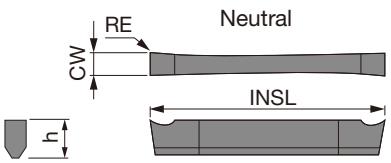
Torque: Recommended clamping torque: N·m

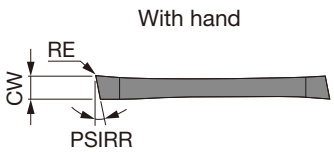
SPARE PARTS


Designation	Clamping screw	Wrench
JCGWSR/L...	CSTB-4S	T-15F

INSERT

JCGN (Sharp edge)





Right hand (R) shown.

P	Steel	★	☆
M	Stainless	★	
K	Cast iron		☆
N	Non-ferrous		★
S	Superalloys		★
H	Hard materials		

★ : First choice
☆ : Second choice

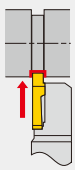
Designation	HAND	CW±0.001 (in)	CW±0.025 (mm)	RE (mm)	Coated	Uncoated	PSIRR	INSL (mm)	h (mm)
					J740	TH10			
JCGN200F	N	0.079	2	0.05	●	●	0°	20	3
JCGN200FR	R	0.079	2	0.05	●	●	8°	20	3
JCGN200FL	L	0.079	2	0.05	●	●	8°	20	3

● : Line up

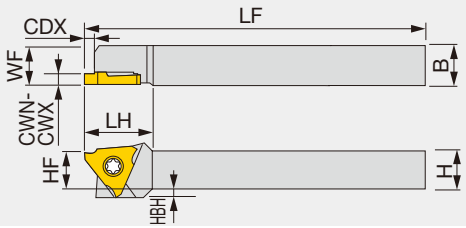
Reference pages: Standard cutting conditions → F110

JSTGR/L

External grooving toolholder, for Swiss lathes



Access to insert clamping screw is available from both sides of the tool for ease of insert indexing/changing.



Right hand (R) shown.

Inch	CWN	CWX	CDX	H	B	LF	LH	HF	WF	HBH	Insert	Torque
JSTGR/L063	0.013	0.118	0.028 - 0.102	0.375	0.375	5	0.75	0.375	0.375	0.100	JTGR/L3...	0.89
JSTGR/L083	0.013	0.118	0.028 - 0.102	0.500	0.500	5	0.75	0.500	0.500	-	JTGR/L3...	0.89
JSTGR/L103	0.013	0.118	0.028 - 0.102	0.625	0.625	5	0.75	0.625	0.625	-	JTGR/L3...	0.89

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	HBH	Insert	Torque*
JSTGR/L1010X3	0.33	3	0.7 - 2.6	10	10	120	18.5	10	10	2	JTGR/L3...	1.2
JSTGR/L1212F3	0.33	3	0.7 - 2.6	12	12	85	18.5	12	12	-	JTGR/L3...	1.2
JSTGR/L1212X3	0.33	3	0.7 - 2.6	12	12	120	18.5	12	12	-	JTGR/L3...	1.2
JSTGR/L1616X3	0.33	3	0.7 - 2.6	16	16	120	18.5	16	16	-	JTGR/L3...	1.2
JSTGL1616K3	0.33	3	0.7 - 2.6	16	16	125	18.5	16	16	-	JTGR/L3...	1.2

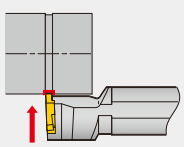
Torque: Recommended clamping torque: lbs·ft (*N·m)

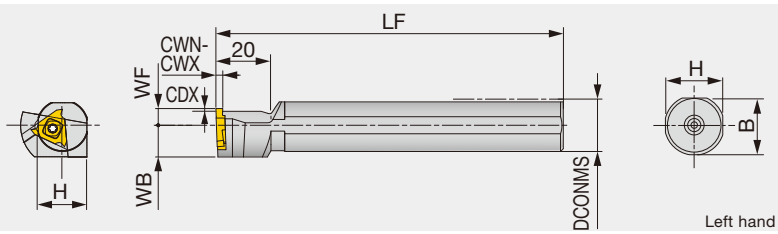
SPARE PARTS


Designation	Clamping screw	Wrench
JSTGR/L...	CSTB-4SD	T-8F

JS-TGL3

External grooving toolholder, for Swiss lathes





Left hand (L) shown.

Metric	CWN	CWX	CDX	DCONMS	H	B	LF	WF	WB	Insert	Torque
JS19K-TGL3	0.33	3	0.7 - 2.6	19.05	18	18	125	6	11.5	JTGR3...	3
JS20K-TGL3	0.33	3	0.7 - 2.6	20	19	19	125	6	11.5	JTGR3...	3
JS22K-TGL3	0.33	3	0.7 - 2.6	22	21	21	125	6	11.5	JTGR3...	3
JS25K-TGL3	0.33	3	0.7 - 2.6	25.4	24	24	125	10	12.7	JTGR3...	3

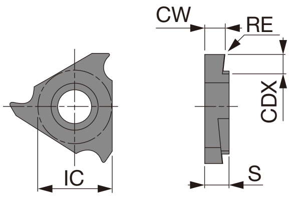
Note: Use left-hand toolholders (L) with right-hand inserts (R).
Torque: Recommended clamping torque: N·m

SPARE PARTS


Designation	Clamping screw	Wrench
JS***-TGL3	CSTB-4S	T-15F

Reference pages: Inserts → F108 - F109, Standard cutting conditions → F110

JTG (Sharp edge)



Right hand (R) shown.

	Material	SH725	J740	NS9530	TH10
P	Steel	★	★	★	☆
M	Stainless	★	★		
K	Cast iron			☆	★
N	Non-ferrous				★
S	Superalloys				★
H	Hard materials				

★ : First choice
☆ : Second choice

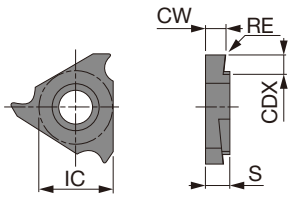
Designation	HAND	$CW^{+0.05}_{0}$ (mm)	$CW^{+0.002}_{0}$ (in)	RE (in)	Coated		Cermet	Uncoated	CDX (in)	IC (mm)	S (mm)
					SH725	J740	NS9530	TH10			
JTGR3033F	R	0.33	0.013	0.0012	●	●		●	0.028	9.53	3.18
JTGL3033F	L	0.33	0.013	0.0012		●		●	0.028	9.53	3.18
JTGR3033F-005	R	0.33	0.013	0.002	●				0.028	9.53	3.18
JTGR3043F	R	0.43	0.017	0.0012		●			0.043	9.53	3.18
JTGR3050F	R	0.5	0.020	0.0012	●	●	●	●	0.043	9.53	3.18
JTGL3050F	L	0.5	0.020	0.0012	●	●		●	0.043	9.53	3.18
JTGR3050F-005	R	0.5	0.020	0.002	●				0.043	9.53	3.18
JTGL3050F-005	L	0.5	0.020	0.002	●				0.043	9.53	3.18
JTGR3065F	R	0.65	0.026	0.0012	●	●			0.075	9.53	3.18
JTGR3065F-010	R	0.65	0.026	0.004	●				0.075	9.53	3.18
JTGR3075F	R	0.75	0.030	0.0012	●	●	●	●	0.075	9.53	3.18
JTGL3075F	L	0.75	0.030	0.0012	●	●	●	●	0.075	9.53	3.18
JTGR3075F-010	R	0.75	0.030	0.004	●				0.075	9.53	3.18
JTGL3075F-010	L	0.75	0.030	0.004	●				0.075	9.53	3.18
JTGR3080F	R	0.8	0.031	0.0012	●	●			0.075	9.53	3.18
JTGR3080F-010	R	0.8	0.031	0.004	●				0.075	9.53	3.18
JTGR3085F	R	0.85	0.033	0.0012	●	●			0.075	9.53	3.18
JTGR3095F	R	0.95	0.037	0.0012	●	●	●	●	0.075	9.53	3.18
JTGL3095F	L	0.95	0.037	0.0012	●	●		●	0.075	9.53	3.18
JTGR3095F-010	R	0.95	0.037	0.004	●				0.075	9.53	3.18
JTGL3095F-010	L	0.95	0.037	0.004	●				0.075	9.53	3.18
JTGR3100F	R	1	0.039	0.002	●	●	●	●	0.083	9.53	3.18
JTGL3100F	L	1	0.039	0.002	●	●		●	0.083	9.53	3.18
JTGR3100F-010	R	1	0.039	0.004	●				0.083	9.53	3.18
JTGL3100F-010	L	1	0.039	0.004	●				0.083	9.53	3.18
JTGR3110F	R	1.1	0.043	0.002	●	●			0.083	9.53	3.18
JTGR3120F	R	1.2	0.047	0.002	●	●			0.083	9.53	3.18
JTGR3120F-010	R	1.2	0.047	0.004	●				0.083	9.53	3.18
JTGR3125F	R	1.25	0.049	0.002	●	●	●	●	0.083	9.53	3.18
JTGL3125F	L	1.25	0.049	0.002	●	●		●	0.083	9.53	3.18
JTGR3125F-010	R	1.25	0.049	0.004	●				0.083	9.53	3.18
JTGL3125F-010	L	1.25	0.049	0.004	●				0.083	9.53	3.18
JTGR3130F	R	1.3	0.051	0.002	●	●			0.083	9.53	3.18
JTGR3140F	R	1.4	0.055	0.002	●	●			0.083	9.53	3.18
JTGR3140F-010	R	1.4	0.055	0.004	●				0.083	9.53	3.18
JTGR3145F	R	1.45	0.057	0.002	●	●	●	●	0.083	9.53	3.18
JTGL3145F	L	1.45	0.057	0.002		●		●	0.083	9.53	3.18
JTGR3145F-010	R	1.45	0.057	0.004	●				0.083	9.53	3.18
JTGR3150F	R	1.5	0.059	0.002	●	●	●	●	0.083	9.53	3.18
JTGL3150F	L	1.5	0.059	0.002	●	●		●	0.083	9.53	3.18
JTGR3150F-010	R	1.5	0.059	0.004	●				0.083	9.53	3.18
JTGL3150F-010	L	1.5	0.059	0.004	●				0.083	9.53	3.18

● : Line up

Reference pages: Toolholders →F107, Standard cutting conditions → F110

External
Internal
Face
Parting
Others

JTG (Sharp edge)



Right hand (R) shown.

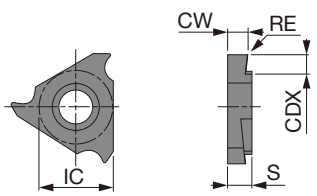
		Coated			Cermet		Uncoated					
P	Steel	★	★		★		☆					
M	Stainless	★	★									
K	Cast iron				☆		★					
N	Non-ferrous						★					
S	Superalloys						★					
H	Hard materials											

★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.05}_{0}$ (mm)	$CW^{+0.002}_{0}$ (in)	RE (in)	SH725	J740	NS9530	TH10	CDX (in)	IC (mm)	S (mm)
JTGR3175F	R	1.75	0.069	0.002	●	●	●	●	0.083	9.53	3.18
JTGL3175F	L	1.75	0.069	0.002		●	●	●	0.083	9.53	3.18
JTGR3175F-010	R	1.75	0.069	0.004	●				0.083	9.53	3.18
JTGR3180F	R	1.8	0.071	0.002	●	●			0.083	9.53	3.18
JTGR3200F	R	2	0.079	0.002	●	●	●	●	0.102	9.53	3.18
JTGL3200F	L	2	0.079	0.002	●	●		●	0.102	9.53	3.18
JTGR3200F-010	R	2	0.079	0.004	●				0.102	9.53	3.18
JTGL3200F-010	L	2	0.079	0.004	●				0.102	9.53	3.18
JTGR3225F	R	2.25	0.089	0.002	●	●			0.102	9.53	3.18
JTGR3250F	R	2.5	0.098	0.002	●	●	●	●	0.102	9.53	3.18
JTGL3250F	L	2.5	0.098	0.002	●	●		●	0.102	9.53	3.18
JTGR3250F-010	R	2.5	0.098	0.004	●				0.102	9.53	3.18
JTGL3250F-010	L	2.5	0.098	0.004	●				0.102	9.53	3.18
JTGR3275F	R	2.75	0.108	0.002		●			0.102	9.53	3.18
JTGR3300F	R	3	0.118	0.002	●	●			0.102	9.53	3.18
JTGR3300F-010	R	3	0.118	0.004	●				0.102	9.53	3.18

● : Line up

JTG (honed edge)



Right hand (R) shown.

		Coated cermet
P	Steel	★
M	Stainless	
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.05}_{0}$ (mm)	$CW^{+0.002}_{0}$ (in)	RE (in)	J9530	CDX (in)	IC (mm)	S (mm)
JTGR3100	R	1	0.039	0.002	●	0.083	9.53	3.18
JTGR3125	R	1.25	0.049	0.002	●	0.083	9.53	3.18
JTGR3150	R	1.5	0.059	0.002	●	0.083	9.53	3.18
JTGR3200	R	2	0.079	0.002	●	0.102	9.53	3.18

● : Line up

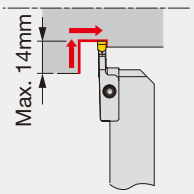
Reference pages: Toolholders →F107, Standard cutting conditions → F110

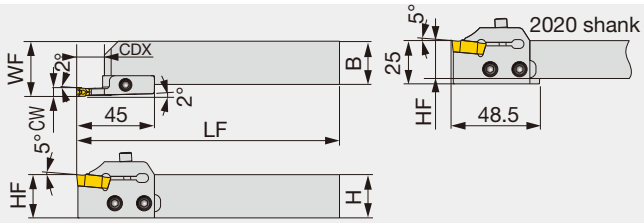
STANDARD CUTTING CONDITIONS (J-Series grooving tool)

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	General steel, Free-cutting steel, etc.	J740	33 - 328	0.0004 - 0.004
		SH725	164 - 492	0.0004 - 0.004
		NS9530	164 - 492	0.0004 - 0.004
		J9530	164 - 492	0.0004 - 0.004
M	Stainless steel, etc.	J740	33 - 328	0.0004 - 0.004
		SH725	164 - 492	0.0004 - 0.004
N	Aluminum alloys, Brass, etc.	TH10	33 - 656	0.0004 - 0.004
S	Difficult-to-cut materials, Titanium alloys, etc.	TH10	33 - 98	0.0004 - 0.004

CGWSR/L-FLR/L#GP

External grooving and turning toolholder





Right hand (R) shown.

Metric	CW	CDX	H	B	LF	HF	WF	Insert	Shank	Blade	Torque
CGWSR/L2020-FLR/L3GP	3	10	20	20	152	20	27	FLEX30R/L	CGWSR/L2020	FLR/L3GP	5
CGWSR/L2525-FLR/L3GP	3	10	25	25	152	25	32	FLEX30R/L	CGWSR/L2525	FLR/L3GP	5
CGWSR/L2020-FLR/L4GP	4	12	20	20	152	20	27	FLEX40R/L	CGWSR/L2020	FLR/L4GP	5
CGWSR/L2525-FLR/L4GP	4	12	25	25	152	25	32	FLEX40R/L	CGWSR/L2525	FLR/L4GP	5
CGWSR/L2020-FLR/L5GP	5	14	20	20	152	20	27	FLEX50R/L	CGWSR/L2020	FLR/L5GP	5
CGWSR/L2525-FLR/L5GP	5	14	25	25	152	25	32	FLEX50R/L	CGWSR/L2525	FLR/L5GP	5

Toolholders are in stock with the designations of: a set of shank and blade; a shank; a blade. Combining the designations of a blade and a shank will make the designation of a set.
Please check the stock and place an order with the designation of a set or a shank+a blade.
Use right-hand toolholders (CGWSR...) with right-hand blade (FLR...); and left-hand toolholders (CGWSL...) with left-hand blade (FLL...).
Torque: Recommended clamping torque: N·m

SPARE PARTS

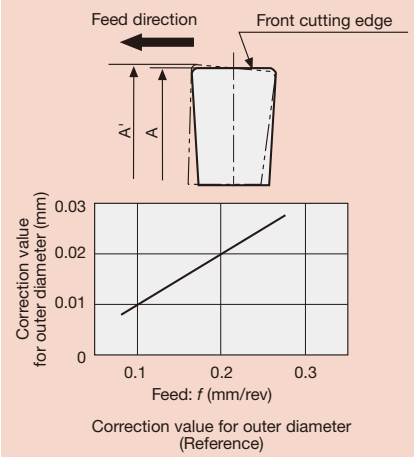


Designation	Clamping screw	Blade screw	Wrench
CGWSR/L****-FLR/L*GP	CHHM5-18	CSHB-6	P-4

Caution

- Flex-Tool has a mechanism in which the end cutting edge angle is formed by accepting a cutting force. In external grooving, there is a possibility that if the cutting conditions (feed and depth of cut) are set too high, the programmed diameter will not be achieved. To prevent this problem, it is necessary to perform a compensation in the program by an amount that is equal to the amount A'-A that is shown in the drawing on the right. The values of compensation corresponding to the feeds are also shown in the graph.

The length of blade for 5 mm width is shortened 2 mm compared from the old type blade. Please notice and read the instruction manual packaged in the box.

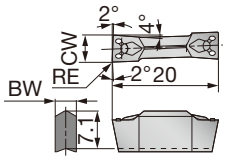


Correction value for outer diameter (Reference)

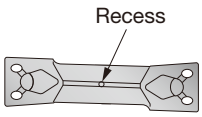
Reference pages: Inserts, Standard cutting conditions → F112

INSERT

FLEX(R/L)



Right hand (R) shown.



To distinguish the insert hands, the V-shape surface (top surface) of a left-hand insert has a recess. (not of a right-hand insert)

		Coated				Carbide				Uncoated				
P	Steel	★	☆			★				★				
M	Stainless	★								★				
K	Cast iron	☆				☆								
N	Non-ferrous													
S	Superalloys													
H	Hard materials													

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.002 (in)	CW±0.05 (mm)	RE (mm)	Coated T9225	Coated T9125	Carbide NS9530	Uncoated UX30	BW (mm)
FLEX30R	R	0.118	3	0.4			●		2.2
FLEX30L	L	0.118	3	0.4			●		2.2
FLEX40R	R	0.157	4	0.4			●		3.1
FLEX40L	L	0.157	4	0.4			●		3.1
FLEX50R	R	0.197	5	0.4	●	▲	●	●	4
FLEX50L	L	0.197	5	0.4	●	▲	●	●	4

● : Line up
▲ : To be discontinued

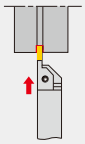
STANDARD CUTTING CONDITIONS

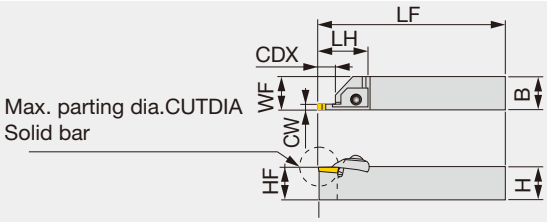
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) Grooving	Feed: *f* (ipr) Turning
P	Carbon steel	T9225	262 - 984	0.002 - 0.010	0.004 - 0.012
		NS9530	262 - 656	0.002 - 0.010	0.004 - 0.012
		UX30	197 - 492	0.002 - 0.010	0.004 - 0.012

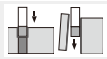
Reference pages: Toolholders →F111

CTWR/L

External grooving and parting toolholder, for 2 corner inserts







Right hand (R) shown.

Metric	CW	CUTDIA	CDX	H	B	LF	LH	HF	WF	Insert	Torque
CTWR/L2020-3	3	32	14	20	20	150	41	20	20.25	CTD3	5
CTWR/L2525-3	3	32	14	25	25	150	41	25	25.25	CTD3	5
CTWR/L2020-4	4	32	14	20	20	150	41	20	20.25	CTD4	5
CTWR/L2525-4	4	32	14	25	25	150	41	25	25.25	CTD4	5
CTWR/L2525-5	5	42	20	25	25	150	46	25	25.25	CTD5	5

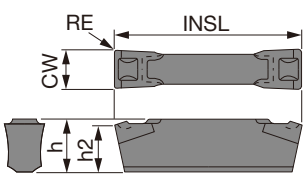
Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamp	Pin	Clamping screw	Washer	Wrench
CTWR2020-3	CTC-3R	BP-360	CTS-M6	CDW6	P-4
CTWL2020-3	CTC-3L	BP-360	CTS-M6	CDW6	P-4
CTWR2525-3	CTC-3R	BP-360	CTS-M6	CDW6	P-4
CTWL2525-3	CTC-3L	BP-360	CTS-M6	CDW6	P-4
CTWR2020-4	CTC-4R	BP-360	CTS-M6	CDW6	P-4
CTWL2020-4	CTC-4L	BP-360	CTS-M6	CDW6	P-4
CTWR2525-4	CTC-4R	BP-360	CTS-M6	CDW6	P-4
CTWL2525-4	CTC-4L	BP-360	CTS-M6	CDW6	P-4
CTWR2525-5	CTC-5R	BP-360	CTS-M6	CDW6	P-4
CTWL2525-5	CTC-5L	BP-360	CTS-M6	CDW6	P-4

INSERT

CTD



		AH725
P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	CW±0.004 (in)	CW±0.1 (mm)	RE (mm)	Coated AH725	INSL (mm)	h (mm)	h2 (mm)
CTD3	0.118	3	0.2	●	20	4.3	4
CTD4	0.157	4	0.2	●	20	5.3	5
CTD5	0.197	5	0.2	●	25	6.3	6

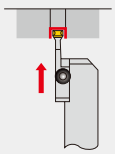
● : Line up

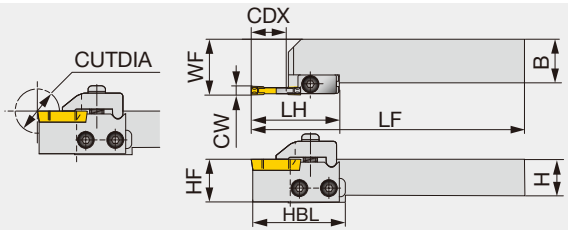
STANDARD CUTTING CONDITIONS

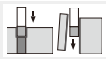
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) Grooving	Feed: *f* (ipr) Parting off
P	Carbon steel	AH725	262 - 591	0.003 - 0.012	0.003 - 0.006
M	Stainless steel	AH725	164 - 394	0.003 - 0.010	0.003 - 0.004

CGWSR/L-CGD

External grooving and parting toolholder







Right hand (R) shown.

Metric	CW	CUTDIA	CDX	H	B	LF	LH	HBL	HF	WF	Insert	Shank	Blade	Torque
CGWSR/L2020-CGDR/L2	2	35	16	20	20	152	45	48.5	20	26.45	CGD200	CGWSR/L2020	CGDR/L2	5
CGWSR/L2525-CGDR/L2	2	35	16	25	25	152	45	-	25	31.45	CGD200	CGWSR/L2525	CGDR/L2	5
CGWSR/L2020-CGDR/L3	3	46	21.6	20	20	157.6	50.6	54.1	20	26.45	CGD300	CGWSR/L2020	CGDR/L3	5
CGWSR/L2525-CGDR/L3	3	46	21.6	25	25	157.6	50.6	-	25	31.45	CGD300	CGWSR/L2525	CGDR/L3	5
CGWSR/L2020-CGDR/L4	4	46	21.6	20	20	157.6	50.6	54.1	20	26.65	CGD400	CGWSR/L2020	CGDR/L4	5
CGWSR/L2525-CGDR/L4	4	46	21.6	25	25	157.6	50.6	-	25	31.65	CGD400	CGWSR/L2525	CGDR/L4	5
CGWSR/L2020-CGDR/L5	5	46	21.6	20	20	157.6	50.6	54.1	20	26.95	CGD500	CGWSR/L2020	CGDR/L5	5
CGWSR/L2525-CGDR/L5	5	46	21.6	25	25	157.6	50.6	-	25	31.95	CGD500	CGWSR/L2525	CGDR/L5	5
CGWSR/L2020-CGDR/L6	6	46	21.6	20	20	157.6	50.6	54.1	20	27.1	CGD600	CGWSR/L2020	CGDR/L6	5
CGWSR/L2525-CGDR/L6	6	46	21.6	25	25	157.6	50.6	-	25	32.1	CGD600	CGWSR/L2525	CGDR/L6	5
CGWSR2525-8	7 / 8	50	21.6	25	25	150	-	-	25	26.35	CGD700, CGD800	-	-	8.5
CGWSR3232-8	7 / 8	50	21.6	32	32	170	-	-	32	33.35	CGD700, CGD800	-	-	8.5

When using a right or left hand blade set, the right hand blade set is used with right hand shank and the left hand blade set is used with left hand shank.
Torque: Recommended clamping torque: N·m

SPARE PARTS

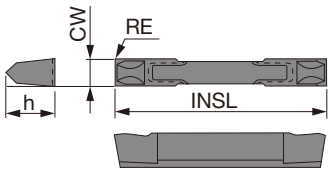
Designation	Blade	Clamp	Clamping screw	Blade screw	Spring pin	Spring	Wrench
CGWSR****-CGDR2	TCR2	CCR2	RT-1	CSHB-6	-	BP-9	P-4
CGWSL****-CGDL2	TCL2	CCL2	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-CGDR3	TCR3	CCR3	RT-1	CSHB-6	-	BP-9	P-4
CGWSL****-CGDL3	TCL3	CCL3	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-CGDR4	TCR4	CCR4	RT-1	CSHB-6	-	BP-9	P-4
CGWSL****-CGDL4	TCL4	CCL4	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-CGDR5	TCR5	CCR5	RT-1	CSHB-6	-	BP-9	P-4
CGWSL****-CGDL5	TCL5	CCL5	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-CGDR6	TCR6	CCR6	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-CGDL6	TCL6	CCL6	RT-1	CSHB-6	-	BP-9	P-4
CGWSR****-8	-	CCR/L-8	CHHM6-20	-	5X14AW	BP-9	P-5

External
Internal
Face
Parting
Others

Reference pages: Inserts, Standard cutting conditions → F115

INSERT

CGD



P	Steel	★	☆		★			★				
M	Stainless	★	★					★				
K	Cast iron	★			☆							
N	Non-ferrous											
S	Superalloys	☆										
H	Hard materials											

★ : First choice
☆ : Second choice

Designation	CW±0.001 (in)	CW±0.025 (mm)	RE (mm)	Coated			Cermet			Uncoated				INSL (in)	h (in)
				AH120	GH330		NS9530			UX30					
CGD200	0.079	2	0.2		●		●			●				0.787	0.128
CGD300	0.118	3	0.2	●	●		●			●				1.126	0.248
CGD400	0.157	4	0.2	●	●		●			●				1.126	0.248
CGD500	0.197	5	0.2	●	●		●			●				1.126	0.248
CGD600	0.236	6	0.2		●		●			●				1.126	0.335
CGD700	0.276	7	0.2		●					●				1.126	0.335
CGD800	0.315	8	0.2		●					●				1.126	0.335

● : Line up

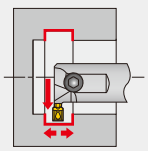
STANDARD CUTTING CONDITIONS

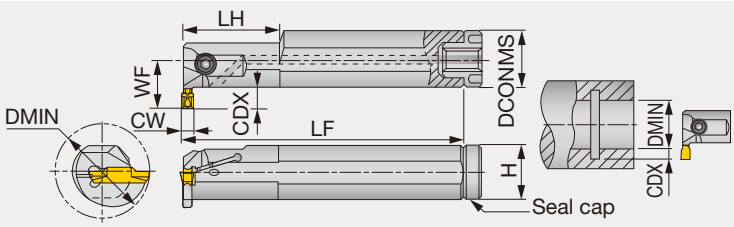
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) Grooving	Feed: *f* (ipr) Parting off
P	Carbon steel	GH330	230 - 591	0.003 - 0.012	0.003 - 0.006
		NS9530	262 - 656	0.003 - 0.012	0.003 - 0.006
		UX30	197 - 492	0.003 - 0.012	0.003 - 0.006

Reference pages: Toolholders → F114

CTIR/L

Internal grooving and turning toolholder





Insert:
Seat size 2: DGIM, DGIS
Seat size 3 - 8: DTI, DTX, DGL

Right hand (R) shown.

Inch	CW (in)	CW (mm)	DMIN	Seat size	CDX	DCONMS	H	LF (1)	LH	WF	Insert	Torque
CTIR/L12-3T06-D16	0.118	3	1.000	3	0.236	0.750	0.551	6.500	1.575	0.609	DTI..., DTX...	3.69
CTIR/L16-3T05-D16	0.118	3	1.000	3	0.201	1.000	0.709	8.000	1.575	0.689	DTI..., DTX...	3.69
CTIR/L16-3T08-D20	0.118	3	1.250	3	0.315	1.000	0.709	8.000	1.575	0.846	DTI..., DTX...	3.69
CTIR/L20-3T10-D25	0.118	3	1.563	3	0.394	1.250	0.906	10.000	2.362	1.063	DTI..., DTX...	3.69
CTIR/L12-4T06-D16	0.157	4	1.000	4	0.236	0.750	0.906	6.500	1.575	0.609	DTI..., DTX...	3.69
CTIR/L16-4T08-D20	0.157	4	1.250	4	0.315	1.000	1.181	8.000	1.575	0.846	DTI..., DTX...	3.69
CTIR/L20-4T04-D20	0.157	4	1.250	4	0.157	1.250	0.709	10.000	2.362	0.819	DTI..., DTX...	3.69
CTIR/L20-4T10-D25	0.157	4	1.563	4	0.394	1.250	0.906	10.000	2.362	1.063	DTI..., DTX...	3.69
CTIR/L16-5T05-D20	0.197	5	1.250	5	0.197	1.000	1.181	8.000	2.362	0.681	DTI..., DTX...	6.27
CTIR/L20-5T10-D25	0.197	5	1.563	5	0.394	1.250	1.181	10.000	2.362	1.063	DTI..., DTX...	6.27
CTIR/L20-6T04-D20	0.236	6	1.250	6	0.157	1.250	0.906	10.000	2.362	0.820	DTI..., DTX...	6.27
CTIR/L20-6T10-D25	0.236	6	1.563	6	0.394	1.250	1.181	10.000	2.362	1.063	DTI..., DTX...	6.27
CTIR/L20-8T05-D23	0.315	8	1.438	8	0.197	1.250	1.181	10.000	2.362	0.839	DTI..., DTX...	6.27
CTIR/L24-8T05-D26	0.315	8	1.625	8	0.228	1.500	1.181	12.000	2.559	0.982	DTI..., DTX...	6.27

(1) LF is calculated with the groove width CW in the above table.
Torque: Recommended clamping torque: lbs·ft

Inch
SPARE PARTS

Designation	Clamping screw	Wrench	Seal cap	Thread type for connection
CTIR/L12-3T06-D16	CM5x0.8x12-A	P-4	CA-20	M6
CTIR/L16-3T05-D16	CM5x0.8x16-A	P-4	CA-25	R1/8"
CTIR/L16-3T08-D20	CM5x0.8x16-A	P-4	CA-25	R1/8"
CTIR/L20-3T10-D25	CM5x0.8x16-A	P-4	CA-32	R1/8"
CTIR/L12-4T06-D16	CM5x0.8x12-A	P-4	CA-20	M6
CTIR/L16-4T08-D20	CM5x0.8x16-A	P-4	CA-25	R1/8"
CTIR/L20-4T04-D20	CM5x0.8x16-A	P-4	CA-32	R1/8"
CTIR/L20-4T10-D25	CM5x0.8x16-A	P-4	CA-32	R1/8"
CTIR/L16-5T05-D20	CM6x1x16-A	P-5	CA-25	R1/8"
CTIR/L20-5T10-D25	CM6x1x20-A	P-5	CA-32	R1/8"
CTIR/L20-6T04-D20	CM6x1x20-A	P-5	CA-32	R1/8"
CTIR/L20-6T10-D25	CM6x1x20-A	P-5	CA-32	R1/8"
CTIR/L20-8T05-D23	CM6x1x20-A	P-5	CA-32	R1/8"
CTIR/L24-8T05-D26	CM6x1x25-A	P-5	CA-40	R1/8"

When using the inserts that are not in the above

Insert	Groove width CW (in)	Min. diameter DMIN (in)
DGM / DGS / SGN / DGL / DTM	0.118	1.969
DGM / DGS / SGN / DTM / DGL	0.157	1.969
DGM / DGS / DTM / DGL	0.197	2.362
DGM / DGS / DTM / DGL	0.236	2.362
DGM / DGS / DTM	0.315	2.756
DTE / DGG	0.118	1.575
DTE / DGG	0.157	1.575
DTE / DGG	0.197	1.969
DTE / DGG	0.236	1.969
DTE / DGG	0.315	2.441
DTR	0.118	1.496
DTR	0.157	1.496
DTR	0.197	1.693
DTR	0.236	1.811
DTR	0.315	2.205

External
Internal
Face
Parting
Others

Reference pages: Inserts → F119 - F130, Standard cutting conditions → F130

Metric	CW	DMIN	Seat size	CDX	DCONMS	H	LF	LH	WF	Insert	Torque
CTIR/L16-2T08-D250	2	25	2	8	16	14	125	-	16.5	DGIM..., DGIS...	5
CTIR/L20-2T06-D250	2	25	2	6	20	18	160	40	15.8	DGIM..., DGIS...	5
CTIR/L20-3T06-D250	3	25	3	6	20	18	160	40	15.8	DTI..., DTX...	5
CTIR/L25-3T05-D250	3	25	3	5.1	25	23	200	40	17.5	DTI..., DTX...	5
CTIR/L25-3T08-D320	3	32	3	8	25	23	200	40	21.5	DTI..., DTX...	5
CTIR/L32-3T10-D400	3	40	3	10	32	30	250	60	27	DTI..., DTX...	5
CTIR/L20-4T06-D250	4	25	4	6	20	18	160	40	15.8	DTI..., DTX...	5
CTIR/L25-4T08-D320	4	32	4	8	25	23	200	40	21.5	DTI..., DTX...	5
CTIR/L32-4T04-D310	4	31	4	4	32	30	250	60	20.8	DTI..., DTX...	5
CTIR/L32-4T10-D400	4	40	4	10	32	30	250	60	27	DTI..., DTX...	5
CTIR/L25-5T05-D310	5	31	5	5	25	23	200	60	17.3	DTI..., DTX...	8.5
CTIR/L32-5T10-D400	5	40	5	10	32	30	250	60	27	DTI..., DTX...	8.5
CTIR/L32-6T04-D310	6	31	6	4	32	30	250	60	20.8	DTI..., DTX...	8.5
CTIR/L32-6T10-D400	6	40	6	10	32	30	250	60	27	DTI..., DTX...	8.5
CTIR/L32-8T05-D370	8	37	8	5	32	30	250	60	21.3	DTI..., DTX...	8.5
CTIR/L40-8T05-D420	8	42	8	5.8	40	38	300	65	25.8	DTI..., DTX...	8.5

(1) LF is calculated with the groove width CW in the above table.
Torque: Recommended clamping torque: N·m

Metric SPARE PARTS

Designation	Clamping screw	Wrench	Seal cap	Thread type for connection
CTIR/L16-2T08-D250	CM5X0.8X10-A	P-4	CA-16	M6
CTIR/L20-2T06-D250	CM5X0.8X12-A	P-4	CA-20	M6
CTIR/L20-3T06-D250	CM5X0.8X12-A	P-4	CA-20	M6
CTIR/L25-3T05-D250	CM5X0.8X16-A	P-4	CA-25	R1/8"
CTIR/L25-3T08-D320	CM5X0.8X16-A	P-4	CA-25	R1/8"
CTIR/L32-3T10-D400	CM5X0.8X16-A	P-4	CA-32	R1/8"
CTIR/L20-4T06-D250	CM5X0.8X12-A	P-4	CA-20	M6
CTIR/L25-4T08-D320	CM5X0.8X16-A	P-4	CA-25	R1/8"
CTIR/L32-4T04-D310	CM5X0.8X16-A	P-4	CA-32	R1/8"
CTIR/L32-4T10-D400	CM5X0.8X16-A	P-4	CA-32	R1/8"
CTIR/L25-5T05-D310	CM6X1X16-A	P-5	CA-25	R1/8"
CTIR/L32-5T10-D400	CM6X1X20-A	P-5	CA-32	R1/8"
CTIR/L32-6T04-D310	CM6X1X20-A	P-5	CA-32	R1/8"
CTIR/L32-6T10-D400	CM6X1X20-A	P-5	CA-32	R1/8"
CTIR/L32-8T05-D370	CM6X1X20-A	P-5	CA-32	R1/8"
CTIR/L40-8T05-D420	CM6X1X25-A	P-5	CA-40	R1/8"

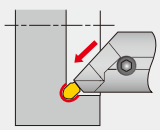
When using the inserts that are not in the above

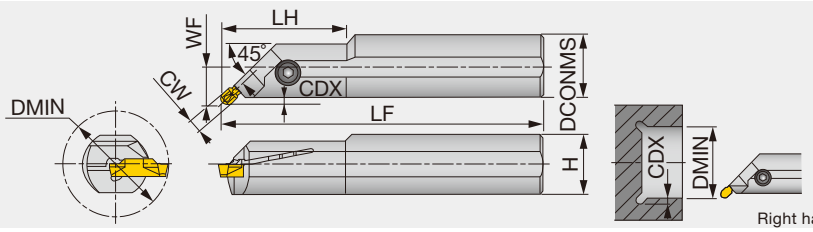
Insert	Groove width CW (mm)	Min. diameter DMIN (mm)
DGM / DGS / SGN / DGL / DTM	3	50
DGM / DGS / SGN / DTM / DGL	4	50
DGM / DGS / DTM / DGL	5	60
DGM / DGS / DTM / DGL	6	60
DGM / DGS / DTM	8	70
DTE / DGG	3	40
DTE / DGG	4	40
DTE / DGG	5	50
DTE / DGG	6	50
DTE / DGG	8	62
DTR	3	38
DTR	4	38
DTR	5	43
DTR	6	46
DTR	8	56

Reference pages: Inserts → F119 - F130, Standard cutting conditions → F130

CGIUR/L

Internal 45° undercutting toolholder





Right hand (R) shown.

Metric	CW	DMIN	Seat size	CDX	DCONMS	H	LF	LH	WF (1)	Insert	Torque
CGIUR/L20-3T02-D380	3	38	3	2.8	20	19	160	-	12.8	DTIU...	5
CGIUR/L25-3T02-D380	3	38	3	2.8	25	23	200	40	14.8	DTIU...	5
CGIUR/L20-4T02-D380	4	38	4	2.8	20	19	160	-	12.9	DTIU...	5
CGIUR/L25-4T02-D460	4	46	4	2.8	25	23	200	40	14.9	DTIU...	5
CGIUR/L25-6T02-D460	6	46	5, 6	2.8	25	23	200	-	15.2	DTIU...	8.5

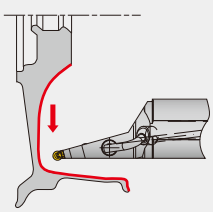
(1) WF is calculated with the groove width CW in the above table.
Torque: Recommended clamping torque: N·m

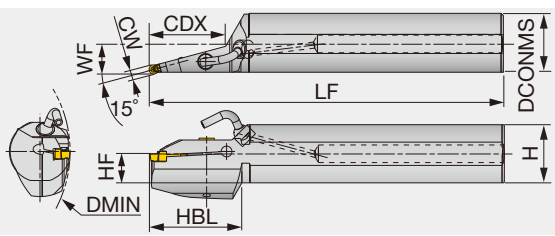
SPARE PARTS

Designation	Clamping screw	Wrench
CGIUR/L20-3T02-D380	CM5X0.8X12-A	P-4
CGIUR/L25-3T02-D380	CM5X0.8X16-A	P-4
CGIUR/L**-4T02-D...	CM5X0.8X16-A	P-4
CGIUR/L25-6T02-D460	CM6X1X25-A	P-5

CGIUR/L-15A

Round-shank toolholder for profiling aluminum wheel





Right hand (R) shown.

Metric	CW	DMIN	Seat size	CDX	DCONMS	H	WF	LF	HF	HBL	Insert	Seal cap	Torque
CGIUR/L40-6T50-D160-15A	6	160	6	50	40	38.5	19.7	320	19	60	DTA...	CA-40	5
CGIUR/L40-8T83-D160-15A	8	160	8	83	40	38.5	20.5	320	19	85	DTA...	CA-40	5
CGIUR/L50-6T85-D200-15A	6	200	6	85	50	48.5	25.2	350	23.5	85	DTA...	-	5
CGIUR/L50-8T85-D200-15A	8	200	8	85	50	48.5	25.9	350	23.5	85	DTA...	-	5

Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamping screw	Wrench	Seal cap
CGIUR/L**-15A	CM6X1X25-A	P-5	CA-40

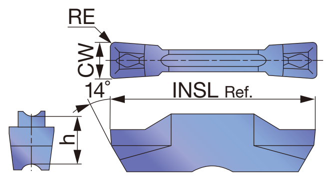
NOZZLE

Coolant pipe	Coolant nozzle
PNZ5	CNZ125

Reference pages: Inserts → F119 - F130, Standard cutting conditions → F130

DTI

Internal grooving and turning (for high precision)



		T9225	T9125	AH7025	AH725	GH130	NS9530
P	Steel	★	☆	★	☆	☆	★
M	Stainless	★		★	☆	★	
K	Cast iron	☆		★		☆	☆
N	Non-ferrous						
S	Superalloys			★	☆		
H	Hard materials						

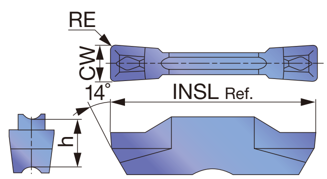
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated T9225	Coated T9125	Coated AH7025	Coated AH725	Coated GH130	Cermet NS9530	INSL (in)	h (in)
DTI300-040	3	3	0.118	0.016	●	▲	●	●	●	●	0.787	0.197
DTI400-040	4	4	0.157	0.016	●	▲	●	●	●	●	0.787	0.197
DTI400-080	4	4	0.157	0.031	●	▲	●	●	●	●	0.787	0.197
DTI500-040	5	5	0.197	0.016	●	▲	●	●	●	●	0.984	0.217
DTI500-080	5	5	0.197	0.031	●	▲	●	●	●	●	0.984	0.217
DTI600-080	6	6	0.236	0.031	●	▲	●	●	●		0.984	0.217
DTI600-120	6	6	0.236	0.047	●	▲	●	●	●		0.984	0.217
DTI800-080	8	8	0.315	0.031	●	▲	●	●	●		1.181	0.264
DTI800-120	8	8	0.315	0.047	●	▲	●	●	●		1.181	0.264

● : Line up
▲ : To be discontinued

DTI

Internal grooving and turning



		T9225	T9125	AH7025	AH725	GH130	NS9530
P	Steel	★	☆	★	☆	☆	★
M	Stainless	★		★	☆	★	
K	Cast iron	☆		★		☆	☆
N	Non-ferrous						
S	Superalloys			★	☆		
H	Hard materials						

★ : First choice
☆ : Second choice

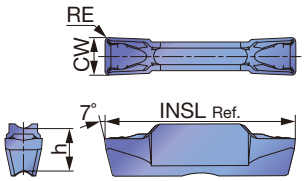
Designation	Seat size	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated T9225	Coated T9125	Coated AH7025	Coated AH725	Coated GH130	Cermet NS9530	INSL (in)	h (in)
DTI3-040	3	3	0.118	0.016	●	▲	●	●	●	●	0.787	0.197
DTI4-040	4	4	0.157	0.016	●	▲	●	●	●	●	0.787	0.197

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F116 - F118, Standard cutting conditions → F130

DTX

External/Internal face grooving and turning



P	Steel	★	★	★	☆	☆			★			
M	Stainless	★		★	☆	★						
K	Cast iron	☆		★		☆			☆			
N	Non-ferrous											
S	Superalloys			★	☆							
H	Hard materials											

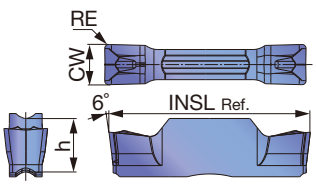
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet				INSL (in)	h (in)
					T9225	T9125	AH7025	AH725	GH130			NS9530					
DTX3-030	3	3	0.118	0.012	●	▲	●	●	●			●				0.787	0.197
DTX4-040	4	4	0.157	0.016	●	▲	●	●	●			●				0.787	0.197
DTX5-040	5	5	0.197	0.016	●	▲	●	●	●			●				0.984	0.217
DTX6-080	6	6	0.236	0.031			●	●	●							0.984	0.197

● : Line up
▲ : To be discontinued

DTM

External face grooving and turning



P	Steel	★										
M	Stainless	★										
K	Cast iron	★										
N	Non-ferrous											
S	Superalloys	★										
H	Hard materials											

★ : First choice
☆ : Second choice

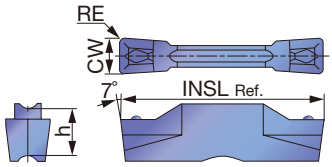
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated											INSL (in)	h (in)
					AH7025												
DTM3-030	3	3	0.118	0.012	●											0.787	0.197
DTM4-040	4	4	0.157	0.016	●											0.787	0.197
DTM4-080	4	4	0.157	0.031	●											0.787	0.197
DTM5-080	5	5	0.197	0.031	●											0.984	0.217
DTM6-080	6	6	0.236	0.031	●											0.984	0.217
DTM8-080	8	8	0.315	0.031	●											1.181	0.264

● : Line up

Reference pages: Toolholders → F116 - F118, Standard cutting conditions → F130

DTE

External face grooving and turning (for high precision)



P	Steel	★	★	★	☆	☆			★			
M	Stainless	★		★	☆	★						
K	Cast iron	☆		★		☆						
N	Non-ferrous											
S	Superalloys			★	☆							
H	Hard materials											

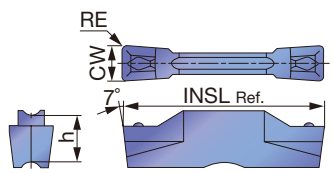
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated									Cermet				INSL (in)	h (in)
					T9225	T9125	AH7025	AH725	GH130					NS9530					
DTE265-015	3	2.65	0.104	0.006	●	▲	●	●	●					●				0.787	0.197
DTE300-020	3	3	0.118	0.008	●	▲	●	●	●					●				0.787	0.197
DTE300-040	3	3	0.118	0.016	●	▲	●	●	●					●				0.787	0.197
DTE315-015	3	3.15	0.124	0.006	●	▲	●	●	●					●				0.787	0.197
DTE400-040	4	4	0.157	0.016	●	▲	●	●	●					●				0.787	0.197
DTE400-080	4	4	0.157	0.031	●	▲	●	●	●					●				0.787	0.197
DTE415-015	4	4.15	0.163	0.006	●	▲	●	●	●					●				0.787	0.197
DTE478-055	5	4.78	0.188	0.022	●	▲	●	●	●					●				0.984	0.217
DTE500-040	5	5	0.197	0.016	●	▲	●	●	●					●				0.984	0.217
DTE500-080	5	5	0.197	0.031	●	▲	●	●	●					●				0.984	0.217
DTE515-015	5	5.15	0.203	0.006	●	▲	●	●	●									0.984	0.217
DTE600-080	6	6	0.236	0.031	●	▲	●	●	●									0.984	0.217
DTE600-120	6	6	0.236	0.047	●	▲	●	●	●									0.984	0.217
DTE800-080	8	8	0.315	0.031	●	▲	●	●	●									1.181	0.264
DTE800-120	8	8	0.315	0.047	●	▲	●	●	●									1.181	0.264

● : Line up
▲ : To be discontinued

DTE

External face grooving and turning



P	Steel	★	★		★	☆	☆		★			
M	Stainless	★			★	☆	★					
K	Cast iron	☆		★	★		☆					
N	Non-ferrous											
S	Superalloys				★	☆						
H	Hard materials											

★ : First choice
☆ : Second choice

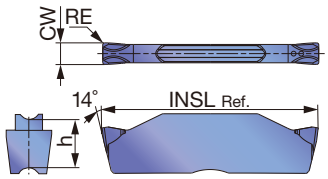
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet				INSL (in)	h (in)
					T9225	T9125	T515	AH7025	AH725	GH130		NS9530					
DTE3-040	3	3	0.118	0.016	●	▲	●	●	●	●		●				0.787	0.197
DTE4-040	4	4	0.157	0.016	●	▲	●	●	●	●		●				0.787	0.197
DTE5-040	5	5	0.197	0.016			●	●								0.984	0.217
DTE6-080	6	6	0.236	0.031			●	●								0.984	0.217

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F116 - F118, Standard cutting conditions → F130

DGIM

Small diameter internal grooving



P	Steel	★	☆	★	☆	☆			★				
M	Stainless	★		★	☆	★							
K	Cast iron	☆		★		☆			☆				
N	Non-ferrous												
S	Superalloys			★	☆								
H	Hard materials												

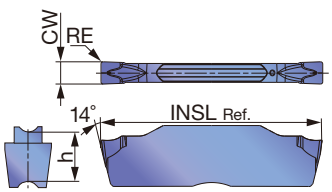
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated						Cermet				INSL (in)	h (in)
					T9225	T9125	AH7025	AH725	GH130		NS9530					
DGIM2-020	2	2	0.079	0.008	●	▲	●	●	●		●				0.787	0.197

● : Line up
▲ : To be discontinued

DGIS

Small diameter internal grooving



P	Steel	★	☆	★	☆	☆			★				
M	Stainless	★		★	☆	★							
K	Cast iron	☆		★		☆			☆				
N	Non-ferrous												
S	Superalloys			★	☆								
H	Hard materials												

★ : First choice
☆ : Second choice

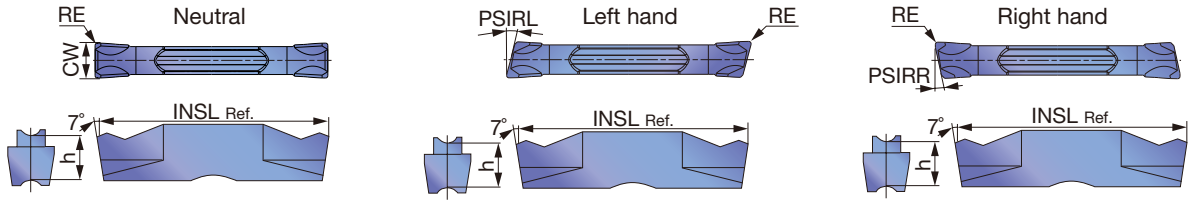
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated						Cermet				INSL (in)	h (in)
					T9225	T9125	AH7025	AH725	GH130		NS9530					
DGIS2-020	2	2	0.079	0.008	●	▲	●	●	●		●				0.787	0.197

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F116 - F118, Standard cutting conditions → F130

DGM

External grooving and parting, 2 corners



P	Steel	★	★	★	☆		☆			★			
M	Stainless	★		★	☆		★						
K	Cast iron	☆		★		☆	☆			☆			
N	Non-ferrous												
S	Superalloys			★	☆	★							
H	Hard materials												

★ : First choice
☆ : Second choice

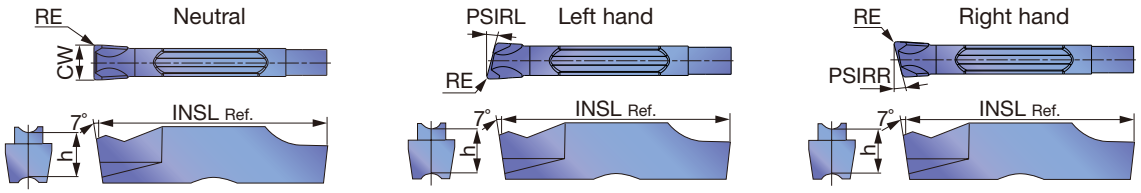
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet				INSL (in)	h (in)	PSIRL	PSIRR
						T9225	T9125	AH7025	AH725	AH905	GH130		NS9530							
DGM2-020	2	N	2	0.079	0.008	●	▲	●	●		●		●				0.787	0.197	0°	0°
DGM2-020-6R	2	R	2	0.079	0.008			●	●		●						0.787	0.197	0°	6°
DGM2-020-6L	2	L	2	0.079	0.008			●	●		●						0.787	0.197	6°	0°
DGM2-020-8R	2	R	2	0.079	0.008			●	●		●						0.787	0.197	0°	8°
DGM2-020-8L	2	L	2	0.079	0.008			●	●		●						0.787	0.197	8°	0°
DGM2-020-15R	2	R	2	0.079	0.008			●	●		●						0.787	0.197	0°	15°
DGM2-020-15L	2	L	2	0.079	0.008			●	●		●						0.787	0.197	15°	0°
DGM2-002-15R	2	R	2	0.079	0.0008				●		●						0.762	0.197	0°	15°
DGM2-002-15L	2	L	2	0.079	0.0008				●		●						0.762	0.197	15°	0°
DGM3-020	3	N	3	0.118	0.008	●	▲	●	●	●	●		●				0.787	0.197	0°	0°
DGM3-020-6R	3	R	3	0.118	0.008			●	●		●						0.787	0.197	0°	6°
DGM3-020-6L	3	L	3	0.118	0.008			●	●		●						0.787	0.197	6°	0°
DGM3-002-6R	3	R	3	0.118	0.0008				●		●						0.766	0.197	0°	6°
DGM3-002-6L	3	L	3	0.118	0.0008				●		●						0.766	0.197	6°	0°
DGM3-020-15R	3	R	3	0.118	0.008			●	●		●						0.787	0.197	0°	15°
DGM3-020-15L	3	L	3	0.118	0.008			●	●		●						0.787	0.197	15°	0°
DGM4-030	4	N	4	0.157	0.012	●	▲	●	●	●	●		●				0.787	0.197	0°	0°
DGM4-030-4R	4	R	4	0.157	0.012			●	●		●						0.787	0.197	0°	4°
DGM4-030-4L	4	L	4	0.157	0.012			●	●		●						0.787	0.197	4°	0°
DGM4-030-15R	4	R	4	0.157	0.012			●	●		●						0.787	0.197	0°	15°
DGM4-030-15L	4	L	4	0.157	0.012			●	●		●						0.787	0.197	15°	0°
DGM5-030	5	N	5	0.197	0.012	●	▲	●	●	●	●		●				0.984	0.217	0°	0°
DGM5-030-4R	5	R	5	0.197	0.012			●	●		●						0.984	0.217	0°	4°
DGM6-030	6	N	6	0.236	0.012	●	▲	●	●	●	●						0.984	0.217	0°	0°
DGM8-040	8	N	8	0.315	0.016	●	▲	●	●		●						1.181	0.264	0°	0°

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F116 - F118, Standard cutting conditions → F130

SGM

External deep grooving and parting, 1corner



P	Steel	★	☆	☆		
M	Stainless	★	☆	★		
K	Cast iron	★		☆		
N	Non-ferrous					
S	Superalloys	★	☆			
H	Hard materials					

★ : First choice
☆ : Second choice

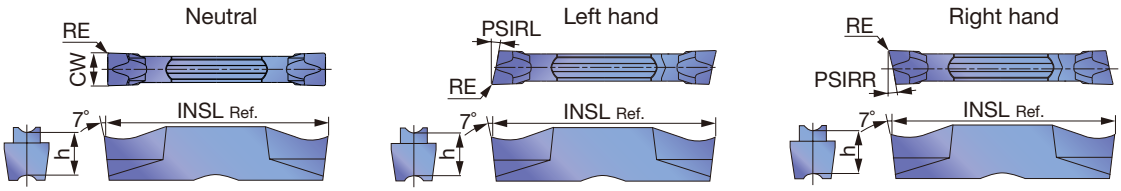
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	Coated AH725	Coated GH130	INSL (in)	h (in)	PSIRL	PSIRR
SGM2-020	2	N	2	0.079	0.008	●	●	●	0.787	0.197	0°	0°
SGM2-020-6R	2	R	2	0.079	0.008	●	●	●	0.787	0.197	0°	6°
SGM2-020-6L	2	L	2	0.079	0.008	●	●	●	0.787	0.197	6°	0°
SGM3-020	3	N	3	0.118	0.008	●	●	●	0.787	0.197	0°	0°
SGM3-020-6R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	6°
SGM3-020-6L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	6°	0°
SGM3-020-15R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	15°
SGM3-020-15L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	15°	0°
SGM4-030	4	N	4	0.157	0.012	●	●	●	0.787	0.197	0°	0°
SGM4-030-4R	4	R	4	0.157	0.012	●	●	●	0.787	0.197	0°	4°
SGM4-030-4L	4	L	4	0.157	0.012	●	●	●	0.787	0.197	4°	0°
SGM5-030	5	N	5	0.197	0.012	●	●	●	0.984	0.217	0°	0°
SGM6-030	6	N	6	0.236	0.012	●	●	●	0.984	0.217	0°	0°

● : Line up

Reference pages: Toolholders → F116 - F118, Standard cutting conditions → F130

DGS

External grooving and parting, 2 corners



P	Steel	★	★	★	☆	☆			★				
M	Stainless	★		★	☆	★							
K	Cast iron	☆		★		☆			☆				
N	Non-ferrous												
S	Superalloys			★	☆								
H	Hard materials												

★ : First choice
☆ : Second choice

Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated						Cermet				INSL (in)	h (in)	PSIRL	PSIRR
						T9225	T9125	AH7025	AH725	GH130		NS9530							
DGS1.4-016	1	N	1.4	0.055	0.006			●	●	●						0.630	0.169	0°	0°
DGS2-020	2	N	2	0.079	0.008	●	▲	●	●	●		●				0.787	0.197	0°	0°
DGS2-020-6R	2	R	2	0.079	0.008			●	●	●						0.787	0.197	0°	6°
DGS2-020-6L	2	L	2	0.079	0.008			●	●	●						0.787	0.197	6°	0°
DGS2-002-6R	2	R	2	0.079	0.0008				●	●						0.768	0.197	0°	6°
DGS2-002-6L	2	L	2	0.079	0.0008				●	●						0.768	0.197	6°	0°
DGS2-020-15R	2	R	2	0.079	0.008			●	●	●						0.787	0.197	0°	15°
DGS2-020-15L	2	L	2	0.079	0.008			●	●	●						0.787	0.197	15°	0°
DGS2-002-15R	2	R	2	0.079	0.0008				●	●						0.768	0.197	0°	15°
DGS2-002-15L	2	L	2	0.079	0.0008				●	●						0.768	0.197	15°	0°
DGS3-020	3	N	3	0.118	0.008	●	▲	●	●	●		●				0.787	0.197	0°	0°
DGS3-020-6R	3	R	3	0.118	0.008			●	●	●						0.787	0.197	0°	6°
DGS3-020-6L	3	L	3	0.118	0.008			●	●	●						0.787	0.197	6°	0°
DGS3-002-6R	3	R	3	0.118	0.0008				●	●						0.766	0.197	0°	6°
DGS3-002-6L	3	L	3	0.118	0.0008				●	●						0.766	0.197	6°	0°
DGS3-020-15R	3	R	3	0.118	0.008			●	●	●						0.787	0.197	0°	15°
DGS3-020-15L	3	L	3	0.118	0.008			●	●	●						0.787	0.197	15°	0°
DGS3-002-15R	3	R	3	0.118	0.0008				●	●						0.766	0.197	0°	15°
DGS3-002-15L	3	L	3	0.118	0.0008				●	●						0.766	0.197	15°	0°
DGS4-030	4	N	4	0.157	0.012	●	▲	●	●	●		●				0.787	0.197	0°	0°
DGS4-030-4R	4	R	4	0.157	0.012			●	●	●						0.787	0.197	0°	4°
DGS4-030-4L	4	L	4	0.157	0.012			●	●	●						0.787	0.197	4°	0°
DGS5-030	5	N	5	0.197	0.012	●	▲	●	●	●		●				0.984	0.217	0°	0°
DGS6-030	6	N	6	0.236	0.012	●	▲	●	●	●						0.984	0.217	0°	0°

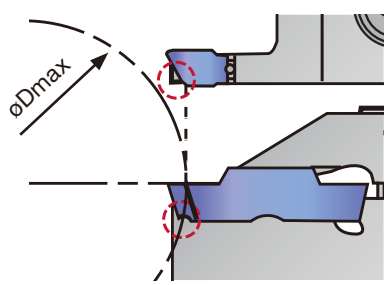
● : Line up
▲ : To be discontinued

Caution

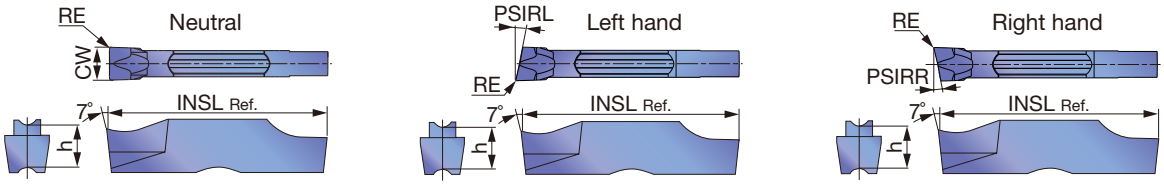
The tool will interfere with the workpiece when grooving larger diameter than øDmax.

Designation	øDmax (in)
DGM2-002-15R/L	1.102
DGM3-002-15R/L	1.141
DGM4-030-15R/L	1.181
SGM3-020-15R/L	4.055

Designation	øDmax (in)
DGS2-002-15R/L	1.102
DGS3-002-15R/L	1.141
SGS3-020-15R/L	4.055
SGS3-002-15R/L	1.338



Reference pages: Toolholders → F116 - F118, Standard cutting conditions → F130



P	Steel	★	☆	☆
M	Stainless	★	☆	★
K	Cast iron	★		☆
N	Non-ferrous			
S	Superalloys	★	☆	
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	Coated AH725	Coated GH130	INSL (in)	h (in)	PSIRL	PSIRR
SGS2-020	2	N	2	0.079	0.008	●	●	●	0.787	0.197	0°	0°
SGS2-020-6R	2	R	2	0.079	0.008	●	●	●	0.787	0.197	0°	6°
SGS2-020-6L	2	L	2	0.079	0.008	●	●	●	0.787	0.197	6°	0°
SGS2-020-15R	2	R	2	0.079	0.008	●	●	●	0.787	0.197	0°	15°
SGS2-020-15L	2	L	2	0.079	0.008	●	●	●	0.787	0.197	15°	0°
SGS3-020	3	N	3	0.118	0.008	●	●	●	0.787	0.197	0°	0°
SGS3-020-6R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	6°
SGS3-020-6L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	6°	0°
SGS3-002-6R	3	R	3	0.118	0.0008		●	●	0.780	0.197	0°	6°
SGS3-002-6L	3	L	3	0.118	0.0008		●	●	0.780	0.197	6°	0°
SGS3-020-15R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	15°
SGS3-020-15L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	15°	0°
SGS3-002-15R	3	R	3	0.118	0.0008		●	●	0.780	0.197	0°	15°
SGS3-002-15L	3	L	3	0.118	0.0008		●	●	0.780	0.197	15°	0°
SGS4-030	4	N	4	0.157	0.012	●	●	●	0.787	0.197	0°	0°
SGS5-030	5	N	5	0.197	0.012	●	●	●	0.984	0.217	0°	0°
SGS6-030	6	N	6	0.236	0.012	●	●	●	0.984	0.217	0°	0°

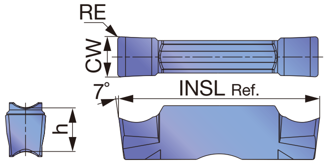
● : Line up

External
Internal
Face
Parting
Others

Reference pages: Toolholders → F116 - F118, Standard cutting conditions → F130

DGG

External grooving (for high precision)



		AH7025	NS9530	KS05F
P	Steel	★	★	
M	Stainless	★		
K	Cast iron	★	☆	☆
N	Non-ferrous			★
S	Superalloys	★		☆
H	Hard materials			

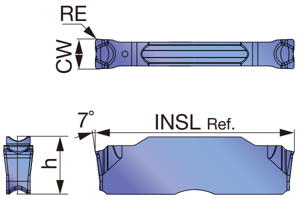
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated AH7025	Cermet NS9530	Uncoated KS05F	INSL (in)	h (in)
DGG200-020	2	2	0.079	0.008	●	●	●	0.787	0.197
DGG300-020	3	3	0.118	0.008	●	●	●	0.787	0.197
DGG400-040	4	4	0.157	0.016	●	●	●	0.787	0.197
DGG500-040	5	5	0.197	0.016	●	●	●	0.984	0.217
DGG600-040	6	6	0.236	0.016	●	●	●	0.984	0.217

● : Line up

DGL

External grooving and parting



		AH7025
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

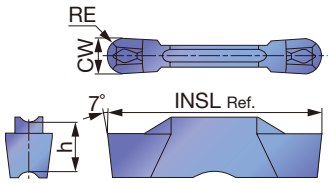
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	INSL (in)	h (in)
DGL3-025	3	3	0.118	0.010	●	0.787	0.197
DGL4-030	4	4	0.157	0.012	●	0.787	0.197
DGL5-030	5	5	0.197	0.012	●	0.984	0.217
DGL6-080	6	6	0.236	0.031	●	0.984	0.217

● : Line up

Reference pages: Toolholders → F116 - F118, Standard cutting conditions → F130

DTR

Profiling and undercutting (for high precision)



P	Steel	★	★	★	☆	☆			★				
M	Stainless	★		★	☆	★							
K	Cast iron	☆		★		☆			☆				
N	Non-ferrous												
S	Superalloys			★	☆								
H	Hard materials												

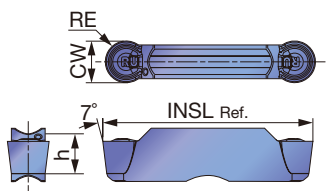
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated							Cermet				INSL (in)	h (in)
					T9225	T9125	AH7025	AH725	GH130			NS9530					
DTR300-150	3	3	0.118	0.059	●	▲	●	●	●			●				0.787	0.197
DTR400-200	4	4	0.157	0.079	●	▲	●	●	●			●				0.787	0.197
DTR478-239	5	4.78	0.188	0.094	●	▲	●	●	●			●				0.984	0.217
DTR500-250	5	5	0.197	0.098	●	▲	●	●	●			●				0.984	0.217
DTR600-300	6	6	0.236	0.118	●	▲	●	●	●							0.984	0.217

● : Line up
▲ : To be discontinued

DTR

Profiling and undercutting



P	Steel	★	★	★	☆		☆			★			
M	Stainless	★		★	☆		★						
K	Cast iron	☆		★		☆	☆			☆			
N	Non-ferrous												
S	Superalloys			★	☆	★							
H	Hard materials												

★ : First choice
☆ : Second choice

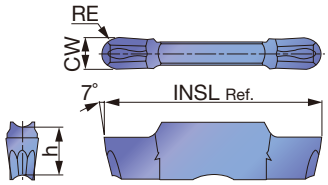
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet				INSL (in)	h (in)
					T9225	T9125	AH7025	AH725	AH905	GH130		NS9530					
DTR3-150	3	3	0.118	0.059	●	▲	●	●	●	●		●				0.787	0.197
DTR4-200	4	4	0.157	0.079	●	▲	●	●	●	●		●				0.787	0.197
DTR5-250	5	5	0.197	0.098	●	▲	●	●	●	●		●				0.984	0.217
DTR6-300	6	6	0.236	0.118	●	▲	●	●		●						0.984	0.217
DTR8-400	8	8	0.315	0.157	●	▲	●	●		●						1.181	0.264

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F116 - F118, Standard cutting conditions → F130

DTIU

Profiling and undercutting (for high precision)



P	Steel	★	☆	☆				
M	Stainless	★	☆	★				
K	Cast iron	★		☆				
N	Non-ferrous							
S	Superalloys	★	☆					
H	Hard materials							

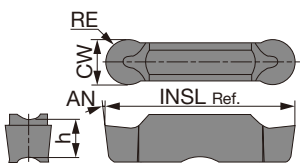
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated								INSL (in)	h (in)
					AH7025	AH725	GH130							
DTIU300-150	3	3	0.118	0.059	●	●	●						0.787	0.197
DTIU400-200	4	4	0.157	0.079	●	●	●						0.787	0.197
DTIU500-250	5	5	0.197	0.098	●	●	●						0.984	0.217
DTIU600-300	6	6	0.236	0.118	●	●	●						0.984	0.217

● : Line up

DTA

Aluminum wheel machining (for high precision)



P	Steel							
M	Stainless							
K	Cast iron							
N	Non-ferrous	★						
S	Superalloys							
H	Hard materials							

★ : First choice
☆ : Second choice

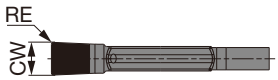
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Uncoated								INSL (in)	h (in)	AN
					TH10										
DTA600-300	6	6	0.236	0.118	●								0.984	0.217	7°
DTA800-400	8	8	0.315	0.157	●								1.181	0.264	10°

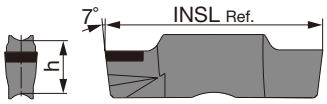
● : Line up

Reference pages: Toolholders → F116 - F118, Standard cutting conditions → F130

SGN

External grooving of hardened steel





P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	CBN BX360	INSL (in)	h (in)
SGN200-020	2	2	0.079	0.008	●	0.787	0.197
SGN300-020	3	3	0.118	0.008	●	0.787	0.197
SGN400-020	4	4	0.157	0.008	●	0.787	0.197

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 4135, etc.	< 300 HB	First choice	AH7025, AH725	164 - 591
		< 300 HB	Priority for wear resistance	T9225	262 - 984
		< 300 HB	Priority for impact resistance	GH130	164 - 394
		< 300 HB	Priority for surface finish	NS9530	262 - 722
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	< 200 HB	First choice	AH7025, AH725	164 - 394
		< 200 HB	Priority for impact resistance	GH130	164 - 394
K	Gray cast iron No.250B, No.300B, etc.	-	First choice	T515, AH7025	164 - 591
		-	Priority for impact resistance	GH130	164 - 591
	Ductile cast iron 60-40-18, 60-55-06, etc.	-	First choice	T515, AH7025	164 - 394
		-	Priority for impact resistance	GH130	164 - 394
N	Aluminum alloys Si < 12%	-	First choice	TH10	328 - 1640
		-	First choice	KS05F	328 - 1969
S	Superalloys Inconel 718, etc.	< HRC 40	First choice	AH7025	66 - 197
		< HRC 40	Priority for wear resistance	AH905	66 - 262
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	First choice	AH905	66 - 262
		< HRC 40	Priority for impact resistance	AH7025, AH725	66 - 262
		< HRC 40	Priority for surface finish	KS05F	66 - 197
H	Hardened steel 4137, etc.	> HRC 50	First choice	BX360	262 - 492

*See page F131 - F134 for feed: *f* (ipr).

Reference pages: Toolholders → F116 - F118

Internal grooving and turning

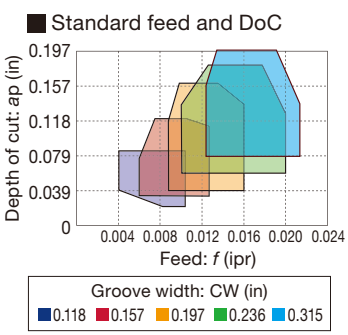
DTI type (2 corners)

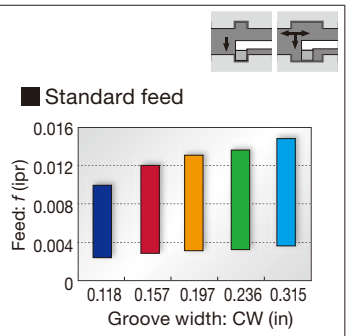
First choice

F119 page

Internal

Unique chipbreaker makes chips shorter
Molded and ground inserts available
CW = 0.118" - 0.315"



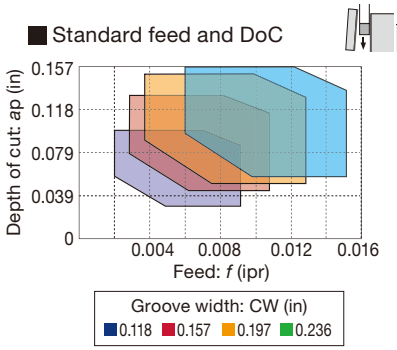


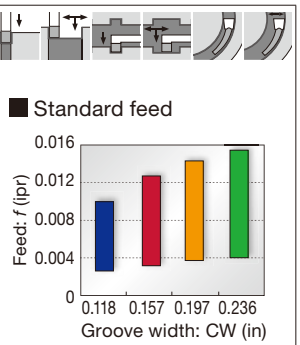
DTX type (2 corners)

F120 page

Multi-functional type

Well balanced sharpness and strength
Multi-functional insert
CW = 0.118" - 0.236"



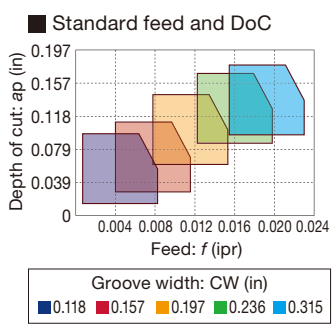


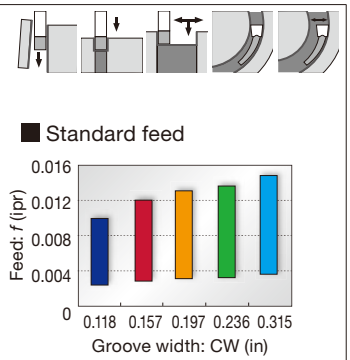
DTM type (2 corners)

F120 page

General purpose

1st choice for grooving and turning
Suitable for light to medium cutting
Excellent chip control in machining steel, alloy steel, stainless steel, and heat-resistant alloy
CW = 0.118" - 0.315"



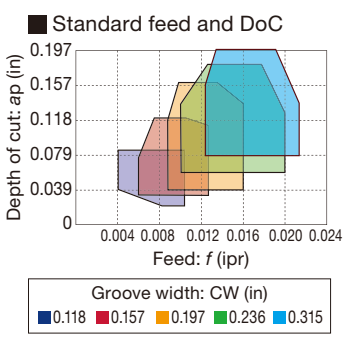


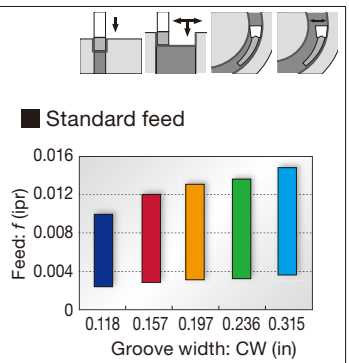
DTE type (2 corners)

F121 page

General purpose

Unique chipbreaker makes chips shorter
Molded and ground inserts available
CW = 0.118" - 0.315"





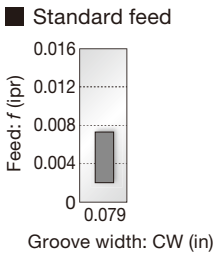
Small diameter internal grooving

DGIM type (2 corners)

F122 page

2 mm insert width only (For general purpose)

Unique chipbreaker for excellent chip control
Excellent fracture resistance due to optimum land on the cutting edge
For general applications on steels & stainless steels
CW = 0.079"

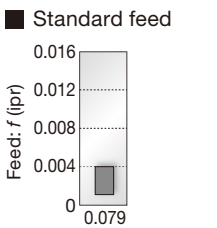


DGIS type (2 corners)

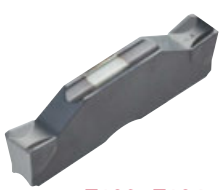
F122 page

2 mm insert width only (Lower cutting force)

Lower cutting force
Excellent fracture resistance due to optimum land on the cutting edge
Applicable for low carbon steels & stainless steels
CW = 0.079"



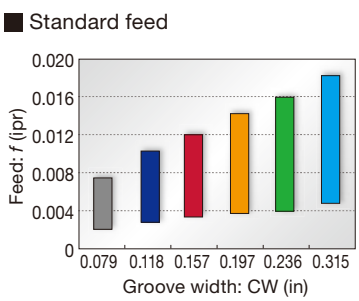
DGM type (2 corners) SGM type (1 corner)

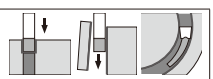


F123, F124 page

1st choice for grooving and parting

Smooth chip evacuation
Well-designed edge with high strength
Handed insert available
CW = 0.079" - 0.315"



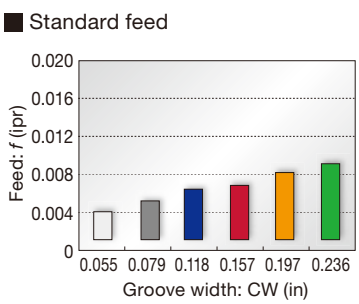


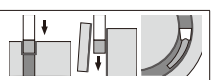
DGS type (2 corners) SGS type (1 corner)

F125, F126 page

Lower cutting force and superior sharpness

Unique-designed edge and chipbreaker
Handed insert available
CW = 0.055" - 0.236"





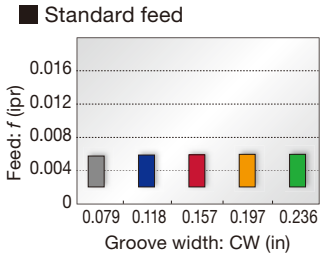
Small diameter internal grooving

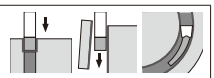
DGG type (2 corners)

F127 page

For non-ferrous materials and titanium

Chipbreaker with low cutting force
Sharp cutting edge that prevents vibration and delivers fine surface finish
CW = 0.079" - 0.236"



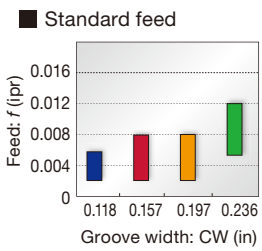


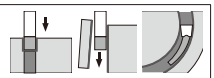
DGL type (2 corners)

F128 page

1st choice for mild steel

Chipbreaker with excellent chip control at low feed
Suitable for mild steel that often has difficulties with chip control
CW = 0.118" - 0.236"





Profiling and undercutting

DTR type (2 corners)

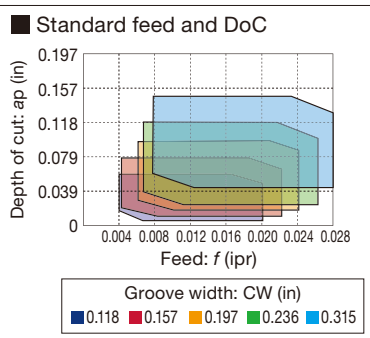
Molded

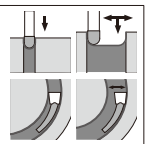
Ground

F128 page

Full radius type

Excellent chip control
Molded and ground inserts available
CW = 0.118" - 0.315"



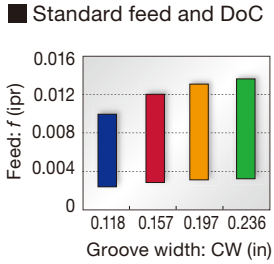


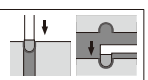
DTIU type (2 corners)

F129 page

Full radius type

Excellent chip control
For undercutting
CW = 0.118" - 0.236"





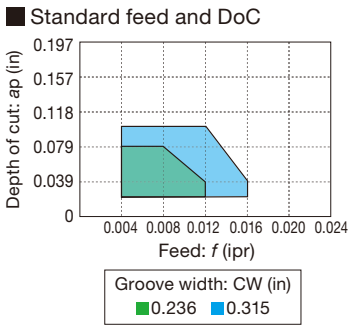
Aluminum wheel machining

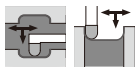
DTA type (2 corners)

F129 page

Full radius type

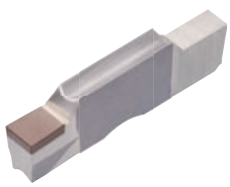
Excellent chip control
For aluminum wheel profiling
Ground insert
CW = 0.236" - 0.315"





External grooving of hardened steel

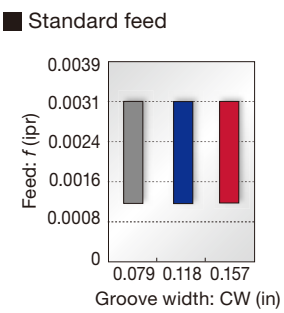
SGN-CBN type (1 corner)

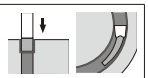


F130 page

For hardened steel cutting

Optimum cutting edge shape for grooving of hardened steels
High tolerance width for finishing
CW = 0.079" - 0.157"
(CW = ±0.001")



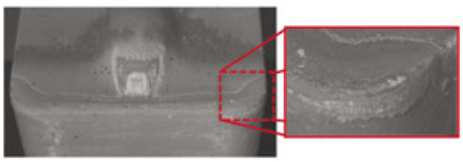


AH7025 Cutting performance

First choice grade for grooving
AH7025 grade: Tungaloy's unique coating technology for drastically improved reliability

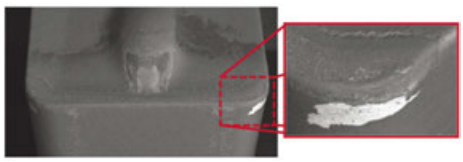
Tool life comparison

AH7025



Tool wear after 60 grooves

Conventional grade



Tool wear after 30 grooves

P Alloy steel (4140)

Insert	: DTE3-040 AH7025
Cutting speed	: *Vc* = 492 sfm
Feed	: *f* = 0.007 ipr
Groove depth	: 0.669"
Machining	: External grooving
Coolant	: Wet

AH7025 provides stability, while preventing coating from peeling off even after machining twice the number of passes compared to the conventional grade.

→ **The combination of Nano-multi-layered AlTiN Coating with high Al content and tough substrate provides highly efficient machining in various grooving operations.**

Grades

AH7025 P M K S

- First choice for various applications
- New PVD coating with high Al content provides excellent adhesion strength
- Improved wear and chipping resistance

AH725 P M S

- Recommended for various applications
- Newly developed coating with well controlled crystal structure and fracture resistance
- Improved adhesion strength

T515 K

- First recommended grade for cast iron
- Excellent wear resistance in high-speed machining

T9225 P

- Suitable for steel machining at high speeds
- New CVD coating and substrate deliver an outstanding balance of wear and chipping resistance

NS9530 P

- Advanced cermet for finish cutting of steel
- Innovative grade with incredible fracture and high wear resistance

GH130 P M K

- Recommended for interrupted machining
- TiCNO PVD coating layer with high wear resistance
- High hardness wear resistance

AH905 S

- Remarkable for machining of heat resistant alloys
- Exclusive coating layer improves adhesion strength and wear resistance

KS05F N S

- Recommended for non-ferrous materials and titanium

TH10 N

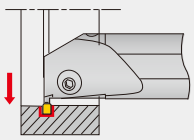
- Recommended for non-ferrous materials

BX360 H

- Suitable for hardened steel machining
- Ideal balance of wear and chipping resistance due to the optimum CBN content and grain size

CGTR/L

Internal grooving and turning toolholder



Right hand (R) shown.

Inch	CW	DMIN	CDX	DCONMS	H	LF	WF	Insert	Torque
A12Q-CGTR30U	0.118	1.0	0.138	0.75	0.709	7.09	0.571	G*30, GE30-AL	2.21
A16R-CGTR/L30U	0.118	1.26	0.197	1.00	0.961	7.87	0.728	G*30, GE30-AL	2.21
A16R-CGTR40U	0.157	1.26	0.197	1.00	0.961	7.87	0.728	G*40, GE40-AL	2.21

Torque: Recommended clamping torque: lbs·ft

SPARE PARTS

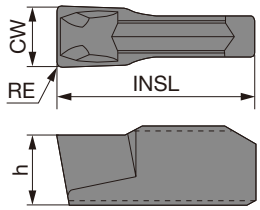
Designation	Clamping screw	Wrench
A***-CGTR/L...	BHM5-14	P-3

Reference pages: Inserts →F137 - F139, Standard cutting conditions →F142

INSERT

GE

For general grooving



P	Steel	★	☆	★	★			★		
M	Stainless	★		★	★					
K	Cast iron	☆		★	☆			☆		
N	Non-ferrous									
S	Superalloys			☆						
H	Hard materials									

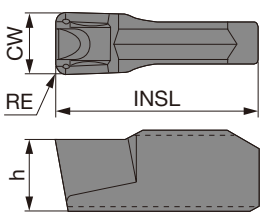
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated				Cermet		INSL (in)	h (in)
				T9225	T9125	AH120	GH730	NS9530			
GE20	2	0.079	0.008			●	●	●		0.394	0.138
GE30	3	0.118	0.008	●	▲	●	●	●		0.394	0.138
GE40	4	0.157	0.008	●	▲	●	●	●		0.394	0.157
GE50	5	0.197	0.008	●	▲	●	●	●		0.472	0.177

● : Line up
▲ : To be discontinued

GT

For turning



P	Steel	★	☆	★	★			★		
M	Stainless	★		★	★					
K	Cast iron	☆		★	☆			☆		
N	Non-ferrous									
S	Superalloys			☆						
H	Hard materials									

★ : First choice
☆ : Second choice

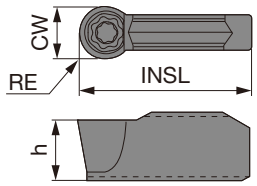
Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated				Cermet		INSL (in)	h (in)
				T9225	T9125	AH120	GH730	NS9530			
GT30	3	0.118	0.016			●	●	●		0.394	0.138
GT40	4	0.157	0.016			●	●	●		0.394	0.157
GT50	5	0.197	0.016	●	▲	●	●	●		0.472	0.177

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F136, Standard cutting conditions → F142

GR

For profiling (full radius)



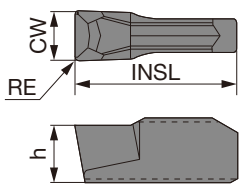
P	Steel	★	☆	★	★			★			
M	Stainless	★		★	★						
K	Cast iron	☆		★	☆			☆			
N	Non-ferrous										
S	Superalloys			☆							
H	Hard materials										

★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated					Cermet					INSL (in)	h (in)
				T9225	T9125	AH120	GH730		NS9530						
GR30	3	0.118	0.059			●	●		●					0.394	0.138
GR40	4	0.157	0.079	●	▲	●	●		●					0.394	0.157
GR50	5	0.197	0.098	●	▲	●	●		●					0.472	0.177

● : Line up
▲ : To be discontinued

GF



P	Steel	★			★						
M	Stainless	★									
K	Cast iron	☆			☆						
N	Non-ferrous										
S	Superalloys										
H	Hard materials										

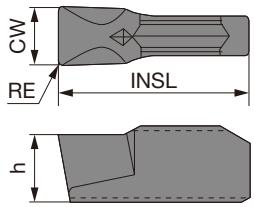
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated			Cermet					INSL (in)	h (in)
				GH730			NS9530						
GF30	3	0.118	0.008	●			●					0.394	0.138
GF40	4	0.157	0.008	●			●					0.394	0.157
GF50	5	0.197	0.008	●			●					0.472	0.177

● : Line up

Reference pages: Toolholders → F136, Standard cutting conditions → F142

GN



P	Steel	★	
M	Stainless	★	
K	Cast iron	☆	
N	Non-ferrous		
S	Superalloys		
H	Hard materials		

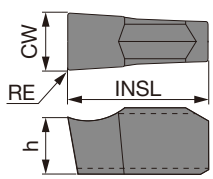
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated GH730	INSL (in)	h (in)
GN30	3	0.118	0.008	●	0.394	0.138
GN40	4	0.157	0.008	●	0.394	0.157
GN50	5	0.197	0.008	●	0.472	0.177

● : Line up

GE-AL

For aluminum and non-ferrous metal



P	Steel		
M	Stainless		
K	Cast iron		
N	Non-ferrous	★	
S	Superalloys		
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Uncoated KS05F	INSL (in)	h (in)
GE20-AL	2	0.079	0.008	●	0.394	0.138
GE30-AL	3	0.118	0.008	●	0.394	0.138
GE40-AL	4	0.157	0.008	●	0.394	0.157

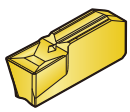
● : Line up

Reference pages: Toolholders → F136, Standard cutting conditions → F142

1 corner insert

Internal grooving

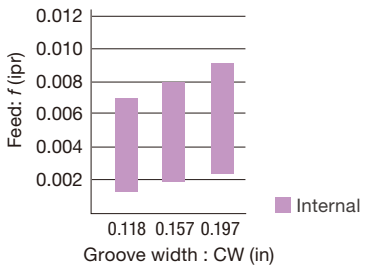
GN

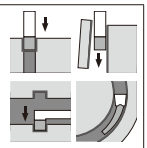


F139 page

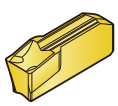
1st choice for internal grooving
Low cutting force and good chip control for internal grooving

CW = 0.118" - 0.197"





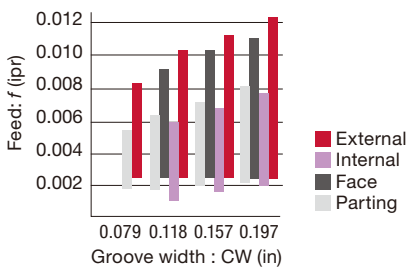
GE

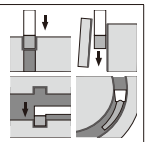


F137 page

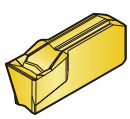
1st choice for external grooving and parting
Excellent chip control

CW = 0.079" - 0.197"





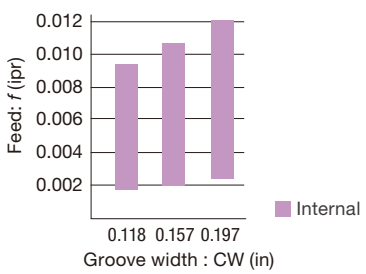
GF

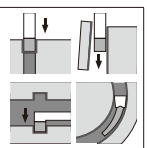


F138 page

1st choice for face grooving
Low cutting force and good chip control for face grooving

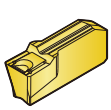
CW = 0.118" - 0.197"





Grooving and turning

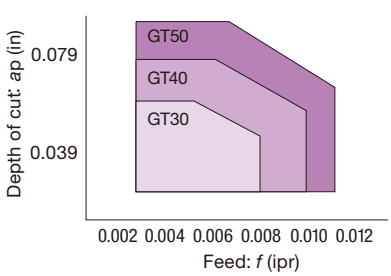
GT

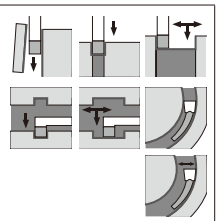


F137 page

1st choice for turning
Low cutting force and good chip control for traversing

CW = 0.118" - 0.197"

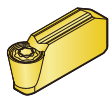




1 corner insert

Profiling

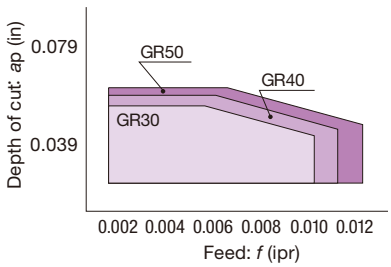
GR

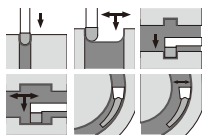


F138 page

Full radius type
Low cutting force and good chip control for profiling

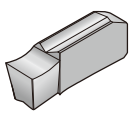
CW = 0.118" - 0.197"





For aluminum and non-ferrous metal

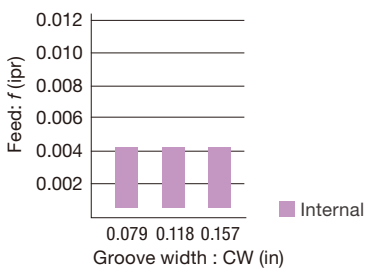
GE-AL

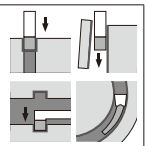


F139 page

Reduce cutting force and welding due to sharp chipbreaker

CW = 0.079" - 0.157"





STANDARD CUTTING CONDITIONS

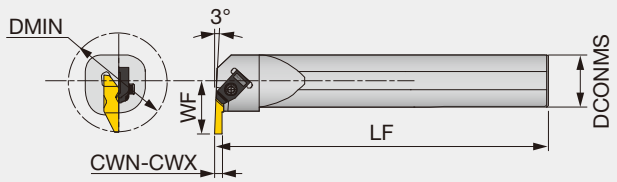
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)
P	Low carbon steel, Alloy steel (~ HB150)	T9225	262 - 984
		NS9530	328 - 656
		GH730	164 - 591
	Medium carbon steel, Alloy steel (HB150 ~ 250)	T9225	262 - 722
		NS9530	262 - 591
		GH730	164 - 492
	High carbon steel, Alloy steel (HB250 ~)	T9225	262 - 722
		NS9530	262 - 492
		GH730	164 - 394
M	Stainless steel	T9225	262 - 591
		GH730	164 - 394
K	Gray iron, Ductile cast iron	T9225	262 - 820
		GH730	164 - 591
N	Aluminum alloy, Non-ferrous metal	KS05F	656 - 984

Internal

Operation	Feed: *f* (ipr)		
	Groove width: CW (in)		
	3 mm (0.118")	4 mm (0.157")	5 mm (0.197")
Internal grooving (GE**)	0.0016 - 0.006	0.002 - 0.006	0.002 - 0.006
Internal grooving (GN**)	0.0016 - 0.006	0.002 - 0.007	0.002 - 0.008
Internal traversing (GT**)	*a*p = 0.020 - 0.059 *f* = 0.0024 - 0.008	*a*p = 0.020 - 0.079 *f* = 0.0024 - 0.010	*a*p = 0.020 - 0.098 *f* = 0.0024 - 0.011
Internal traversing (GR**)	*a*p = 0.020 - 0.055 *f* = 0.002 - 0.010	*a*p = 0.020 - 0.059 *f* = 0.002 - 0.010	*a*p = 0.020 - 0.063 *f* = 0.002 - 0.012
Aluminum alloys (GE**-AL)	0.0012 - 0.004	0.0012 - 0.004	-

For diameter compensation values in traversing, see page F111.
When vibration occurs in turning, please use the lower limit value in the above table.

TUNGT-CLAMP
A-FLER/LT
Internal grooving and threading toolholder



Right hand (R) shown.

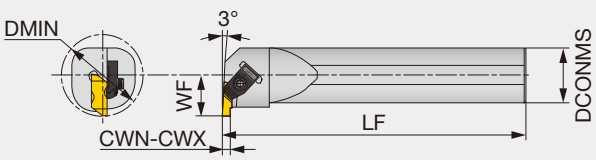
Inch	CWN	CWX	DMIN	DCONMS	LF	WF	Insert	Torque
A20-FLER/LT3	0.094	0.189	1.807	1.250	6.000	1.082	FLGT-3R/L...	2.21
A24-FLER/LT3	0.094	0.189	2.057	1.500	6.000	1.207	FLGT-3R/L...	2.21

Note: The right hand toolholders use right hand inserts, and the left hand toolholders use left hand inserts.
Torque: Recommended clamping torque: lbs·ft

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
A20-FLERT3, A24-FLERT3	TF-72	S-412	5/32HEX
A20-FLELT3, A24-FLELT3	TF-73	S-412	5/32HEX

TUNGT-CLAMP
A_M-FLER/L
Internal grooving and threading toolholder



Right hand (R) shown.

Inch	CWN	CWX	DMIN	DCONMS	LF	WF	Insert	Torque
A08-FLER/L2	0.031	0.125	0.730	0.500	8.000	0.437	FL*-2**L/R...	2.21
A10-FLER2	0.031	0.125	1.000	0.625	10.000	0.500	FL*-2**L...	2.21
A12-FLER/L2	0.031	0.128	1.125	0.750	10.000	0.562	FL*-2**L/R...	2.21
A16-FLER/L2	0.031	0.128	1.375	1.000	12.000	0.688	FL*-2**L/R...	2.21
A16-FLER/L3	0.031	0.250	1.375	1.000	12.000	0.688	FL*-3**L/R...	2.21

Metric	CWN	CWX	DMIN	DCONMS	LF	WF	Insert	Torque*
A25M-FLER/L3	1	3	34.9	25	300	17.7	FL*-3**L/R...	3
A32M-FLER/L3	1	3	44.45	32	350	22.1	FL*-3**L/R...	3
A40M-FLER3	1	3	50.8	40	350	24.5	FL*-3**L...	3

Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).
Torque: Recommended clamping torque: lbs·ft (*N·m)

Inch SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
A08-FLER2	TF-146	S-310	7/64HEX
A08-FLEL2	TF-147	S-310	7/64HEX
A10-FLER2, A12-FLER2, A16-FLER2	TF-75	S-310	7/64HEX
A12-FLEL2, A16-FLEL2	TF-74	S-310	7/64HEX
A16-FLER3	TF-73	S-412	5/32HEX
A16-FLEL3	TF-72	S-412	5/32HEX

Metric SPARE PARTS

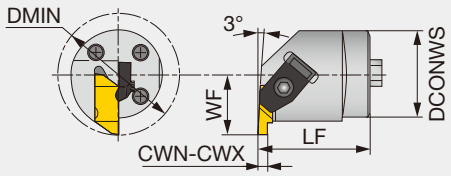
Designation	Clamp	Clamping screw	Wrench
A**M-FLER3	TF-73	S-412	5/32HEX
A**M-FLEL3	TF-72	S-412	5/32HEX

Reference pages: Inserts → F145 - F152, Standard cutting conditions → F144

TUNGT-CLAMP

HS-FLER/L

Internal grooving and threading head, for S-570 shank



Right hand (R) shown.

Metric	CWN	CWX	DMIN	DCONWS	LF	WF	Insert	Torque
HS40-FLER3W	1	3	56.1	40	40.1	28	FL*-3**L...	3
HS50-FLER3W	1	3	70.1	50	41.9	35	FL*-3**L...	3

Note: Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).
Torque: Recommended clamping torque: N·m

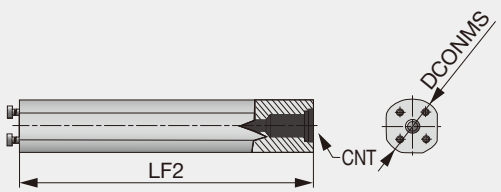
SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
HS40-FLER3W	TF-73	S-412	5/32HEX
HS50-FLER3W	TF-73	S-412	5/32HEX

TUNGT-CLAMP

S-570

Steel shank for head exchangeable tools



Metric	DCONMS	LF2	CNT
S-570-40M-40	40	273	1/2-14NPT
S-570-50M-50	50	366	1/2-14NPT

SPARE PARTS

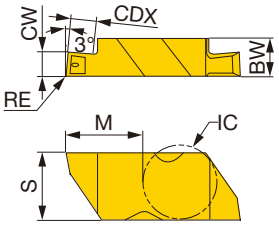
Designation	Clamping screw	Wrench
S-570-40M-40	SS100	5/32HEX
S-570-50M-50	SS94	1/4HEX

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Application	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	High carbon steel 1045, etc.	AH110	Grooving	328 - 656	0.005 - 0.014
		AH725	Threading	262 - 591	-
	Alloy steel 4137, etc.	AH110	Grooving	164 - 262	0.005 - 0.012
		AH725	Threading	197 - 525	-
M	Stainless steel S30400, etc.	AH110	Grooving	164 - 492	0.004 - 0.008
		AH725	Threading	164 - 427	-
K	Gray cast iron No.250B, etc.	AH110	Grooving	164 - 591	0.004 - 0.010
	Ductile cast iron 60-40-18, etc.	AH110	Grooving	164 - 394	0.004 - 0.010

Reference pages: Inserts → F145 - F152

FLG-CB (With chipbreaker, metric width)



P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

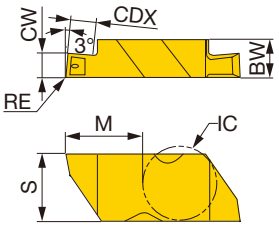
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLG-3M100R-CB	R	1	0.039	0.005 - 0.010	●	0.055	0.3750	0.195	0.344	0.4050
FLG-3M100L-CB	L	1	0.039	0.005 - 0.010	●	0.055	0.3750	0.195	0.344	0.4050
FLG-3M150R-CB	R	1.5	0.059	0.005 - 0.010	●	0.100	0.3750	0.195	0.344	0.4050
FLG-3M150L-CB	L	1.5	0.059	0.005 - 0.010	●	0.100	0.3750	0.195	0.344	0.4050
FLG-3M200R-CB	R	2	0.079	0.005 - 0.010	●	0.100	0.3750	0.195	0.344	0.4050
FLG-3M200L-CB	L	2	0.079	0.005 - 0.010	●	0.100	0.3750	0.195	0.344	0.4050
FLG-3M250R-CB	R	2.5	0.098	0.005 - 0.010	●	0.160	0.3750	0.195	0.344	0.4050
FLG-3M250L-CB	L	2.5	0.098	0.005 - 0.010	●	0.160	0.3750	0.195	0.344	0.4050
FLG-3M300R-CB	R	3	0.118	0.005 - 0.010	●	0.160	0.3750	0.195	0.344	0.4050
FLG-3M300L-CB	L	3	0.118	0.005 - 0.010	●	0.160	0.3750	0.195	0.344	0.4050

● : Line up

Reference pages: Toolholders → F143 - F144

FLG-CB (With chipbreaker)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

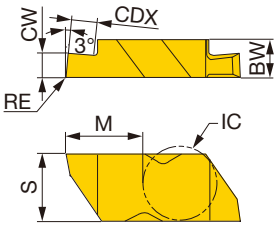
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLG-2047R-CB	R	1.2	0.047	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2047L-CB	L	1.2	0.047	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLG-2062R-CB	R	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2062L-CB	L	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2078R-CB	R	1.98	0.078	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2078L-CB	L	1.98	0.078	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2094R-CB	R	2.39	0.094	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2094L-CB	L	2.39	0.094	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2125R-CB	R	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-2125L-CB	L	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLG-3031R-CB	R	0.79	0.031	0.002 - 0.005	●	0.050	0.3750	0.195	0.344	0.4050
FLG-3031L-CB	L	0.79	0.031	0.002 - 0.005	●	0.050	0.3750	0.195	0.344	0.4050
FLG-3047R-CB	R	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLG-3047L-CB	L	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLG-3062R-CB	R	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3062L-CB	L	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3072R-CB	R	1.83	0.072	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3072L-CB	L	1.83	0.072	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3078R-CB	R	1.98	0.078	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3078L-CB	L	1.98	0.078	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLG-3088R-CB	R	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3088L-CB	L	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3094R-CB	R	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3094L-CB	L	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3097R-CB	R	2.46	0.097	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3097L-CB	L	2.46	0.097	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3125R-CB	R	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3125L-CB	L	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3189R-CB	R	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLG-3189L-CB	L	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050

● : Line up

Reference pages: Toolholders → F143 - F144

FLG



P	Steel	★			
M	Stainless	★			
K	Cast iron	★			
N	Non-ferrous				
S	Superalloys	☆			
H	Hard materials				

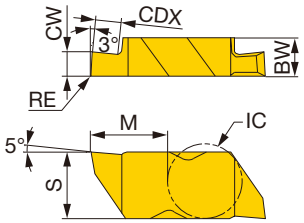
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated						CDX (in)	IC (in)	BW (in)	S (in)	M (in)
					AH110										
FLG-2031R	R	0.79	0.031	0.002 - 0.005	●						0.050	0.1875	0.150	0.219	0.2700
FLG-2031L	L	0.79	0.031	0.002 - 0.005	●						0.050	0.1875	0.150	0.219	0.2700
FLG-2041R	R	1.04	0.041	0.002 - 0.005	●						0.050	0.1875	0.150	0.219	0.2700
FLG-2041L	L	1.04	0.041	0.002 - 0.005	●						0.050	0.1875	0.150	0.219	0.2700
FLG-2047R	R	1.19	0.047	0.002 - 0.005	●						0.050	0.1875	0.150	0.219	0.2700
FLG-2047L	L	1.19	0.047	0.002 - 0.005	●						0.050	0.1875	0.150	0.219	0.2700
FLG-2058R	R	1.47	0.058	0.005 - 0.010	●						0.050	0.1875	0.150	0.219	0.2700
FLG-2058L	L	1.47	0.058	0.005 - 0.010	●						0.050	0.1875	0.150	0.219	0.2700
FLG-2062R	R	1.57	0.062	0.005 - 0.010	●						0.110	0.1875	0.150	0.219	0.2700
FLG-2062L	L	1.57	0.062	0.005 - 0.010	●						0.110	0.1875	0.150	0.219	0.2700
FLG-2094R	R	2.39	0.094	0.005 - 0.010	●						0.110	0.1875	0.150	0.219	0.2700
FLG-2094L	L	2.39	0.094	0.005 - 0.010	●						0.110	0.1875	0.150	0.219	0.2700
FLG-2125R	R	3.18	0.125	0.005 - 0.010	●						0.110	0.1875	0.150	0.219	0.2700
FLG-2125L	L	3.18	0.125	0.005 - 0.010	●						0.110	0.1875	0.150	0.219	0.2700
FLG-3031R	R	0.79	0.031	0.002 - 0.005	●						0.050	0.3750	0.195	0.344	0.4050
FLG-3031L	L	0.79	0.031	0.002 - 0.005	●						0.050	0.3750	0.195	0.344	0.4050
FLG-3047R	R	1.19	0.047	0.005 - 0.010	●						0.075	0.3750	0.195	0.344	0.4050
FLG-3047L	L	1.19	0.047	0.005 - 0.010	●						0.075	0.3750	0.195	0.344	0.4050
FLG-3062R	R	1.57	0.062	0.005 - 0.010	●						0.120	0.3750	0.195	0.344	0.4050
FLG-3062L	L	1.57	0.062	0.005 - 0.010	●						0.120	0.3750	0.195	0.344	0.4050
FLG-3072R	R	1.83	0.072	0.005 - 0.010	●						0.120	0.3750	0.195	0.344	0.4050
FLG-3072L	L	1.83	0.072	0.005 - 0.010	●						0.120	0.3750	0.195	0.344	0.4050
FLG-3078R	R	1.98	0.078	0.005 - 0.010	●						0.120	0.3750	0.195	0.344	0.4050
FLG-3078L	L	1.98	0.078	0.005 - 0.010	●						0.120	0.3750	0.195	0.344	0.4050
FLG-3088R	R	2.24	0.088	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3088L	L	2.24	0.088	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3094R	R	2.39	0.094	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3094L	L	2.39	0.094	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3097R	R	2.46	0.097	0.010 - 0.015	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3097L	L	2.46	0.097	0.010 - 0.015	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3105R	R	2.67	0.105	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3105L	L	2.67	0.105	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3110R	R	2.79	0.110	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3110L	L	2.79	0.110	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3122R	R	3.1	0.122	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3122L	L	3.1	0.122	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3125R	R	3.18	0.125	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3125L	L	3.18	0.125	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3142R	R	3.61	0.142	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3142L	L	3.61	0.142	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3156R	R	3.96	0.156	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3156L	L	3.96	0.156	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3178R	R	4.52	0.178	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3178L	L	4.52	0.178	0.005 - 0.010	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3185R	R	4.7	0.185	0.020 - 0.025	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3185L	L	4.7	0.185	0.020 - 0.025	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3189R	R	4.8	0.189	0.020 - 0.025	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3189L	L	4.8	0.189	0.020 - 0.025	●						0.180	0.3750	0.195	0.344	0.4050
FLG-3250R	R	6.35	0.250	0.020 - 0.025	●						0.180	0.3750	0.250	0.344	0.4050
FLG-3250L	L	6.35	0.250	0.020 - 0.025	●						0.180	0.3750	0.250	0.344	0.4050

● : Line up

Reference pages: Toolholders → F143 - F144

FLGP (Positive rake)



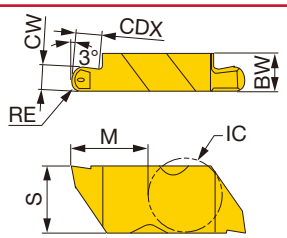
P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLGP-2031R	R	0.79	0.031	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLGP-2031L	L	0.79	0.031	0.002 - 0.005	●	0.050	0.1875	0.150	0.219	0.2700
FLGP-2062R	R	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLGP-2062L	L	1.57	0.062	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLGP-2125R	R	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLGP-2125L	L	3.18	0.125	0.005 - 0.010	●	0.110	0.1875	0.150	0.219	0.2700
FLGP-3047R	R	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLGP-3047L	L	1.19	0.047	0.005 - 0.010	●	0.075	0.3750	0.195	0.344	0.4050
FLGP-3062R	R	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLGP-3062L	L	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.4050
FLGP-3088R	R	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3088L	L	2.24	0.088	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3094R	R	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3094L	L	2.39	0.094	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3125R	R	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3125L	L	3.18	0.125	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3156R	R	3.96	0.156	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3156L	L	3.96	0.156	0.005 - 0.010	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3189R	R	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050
FLGP-3189L	L	4.8	0.189	0.020 - 0.025	●	0.180	0.3750	0.195	0.344	0.4050

● : Line up

FLR-CB (Full nose radius, with chipbreaker)



P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

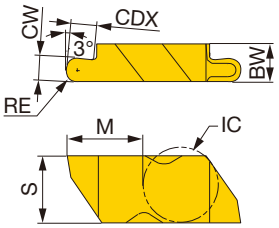
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLR-3031R-CB	R	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLR-3031L-CB	L	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLR-3047R-CB	R	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLR-3047L-CB	L	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLR-3062R-CB	R	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLR-3062L-CB	L	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017

● : Line up

Reference pages: Toolholders → F143 - F144

FLR (Full nose radius)



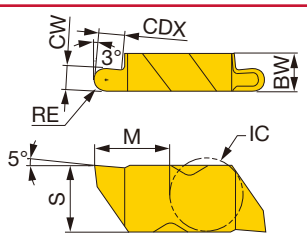
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLR-2031R	R	1.57	0.062	0.031	●	0.110	0.1875	0.150	0.219	0.2683
FLR-2031L	L	1.57	0.062	0.031	●	0.110	0.1875	0.150	0.219	0.2683
FLR-2047R	R	2.39	0.094	0.047	●	0.110	0.1875	0.150	0.219	0.2675
FLR-2047L	L	2.39	0.094	0.047	●	0.110	0.1875	0.150	0.219	0.2675
FLR-2062R	R	3.18	0.125	0.062	●	0.110	0.1875	0.150	0.219	0.2667
FLR-2062L	L	3.18	0.125	0.062	●	0.110	0.1875	0.150	0.219	0.2667
FLR-3031R	R	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLR-3031L	L	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLR-3047R	R	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLR-3047L	L	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLR-3062R	R	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLR-3062L	L	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLR-3078R	R	3.96	0.156	0.078	●	0.180	0.3750	0.195	0.344	0.4008
FLR-3078L	L	3.96	0.156	0.078	●	0.180	0.3750	0.195	0.344	0.4008
FLR-3094R	R	4.8	0.189	0.094	●	0.180	0.3750	0.195	0.344	0.4000
FLR-3094L	L	4.8	0.189	0.094	●	0.180	0.3750	0.195	0.344	0.4000

● : Line up

FLRP (Full nose radius and positive rake)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

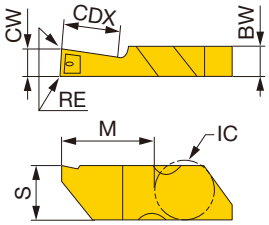
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLRP-3031R	R	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLRP-3031L	L	1.57	0.062	0.031	●	0.125	0.3750	0.195	0.344	0.4033
FLRP-3047R	R	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLRP-3047L	L	2.39	0.094	0.047	●	0.180	0.3750	0.195	0.344	0.4025
FLRP-3062R	R	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLRP-3062L	L	3.18	0.125	0.062	●	0.180	0.3750	0.195	0.344	0.4017
FLRP-3078R	R	3.96	0.156	0.078	●	0.180	0.3750	0.195	0.344	0.4008
FLRP-3078L	L	3.96	0.156	0.078	●	0.180	0.3750	0.195	0.344	0.4008
FLRP-3094R	R	4.8	0.189	0.094	●	0.180	0.3750	0.195	0.344	0.4000
FLRP-3094L	L	4.8	0.189	0.094	●	0.180	0.3750	0.195	0.344	0.4000

● : Line up

Reference pages: Toolholders → F143 - F144

FLGD-CB (Single edge deep, with chipbreaker)



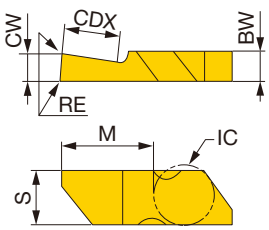
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLGD-3094R-CB	R	2.39	0.094	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3094L-CB	L	2.39	0.094	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3125R-CB	R	3.18	0.125	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3125L-CB	L	3.18	0.125	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3189R-CB	R	4.8	0.189	0.020 - 0.025	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3189L-CB	L	4.8	0.189	0.020 - 0.025	●	0.250	0.3750	0.195	0.344	0.5050

● : Line up

FLGD (Single edge deep)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

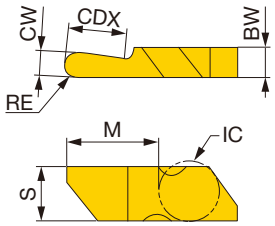
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLGD-3062R	R	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.5050
FLGD-3062L	L	1.57	0.062	0.005 - 0.010	●	0.120	0.3750	0.195	0.344	0.5050
FLGD-3094R	R	2.39	0.094	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3094L	L	2.39	0.094	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3125R	R	3.18	0.125	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3125L	L	3.18	0.125	0.005 - 0.010	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3189R	R	4.8	0.189	0.020 - 0.025	●	0.250	0.3750	0.195	0.344	0.5050
FLGD-3189L	L	4.8	0.189	0.020 - 0.025	●	0.250	0.3750	0.195	0.344	0.5050

● : Line up

Reference pages: Toolholders → F143 - F144

FLRD (Full nose radius, single edge deep)



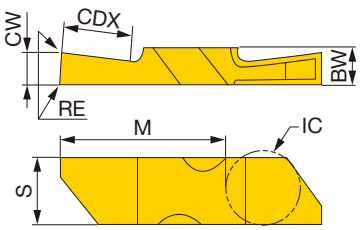
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLRD-3062R	R	3.19	0.125	0.062	●	0.250	0.3750	0.195	0.344	0.5016
FLRD-3062L	L	3.19	0.125	0.062	●	0.250	0.3750	0.195	0.344	0.5016
FLRD-3094R	R	4.8	0.189	0.094	●	0.250	0.3750	0.195	0.344	0.5016
FLRD-3094L	L	4.8	0.189	0.094	●	0.250	0.3750	0.195	0.344	0.5016

● : Line up

FLGT (Double end deep)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

★ : First choice
☆ : Second choice

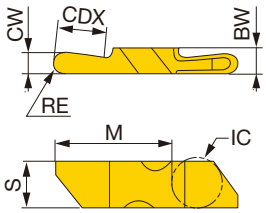
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLGT-3094R	R	2.39	0.094	0.005 - 0.010	●	0.275	0.3750	0.195	0.344	0.8550
FLGT-3094L	L	2.39	0.094	0.005 - 0.010	●	0.275	0.3750	0.195	0.344	0.8550
FLGT-3125R	R	3.18	0.125	0.005 - 0.010	●	0.437	0.3750	0.195	0.344	0.8550
FLGT-3125L	L	3.18	0.125	0.005 - 0.010	●	0.437	0.3750	0.195	0.344	0.8550
FLGT-3189R	R	4.8	0.189	0.020 - 0.025	●	0.437	0.3750	0.195	0.344	0.8550
FLGT-3189L	L	4.8	0.189	0.020 - 0.025	●	0.437	0.3750	0.195	0.344	0.8550

*Fits FLSLT/RT toolholders

● : Line up

Reference pages: Toolholders → F143 - F144

FLRT (Double end deep FNR)



P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

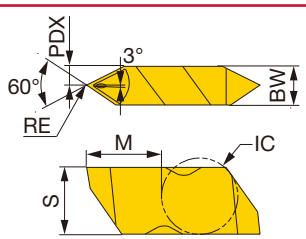
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated AH110	CDX (in)	IC (in)	BW (in)	S (in)	M (in)
FLRT-3062R	R	3.18	0.125	0.062	●	0.437	0.3750	0.195	0.344	0.8550
FLRT-3062L	L	3.18	0.125	0.062	●	0.437	0.3750	0.195	0.344	0.8550
FLRT-3094R	R	4.8	0.189	0.094	●	0.437	0.3750	0.195	0.344	0.8550
FLRT-3094L	L	4.8	0.189	0.094	●	0.437	0.3750	0.195	0.344	0.8550

*Fits FLSLT/RT toolholders

● : Line up

FLT-CB (For threading)



P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

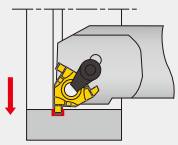
Designation	HAND	RE (in)	Coated AH110	TPI Internal	TPI External	IC (in)	PDX (in)	BW (in)	S (in)	M (in)
FLT-3R-HCB	R	0.005 - 0.008	●	5-12	6-20	0.3750	0.098	0.195	0.344	0.3999
FLT-3L-HCB	L	0.005 - 0.008	●	5-12	6-20	0.3750	0.098	0.195	0.344	0.3999
FLT-3RC-HCB	R	0.012 - 0.015	●	5-6	6-11	0.3750	0.098	0.195	0.344	0.3999
FLT-3LC-HCB	L	0.012 - 0.015	●	5-6	6-11	0.3750	0.098	0.195	0.344	0.3999
FLT-3R-CB	R	0.005 - 0.008	●	8-12	8-20	0.3750	0.098	0.195	0.344	0.3999
FLT-3L-CB	L	0.005 - 0.008	●	8-12	8-20	0.3750	0.098	0.195	0.344	0.3999

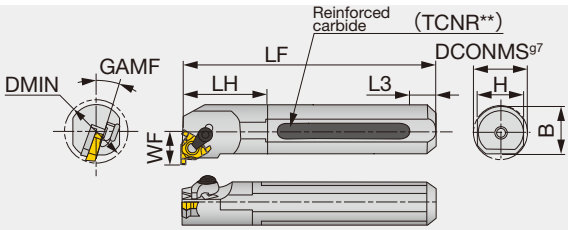
● : Line up

Reference pages: Toolholders → F143 - F144

CNR

Clamp-on internal threading and grooving toolholder (alternative clamping of screw-on or clamp-on only for DT type)





Right hand (R) shown.

Inch	Material	CWN	CWX	DMIN	DCONMS	WF	LF	LH	L3	H	B	GAMF	Insert	Torque
S12-CNR3DT	STEEL	0.039	0.089	0.950	0.750	0.552	7.000	1.200	-	0.725	0.738	15	GTGN-16...	2.58
S16-CNR3DT	STEEL	0.039	0.089	1.150	1.000	0.652	8.000	1.500	-	0.906	0.953	15	GTGN-16...	2.58
S20-CNR3DT	STEEL	0.039	0.089	1.450	1.250	0.788	10.000	1.900	-	1.188	1.219	15	GTGN-16...	2.58

A clamp set consists of a clamp and a clamping screw.
A shim set consists of a shim and a shim screw to secure the shim to the shank.
Use right-hand toolholders (CNR...) with right-hand inserts (**IR...).
Standard shims can be used on both right- and left-hand toolholders. Please use either of the sides depending on the tool hand.
When using grooving inserts, please use shims for grooving. Shims for grooving inserts are sold separately.
Torque: Recommended clamping torque: lbs·ft

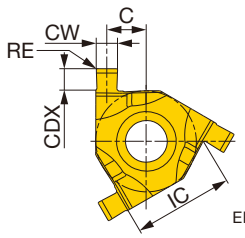
SPARE PARTS

Designation	Clamp set	Clamping screw	Shim screw	Shim (Optional)	Wrench 1	Wrench 2
S**-CNR3DT	CSP16	CSTB-3.5ST	DTS5-3.5	G16EL/IR-DT	P-3.5	T-15F

Reference pages: Inserts, Standard cutting conditions → F154

INSERT

GTGN16



ER/IL shown.

P	Steel	★	
M	Stainless	★	
K	Cast iron		
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND (Internal)	CW±0.03 (mm)	CW±0.001 (in)	RE (in)	Coated SH730	Insert size	CDX (in)	IC (in)	C (in)	Shim: Dual-clamp toolholder: screw-on and clamp-on	Shim: Clamp-on toolholder
GTGN-16ER/IL100	L	1	0.039	0.004	●	16	0.049	0.375	0.166	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR100	R	1	0.039	0.004	●	16	0.049	0.375	0.166	G16ER/IL-DT	G16ER/IL-S
GTGN-16ER/IL120	L	1.2	0.047	0.004	●	16	0.051	0.375	0.162	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR120	R	1.2	0.047	0.004	●	16	0.051	0.375	0.162	G16ER/IL-DT	G16ER/IL-S
GTGN-16ER/IL140	L	1.4	0.055	0.004	●	16	0.059	0.375	0.158	G16ER/IL-DT	G16ER/IL-S
GTGN-16EL/IR140	R	1.4	0.055	0.004	●	16	0.059	0.375	0.158	G16ER/IL-DT	G16ER/IL-S
GTGN-16ER/IL170	L	1.7	0.067	0.004	●	16	0.067	0.375	0.144	G16EL/IR-DT	G16EL/IR-S
GTGN-16EL/IR170	R	1.7	0.067	0.004	●	16	0.067	0.375	0.144	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL195	L	1.95	0.077	0.004	●	16	0.067	0.375	0.148	G16EL/IR-DT	G16EL/IR-S
GTGN-16EL/IR195	R	1.95	0.077	0.004	●	16	0.067	0.375	0.148	G16EL/IR-DT	G16EL/IR-S
GTGN-16ER/IL225	L	2.25	0.089	0.004	●	16	0.071	0.375	0.142	G16EL/IR-DT	G16EL/IR-S
GTGN-16EL/IR225	R	2.25	0.089	0.004	●	16	0.071	0.375	0.142	G16EL/IR-DT	G16EL/IR-S

Note: GTGN insert can be used for both external and internal machining, but the tool hand is reversed.
Shim for GTGN depends on the toolholder type.

● : Line up

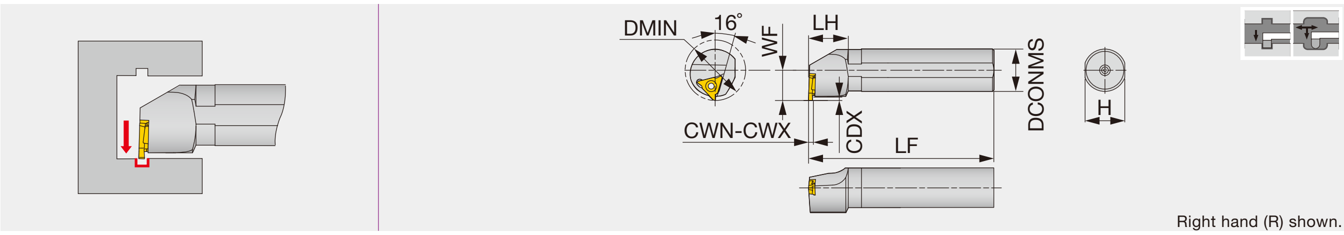
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Steel 1045, 4140, etc.	SH730	160 - 490	0.002 - 0.004
M	Stainless steel 304, 316, etc.	SH730	100 - 490	0.002 - 0.004
S	Heat-resistant alloys, Titanium alloys, etc. Ti-6Al-4V, etc.	SH730	100 - 330	0.002 - 0.004

Reference pages: Toolholders → F153

S-SGTR/L

Internal grooving



Inch	CWN	CWX	DMIN	CDX	DCONMS	H	LF	LH	WF	Insert	Torque
S16R-SGTR/L3	0.013	0.098	1.38	0.100	1.00	0.910	7.78	1.18	0.690	GBL/R32...	2.58

Metric	CWN	CWX	DMIN	CDX	DCONMS	H	LF	LH	WF	Insert	Torque*
S25R-SGTR/L16	0.33	2.5	35	2	25	23	200	30	17.5	GBL/R32...	3.5
S32S-SGTR/L22	1.25	4.5	40	2.5	32	30	250	30	23	GBL/R43...	5

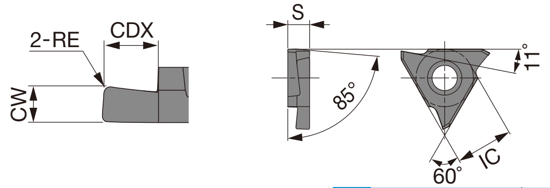
Use right-hand toolholders (SGTR) with left-hand inserts (GBL); and left-hand toolholders (SGTL) with right-hand inserts (GBR).
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

Designation	Clamping screw	Wrench
S16R-SGTR/L3, S25R-SGTR/L16	CSTB-4S	T-15F
S32S-SGTR/L22	CSTB-5S	T-20F

INSERT

GBR/L32



Right hand (R) shown.

		AH710	NS9530	KS05F
P	Steel	★	★	
M	Stainless	★		
K	Cast iron	★	☆	
N	Non-ferrous			★
S	Superalloys	☆		☆
H	Hard materials			

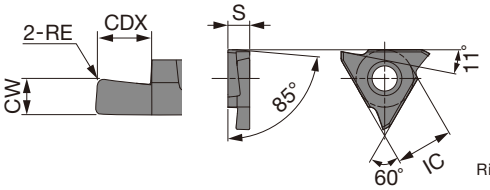
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	AH710 (Coated)	NS9530 (Cermet)	KS05F (Uncoated)	CDX (in)	IC (mm)	S (mm)
GBR32033	R	0.33	0.013	0.0012	●	●	●	0.031	9.53	3.18
GBL32033	L	0.33	0.013	0.0012	●			0.031	9.53	3.18
GBR32050	R	0.5	0.020	0.002	●	●	●	0.047	9.53	3.18
GBL32050	L	0.5	0.020	0.002	●			0.047	9.53	3.18
GBR32075	R	0.75	0.030	0.002	●	●	●	0.079	9.53	3.18
GBL32075	L	0.75	0.030	0.002	●	●		0.079	9.53	3.18
GBR32095	R	0.95	0.037	0.002	●	●	●	0.079	9.53	3.18
GBL32095	L	0.95	0.037	0.002	●	●		0.079	9.53	3.18
GBR32100	R	1	0.039	0.002	●	●	●	0.079	9.53	3.18
GBL32100	L	1	0.039	0.002	●	●		0.079	9.53	3.18
GBR32125	R	1.25	0.049	0.008	●	●	●	0.079	9.53	3.18
GBL32125	L	1.25	0.049	0.008	●	●		0.079	9.53	3.18
GBR32145	R	1.45	0.057	0.008	●	●	●	0.079	9.53	3.18
GBL32145	L	1.45	0.057	0.008	●			0.079	9.53	3.18
GBR32150	R	1.5	0.059	0.008	●	●	●	0.079	9.53	3.18
GBL32150	L	1.5	0.059	0.008	●			0.079	9.53	3.18
GBR32200	R	2	0.079	0.008	●	●	●	0.098	9.53	3.18
GBL32200	L	2	0.079	0.008	●			0.098	9.53	3.18
GBR32250	R	2.5	0.098	0.008	●	●	●	0.098	9.53	3.18
GBL32250	L	2.5	0.098	0.008	●			0.098	9.53	3.18

● : Line up

Reference pages: Inserts → F156 - F157, Standard cutting conditions → F157

GBR/L43



Right hand (R) shown.

		Coated			Cermet		Uncoated		
P	Steel	★			★				
M	Stainless	★							
K	Cast iron	★			☆				
N	Non-ferrous						★		
S	Superalloys	☆					☆		
H	Hard materials								

★ : First choice
☆ : Second choice

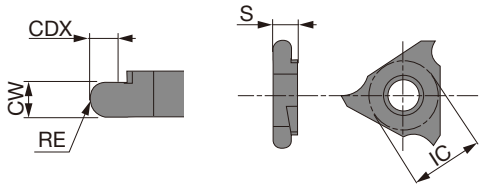
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	AH710	NS9530	KS05F	CDX (in)	IC (mm)	S (mm)
GBR43125	R	1.25	0.049	0.008	●	●	●	0.079	12.7	4.76
GBL43125	L	1.25	0.049	0.008	●			0.079	12.7	4.76
GBR43145	R	1.45	0.057	0.008	●	●	●	0.079	12.7	4.76
GBL43145	L	1.45	0.057	0.008	●			0.079	12.7	4.76
GBR43150	R	1.50	0.059	0.008	●	●	●	0.138	12.7	4.76
GBL43150	L	1.50	0.059	0.008	●	●		0.138	12.7	4.76
GBR43175	R	1.75	0.069	0.008	●	●	●	0.138	12.7	4.76
GBL43175	L	1.75	0.069	0.008	●	●		0.138	12.7	4.76
GBR43185	R	1.85	0.073	0.008	●	●	●	0.138	12.7	4.76
GBL43185	L	1.85	0.073	0.008	●	●		0.138	12.7	4.76
GBR43200	R	2	0.079	0.008	●	●	●	0.138	12.7	4.76
GBL43200	L	2	0.079	0.008	●	●		0.138	12.7	4.76
GBR43230	R	2.3	0.091	0.008	●	●	●	0.138	12.7	4.76
GBL43230	L	2.3	0.091	0.008	●	●		0.138	12.7	4.76
GBR43250	R	2.5	0.098	0.012	●	●	●	0.197	12.7	4.76
GBL43250	L	2.5	0.098	0.012	●			0.197	12.7	4.76
GBR43265	R	2.65	0.104	0.012	●	●	●	0.197	12.7	4.76
GBL43265	L	2.65	0.104	0.012	●			0.197	12.7	4.76
GBR43280	R	2.8	0.110	0.012	●	●	●	0.197	12.7	4.76
GBL43280	L	2.8	0.110	0.012	●			0.197	12.7	4.76
GBR43300	R	3	0.118	0.012	●	●	●	0.197	12.7	4.76
GBL43300	L	3	0.118	0.012	●			0.197	12.7	4.76
GBR43330	R	3.3	0.130	0.012	●	●	●	0.197	12.7	4.76
GBL43330	L	3.3	0.130	0.012	●			0.197	12.7	4.76
GBR43350	R	3.5	0.138	0.012	●	●	●	0.197	12.7	4.76
GBL43350	L	3.5	0.138	0.012	●			0.197	12.7	4.76
GBR43400	R	4	0.157	0.016	●	●	●	0.197	12.7	4.76
GBL43400	L	4	0.157	0.016	●			0.197	12.7	4.76
GBR43430	R	4.3	0.169	0.016	●	●	●	0.197	12.7	4.76
GBL43430	L	4.3	0.169	0.016	●			0.197	12.7	4.76
GBR43450	R	4.5	0.177	0.016	●	●	●	0.197	12.7	4.76
GBL43450	L	4.5	0.177	0.016	●			0.197	12.7	4.76

● : Line up

External
Internal
Face
Parting
Others

Reference pages: Toolholders → F155

GBR/L43-R(full radius)



Right hand (R) shown.

		Coated		Cermet		Uncoated	
		AH710		NS9530		KS05F	
P	Steel	★		★			
M	Stainless	★					
K	Cast iron	★		☆			
N	Non-ferrous					★	
S	Superalloys	☆				☆	
H	Hard materials						

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	CDX (in)	IC (mm)	S (mm)
GBR43050R	R	1	0.039	0.020	0.079	12.7	4.76
GBL43050R	L	1	0.039	0.020	0.079	12.7	4.76
GBR43075R	R	1.5	0.059	0.030	0.138	12.7	4.76
GBL43075R	L	1.5	0.059	0.030	0.138	12.7	4.76
GBR43100R	R	2	0.079	0.039	0.138	12.7	4.76
GBL43100R	L	2	0.079	0.039	0.138	12.7	4.76
GBR43125R	R	2.5	0.098	0.049	0.197	12.7	4.76
GBL43125R	L	2.5	0.098	0.049	0.197	12.7	4.76
GBR43150R	R	3	0.118	0.059	0.197	12.7	4.76
GBL43150R	L	3	0.118	0.059	0.197	12.7	4.76
GBR43200R	R	4	0.157	0.079	0.197	12.7	4.76
GBL43200R	L	4	0.157	0.079	0.197	12.7	4.76

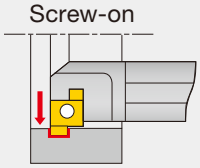
● : Line up

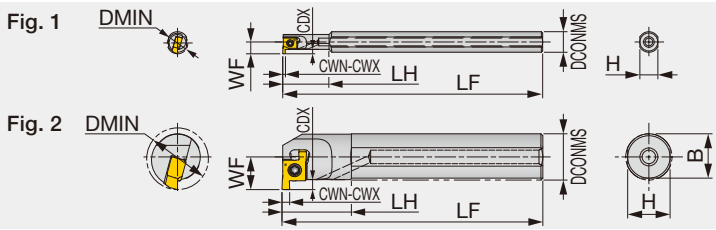
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Grade	Cutting Speed *Vc* (sfm)	Feed *f* (ipr)
P	Carbon steel, Alloy steel 1045 SAE, 4140 SAE, etc.	150 - 240HB	NS9530	330 - 650	0.001 - 0.010
		150 - 240HB	AH710	200 - 500	0.002 - 0.010
M	Stainless steel 303, 304, etc.	≤ 240HB	AH710	200 - 500	0.002 - 0.006
K	Cast irons 250, etc.	Tensile strength ≤ 350 N/mm^2	AH710	200 - 500	0.002 - 0.006
N	Non-ferrous metals Aluminum, etc.	-	KS05F	650 - 980	0.002 - 0.006

Reference pages: Toolholders → F155

Toolholders for internal grooving, coolant-through





Right hand (R) shown.

Metric	Material	CWN	CWX	DMIN	CDX	DCONMS	H	B	LF	LH	WF	Insert	Torque	Fig.
A08H-SNGR06-D080	Steel	1	2	8	1.5	8	7	-	100	18	4.73	6GMR..., 6GR...	0.7	1
A08H-SNGR07-D100	Steel	1	2	10	1.5	8	7	-	100	23	5.8	7GMR..., 7GR...	1.0	1
A10K-SNGR07-D120	Steel	1	2	12	1.5	10	9	-	125	29	6.8	7GMR..., 7GR...	1.0	1
A10K-SNGR08-D140	Steel	1.5	3.5	14	2	10	9	-	125	15	7.6	8GMR..., 8GR...	1.0	2
A12M-SNGR08-D160	Steel	1.5	3.5	16	2	12	11	11.5	150	18	8.6	8GMR..., 8GR...	1.0	2
A16Q-SNGR09-D200	Steel	1.5	3.5	20	3	16	15	15.5	180	20	11.6	9GMR..., 9GR...	1.3	2
A20R-SNGR09-D240	Steel	1.5	3.5	24	3	20	18	19	200	25	13.6	9GMR..., 9GR...	1.3	2
E08X-SNGR07-D100	Carbide	1	2	10	1.5	8	7.5	-	120.5	35	5.8	7GMR..., 7GR...	1.0	1
E10X-SNGR07-D120	Carbide	1	2	12	1.5	10	9	-	143.5	45	6.8	7GMR..., 7GR...	1.0	1
E10X-SNGR08-D140	Carbide	1.5	3.5	14	2	10	9	-	146	-	7.6	8GMR..., 8GR...	1.0	2
E12X-SNGR08-D160	Carbide	1.5	3.5	16	2	12	11	-	174.8	-	8.6	8GMR..., 8GR...	1.0	2
E16X-SNGR09-D200	Carbide	1.5	3.5	20	3	16	15	-	194.6	-	11.6	9GMR..., 9GR...	1.5	2

Use the right-hand insert (☐GR) with the right-hand holder (☐NGR).
Torque: Recommended clamping torque: N·m

SPARE PARTS

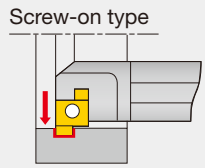
Designation	Clamping screw	Wrench
A**-SNGR06-D...	CSTB-2L040	T-6F
A**-SNGR07-D...	CSTB-2.2S	T-7F
A**-SNGR08-D...	CSTB-2.2	T-7F
A**-SNGR09-D...	CSTB-2.5L080	T-8F
E**-SNGR07-D...	CSTB-2.2S	T-7F
E**-SNGR08-D...	CSTB-2.2	T-7F
E**-SNGR09-D...	CSTB-2.5L080	T-8F

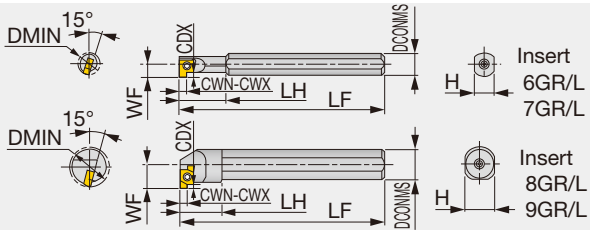
External
Internal
Face
Parting
Others

Reference pages: Inserts → F160 - F161, Standard cutting conditions → F162

SNGR/L

Internal grooving





Right hand (R) shown.

Metric	Material	CWN	CWX	DMIN	CDX	DCONMS	H	LF	LH	WF	Insert	Torque
SNGR/L08H06	Steel	1	2	8	1.5	8	7	100	18	4.7	6GR/L...	0.7
SNGR/L08H07	Steel	1	2	10	1.5	8	7	100	23	5.8	7GR/L...	1.0
SNGR/L10K07	Steel	1	2	12	1.5	10	9	125	29	6.8	7GR/L...	1.0
SNGR/L10K08	Steel	1.5	3.5	14	2	10	9	125	15	7.6	8GR/L...	1.0
SNGR/L12M08	Steel	1.5	3.5	16	2	12	11	150	18	8.6	8GR/L...	1.0
SNGR/L16Q09	Steel	1.5	3.5	20	3	16	15	180	20	11.6	9GR/L...	1.3
SNGR/L20R09	Steel	1.5	3.5	24	3	20	18	200	25	13.6	9GR/L...	1.3
SNGR/L08K06SC	Carbide	1	2	8	1.5	8	7	125	28	4.7	6GR/L...	0.7
SNGR/L08K07SC	Carbide	1	2	10	1.5	8	7	125	35	5.8	7GR/L...	1.0
SNGR/L10M07SC	Carbide	1	2	12	1.5	10	9	150	45	6.8	7GR/L...	1.0
SNGR/L10M08SC	Carbide	1.5	3.5	14	2	10	9	150	45	7.6	8GR/L...	1.0
SNGR/L12Q08SC	Carbide	1.5	3.5	16	2	12	11	180	-	8.6	8GR/L...	1.0
SNGR/L16R09SC	Carbide	1.5	3.5	20	3	16	15	200	-	11.6	9GR/L...	1.5

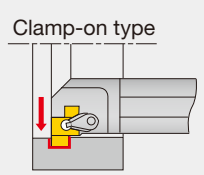
Use right-hand holder (☐NGR ⁓) with right-hand insert (☐GR ⁓); and left-hand holder (☐NGL ⁓) with left-hand insert (☐GL ⁓).
Torque: Recommended clamping torque: N·m

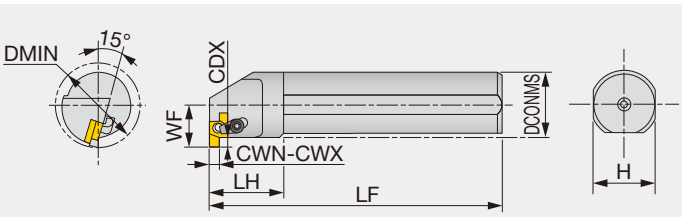
SPARE PARTS

Designation	Clamping screw	Wrench
SNGR/L**06	CSTB-2L040	T-6F
SNGR/L**07	CSTB-2.2S	T-7F
SNGR/L**08	CSTB-2.2	T-7F
SNGR/L**09	CSTB-2.5L080	T-8F
SNGR/L**06SC	CSTB-2L040	T-6F
SNGR/L**07SC	CSTB-2.2S	T-7F
SNGR/L**08SC	CSTB-2.2	T-7F
SNGR/L**09SC	CSTB-2.5L080	T-8F

CNGR/L

Internal grooving





Right hand (R) shown.

Metric	CWN	CWX	DMIN	CDX	DCONMS	H	LF	LH	WF	Insert	Torque*
CNGR/L25S15	2	5	32	5	25	23	250	30	18.1	15GR/L...	7
CNGR/L32T15	2	5	40	5	32	30	300	35	22.1	15GR/L...	7
CNGR/L40U15	2	5	48	5	40	38	350	45	26.1	15GR/L...	7

Use right-hand holder (☐NGR ⁓) with right-hand insert (☐GR ⁓); and left-hand holder (☐NGL ⁓) with left-hand insert (☐GL ⁓).
Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamp set	Screw	Shim	Wrench
CNGR...	CSP22	DTS5-3.5	SGSR151	T-20F
CNGL...	CSP22	DTS5-3.5	SGSL151	T-20F

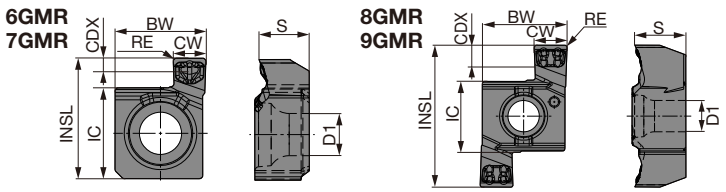
Optional parts for CNG type toolholder

When using as a screw-on type, please use the parts below.

Designation	Clamping screw	Wrench
CNGR/L...	CSTB-3.5L	T-15F

Reference pages: Inserts → F160 - F161, Standard cutting conditions → F162

**GMR/L



Single edge

Double edge

Right hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

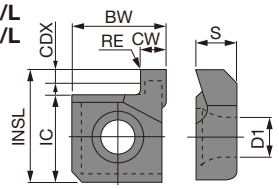
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.001 (in)	CW±0.025 (mm)	RE (mm)	Coated AH7025	CDX (mm)	BW (in)	S (in)	IC (in)	INSL (in)	D1 (in)
6GMR100-015	R	0.039	1	0.15	●	1.5	0.219	0.092	0.187	0.254	0.091
7GMR200-020	R	0.079	2	0.20	●	1.5	0.219	0.121	0.219	0.290	0.102
8GMR150-020	R	0.059	1.5	0.20	●	2	0.242	0.152	0.219	0.400	0.102
9GMR200-020	R	0.079	2	0.20	●	3	0.305	0.183	0.250	0.510	0.113
9GMR300-020	R	0.118	3	0.20	●	3	0.305	0.183	0.250	0.510	0.113

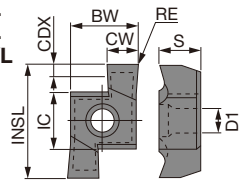
● : Line up

**GR/L

6GR/L
7GR/L



8GR/L
9GR/L
15GR/L



Right hand (R) shown.

P	Steel	★				★		
M	Stainless					★		
K	Cast iron	☆			★			
N	Non-ferrous				★			
S	Superalloys				☆			
H	Hard materials							

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.001 (in)	CW±0.025 (mm)	RE (mm)	Cermet			Uncoated			CDX (mm)	BW (in)	S (in)	IC (in)	INSL (in)	D1 (in)
					NS9530			TH10	UX30							
6GR100	R	0.039	1	0.2	●			●	●		1.5	0.220	0.092	0.187	0.254	0.098
6GL100	L	0.039	1	0.2					●		1.5	0.220	0.092	0.187	0.254	0.098
6GR150	R	0.059	1.5	0.2	●			●	●		1.5	0.220	0.092	0.187	0.254	0.098
6GL150	L	0.059	1.5	0.2				●	●		1.5	0.220	0.092	0.187	0.254	0.098
6GR200	R	0.079	2	0.2	●			●	●		1.5	0.220	0.092	0.187	0.254	0.098
6GL200	L	0.079	2	0.2				●	●		1.5	0.220	0.092	0.187	0.254	0.098
7GR100	R	0.039	1	0.2	●			●	●		1.5	0.220	0.121	0.219	0.290	0.102
7GR150	R	0.059	1.5	0.2	●			●	●		1.5	0.220	0.121	0.219	0.290	0.102
7GR200	R	0.079	2	0.2	●			●	●		1.5	0.220	0.121	0.219	0.290	0.102
7GL200	L	0.079	2	0.2				●	●		1.5	0.220	0.121	0.219	0.290	0.102
8GR150	R	0.059	1.5	0.2	●			●	●		2	0.244	0.152	0.219	0.400	0.102
8GR200	R	0.079	2	0.2	●			●	●		2	0.244	0.152	0.219	0.400	0.102
8GL200	L	0.079	2	0.2				●			2	0.244	0.152	0.219	0.400	0.102
8GR250	R	0.098	2.5	0.2	●			●	●		2	0.244	0.152	0.219	0.400	0.102
8GL250	L	0.098	2.5	0.2				●	●		2	0.244	0.152	0.219	0.400	0.102
8GR300	R	0.118	3	0.2	●			●	●		2	0.244	0.152	0.219	0.400	0.102
8GL300	L	0.118	3	0.2				●	●		2	0.244	0.152	0.219	0.400	0.102
8GR350	R	0.138	3.5	0.2				●	●		2	0.244	0.152	0.219	0.400	0.102
9GR150	R	0.059	1.5	0.2	●			●	●		2	0.303	0.183	0.250	0.510	0.114
9GL150	L	0.059	1.5	0.2	●				●		2	0.303	0.183	0.250	0.510	0.114
9GR200	R	0.079	2	0.2	●			●	●		3	0.303	0.183	0.250	0.510	0.114
9GL200	L	0.079	2	0.2	●			●	●		3	0.303	0.183	0.250	0.510	0.114
9GR250	R	0.098	2.5	0.2	●			●	●		3	0.303	0.183	0.250	0.510	0.114
9GL250	L	0.098	2.5	0.2	●				●		3	0.303	0.183	0.250	0.510	0.114
9GR300	R	0.118	3	0.2	●			●	●		3	0.303	0.183	0.250	0.510	0.114
9GL300	L	0.118	3	0.2	●			●	●		3	0.303	0.183	0.250	0.510	0.114
9GR350	R	0.138	3.5	0.2	●			●	●		3	0.303	0.183	0.250	0.510	0.114
9GL350	L	0.138	3.5	0.2	●				●		3	0.303	0.183	0.250	0.510	0.114
15GR200	R	0.079	2	0.2	●			●	●		3	0.425	0.201	0.362	0.819	0.189
15GR250	R	0.098	2.5	0.2	●			●	●		3	0.425	0.201	0.362	0.819	0.189
15GR300	R	0.118	3	0.2	●			●	●		3	0.425	0.201	0.362	0.819	0.189
15GL300	L	0.118	3	0.2					●		3	0.425	0.201	0.362	0.819	0.189
15GR350	R	0.138	3.5	0.2	●			●	●		3	0.425	0.201	0.362	0.819	0.189
15GR400	R	0.157	4	0.2	●			●	●		4	0.425	0.201	0.362	0.819	0.189
15GR450	R	0.177	4.5	0.2				●	●		4	0.425	0.201	0.362	0.819	0.189
15GL450	L	0.177	4.5	0.2				●			4	0.425	0.201	0.362	0.819	0.189
15GR500	R	0.197	5	0.2				●	●		5	0.425	0.201	0.362	0.819	0.189

Note: Use right-hand holder (□NGR ～) with right-hand insert (□GR ～); and left-hand holder (□NGL ～) with left-hand insert (□GL ～).

● : Line up

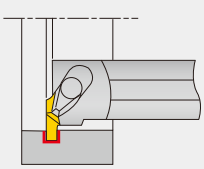
STANDARD CUTTING CONDITIONS

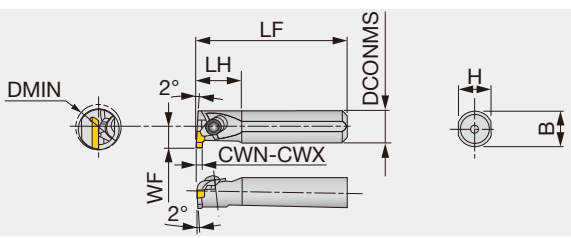
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed rate: *f* (ipr) **GMR...	Feed rate: *f* (ipr) **GR/L...
P	Carbon steel 1045, etc.	AH7025	262 - 591	0.0012 - 0.0047	-
		NS9530	262 - 656	-	0.002 - 0.0059
		UX30	131 - 492	-	0.002 - 0.0059
	Alloy steel 4137, etc.	AH7025	262 - 591	0.0012 - 0.0047	-
		NS9530	262 - 656	-	0.002 - 0.0059
		UX30	131 - 492	-	0.002 - 0.0059
M	Stainless steel 304SS, etc.	AH7025	164 - 394	0.0012 - 0.0047	-
		UX30	131 - 328	-	0.0012 - 0.0039
K	Grey cast irons Class 25, etc.	AH7025	164 - 722	0.0012 - 0.0047	-
		TH10	197 - 656	-	0.002 - 0.0059
	Ductile cast irons 60-40-18, etc.	AH7025	164 - 591	0.0012 - 0.0047	-
		TH10	131 - 525	-	0.002 - 0.0059
S	Titanium alloys Ti-6Al-4V, etc.	AH7025	98 - 262	0.0012 - 0.0047	-
		TH10	66 - 164	-	0.002 - 0.0031
	Superalloys Inconel718, etc.	AH7025	66 - 197	0.0012 - 0.0047	-
		TH10	33 - 98	-	0.0012 - 0.0031

Reference pages: Inserts → F160 - F161, Toolholders → F158 - F159

CGXR/L

Internal grooving





Right hand (R) shown.

Metric	Material	CWN	CWX	DMIN	CDX	DCONMS	H	B	LF	LH	WF	Insert	Torque*
CGXR/L0016	Steel	1	3	20	3	16	15	15.5	150	24	11.3	GIR/L52...	2.2
CGXR/L0020	Steel	1	3	24	3	20	18	19	180	30	13.3	GIR/L52...	2.2
CGXR/L0025	Steel	1	5	32	5.3	25	23	24	200	38	18	GIR/L63...	5
CGXR/L0032	Steel	1	5	40	5.3	32	30	31	250	48	23	GIR/L63...	5
CGXR/L0040	Steel	1	5	48	5.3	40	37	38.5	300	60	27	GIR/L63...	5
CGXR/L16SC	Carbide	1	3	20	3	16	15	-	200	24	11.3	GIR/L52...	2.2

Note: Use right-hand holder (CGXR) with right-hand insert (GIR); and left-hand holder (L) with left-hand insert (GIL).
*Torque: Recommended clamping torque (N·m)

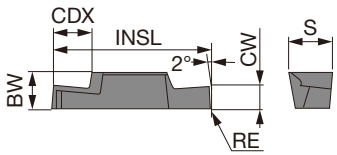
SPARE PARTS

Designation	Clamp set	Wrench1	Wrench2
CGXR/L0016/20	CSW-0	-	P-2.5T
CGXR/L0025/32/40	CSW-2	P-4	-
CGXR/L16SC	CSW-0	-	P-2.5T

Reference pages: Inserts, Standard cutting conditions → F163

INSERT

GIR/L



Right hand (R) shown.

		Coated	Uncoated
		NS9530	TH10
P	Steel	★	☆
M	Stainless		★
K	Cast iron	☆	★
N	Non-ferrous		★
S	Superalloys		☆
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.002 (in)	CW±0.05 (mm)	RE (mm)	CDX (mm)	INSL (mm)	BW (mm)	S (mm)
GIR5210-02	R	0.039	1	0.2	1.5	15	3.5	4.4
GIL5210-02	L	0.039	1	0.2	1.5	15	3.5	4.4
GIR5215-02	R	0.059	1.5	0.2	2.3	15	3.5	4.4
GIL5215-02	L	0.059	1.5	0.2	2.3	15	3.5	4.4
GIR5220-02	R	0.079	2	0.2	3	15	3.5	4.4
GIL5220-02	L	0.079	2	0.2	3	15	3.5	4.4
GIR5225-02	R	0.098	2.5	0.2	3	15	3.5	4.4
GIL5225-02	L	0.098	2.5	0.2	3	15	3.5	4.4
GIR5230-02	R	0.118	3	0.2	3	15	3.5	4.4
GIL5230-02	L	0.118	3	0.2	3	15	3.5	4.4
GIR6310-02	R	0.039	1	0.2	1.5	24	5.5	6.4
GIL6310-02	L	0.039	1	0.2	1.5	24	5.5	6.4
GIR6315-02	R	0.059	1.5	0.2	2.3	24	5.5	6.4
GIL6315-02	L	0.059	1.5	0.2	2.3	24	5.5	6.4
GIR6320-02	R	0.079	2	0.2	3	24	5.5	6.4
GIL6320-02	L	0.079	2	0.2	3	24	5.5	6.4
GIR6325-02	R	0.098	2.5	0.2	3.8	24	5.5	6.4
GIL6325-02	L	0.098	2.5	0.2	3.8	24	5.5	6.4
GIR6330-02	R	0.118	3	0.2	4.5	24	5.5	6.4
GIL6330-02	L	0.118	3	0.2	4.5	24	5.5	6.4
GIR6335-02	R	0.138	3.5	0.2	5.3	24	5.5	6.4
GIL6335-02	L	0.138	3.5	0.2	5.3	24	5.5	6.4
GIR6340-02	R	0.157	4	0.2	5.3	24	5.5	6.4
GIL6340-02	L	0.157	4	0.2	5.3	24	5.5	6.4
GIR6345-02	R	0.177	4.5	0.2	5.3	24	5.5	6.4
GIL6345-02	L	0.177	4.5	0.2	5.3	24	5.5	6.4
GIR6350-02	R	0.197	5	0.2	5.3	24	5.5	6.4
GIL6350-02	L	0.197	5	0.2	5.3	24	5.5	6.4

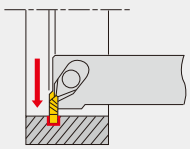
Use right-hand toolholders (CGXR〜) with right-hand inserts (GIR); and left-hand toolholders (GX-****LI) with left-hand inserts (XGR).

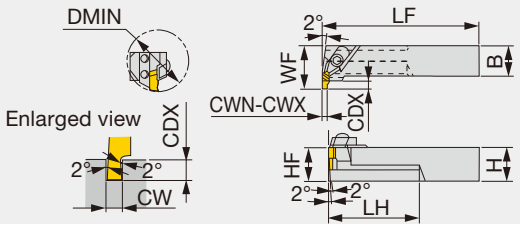
● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)		
				CW < 0.079"	CW = 0.079" - 0.157"	CW > 0.157"
P	Carbon steel	NS9530	262 - 492	0.002 - 0.004	0.003 - 0.006	0.003 - 0.008
K	Cast iron, Light alloys	TH10	197 - 492	0.002 - 0.004	0.003 - 0.006	0.003 - 0.008

Reference pages: Toolholders → F162





Right hand (R) shown.

Inch	CWN	CWX	DMIN	CDX	H	B	LF	LH	HF	WF	Insert	Torque
GX-1212RIU	0.039	0.177	2.165	0.059 - 0.236	0.750	0.75	6.30	2.36	0.75	1.37	XGL63...	3.69
GX-1616RIU	0.039	0.177	2.165	0.059 - 0.236	1.00	1.00	7.87	1.96	1.00	1.37	XGL63...	3.69

Metric	CWN	CWX	DMIN	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
GX-2525R/LI	1	4.5	55	1.5 - 6	25	25	200	70	25	35	XGL/R63...	5

Use right-hand toolholders (GX-****RI) with left-hand inserts (XGL); and left-hand toolholders (GX-****LI) with right-hand inserts (XGR).
Torque: Recommended clamping torque: lbs·ft (*N·m)

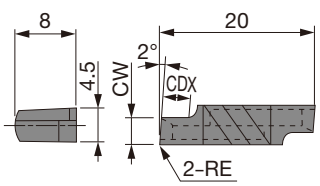
SPARE PARTS

Designation	Clamp set	Clamp screw	Shim	Shim screw	Wrench
GX-1212RIU	CP81B	RT-1	SL-7R	BHM4-8	P-4
GX-2525RI	CP81B	RT-1	SL-2R	BHM3-8	P-4
GX-1616RIU, GX-2525LI	CP81B	RT-1	SL-2L	BHM3-8	P-4

Max. groove width and max. groove depth will depend on the insert type.

INSERT

XGR/L



Right hand (R) shown.

		Cermet		Uncoated		
P	Steel	★		☆	★	
M	Stainless				★	
K	Cast iron	☆		★		
N	Non-ferrous			★		
S	Superalloys			☆		
H	Hard materials					

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Cermet NS9530	Uncoated TH10	Uncoated UX30	CDX (in)
XGR6310-02	R	1	0.039	0.008	●	●	●	0.059
XGL6310-02	L	1	0.039	0.008	●	●	●	0.059
XGR6315-02	R	1.5	0.059	0.008	●	●	●	0.091
XGL6315-02	L	1.5	0.059	0.008	●	●	●	0.091
XGR6320-02	R	2	0.079	0.008	●	●	●	0.118
XGL6320-02	L	2	0.079	0.008	●	●	●	0.118
XGR6325-02	R	2.5	0.098	0.008	●	●	●	0.150
XGL6325-02	L	2.5	0.098	0.008	●	●	●	0.150
XGR6330-02	R	3	0.118	0.008	●	●	●	0.177
XGL6330-02	L	3	0.118	0.008	●	●	●	0.177
XGR6335-02	R	3.5	0.138	0.008	●	●	●	0.209
XGL6335-02	L	3.5	0.138	0.008	●	●	●	0.209
XGR6340-02	R	4	0.157	0.008	●	●	●	0.236
XGL6340-02	L	4	0.157	0.008	●	●	●	0.236
XGR6345-02	R	4.5	0.177	0.008	●	●	●	0.236
XGL6345-02	L	4.5	0.177	0.008	●	●	●	0.236

Use right-hand toolholders (GX-****RE) with right-hand inserts (XGR...)
left-hand toolholders (GX-****LE) with left-hand inserts (XGL...).

● : Line up

Reference pages: Standard cutting conditions → F165

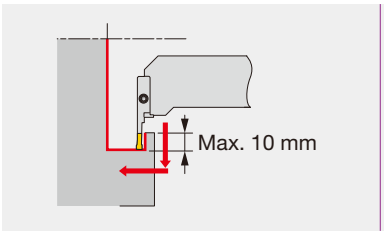
STANDARD CUTTING CONDITIONS

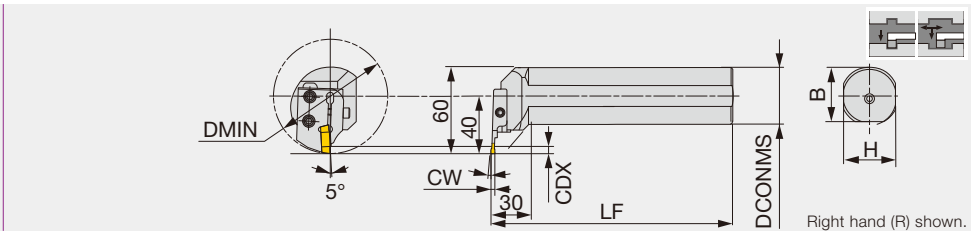
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)		
				CW < 0.079"	CW = 0.079" - 0.157"	CW > 0.157"
P	Carbon steel	NS9530	262 - 656	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010
		UX30	197 - 492	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010
K	Cast irons , Light alloys	TH10	197 - 492	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010
H	Hardened steel	BX360	164 - 591	0.002 - 0.006	0.002 - 0.006	0.002 - 0.006

Reference pages: Toolholders → F164

CGWTR/L0040-FLL/R3NP

Internal grooving and turning toolholder





Metric	CW	DMIN	CDX	DCONMS	LF	H	B	Insert	Shank	Blade	Torque
CGWTR/L0040-FLL/R3NP	3	80	10	40	180	37.5	37	FLEX30L/R	CGWTR/L0040	FLL/R3NP	5

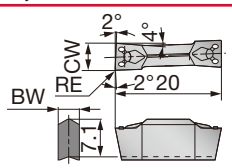
Please place an order with the designation of a set or a shank+a blade
Note: Use right-hand blades (CCWTR) with left-hand shanks (FLL3NP); and left-hand blades (CGWTL) with right-hand shanks (FLR3NP).
Torque: Recommended clamping torque: N·m

SPARE PARTS

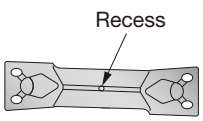
Designation	Clamping screw	Blade screw	Wrench
CGWTR/L0040-FLL/R3NP	CHHM5-18	CSHB-6	P-4

INSERT

FLEX(R/L)



Right hand (R) shown.



To distinguish the insert hands, the V-shape surface (top surface) of a left-hand insert has a recess. (not of a right-hand insert)

		Coated			Carbide		Uncoated		
P	Steel	★	☆		★		★		
M	Stainless	★					★		
K	Cast iron	☆			☆				
N	Non-ferrous								
S	Superalloys								
H	Hard materials								

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.002 (in)	CW±0.05 (mm)	RE (mm)	T9225	T9125	NS9530	UX30	BW (mm)
FLEX30R	R	0.118	3	0.4			●		2.2
FLEX30L	L	0.118	3	0.4			●		2.2
FLEX40R	R	0.157	4	0.4			●		3.1
FLEX40L	L	0.157	4	0.4			●		3.1
FLEX50R	R	0.197	5	0.4	●	▲	●	●	4
FLEX50L	L	0.197	5	0.4	●	▲	●	●	4

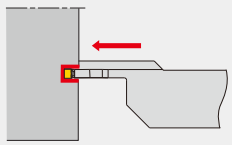
● : Line up
▲ : To be discontinued

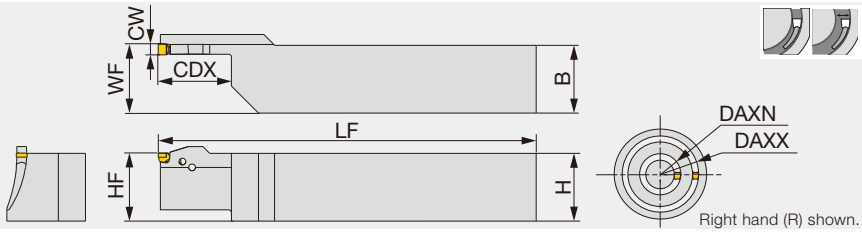
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) Grooving	Feed: *f* (ipr) Turning
P	Carbon steel	T9225	262 - 984	0.002 - 0.010	0.004 - 0.012
		NS9530	262 - 656	0.002 - 0.010	0.004 - 0.012
		UX30	197 - 492	0.002 - 0.010	0.004 - 0.012

ETFR/L

Face grooving and turning toolholder





Inch	CW	DAXN	DAXX	CDX	H	B	LF	HF	WF	Insert
ETFR/L12-4T15-030035	0.157	1.181	1.378	0.591	0.750	0.750	5.000	0.750	0.770	E**4...
ETFR/L16-4T15-030035	0.157	1.181	1.378	0.591	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR/L12-4T22-035045	0.157	1.378	1.772	0.866	0.750	0.750	5.000	0.750	0.770	E**4...
ETFR/L16-4T22-035045	0.157	1.378	1.772	0.866	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR/L12-4T25-045055	0.157	1.772	2.165	0.984	0.750	0.750	5.000	0.750	0.770	E**4...
ETFR/L16-4T25-045055	0.157	1.772	2.165	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR/L12-4T25-055075	0.157	2.165	2.953	0.984	0.750	0.750	5.000	0.750	0.770	E**4...
ETFR/L16-4T25-055075	0.157	2.165	2.953	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR/L12-4T25-075120	0.157	2.953	4.724	0.984	0.750	0.750	5.000	0.750	0.770	E**4...
ETFR/L16-4T25-075120	0.157	2.953	4.724	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR/L16-4T25-120200	0.157	4.724	7.874	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR/L16-4T25-200500	0.157	7.874	19.685	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR/L16-5T25-035045	0.197	1.378	1.772	0.984	1.000	1.000	6.000	1.000	1.020	ETX5...
ETFR/L16-5T25-045055	0.197	1.772	2.165	0.984	1.000	1.000	6.000	1.000	1.020	ETX5...
ETFR/L16-5T25-055075	0.197	2.165	2.953	0.984	1.000	1.000	6.000	1.000	1.020	ETX5...
ETFR/L16-5T32-075120	0.197	2.953	4.724	1.260	1.000	1.000	6.000	1.000	1.020	ETX5...
ETFR/L16-5T32-120200	0.197	4.724	7.874	1.260	1.000	1.000	6.000	1.000	1.020	ETX5...
ETFR/L16-5T32-200500	0.197	7.874	19.685	1.260	1.000	1.000	6.000	1.000	1.020	ETX5...
ETFR/L16-6T25-040055	0.236	1.575	2.165	0.984	1.000	1.000	6.000	1.000	1.020	ETX6...
ETFR/L16-6T25-055075	0.236	2.165	2.953	0.984	1.000	1.000	6.000	1.000	1.020	ETX6...
ETFR/L16-6T32-075120	0.236	2.953	4.724	1.260	1.000	1.000	6.000	1.000	1.020	ETX6...
ETFR/L16-6T32-120200	0.236	4.724	7.874	1.260	1.000	1.000	6.000	1.000	1.020	ETX6...
ETFR/L16-6T32-200500	0.236	7.874	19.685	1.260	1.000	1.000	6.000	1.000	1.020	ETX6...

SPARE PARTS

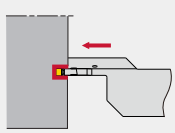
Designation	Wrench (Optional)
ETFR/L...	ECW-456EF

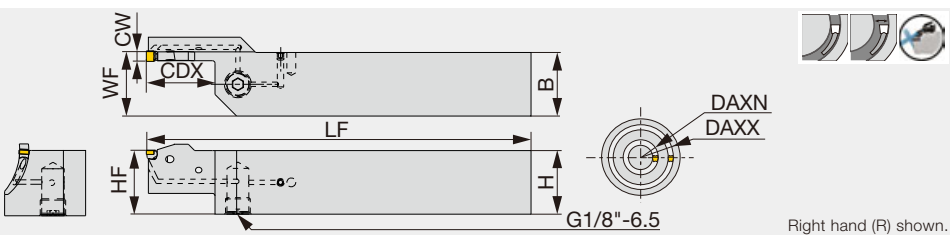
Wrench (ECW...) is not included. Please order it separately.

ETFR-CHP

TUNGTURN TJET

Face grooving and turning toolholder, with high pressure coolant capability





Inch	CW	DAXN	DAXX	CDX	H	B	LF	HF	WF	Insert
ETFR16-4T15-030035-CHP	0.157	1.181	1.378	0.591	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR16-4T22-035045-CHP	0.157	1.378	1.772	0.866	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR16-4T25-045055-CHP	0.157	1.772	2.165	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR16-4T25-055075-CHP	0.157	2.165	2.953	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR16-4T25-075120-CHP	0.157	2.953	4.724	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR16-4T25-120200-CHP	0.157	4.724	7.874	0.984	1.000	1.000	6.000	1.000	1.020	E**4...
ETFR16-4T25-200500-CHP	0.157	7.874	19.685	0.984	1.000	1.000	6.000	1.000	1.020	E**4...

SPARE PARTS

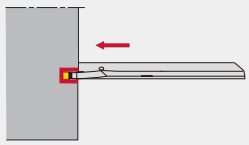
Designation	Wrench (Optional)
ETFR**-CHP	ECW-456EF

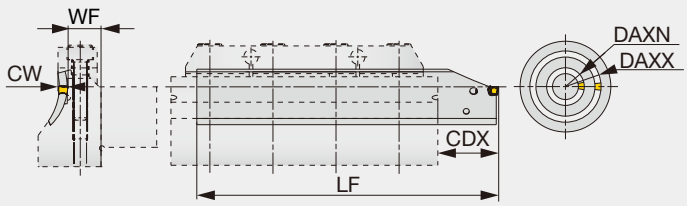
Wrench (ECW...) is not included. Please order it separately.

Reference pages: Inserts, Standard cutting conditions → F170, Parts for coolant hose → F240

EFPR/L

Face grooving blade





Right hand (R) shown.

Inch	CW	DAXN	DAXX	WF	LF	Min. CDX	Max. CDX	Insert
EFPR/L-4-030035	0.157	1.181	1.378	0.535	4.921	0.709	1.968	E**4...
EFPR-4-035045	0.157	1.378	1.772	0.535	4.921	0.709	1.968	E**4...
EFPR-4-045055	0.157	1.772	2.165	0.535	4.921	0.709	1.968	E**4...
EFPR-4-055075	0.157	2.165	2.953	0.535	4.921	0.709	1.968	E**4...
EFPR-4-075120	0.157	2.953	4.724	0.535	5.512	0.709	2.559	E**4...
EFPR-4-120200	0.157	4.724	7.874	0.535	5.512	0.709	2.559	E**4...
EFPR-4-200500	0.157	7.874	19.685	0.535	5.512	0.709	2.559	E**4...
EFPR-5-035045	0.197	1.378	1.772	0.535	4.921	0.748	1.968	ETX5...
EFPR-5-045055	0.197	1.772	2.165	0.535	4.921	0.748	1.968	ETX5...
EFPR-5-055075	0.197	2.165	2.953	0.535	4.921	0.748	1.968	ETX5...
EFPR-5-075120	0.197	2.953	4.724	0.535	5.512	0.748	2.559	ETX5...
EFPR-5-120200	0.197	4.724	7.874	0.535	5.512	0.748	2.559	ETX5...
EFPR-5-200500	0.197	7.874	19.685	0.535	5.512	0.748	2.559	ETX5...
EFPR-6-045055	0.236	1.772	2.165	0.535	4.921	0.787	1.968	ETX6...
EFPR-6-055075	0.236	2.165	2.953	0.535	4.921	0.787	1.968	ETX6...
EFPR-6-075120	0.236	2.953	4.724	0.535	5.512	0.787	2.559	ETX6...
EFPR-6-120200	0.236	4.724	7.874	0.535	5.512	0.787	2.559	ETX6...
EFPR/L-6-200500	0.236	7.874	19.685	0.535	5.512	0.787	2.559	ETX6...

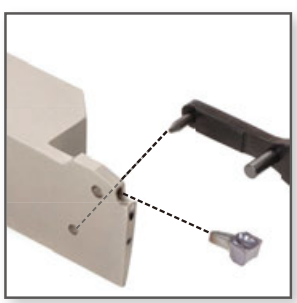
SPARE PARTS

Designation	Wrench (Optional)
EFPR/L...	ECW-456I

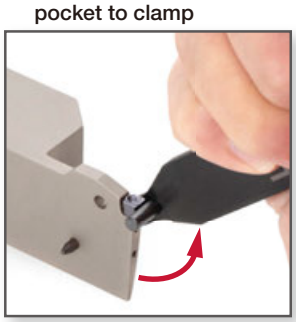
Wrench (ECW...) is not included. Please order it separately.

Procedure to clamp and unclamp insert

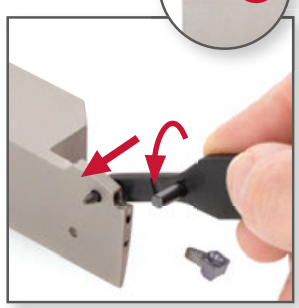
1 Put the insert in the Unclamp pocket



2 Turn the wrench Push the insert into the pocket to clamp

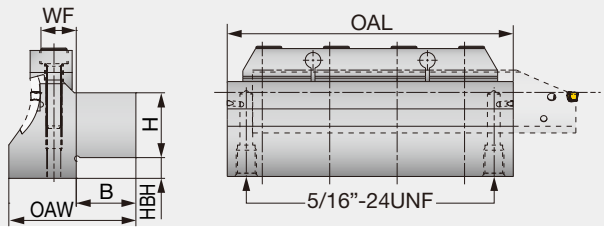


3 Unclamp



Reference pages: Inserts, Standard cutting conditions → F170

Tool block for EFP blades with high pressure coolant capability



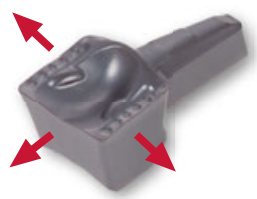
Inch	CW	DAXN	WF	H	B	HBH	OAW	OAL	Blade
CTBU16-030-4U-CHP	0.157	1.181	0.535	1.000	0.905	0.299	1.929	4.331	EFPR/L-4-030035
CTBU16-035-4/5U-CHP	0.157, 0.197	1.378	0.535	1.000	0.905	0.299	1.929	4.331	EFPR/L-4/5-035045
CTBU16-045-4/5U-CHP	0.157, 0.197	1.772	0.535	1.000	0.905	0.299	1.929	4.331	EFPR/L-4/5-045055
CTBU16-055-4/5U-CHP	0.157, 0.197	2.165	0.535	1.000	0.905	0.299	1.850	4.331	EFPR/L-4/5-055075
CTBU16-075-4/5U-CHP	0.157, 0.197	2.953	0.535	1.000	0.905	0.299	1.771	4.331	EFPR/L-4/5-075120
CTBU16-120-4/5U-CHP	0.157, 0.197	4.724	0.535	1.000	0.905	0.299	1.732	4.331	EFPR/L-4/5-120200
CTBU16-200-4/5U-CHP	0.157, 0.197	7.874	0.535	1.000	0.905	0.299	1.633	4.331	EFPR/L-4/5-200500
CTBU16-045-6U-CHP	0.236	1.772	0.535	1.000	0.905	0.299	2.007	4.331	EFPR/L-6-045055
CTBU16-055-6U-CHP	0.236	2.165	0.535	1.000	0.905	0.299	1.929	4.331	EFPR/L-6-055075
CTBU16-075-6U-CHP	0.236	2.953	0.535	1.000	0.905	0.299	1.850	4.331	EFPR/L-6-075120
CTBU16-120-6U-CHP	0.236	4.724	0.535	1.000	0.905	0.299	1.811	4.331	EFPR/L-6-120200
CTBU16-200-6U-CHP	0.236	7.874	0.535	1.000	0.905	0.299	1.712	4.331	EFPR/L-6-200500

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
CTBU**-CHP	CT-110	CM6X30-S	P-5

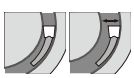
EASY MULTI CUT - Chipbreaker Guide

ETX type

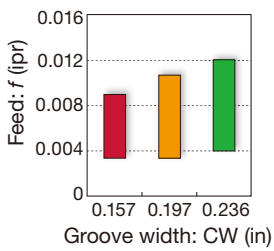


Multi-functional insert
Grooving and turning suitable for light to medium cutting
Well-balanced sharpness and strength

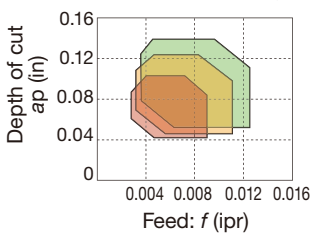
CW = 0.157" - 0.236"



■ Standard feed



■ Standard feed and depth of cut for turning

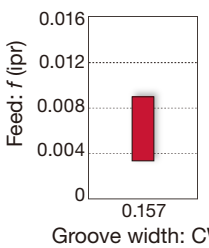


EGM type

1st choice for high feed
Well-designed edge

CW = 0.157"

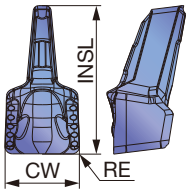
■ Standard feed



Reference pages: Inserts, Standard cutting conditions → F170
Parts for coolant hose → F240

INSERT

ETX



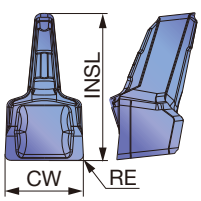
P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH725	INSL (in)
ETX4-040	4	0.157	0.016	●	0.315
ETX5-040	5	0.197	0.016	●	0.394
ETX6-040	6	0.236	0.016	●	0.472

● : Line up

EGM



P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH725	INSL (in)
EGM4-030	4	0.157	0.012	●	0.315

● : Line up

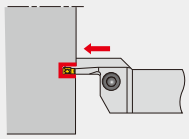
STANDARD CUTTING CONDITIONS

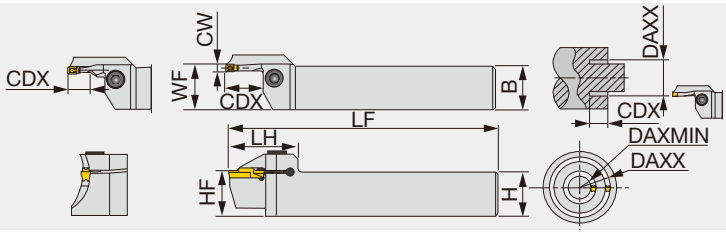
ISO	Workpiece material	Hardness	Grade	Chipbreaker	Cutting speed *Vc* (sfm)
P	Low carbon steel 1018, 1020, 1026, etc.	- 300 HB	AH725	ETX	262 - 591
		- 300 HB	AH725	EGM	262 - 591
	Carbon steel, Alloy steel 1045, 1055, etc.	- 300 HB	AH725	ETX	262 - 591
		- 300 HB	AH725	EGM	262 - 591
	Prehardened steel NAK80, PX5, etc.	- 300 HB	AH725	ETX	262 - 591
		- 300 HB	AH725	EGM	262 - 591
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	-	AH725	ETX	164 - 394
		-	AH725	EGM	164 - 394

Reference pages: Toolholders → F167 - F168

CTFR/L

Face grooving and turning toolholder





Right hand (R) shown.

Metric	CW	DAXMIN	DAXX	Seat size	CDX	H	B	LF	LH	HF	WF (1)	Torque
CTFR/L2525-3T10-024035	3	24	35	3	10	25	25	150	38	25	25.5	5
CTFR/L2525-3T10-029040	3	29	40	3	10	25	25	150	38	25	25.5	5
CTFR/L2525-3T10-034050	3	34	50	3	10	25	25	150	38	25	25.5	5
CTFR/L2525-3T15-044070	3	44	70	3	15	25	25	150	38	25	25.5	5
CTFR/L2525-3T15-064100	3	64	100	3	15	25	25	150	38	25	25.5	5
CTFR/L2525-4T10-022036	4	22	36	4	10	25	25	150	39	25	25.6	5
CTFR/L2525-4T20-028042	4	28	42	4	20	25	25	150	39	25	25.6	5
CTFR/L2525-4T20-034050	4	34	50	4	20	25	25	150	39	25	25.6	5
CTFR/L2525-4T20-042070	4	42	70	4	20	25	25	150	39	25	25.6	5
CTFR/L2525-4T20-062120	4	62	120	4	20	25	25	150	39	25	25.6	5
CTFR/L2525-4T20-112200	4	112	200	4	20	25	25	150	39	25	25.6	5
CTFR/L2525-5T25-050080	5	50	80	5	25	25	25	150	49	25	25.6	12
CTFR/L2525-5T25-070110	5	70	110	5	25	25	25	150	49	25	25.6	12
CTFR/L2525-5T25-100150	5	100	150	5	25	25	25	150	49	25	25.6	12
CTFR/L2525-5T25-140200	5	140	200	5	25	25	25	150	49	25	25.6	12
CTFR/L2525-6T25-048070	6	48	70	6	25	25	25	150	49	25	25.6	12
CTFR/L2525-6T25-058100	6	58	100	6	25	25	25	150	49	25	25.6	12
CTFR/L2525-6T25-088180	6	88	180	6	25	25	25	150	49	25	25.6	12
CTFR/L2525-6T25-168400	6	168	400	6	25	25	25	150	49	25	25.6	12

When depth is deeper than (insert length - 1.5 mm), 1 corner type is recommended.
Max. groove depth will be 15 mm with DTF insert.
(1)WF is calculated with the groove width (CW) in the above table.
Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamping screw	Wrench
CTFR/L2525-3T - 4T...	CM6X1X25-A	P-5
CTFR/L2525-5T - 6T...	CM8X1.25X25-A	P-6

INSERT

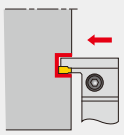
Designation	Seat size	Insert
CTFR/L2525-3T10-024035	3	DTF, DTX
CTFR/L2525-3T10-029040	3	DTF, DTX
CTFR/L2525-3T10-034050	3	DTF, DTX
CTFR/L2525-3T15-044070	3	DTF, DTX, DTR, DTE, DGG, DTM
CTFR/L2525-3T15-064100	3	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DGL, DTM
CTFR/L2525-4T10-022036	4	DTF, DTX
CTFR/L2525-4T20-028042	4	DTF, DTX, DTR
CTFR/L2525-4T20-034050	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL
CTFR/L2525-4T20-042070	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DTM, DGL
CTFR/L2525-4T20-062120	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DTM, DGL
CTFR/L2525-4T20-112200	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DTM, DGL
CTFR/L2525-5T25-...	5	DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL
CTFR/L2525-6T25-...	6	DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL

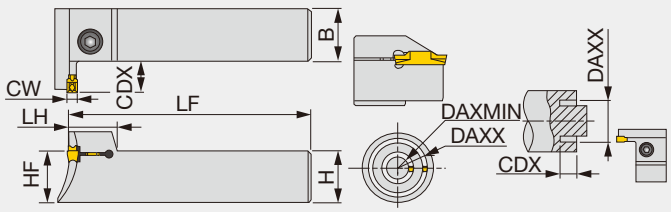
Insert	Groove width CW (mm)	Face grooving Min. machining dia. DAXMIN (mm)
DGM / DGS / SGN / DGL	3	92
DGM / DGS / SGN / DGL	4	37
DGM / DGS / DGL	5	60
DGM / DGS / DGL	6	57
DTE / DGG / DTM	3	62
DTE / DGG / DTM	4	42
DTE / DGG / DTM	5	64
DTE / DGG / DTM	6	61
DTR	3	44
DTR	4	32
DTR	5	48
DTR	6	48
DTX	3	22
DTX	4	20
DTX	5	20
DTX	6	23
DTF	3	20
DTF	4	20

Reference pages: Inserts → F178 - F187, Standard cutting conditions → F192

CTFVR/L

Perpendicular toolholder for face grooving and turning





Right hand (R) shown.

Metric	CW	DAXMIN	DAXX	Seat size	CDX	H	B	LF	LH	HF	Torque
CTFVR/L2525-3T10-024035	3	24	35	3	10	25	25	150	18	25	5
CTFVR/L2525-3T10-029040	3	29	40	3	10	25	25	150	18	25	5
CTFVR/L2525-3T10-034050	3	34	50	3	10	25	25	150	18	25	5
CTFVR/L2525-3T15-044060	3	44	60	3	15	25	25	150	18	25	5
CTFVR/L2525-3T15-054085	3	54	85	3	15	25	25	150	18	25	5
CTFVR/L2525-4T12-022040	4	22	40	4	12	25	25	150	18.5	25	8.5
CTFVR/L2525-4T15-032050	4	32	50	4	15	25	25	150	18.5	25	8.5
CTFVR/L2525-4T15-042060	4	42	60	4	15	25	25	150	18.5	25	8.5
CTFVR/L2525-4T15-052085	4	52	85	4	15	25	25	150	18.5	25	8.5
CTFVR/L2525-5T20-050080	5	50	80	5	20	25	25	150	22	25	12
CTFVR/L2525-5T20-070110	5	70	110	5	20	25	25	150	22	25	12
CTFVR/L2525-5T20-100150	5	100	150	5	20	25	25	150	22	25	12
CTFVR/L2525-5T20-140200	5	140	200	5	20	25	25	150	22	25	12
CTFVR/L2525-6T20-048085	6	48	85	6	20	25	25	150	22	25	12
CTFVR/L2525-6T20-073150	6	73	150	6	20	25	25	150	22	25	12
CTFVR/L2525-6T20-138250	6	138	250	6	20	25	25	150	22	25	12

When depth is deeper than (insert length - 1.5 mm), 1 corner type is recommended
Max. groove depth will be 15 mm with DTF insert.
Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamping screw	Wrench
CTFVR/L2525-3T...	CM5X0.8X25-A	P-4
CTFVR/L2525-4T...	CM6X1X25-A	P-5
CTFVR/L2525-5T..., 6T...	CM8X1.25X25-A	P-6

INSERT

Designation	Seat size	Insert
CTFVR/L2525-3T10-024035	3	DTF, DTX
CTFVR/L2525-3T10-029040	3	DTF, DTX
CTFVR/L2525-3T10-034050	3	DTF, DTX, DTR
CTFVR/L2525-3T15-044060	3	DTF, DTX, DTR
CTFVR/L2525-3T15-054085	3	DTF, DTX, DTE, DGG, DTR, DTM
CTFVR/L2525-4T12-022040	4	DTF, DTX, DTR
CTFVR/L2525-4T15-032050	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL
CTFVR/L2525-4T15-042060	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DTM, DGL
CTFVR/L2525-4T15-052085	4	DTF, DTX, DTE, DGG, DGM, DGS, DTR, SGN, DTM, DGL
CTFVR/L2525-5T20-...	5	DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL
CTFVR/L2525-6T20-...	6	DTX, DTE, DGG, DGM, DGS, DTR, DTM, DGL

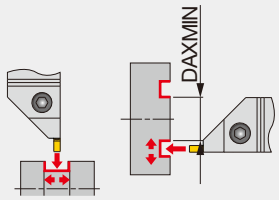
Insert	Groove width CW (mm)	Face grooving Min. machining dia. DAXMIN (mm)
DGM / DGS / SGN / DGL	3	92
DGM / DGS / SGN / DGL	4	37
DGM / DGS / DGL	5	60
DGM / DGS / DGL	6	57
DTE / DGG / DTM	3	62
DTE / DGG / DTM	4	42
DTE / DGG / DTM	5	64
DTE / DGG / DTM	6	61
DTR	3	44
DTR	4	32
DTR	5	48
DTR	6	48
DTX	3	22
DTX	4	20
DTX	5	20
DTX	6	23
DTF	3	20
DTF	4	20

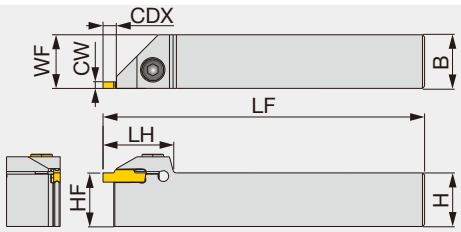
External
Internal
Face
Parting
Others

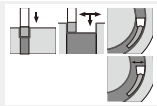
Reference pages: Inserts → F178 - F187, Standard cutting conditions → F192

CTEFR/L

External face grooving and turning toolholder







Right hand (R) shown.

Inch	CW (in)	CW (mm)	Seat size	CDX	HF	B	H	LF	WF (1)	LH	Torque
CTEFR/L12-4T04	0.157	4	2, 3, 4	0.189	0.750	0.750	0.750	5.000	0.770	1.300	6.27
CTEFR/L16-4T04	0.157	4	2, 3, 4	0.189	1.000	1.000	1.000	6.000	1.020	1.300	6.27
CTEFR/L12-6T04	0.236	6	5, 6	0.189	0.750	0.750	0.750	5.000	0.236	1.460	6.27
CTEFR/L16-6T04	0.236	6	5, 6	0.189	1.000	1.000	1.000	6.000	1.020	1.460	6.27

(1) "WF" value is calculated with groove width "CW" shown in the table.
Torque: Recommended clamping torque: lbs·ft

SPARE PARTS

Designation	Clamping screw	Wrench
CTEFR/L12-4T04	CM6X1X20-A	P-5
CTEFR/L16-4T04	CM6X1X25-A	P-5
CTEFR/L12-6T04	CM6X1X20-A	P-5
CTEFR/L16-6T04	CM6X1X25-A	P-5

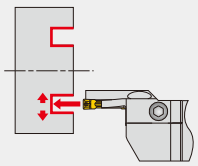
Insert	Groove width CW (in)	Face grooving Min. machining dia. DAXMIN (in)
DGM / DGS / SGN	0.079	11.614
DGM / DGS / SGN / DGL	0.118	3.622
DGM / DGS / SGN / DGL	0.157	1.457
DGM / DGS / DGL	0.197	2.362
DGM / DGS / DGL	0.236	2.244
DTE / DGG / DTM	0.118	2.441
DTE / DGG / DTM	0.157	1.654
DTE / DGG / DTM	0.197	2.520
DTE / DGG / DTM	0.236	2.402

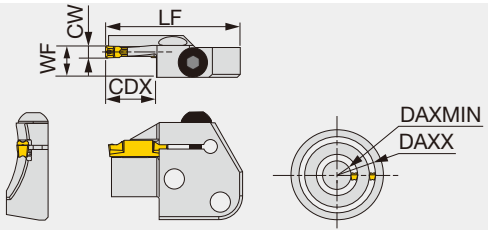
Insert	Groove width CW (in)	Face grooving Min. machining dia. DAXMIN (in)
DTR	0.118	1.732
DTR	0.157	1.260
DTR	0.197	1.890
DTR	0.236	1.890
DTX	0.118	0.866
DTX	0.157	0.787
DTX	0.197	0.787
DTX	0.236	0.906
DTF	0.118	0.787
DTF	0.157	0.787

Reference pages: Inserts → F178 - F187, Standard cutting conditions → F192

CAFR/L

Face grooving and turning blade





Right hand (R) shown.

Inch	CW (in)	CW (mm)	DAXMIN	DAXX	Seat size	CDX	LF	WF (1)	Torque
CAFR/L-3T12-040055	0.118	3	1.575	2.17	3	0.472	1.772	0.409	3.69
CAFR/L-3T12-055075	0.118	3	2.165	2.95	3	0.472	1.772	0.409	3.69
CAFR/L-3T12-075100	0.118	3	2.953	3.94	3	0.472	1.772	0.409	3.69
CAFR/L-3T12-100140	0.118	3	3.937	5.51	3	0.472	1.772	0.409	3.69
CAFR/L-3T12-140200	0.118	3	5.512	7.87	3	0.472	1.772	0.409	3.69
CAFR/L-4T16-050070	0.157	4	1.969	2.76	4	0.630	1.772	0.413	3.69
CAFR/L-4T16-070100	0.157	4	2.756	3.94	4	0.630	1.772	0.413	3.69
CAFR/L-4T16-100150	0.157	4	3.937	5.91	4	0.630	1.772	0.413	3.69
CAFR/L-4T16-150250	0.157	4	5.906	9.84	4	0.630	1.772	0.413	3.69
CAFR/L-5T20-055080	0.197	5	2.165	3.15	5	0.787	1.929	0.413	3.69
CAFR/L-5T20-080120	0.197	5	3.15	4.72	5	0.787	1.929	0.413	3.69
CAFR/L-5T20-120180	0.197	5	4.724	7.09	5	0.787	1.929	0.413	3.69
CAFR/L-5T20-180300	0.197	5	7.087	11.81	5	0.787	1.929	0.413	3.69
CAFR/L-5T20-300000	0.197	5	11.811	0	5	0.787	1.929	0.413	3.69
CAFR/L-6T25-060090	0.236	6	2.362	3.54	6	0.984	2.165	0.413	3.69
CAFR/L-6T25-090150	0.236	6	3.543	5.91	6	0.984	2.165	0.413	3.69
CAFR/L-6T25-150250	0.236	6	5.906	9.84	6	0.984	2.165	0.413	3.69
CAFR/L-6T25-250400	0.236	6	9.843	15.75	6	0.984	2.165	0.413	3.69

When groove depth is larger than (insert length - 0.059"), please use 1-cornered insert.
Max. groove depth will be 0.591" with DTF insert.
Not compatible with TungModularSystem
(1) WF is calculated with the groove width (CW) in the above table.
(2) Not applicable to CAFR/L-3T12-040055
(3) Seat sizes of DTF are only 3 and 4.
Torque: Recommended clamping torque: lbs·ft

SPARE PARTS

Designation	Clamping screw	Wrench
CAFR/L...	BHM6-20-A	P-4

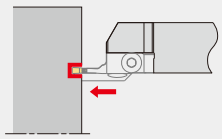
Insert	Groove width CW (in)	Face grooving Min. machining dia. DAXMIN (in)
DGM / DGS / SGN / DGL	0.118	3.622
DGM / DGS / SGN / DGL	0.157	1.457
DGM / DGS / DGL	0.197	2.362
DGM / DGS / DGL	0.236	2.244
DTE / DGG / DTM	0.118	2.441
DTE / DGG / DTM	0.157	1.654
DTE / DGG / DTM	0.197	2.520
DTE / DGG / DTM	0.236	2.402
DTR	0.118	1.732
DTR	0.157	1.260
DTR	0.197	1.890
DTR	0.236	1.890
DTX	0.118	0.866
DTX	0.157	0.787
DTX	0.197	0.787
DTX	0.236	0.906
DTF	0.118	0.787
DTF	0.157	0.787

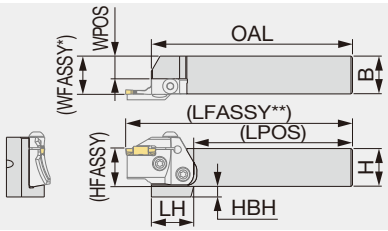
External
Internal
Face
Parting
Others

Reference pages: Inserts → F178 - F187, Standard cutting conditions → F192

TUNGCUT
CHSR/L

Shank for CAER/L and CAFR/L blades





Right hand (R)
with left-hand blade shown.

Inch	H	B	OAL	LPOS	LH	WPOS	HFASSY	HBH	Blade (Option)
CHSR/L12-U	0.750	0.750	5.330	4.227	1.380	0.356	0.750	0.502	CAFL/R...
CHSR/L16-U	1.000	1.000	5.330	4.227	1.100	0.606	1.000	0.280	CAFL/R...
CHSR/L20-U	1.250	1.250	6.330	5.227	-	0.856	1.250	-	CAFL/R...

Metric	H	B	OAL	LPOS	LH	WPOS	HFASSY	HBH	Blade (Option)
CHSR/L2020	20	20	133	105	35	10	20	12	CAFL/R...
CHSR/L2525	25	25	133	105	28	15	25	7	CAFL/R...
CHSR/L3232	32	32	153	105	-	22	32	-	CAFL/R...

*WFASSY : Shank (WPOS) + blade (WF)
**LFASSY : Shank (LPOS) + blade (LF)

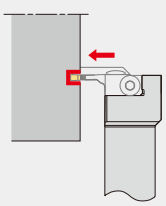
Not compatible with TungModularSystem

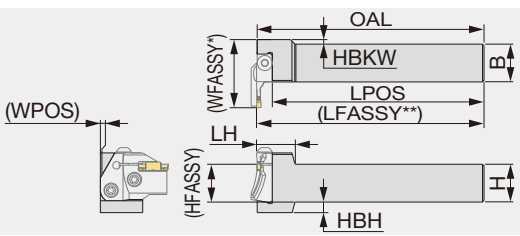
SPARE PARTS

Designation	Clamping screw	Wrench
CHSR/L...	CSHB-6-A	P-4

TUNGCUT
CHFVR/L

Shank for CAER/L and CAFR/L blades





Right hand (R)
with right-hand blade shown.

Inch	H	B	OAL	LPOS	LH	WPOS	HBKW	HFASSY	HBH	Blade (Option)
CHFVR/L12-U	0.750	0.750	6.000	5.606	0.984	-0.001	0.352	0.750	0.502	CAFR/L...
CHFVR/L16-U	1.000	1.000	6.000	5.606	0.984	-0.001	0.102	1.000	0.276	CAFR/L...
CHFVR/L20-U	1.250	1.250	7.000	6.606	0.984	0.147	-	1.250	-	CAFR/L...

Metric	H	B	OAL	LPOS	LH	WPOS	HBKW	HFASSY	HBH	Blade (Option)
CHFVR/L2020	20	20	150	140	25	0	8	20	12	CAFR/L...
CHFVR/L2525	25	25	150	140	25	0	3	25	7	CAFR/L...
CHFVR/L3232	32	32	170	160	25	4	-	32	-	CAFR/L...

*WFASSY : Shank (WPOS) + blade (LF)
**LFASSY : Shank (LPOS) + blade (WF)

Not compatible with TungModularSystem

SPARE PARTS

Designation	Clamping screw	Wrench
CHFVR/L...	CSHB-6-A	P-4

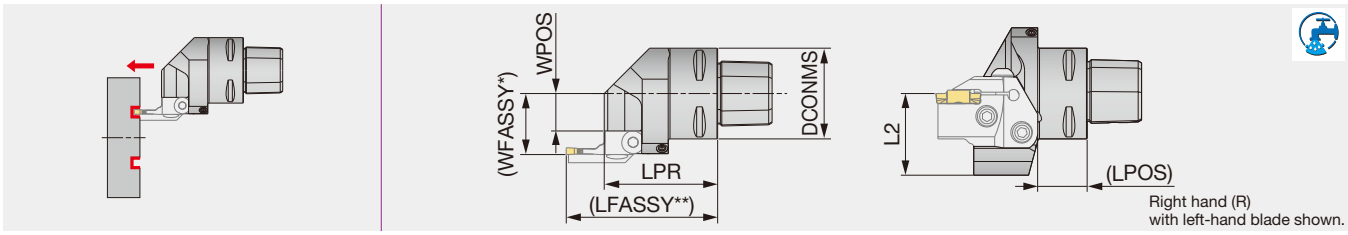
Combination of blade and toolholder

Toolholder	Blade			
	CAER...	CAEL...	CAFR...	CAFL...
CHSR...	●			●
CHSL...		●	●	
CHFVR...		●	●	
CHFVL...	●			●

● : Corresponding

Reference pages: Inserts → F178 - F187,
Standard cutting conditions → F192

TungCap shank for CAER/L and CAFR/L blades



Metric	DCONMS	LPR	LPOS	L2	WPOS	Blade (Option)
C3CHSR/L22050N	32	50	22.1	35	11.5	CAFL/R...
C4CHSR/L27050N	40	50	22.1	36	16.5	CAFL/R...
C5CHSR/L35060N	50	60	32.1	36	24.5	CAFL/R...
C6CHSR/L45065N	63	65	32.1	41	34.5	CAFL/R...

*WFASSY : Shank (WPOS) + blade (WF)
**LFASSY : Shank (LPOS) + blade (LF)

Applicable for 7 MPa coolant.
Not compatible with TungModularSystem

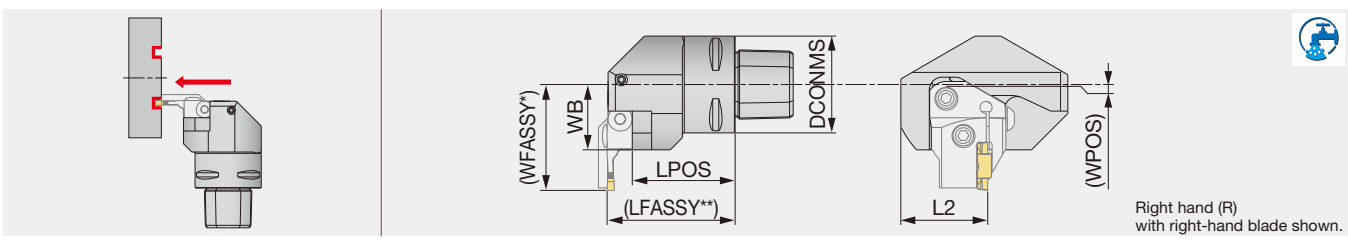
SPARE PARTS

Designation	Coolant parts	Clamping screw	Wrench
C3CHSR/L22050N	SATZ-M8X1-M3	CSHB-6-A	P-4
C4CHSR/L27050N	SATZ-M8X1-M3	CSHB-6-A	P-4
C5CHSR/L35060N	SATZ-M10X1-M5	CSHB-6-A	P-4
C6CHSR/L45065N	SATZ-M10X1-M5	CSHB-6-A	P-4

C-CHFVR/L

TUNGCAP

TungCap shank for CAER/L and CAFR/L blades



Metric	DCONMS	LPOS	L2	WB	WPOS	Blade (Option)
C3CHFVR/L22040N	32	32.5	35	22	-5.9	CAFR/L...
C4CHFVR/L27050N	40	42.5	36	27	-0.9	CAFR/L...
C5CHFVR/L35060N	50	49.5	36	35	7.1	CAFR/L...
C6CHFVR/L45065N	63	54.5	41	45	17.1	CAFR/L...

*WFASSY : Shank (WPOS) + blade (LF)
**LFASSY : Shank (LPOS) + blade (WF)

Applicable for 7 MPa coolant.
Not compatible with TungModularSystem

SPARE PARTS

Designation	Coolant parts	Clamping screw	Wrench
C3CHFVR/L22040N	SATZ-M8X1-M3	CSHB-6-A	P-4
C4CHFVR/L27050N	SATZ-M8X1-M3	CSHB-6-A	P-4
C5CHFVR/L35060N	SATZ-M10X1-M5	CSHB-6-A	P-4
C6CHFVR/L45065N	SATZ-M10X1-M5	CSHB-6-A	P-4

Combination of blade and toolholder

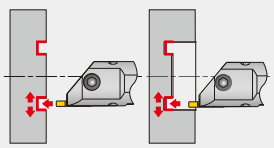
Toolholder	Blade			
	CAER...	CAEL...	CAFR...	CAFL...
C*CHSR...	●			●
C*CHSL...		●	●	
C*CHFVR...		●	●	
C*CHFVL...	●			●

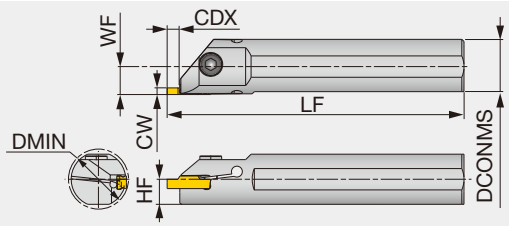
● : Corresponding

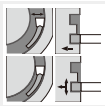
Reference pages: Inserts → F178 - F187, Standard cutting conditions → F192

CTIFR/L

External/Internal face grooving and turning toolholder







Right hand (R) shown.

Inch	CW (in)	CW (mm)	Seat size	CDX	DCONMS	LF	HF	WF (1)	Torque
CTIFR/L16-4T05-D17	0.157	4	3, 4	0.217	1.000	8.000	0.450	0.531	3.69
CTIFR/L20-4T05-D22	0.157	4	3, 4	0.217	1.250	10.000	0.590	0.656	3.69
CTIFR/L16-5T05-D17	0.236	6	5, 6	0.217	1.000	8.000	0.450	0.531	3.69
CTIFR/L20-5T05-D22	0.236	6	5, 6	0.217	1.250	10.000	0.590	0.656	3.69

Metric	CW	Seat size	CDX	DCONMS	LF	HF	WF (1)	Torque*
CTIFR/L25-4T05-D270	4	3, 4	5.5	25	200	11.5	13.3	5
CTIFR/L32-4T05-D340	4	3, 4	5.5	32	250	15	16.8	5
CTIFR/L25-5T05-D270	6	5, 6	5.5	25	200	11.5	13.3	5
CTIFR/L32-5T05-D340	6	5, 6	5.5	32	250	15	16.8	5

(1) WF is calculated with the groove width (CW) in the above table.
Use the right-hand insert for the right-hand holder with DTF insert.
Torque: Recommended clamping torque: lbs·ft (*N·m)

Inch SPARE PARTS



Designation	Clamping screw	Wrench	Seal cap
CTIFR/L16-4T05-D17	CM6X1X16-A	P-5	CA-25
CTIFR/L20-4T05-D22	CM6X1X20-A	P-5	CA-32
CTIFR/L16-5T05-D17	CM6X1X16-A	P-5	CA-25
CTIFR/L20-5T05-D22	CM6X1X20-A	P-5	CA-32

Insert seat size	Minimum diameter	
	DCONMS = 0.984"	DCONMS = 1.259"
3	1.035	1.311
4	1.055	1.331
5	1.035	1.311
6	1.055	1.331

Insert seat size	DAXMIN				DAXX
	DGM, DGS	DTE, DGG	DTF, DTX	DTR	
3	2.126	1.732	0.787	1.614	∞
4	1.339	1.654	0.709	1.417	∞
5	1.929	1.969	0.787	2.126	∞
6	1.811	1.890	0.709	2.126	∞

Metric SPARE PARTS



Designation	Clamping screw	Wrench	Seal cap
CTIFR/L25-4T05-D270	CM6X1X16-A	P-5	CA-25
CTIFR/L32-4T05-D340	CM6X1X20-A	P-5	CA-32
CTIFR/L25-5T05-D270	CM6X1X16-A	P-5	CA-25
CTIFR/L32-5T05-D340	CM6X1X20-A	P-5	CA-32

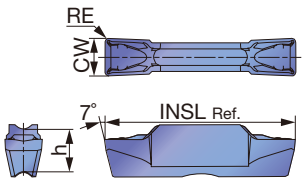
Insert seat size	Minimum diameter	
	DCONMS = 25 mm	DCONMS = 32 mm
3	26.3	33.3
4	26.8	33.8
5	26.3	33.3
6	26.8	33.8

Insert seat size	DAXMIN				DAXX
	DGM, DGS	DTE, DGG	DTF, DTX	DTR	
3	92	62	19	44	∞
4	37	42	20	32	∞
5	60	64	20	48	∞
6	57	61	23	48	∞

Reference pages: Inserts → F178 - F187, Standard cutting conditions → F192

DTX

External/Internal face grooving and turning



P	Steel	★	★	★	☆	☆			★				
M	Stainless	★		★	☆	★							
K	Cast iron	☆		★		☆			☆				
N	Non-ferrous												
S	Superalloys			★	☆								
H	Hard materials												

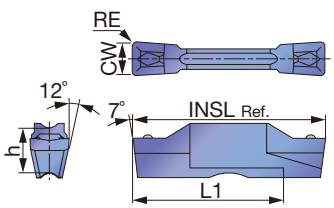
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated										Cermet						INSL (in)	h (in)
					T9225		T9125		AH7025	AH725	GH130				NS9530							
DTX3-030	3	3	0.118	0.012	●		▲		●	●	●				●						0.787	0.197
DTX4-040	4	4	0.157	0.016	●		▲		●	●	●				●						0.787	0.197
DTX5-040	5	5	0.197	0.016	●		▲		●	●	●				●						0.984	0.217
DTX6-080	6	6	0.236	0.031					●	●	●										0.984	0.197

● : Line up
▲ : To be discontinued

DTF

Face grooving and turning



Right hand (R) shown.

P	Steel	★	☆	★	☆	☆			★				
M	Stainless	★		★	☆	★							
K	Cast iron	☆		★		☆			☆				
N	Non-ferrous												
S	Superalloys			★	☆								
H	Hard materials												

★ : First choice
☆ : Second choice

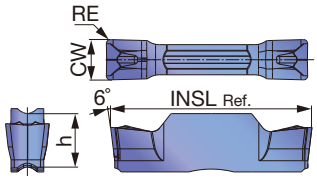
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated										Cermet						INSL (in)	h (in)	L1 (in)
						T9225		T9125		AH7025	AH725	GH130				NS9530								
DTF3-040-R	3	R	3	0.118	0.016	●		▲		●	●	●				●						0.787	0.197	0.630
DTF3-040-L	3	L	3	0.118	0.016	●		▲		●	●	●				●						0.787	0.197	0.630
DTF4-040-R	4	R	4	0.157	0.016	●		▲		●	●	●				●						0.787	0.197	0.630
DTF4-040-L	4	L	4	0.157	0.016	●		▲		●	●	●				●						0.787	0.197	0.630

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F171 - F177, Standard cutting conditions → F192

DTM

External face grooving and turning



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

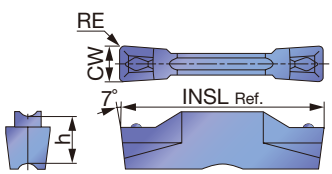
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	INSL (in)	h (in)
DTM3-030	3	3	0.118	0.012	●	0.787	0.197
DTM4-040	4	4	0.157	0.016	●	0.787	0.197
DTM4-080	4	4	0.157	0.031	●	0.787	0.197
DTM5-080	5	5	0.197	0.031	●	0.984	0.217
DTM6-080	6	6	0.236	0.031	●	0.984	0.217
DTM8-080	8	8	0.315	0.031	●	1.181	0.264

● : Line up

DTE

External face grooving and turning (for high precision)



P	Steel	★	★	★	☆	☆			★			
M	Stainless	★		★	☆	★						
K	Cast iron	☆		★		☆						
N	Non-ferrous											
S	Superalloys			★	☆							
H	Hard materials											

★ : First choice
☆ : Second choice

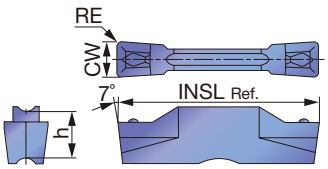
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated T9225	Coated T9125	Coated AH7025	Coated AH725	Coated GH130	Cermet NS9530	INSL (in)	h (in)
DTE265-015	3	2.65	0.104	0.006	●	▲	●	●	●	●	0.787	0.197
DTE300-020	3	3	0.118	0.008	●	▲	●	●	●	●	0.787	0.197
DTE300-040	3	3	0.118	0.016	●	▲	●	●	●	●	0.787	0.197
DTE315-015	3	3.15	0.124	0.006	●	▲	●	●	●	●	0.787	0.197
DTE400-040	4	4	0.157	0.016	●	▲	●	●	●	●	0.787	0.197
DTE400-080	4	4	0.157	0.031	●	▲	●	●	●	●	0.787	0.197
DTE415-015	4	4.15	0.163	0.006	●	▲	●	●	●	●	0.787	0.197
DTE478-055	5	4.78	0.188	0.022	●	▲	●	●	●	●	0.984	0.217
DTE500-040	5	5	0.197	0.016	●	▲	●	●	●	●	0.984	0.217
DTE500-080	5	5	0.197	0.031	●	▲	●	●	●	●	0.984	0.217
DTE515-015	5	5.15	0.203	0.006	●	▲	●	●	●		0.984	0.217
DTE600-080	6	6	0.236	0.031	●	▲	●	●	●		0.984	0.217
DTE600-120	6	6	0.236	0.047	●	▲	●	●	●		0.984	0.217
DTE800-080	8	8	0.315	0.031	●	▲	●	●	●		1.181	0.264
DTE800-120	8	8	0.315	0.047	●	▲	●	●	●		1.181	0.264

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F171 - F177, Standard cutting conditions → F192

DTE

External face grooving and turning



P	Steel	★	★		★	☆	☆			★		
M	Stainless	★			★	☆	★					
K	Cast iron	☆		★	★		☆					
N	Non-ferrous											
S	Superalloys				★	☆						
H	Hard materials											

★ : First choice
☆ : Second choice

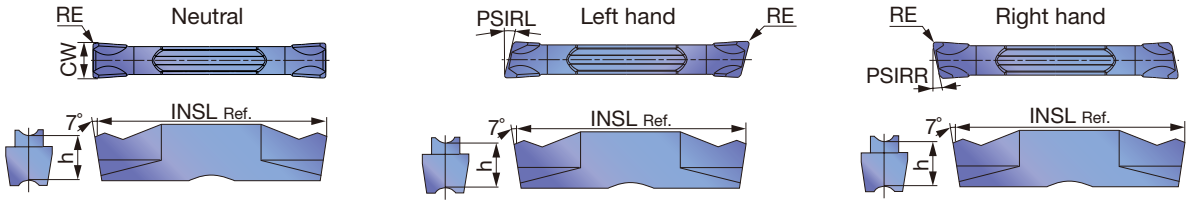
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated								Cermet				INSL (in)	h (in)
					T9225	T9125	T515	AH7025	AH725	GH130			NS9530					
DTE3-040	3	3	0.118	0.016	●	▲	●	●	●	●			●				0.787	0.197
DTE4-040	4	4	0.157	0.016	●	▲	●	●	●	●			●				0.787	0.197
DTE5-040	5	5	0.197	0.016			●	●									0.984	0.217
DTE6-080	6	6	0.236	0.031			●	●									0.984	0.217

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F171 - F177, Standard cutting conditions → F192

DGM

External grooving and parting, 2 corners



P	Steel	★	★	★	☆		☆			★			
M	Stainless	★		★	☆		★						
K	Cast iron	☆		★		☆	☆			☆			
N	Non-ferrous												
S	Superalloys			★	☆	★							
H	Hard materials												

★ : First choice
☆ : Second choice

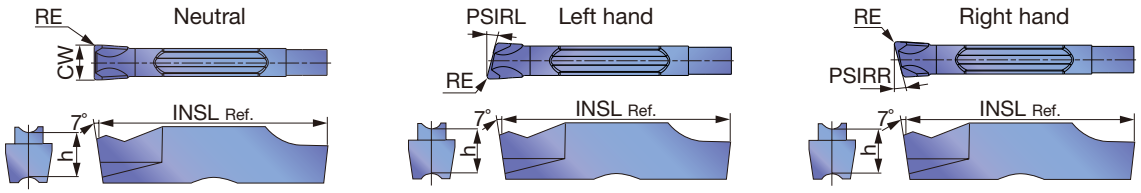
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet			INSL (in)	h (in)	PSIRL	PSIRR
						T9225	T9125	AH7025	AH725	AH905	GH130		NS9530						
DGM2-020	2	N	2	0.079	0.008	●	▲	●	●		●		●			0.787	0.197	0°	0°
DGM2-020-6R	2	R	2	0.079	0.008			●	●		●					0.787	0.197	0°	6°
DGM2-020-6L	2	L	2	0.079	0.008			●	●		●					0.787	0.197	6°	0°
DGM2-020-8R	2	R	2	0.079	0.008			●	●		●					0.787	0.197	0°	8°
DGM2-020-8L	2	L	2	0.079	0.008			●	●		●					0.787	0.197	8°	0°
DGM2-020-15R	2	R	2	0.079	0.008			●	●		●					0.787	0.197	0°	15°
DGM2-020-15L	2	L	2	0.079	0.008			●	●		●					0.787	0.197	15°	0°
DGM2-002-15R	2	R	2	0.079	0.0008				●		●					0.762	0.197	0°	15°
DGM2-002-15L	2	L	2	0.079	0.0008				●		●					0.762	0.197	15°	0°
DGM3-020	3	N	3	0.118	0.008	●	▲	●	●	●	●		●			0.787	0.197	0°	0°
DGM3-020-6R	3	R	3	0.118	0.008			●	●		●					0.787	0.197	0°	6°
DGM3-020-6L	3	L	3	0.118	0.008			●	●		●					0.787	0.197	6°	0°
DGM3-002-6R	3	R	3	0.118	0.0008				●		●					0.766	0.197	0°	6°
DGM3-002-6L	3	L	3	0.118	0.0008				●		●					0.766	0.197	6°	0°
DGM3-020-15R	3	R	3	0.118	0.008			●	●		●					0.787	0.197	0°	15°
DGM3-020-15L	3	L	3	0.118	0.008			●	●		●					0.787	0.197	15°	0°
DGM4-030	4	N	4	0.157	0.012	●	▲	●	●	●	●		●			0.787	0.197	0°	0°
DGM4-030-4R	4	R	4	0.157	0.012			●	●		●					0.787	0.197	0°	4°
DGM4-030-4L	4	L	4	0.157	0.012			●	●		●					0.787	0.197	4°	0°
DGM4-030-15R	4	R	4	0.157	0.012			●	●		●					0.787	0.197	0°	15°
DGM4-030-15L	4	L	4	0.157	0.012			●	●		●					0.787	0.197	15°	0°
DGM5-030	5	N	5	0.197	0.012	●	▲	●	●	●	●		●			0.984	0.217	0°	0°
DGM5-030-4R	5	R	5	0.197	0.012			●	●		●					0.984	0.217	0°	4°
DGM6-030	6	N	6	0.236	0.012	●	▲	●	●	●	●					0.984	0.217	0°	0°
DGM8-040	8	N	8	0.315	0.016	●	▲	●	●		●					1.181	0.264	0°	0°

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F171 - F177, Standard cutting conditions → F192

SGM

External deep grooving and parting, 1corner



P	Steel	★	☆	☆
M	Stainless	★	☆	★
K	Cast iron	★		☆
N	Non-ferrous			
S	Superalloys	★	☆	
H	Hard materials			

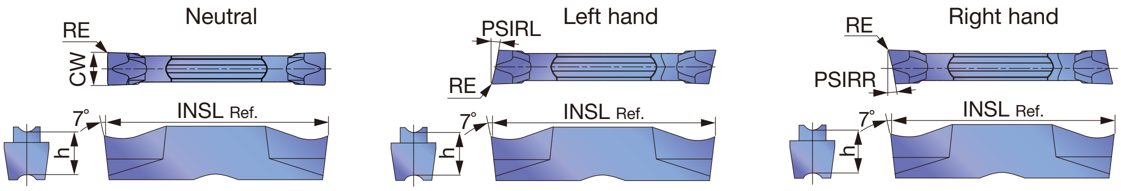
★ : First choice
☆ : Second choice

Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	Coated AH725	Coated GH130	INSL (in)	h (in)	PSIRL	PSIRR
SGM2-020	2	N	2	0.079	0.008	●	●	●	0.787	0.197	0°	0°
SGM2-020-6R	2	R	2	0.079	0.008	●	●	●	0.787	0.197	0°	6°
SGM2-020-6L	2	L	2	0.079	0.008	●	●	●	0.787	0.197	6°	0°
SGM3-020	3	N	3	0.118	0.008	●	●	●	0.787	0.197	0°	0°
SGM3-020-6R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	6°
SGM3-020-6L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	6°	0°
SGM3-020-15R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	15°
SGM3-020-15L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	15°	0°
SGM4-030	4	N	4	0.157	0.012	●	●	●	0.787	0.197	0°	0°
SGM4-030-4R	4	R	4	0.157	0.012	●	●	●	0.787	0.197	0°	4°
SGM4-030-4L	4	L	4	0.157	0.012	●	●	●	0.787	0.197	4°	0°
SGM5-030	5	N	5	0.197	0.012	●	●	●	0.984	0.217	0°	0°
SGM6-030	6	N	6	0.236	0.012	●	●	●	0.984	0.217	0°	0°

● : Line up

Reference pages: Toolholders → F171 - F177, Standard cutting conditions → F192

External grooving and parting, 2 corners



		T9225	T9125	AH7025	AH725	GH130			NS9530					
P	Steel	★	★	★	☆	☆			★					
M	Stainless	★		★	☆	★								
K	Cast iron	☆		★		☆			☆					
N	Non-ferrous													
S	Superalloys			★	☆									
H	Hard materials													

★ : First choice
☆ : Second choice

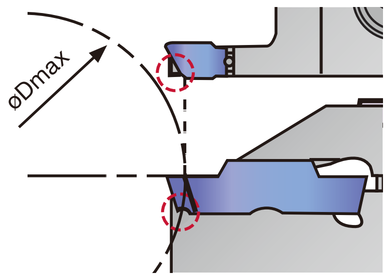
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet						INSL (in)	h (in)	PSIRL	PSIRR
						T9225	T9125	AH7025	AH725	GH130			NS9530									
DGS1.4-016	1	N	1.4	0.055	0.006			●	●	●									0.630	0.169	0°	0°
DGS2-020	2	N	2	0.079	0.008	●	▲	●	●	●			●						0.787	0.197	0°	0°
DGS2-020-6R	2	R	2	0.079	0.008			●	●	●									0.787	0.197	0°	6°
DGS2-020-6L	2	L	2	0.079	0.008			●	●	●									0.787	0.197	6°	0°
DGS2-002-6R	2	R	2	0.079	0.0008				●	●									0.768	0.197	0°	6°
DGS2-002-6L	2	L	2	0.079	0.0008				●	●									0.768	0.197	6°	0°
DGS2-020-15R	2	R	2	0.079	0.008			●	●	●									0.787	0.197	0°	15°
DGS2-020-15L	2	L	2	0.079	0.008			●	●	●									0.787	0.197	15°	0°
DGS2-002-15R	2	R	2	0.079	0.0008				●	●									0.768	0.197	0°	15°
DGS2-002-15L	2	L	2	0.079	0.0008				●	●									0.768	0.197	15°	0°
DGS3-020	3	N	3	0.118	0.008	●	▲	●	●	●			●						0.787	0.197	0°	0°
DGS3-020-6R	3	R	3	0.118	0.008			●	●	●									0.787	0.197	0°	6°
DGS3-020-6L	3	L	3	0.118	0.008			●	●	●									0.787	0.197	6°	0°
DGS3-002-6R	3	R	3	0.118	0.0008				●	●									0.766	0.197	0°	6°
DGS3-002-6L	3	L	3	0.118	0.0008				●	●									0.766	0.197	6°	0°
DGS3-020-15R	3	R	3	0.118	0.008			●	●	●									0.787	0.197	0°	15°
DGS3-020-15L	3	L	3	0.118	0.008			●	●	●									0.787	0.197	15°	0°
DGS3-002-15R	3	R	3	0.118	0.0008				●	●									0.766	0.197	0°	15°
DGS3-002-15L	3	L	3	0.118	0.0008				●	●									0.766	0.197	15°	0°
DGS4-030	4	N	4	0.157	0.012	●	▲	●	●	●			●						0.787	0.197	0°	0°
DGS4-030-4R	4	R	4	0.157	0.012			●	●	●									0.787	0.197	0°	4°
DGS4-030-4L	4	L	4	0.157	0.012			●	●	●									0.787	0.197	4°	0°
DGS5-030	5	N	5	0.197	0.012	●	▲	●	●	●			●						0.984	0.217	0°	0°
DGS6-030	6	N	6	0.236	0.012	●	▲	●	●	●									0.984	0.217	0°	0°

● : Line up
▲ : To be discontinued

Caution

The tool will interfere with the workpiece when grooving larger diameter than øDmax.

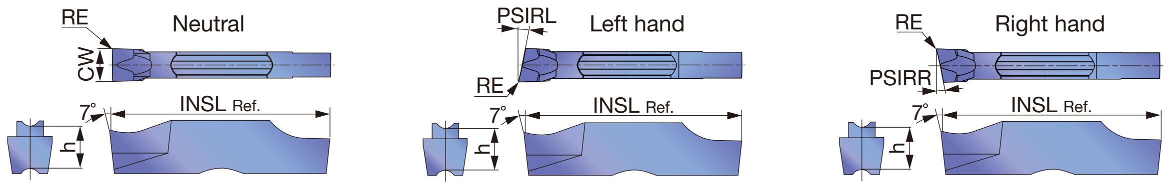
Designation	øDmax (in)	Designation	øDmax (in)
DGM2-002-15R/L	1.102	DGS2-002-15R/L	1.102
DGM3-002-15R/L	1.141	DGS3-002-15R/L	1.141
DGM4-030-15R/L	1.181	SGS3-020-15R/L	4.055
SGM3-020-15R/L	4.055	SGS3-002-15R/L	1.338



Reference pages: Toolholders → F171 - F177, Standard cutting conditions → F192

SGS

External deep grooving and parting, 1corner



		AH7025	AH725	GH130
P	Steel	★	☆	☆
M	Stainless	★	☆	★
K	Cast iron	★		☆
N	Non-ferrous			
S	Superalloys	★	☆	
H	Hard materials			

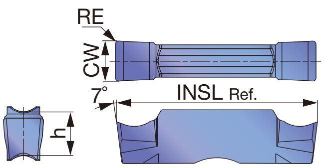
★ : First choice
☆ : Second choice

Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	Coated AH725	Coated GH130	INSL (in)	h (in)	PSIRL	PSIRR
SGS2-020	2	N	2	0.079	0.008	●	●	●	0.787	0.197	0°	0°
SGS2-020-6R	2	R	2	0.079	0.008	●	●	●	0.787	0.197	0°	6°
SGS2-020-6L	2	L	2	0.079	0.008	●	●	●	0.787	0.197	6°	0°
SGS2-020-15R	2	R	2	0.079	0.008	●	●	●	0.787	0.197	0°	15°
SGS2-020-15L	2	L	2	0.079	0.008	●	●	●	0.787	0.197	15°	0°
SGS3-020	3	N	3	0.118	0.008	●	●	●	0.787	0.197	0°	0°
SGS3-020-6R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	6°
SGS3-020-6L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	6°	0°
SGS3-002-6R	3	R	3	0.118	0.0008		●	●	0.780	0.197	0°	6°
SGS3-002-6L	3	L	3	0.118	0.0008		●	●	0.780	0.197	6°	0°
SGS3-020-15R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	15°
SGS3-020-15L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	15°	0°
SGS3-002-15R	3	R	3	0.118	0.0008		●	●	0.780	0.197	0°	15°
SGS3-002-15L	3	L	3	0.118	0.0008		●	●	0.780	0.197	15°	0°
SGS4-030	4	N	4	0.157	0.012	●	●	●	0.787	0.197	0°	0°
SGS5-030	5	N	5	0.197	0.012	●	●	●	0.984	0.217	0°	0°
SGS6-030	6	N	6	0.236	0.012	●	●	●	0.984	0.217	0°	0°

● : Line up

DGG

External grooving (for high precision)



		AH7025	NS9530	KS05F
P	Steel	★	★	
M	Stainless	★		
K	Cast iron	★	☆	☆
N	Non-ferrous			★
S	Superalloys	★		☆
H	Hard materials			

★ : First choice
☆ : Second choice

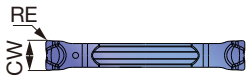
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated AH7025	Cermet NS9530	Uncoated KS05F	INSL (in)	h (in)
DGG200-020	2	2	0.079	0.008	●	●	●	0.787	0.197
DGG300-020	3	3	0.118	0.008	●	●	●	0.787	0.197
DGG400-040	4	4	0.157	0.016	●	●	●	0.787	0.197
DGG500-040	5	5	0.197	0.016	●	●	●	0.984	0.217
DGG600-040	6	6	0.236	0.016	●	●	●	0.984	0.217

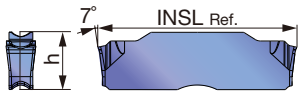
● : Line up

Reference pages: Toolholders → F171 - F177, Standard cutting conditions → F192

DGL

External grooving and parting





		Coated
		AH7025
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

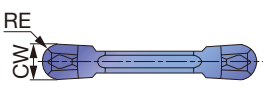
★ : First choice
☆ : Second choice

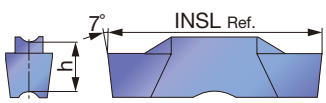
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	AH7025	INSL (in)	h (in)
DGL3-025	3	3	0.118	0.010	●	0.787	0.197
DGL4-030	4	4	0.157	0.012	●	0.787	0.197
DGL5-030	5	5	0.197	0.012	●	0.984	0.217
DGL6-080	6	6	0.236	0.031	●	0.984	0.217

● : Line up

DTR

Profiling and undercutting (for high precision)





		Coated					Cermet	
		T9225	T9125	AH7025	AH725	GH130	NS9530	
P	Steel	★	★	★	☆	☆	★	
M	Stainless	★		★	☆	★		
K	Cast iron	☆		★		☆	☆	
N	Non-ferrous							
S	Superalloys			★	☆			
H	Hard materials							

★ : First choice
☆ : Second choice

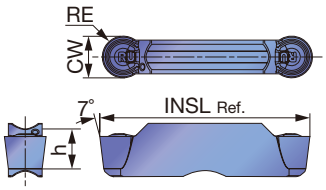
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	T9225	T9125	AH7025	AH725	GH130	NS9530	INSL (in)	h (in)
DTR300-150	3	3	0.118	0.059	●	▲	●	●	●	●	0.787	0.197
DTR400-200	4	4	0.157	0.079	●	▲	●	●	●	●	0.787	0.197
DTR478-239	5	4.78	0.188	0.094	●	▲	●	●	●	●	0.984	0.217
DTR500-250	5	5	0.197	0.098	●	▲	●	●	●	●	0.984	0.217
DTR600-300	6	6	0.236	0.118	●	▲	●	●	●		0.984	0.217

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F171 - F177, Standard cutting conditions → F192

DTR

Profiling and undercutting



P	Steel	★	★	★	☆		☆			★			
M	Stainless	★		★	☆		★						
K	Cast iron	☆		★		☆	☆			☆			
N	Non-ferrous												
S	Superalloys			★	☆	★							
H	Hard materials												

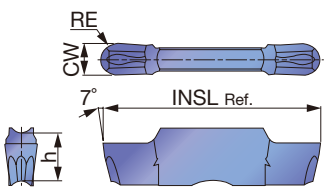
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated								Cermet				INSL (in)	h (in)
					T9225	T9125	AH7025	AH725	AH905	GH130			NS9530					
DTR3-150	3	3	0.118	0.059	●	▲	●	●	●	●			●				0.787	0.197
DTR4-200	4	4	0.157	0.079	●	▲	●	●	●	●			●				0.787	0.197
DTR5-250	5	5	0.197	0.098	●	▲	●	●	●	●			●				0.984	0.217
DTR6-300	6	6	0.236	0.118	●	▲	●	●		●							0.984	0.217
DTR8-400	8	8	0.315	0.157	●	▲	●	●		●							1.181	0.264

● : Line up
▲ : To be discontinued

DTIU

Profiling and undercutting (for high precision)



P	Steel	★	☆	☆									
M	Stainless	★	☆	★									
K	Cast iron	★		☆									
N	Non-ferrous												
S	Superalloys	★	☆										
H	Hard materials												

★ : First choice
☆ : Second choice

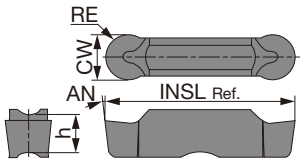
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated												INSL (in)	h (in)
					AH7025	AH725	GH130											
DTIU300-150	3	3	0.118	0.059	●	●	●										0.787	0.197
DTIU400-200	4	4	0.157	0.079	●	●	●										0.787	0.197
DTIU500-250	5	5	0.197	0.098	●	●	●										0.984	0.217
DTIU600-300	6	6	0.236	0.118	●	●	●										0.984	0.217

● : Line up

Reference pages: Toolholders → F171 - F177, Standard cutting conditions → F192

DTA

Aluminum wheel machining (for high precision)



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

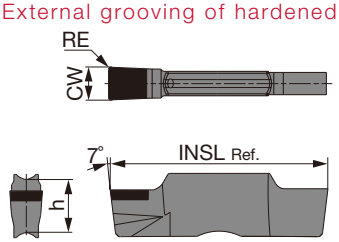
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Uncoated TH10	INSL (in)	h (in)	AN
DTA600-300	6	6	0.236	0.118	●	0.984	0.217	7°
DTA800-400	8	8	0.315	0.157	●	1.181	0.264	10°

● : Line up

SGN

External grooving of hardened steel



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	CBN BX360	INSL (in)	h (in)
SGN200-020	2	2	0.079	0.008	●	0.787	0.197
SGN300-020	3	3	0.118	0.008	●	0.787	0.197
SGN400-020	4	4	0.157	0.008	●	0.787	0.197

● : Line up

Reference pages: Toolholders → F171 - F177, Standard cutting conditions → F192

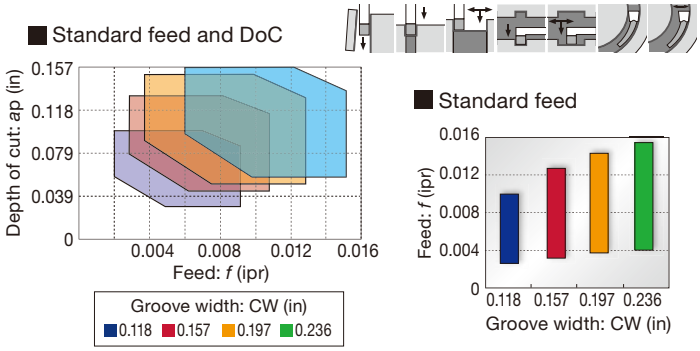
Face grooving and turning

DTX type (2 corners)

F178 page

Multi-functional type

Well balanced sharpness and strength
Multi-functional insert
CW = 0.118" - 0.236"



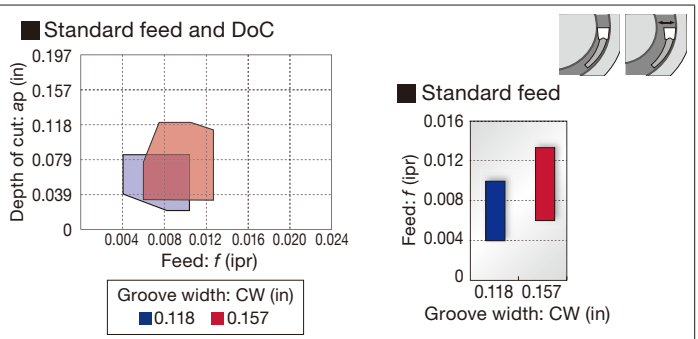
DTF type (2 corners)

First choice

F178 page

1st choice for face grooving

Unique chipbreaker makes chips shorter
Molded and ground insert available
CW = 0.118" - 0.157"

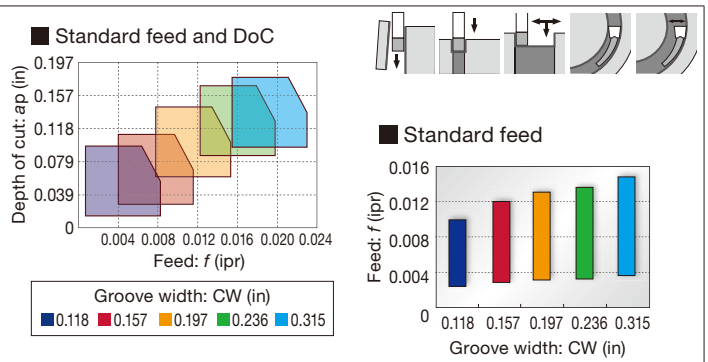


DTM type (2 corners)

F179 page

General purpose

1st choice for grooving and turning
Suitable for light to medium cutting
Excellent chip control in machining steel, alloy steel, stainless steel, and heat-resistant alloy
CW = 0.118" - 0.315"

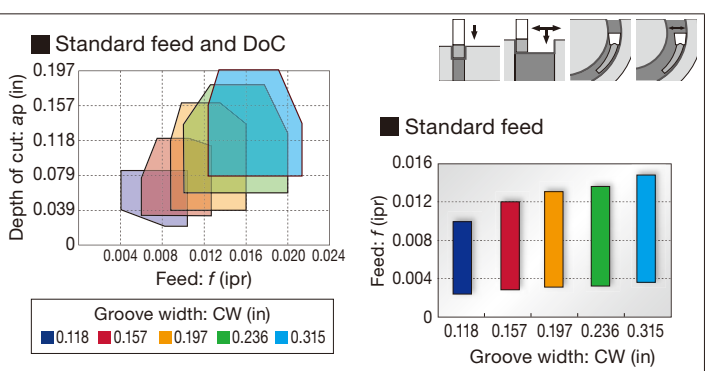


DTE type (2 corners)

F179, F180 page

General purpose

Unique chipbreaker makes chips shorter
Molded and ground inserts available
CW = 0.118" - 0.315"



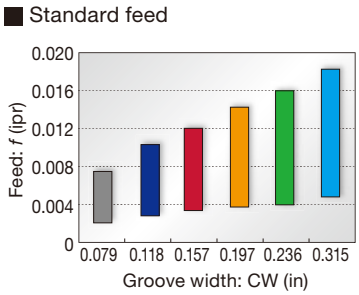
Grooving

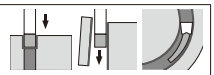
DGM type (2 corners) SGM type (1 corner)

F181, F182 page

1st choice for grooving and parting

Smooth chip evacuation
Well-designed edge with high strength
Handed insert available
CW = 0.079" - 0.315"



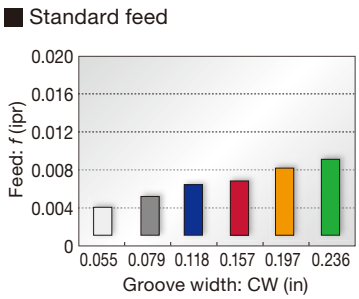


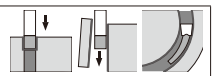
DGS type (2 corners) SGS type (1 corner)

F183, F184 page

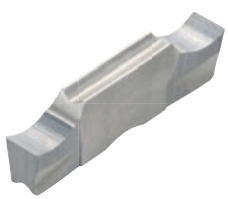
Lower cutting force and superior sharpness

Unique-designed edge and chipbreaker
Handed insert available
CW = 0.055" - 0.236"





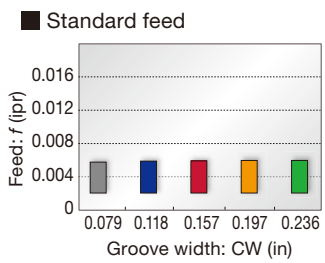
DGG type (2 corners)

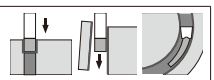


F184 page

For non-ferrous materials and titanium

Chipbreaker with low cutting force
Sharp cutting edge that prevents vibration and delivers fine surface finish
CW = 0.079" - 0.236"



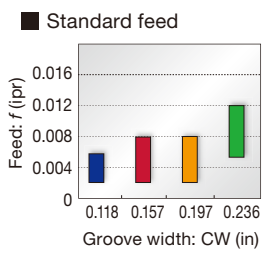


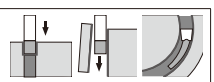
DGL type (2 corners)

F185 page

1st choice for mild steel

Chipbreaker with excellent chip control at low feed
Suitable for mild steel that often has difficulties with chip control
CW = 0.118" - 0.236"





Profiling and undercutting

DTR type (2 corners)

Molded

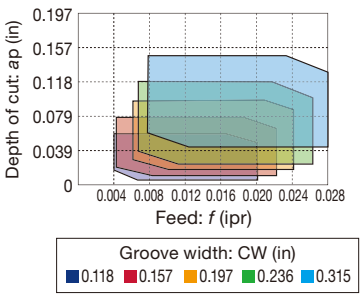
Ground

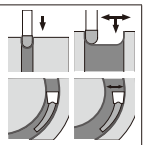
F185, F186 page

Full radius type

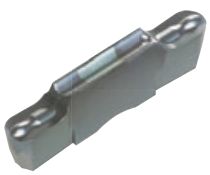
Excellent chip control
Molded and ground inserts available
CW = 0.118" - 0.315"

Standard feed and DoC





DTIU type (2 corners)

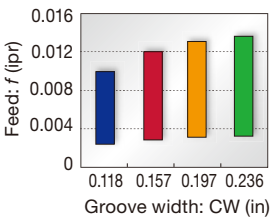


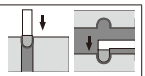
F186 page

Full radius type

Excellent chip control
For undercutting
CW = 0.118" - 0.236"

Standard feed and DoC





Aluminum wheel machining

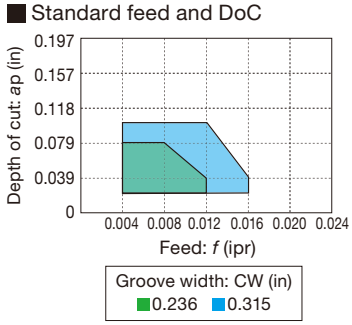
DTA type (2 corners)

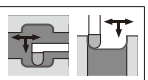
F187 page

Full radius type

Excellent chip control
For aluminum wheel profiling
Ground insert
CW = 0.236" - 0.315"

Standard feed and DoC





External grooving of hardened steel

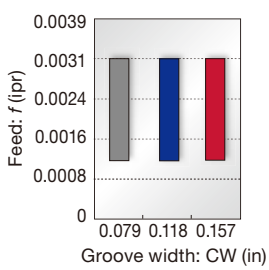
SGN-CBN type (1 corner)

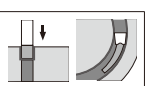
F187 page

For hardened steel cutting

Optimum cutting edge shape for grooving of hardened steels
High tolerance width for finishing
CW = 0.079" - 0.157"
(CW = ±0.001")

Standard feed



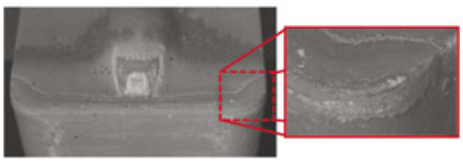


AH7025 Cutting performance

First choice grade for grooving
AH7025 grade: Tungaloy's unique coating technology for drastically improved reliability

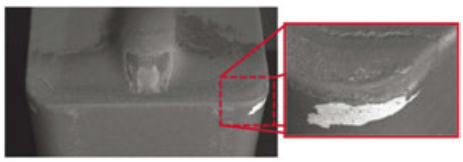
Tool life comparison

AH7025



Tool wear after 60 grooves

Conventional grade



Tool wear after 30 grooves

P Alloy steel (4140)

Insert	: DTE3-040 AH7025
Cutting speed	: *Vc* = 492 sfm
Feed	: *f* = 0.007 ipr
Groove depth	: 0.669"
Machining	: External grooving
Coolant	: Wet

AH7025 provides stability, while preventing coating from peeling off even after machining twice the number of passes compared to the conventional grade.

→ **The combination of Nano-multi-layered AlTiN Coating with high Al content and tough substrate provides highly efficient machining in various grooving operations.**

Grades

AH7025 P M K S

- First choice for various applications
- New PVD coating with high Al content provides excellent adhesion strength
- Improved wear and chipping resistance

AH725 P M S

- Recommended for various applications
- Newly developed coating with well controlled crystal structure and fracture resistance
- Improved adhesion strength

T515 K

- First recommended grade for cast iron
- Excellent wear resistance in high-speed machining

T9225 P

- Suitable for steel machining at high speeds
- New CVD coating and substrate deliver an outstanding balance of wear and chipping resistance

NS9530 P

- Advanced cermet for finish cutting of steel
- Innovative grade with incredible fracture and high wear resistance

GH130 P M K

- Recommended for interrupted machining
- TiCNO PVD coating layer with high wear resistance
- High hardness wear resistance

AH905 S

- Remarkable for machining of heat resistant alloys
- Exclusive coating layer improves adhesion strength and wear resistance

KS05F N S

- Recommended for non-ferrous materials and titanium

TH10 N

- Recommended for non-ferrous materials

BX360 H

- Suitable for hardened steel machining
- Ideal balance of wear and chipping resistance due to the optimum CBN content and grain size

STANDARD CUTTING CONDITIONS

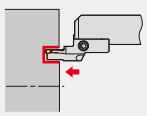
ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 4135, etc.	< 300 HB	First choice	AH7025, AH725	164 - 591
		< 300 HB	Priority for wear resistance	T9225	262 - 984
		< 300 HB	Priority for impact resistance	GH130	164 - 394
		< 300 HB	Priority for surface finish	NS9530	262 - 722
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	< 200 HB	First choice	AH7025, AH725	164 - 394
		< 200 HB	Priority for impact resistance	GH130	164 - 394
K	Gray cast iron No.250B, No.300B, etc.	-	First choice	T515, AH7025	164 - 591
		-	Priority for impact resistance	GH130	164 - 591
	Ductile cast iron 60-40-18, 60-55-06, etc.	-	First choice	T515, AH7025	164 - 394
		-	Priority for impact resistance	GH130	164 - 394
N	Aluminum alloys Si < 12%	-	First choice	TH10	328 - 1640
		-	First choice	KS05F	328 - 1969
S	Superalloys Inconel 718, etc.	< HRC 40	First choice	AH7025	66 - 197
		< HRC 40	Priority for wear resistance	AH905	66 - 262
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	First choice	AH905	66 - 262
		< HRC 40	Priority for impact resistance	AH7025, AH725	66 - 262
		< HRC 40	Priority for surface finish	KS05F	66 - 197
H	Hardened steel 4137, etc.	> HRC 50	First choice	BX360	262 - 492

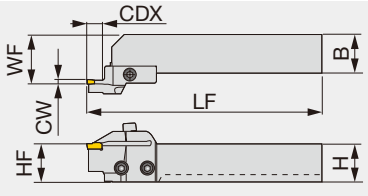
*See page **F189 - F190** for feed: *f* (ipr).

MEMO

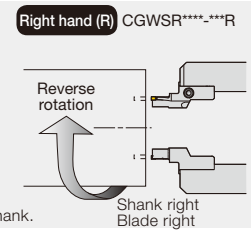
#S/D##R/L+CGWSR/L

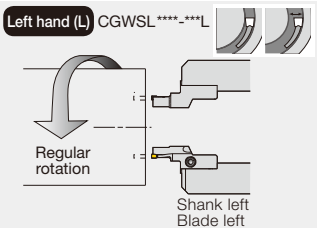
Blade for face grooving and turning toolholders (CGWSR/L-#S/D, CGWTR/L-#S/D)





Right hand (R) shown. Dashed line: 20mm square shank.





Inch	CW	DAXN	DAXX	CDX	H	B	LF	HF	WF	Insert	Shank	Torque
30S3040R/L	0.118	1.181	1.575	0.393	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*30, GE30-AL	CGWSR/L...	3.69
30S4050R/L	0.118	1.575	1.696	0.393	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*30, GE30-AL	CGWSR/L...	3.69
30S5065R/L	0.118	1.696	2.559	0.393	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*30, GE30-AL	CGWSR/L...	3.69
30S6590R/L	0.118	2.559	3.543	0.393	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*30, GE30-AL	CGWSR/L...	3.69
30S90150R/L	0.118	3.543	5.906	0.393	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*30, GE30-AL	CGWSR/L...	3.69
30S150500R/L	0.118	5.906	19.685	0.393	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*30, GE30-AL	CGWSR/L...	3.69
40S3545R/L	0.157	1.378	1.772	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*40, GE40-AL	CGWSR/L...	3.69
40S4555R/L	0.157	1.772	2.165	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*40, GE40-AL	CGWSR/L...	3.69
40S5580R/L	0.157	2.165	3.150	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*40, GE40-AL	CGWSR/L...	3.69
40S80140R/L	0.157	3.150	5.512	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*40, GE40-AL	CGWSR/L...	3.69
40S140500R/L	0.157	5.512	19.685	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*40, GE40-AL	CGWSR/L...	3.69
40D3545R/L	0.157	1.378	1.772	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*40, GE40-AL	CGWSR/L...	3.69
40D4555R/L	0.157	1.772	2.165	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*40, GE40-AL	CGWSR/L...	3.69
40D5580R/L	0.157	2.165	3.150	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*40, GE40-AL	CGWSR/L...	3.69
40D80140R/L	0.157	3.150	5.512	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*40, GE40-AL	CGWSR/L...	3.69
40D140500R/L	0.157	5.512	19.685	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*40, GE40-AL	CGWSR/L...	3.69
50S3545R/L	0.197	1.378	1.772	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*50	CGWSR/L...	3.69
50S4555R/L	0.197	1.772	2.165	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*50	CGWSR/L...	3.69
50S5575R/L	0.197	2.165	2.953	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*50	CGWSR/L...	3.69
50S75130R/L	0.197	2.953	5.118	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*50	CGWSR/L...	3.69
50S130500R/L	0.197	5.118	19.685	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*50	CGWSR/L...	3.69
50D3545R/L	0.197	1.378	1.772	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*50	CGWSR/L...	3.69
50D4555R/L	0.197	1.772	2.165	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*50	CGWSR/L...	3.69
50D5575R/L	0.197	2.165	2.953	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*50	CGWSR/L...	3.69
50D75130R/L	0.197	2.953	5.118	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*50	CGWSR/L...	3.69
50D130500R/L	0.197	5.118	19.685	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*50	CGWSR/L...	3.69

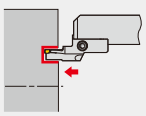
Toolholders are in stock with the designations of: a set of shank and blade; a shank; a blade. Combining the designations of a blade and a shank will make the designation of a set.
Please check the stock and place an order with the designation of a set or a shank+a blade.
Use right-hand blades (CGWSR～) with right-hand shanks ～(R); and left-hand blades (CGWSL～) with left-hand shanks (～L).
Torque: Recommended clamping torque: lbs·ft

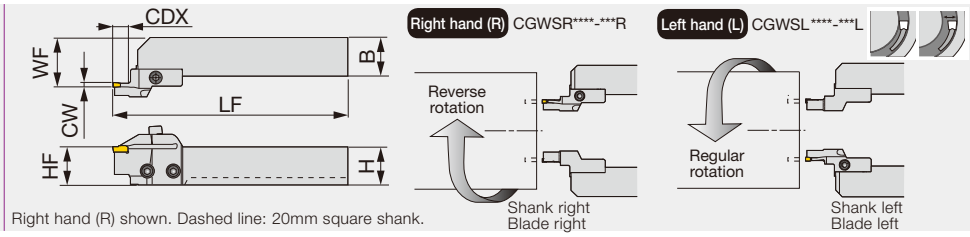
SPARE PARTS

Designation	Clamping screw	Blade screw	Wrench
30S..., 40S...	CHHM5-18	CSHB-6	P-4
40D...	CM5X0.8X16	CSHB-6	P-4
50S...	CHHM5-18	CSHB-6	P-4
50D...	CM5X0.8X16	CSHB-6	P-4

Reference pages: Inserts → F200 - F202, Standard cutting conditions → F205

Blade for face grooving and turning toolholders (CGWSR/L-#S/D, CGWTR/L-#S/D)





Right hand (R) shown. Dashed line: 20mm square shank.

Metric	CW	DAXN	DAXX	CDX	H	B	LF	HF	WF	Insert	Shank	Torque
30S3040R/L	3	30	40	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
30S4050R/L	3	40	50	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
30S5065R/L	3	50	65	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
30S6590R/L	3	65	90	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
30S90150R/L	3	90	150	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
30S150500R/L	3	150	500	10	20/25	20/25	152.5	20/25	27/32	G*30, GE30-AL	CGWSR/L...	5
40S3545R/L	4	35	45	14	20/25	20/25	152.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40S4555R/L	4	45	55	14	20/25	20/25	152.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40S5580R/L	4	55	80	14	20/25	20/25	152.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40S80140R/L	4	80	140	14	20/25	20/25	152.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40S140500R/L	4	140	500	14	20/25	20/25	152.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40D3545R/L	4	35	45	22	20/25	20/25	160.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40D4555R/L	4	45	55	22	20/25	20/25	160.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40D5580R/L	4	55	80	22	20/25	20/25	160.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40D80140R/L	4	80	140	22	20/25	20/25	160.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
40D140500R/L	4	140	500	22	20/25	20/25	160.5	20/25	27/32	G*40, GE40-AL	CGWSR/L...	5
50S3545R/L	5	35	45	14	20/25	20/25	152.5	20/25	27/32	G*50	CGWSR/L...	5
50S4555R/L	5	45	55	14	20/25	20/25	152.5	20/25	27/32	G*50	CGWSR/L...	5
50S5575R/L	5	55	75	14	20/25	20/25	152.5	20/25	27/32	G*50	CGWSR/L...	5
50S75130R/L	5	75	130	14	20/25	20/25	152.5	20/25	27/32	G*50	CGWSR/L...	5
50S130500R/L	5	130	500	14	20/25	20/25	152.5	20/25	27/32	G*50	CGWSR/L...	5
50D3545R/L	5	35	45	22	20/25	20/25	160.5	20/25	27/32	G*50	CGWSR/L...	5
50D4555R/L	5	45	55	22	20/25	20/25	160.5	20/25	27/32	G*50	CGWSR/L...	5
50D5575R/L	5	55	75	22	20/25	20/25	160.5	20/25	27/32	G*50	CGWSR/L...	5
50D75130R/L	5	75	130	22	20/25	20/25	160.5	20/25	27/32	G*50	CGWSR/L...	5
50D130500R/L	5	130	500	22	20/25	20/25	160.5	20/25	27/32	G*50	CGWSR/L...	5

Toolholders are in stock with the designations of: a set of shank and blade; a shank; a blade. Combining the designations of a blade and a shank will make the designation of a set.
Please check the stock and place an order with the designation of a set or a shank+a blade.
Use right-hand blades (CGWSR～) with right-hand shanks ～(R); and left-hand blades (CGWSL～) with left-hand shanks (～L).
Torque: Recommended clamping torque: N·m

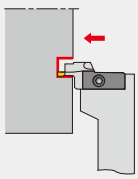
SPARE PARTS

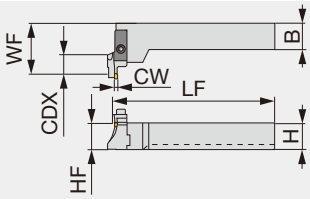


Designation	Clamping screw	Blade screw	Wrench
30S..., 40S...	CHHM5-18	CSHB-6	P-4
40D...	CM5X0.8X16	CSHB-6	P-4
50S...	CHHM5-18	CSHB-6	P-4
50D...	CM5X0.8X16	CSHB-6	P-4

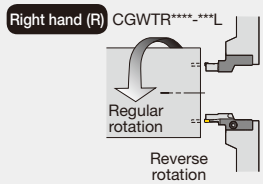
Reference pages: Inserts → F200 - F202, Standard cutting conditions → F205

Blade for face grooving and turning toolholders (CGWSR/L-#S/D, CGWTR/L-#S/D)

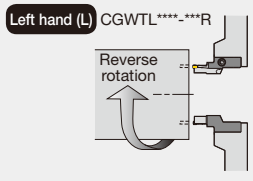




Right hand (R) shown. Dashed line: 20mm square shank.



Shank right
Blade left



Shank left
Blade right

Inch	CW	DAXN	DAXX	CDX	H	B	LF	HF	WF	Insert	Shank	Torque
30S3040R/L	0.118	1.181	1.575	0.393	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*30, GE30-AL	CGWTL/R...	3.69
30S4050R/L	0.118	1.575	1.696	0.393	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*30, GE30-AL	CGWTL/R...	3.69
30S5065R/L	0.118	1.696	2.559	0.393	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*30, GE30-AL	CGWTL/R...	3.69
30S6590R/L	0.118	2.559	3.543	0.393	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*30, GE30-AL	CGWTL/R...	3.69
30S90150R/L	0.118	3.543	5.906	0.393	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*30, GE30-AL	CGWTL/R...	3.69
30S150500R/L	0.118	5.906	19.685	0.393	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*30, GE30-AL	CGWTL/R...	3.69
40S3545R/L	0.157	1.378	1.772	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*40, GE40-AL	CGWTL/R...	3.69
40S4555R/L	0.157	1.772	2.165	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*40, GE40-AL	CGWTL/R...	3.69
40S5580R/L	0.157	2.165	3.150	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*40, GE40-AL	CGWTL/R...	3.69
40S80140R/L	0.157	3.150	5.512	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*40, GE40-AL	CGWTL/R...	3.69
40S140500R/L	0.157	5.512	19.685	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*40, GE40-AL	CGWTL/R...	3.69
40D3545R/L	0.157	1.378	1.772	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*40, GE40-AL	CGWTL/R...	3.69
40D4555R/L	0.157	1.772	2.165	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*40, GE40-AL	CGWTL/R...	3.69
40D5580R/L	0.157	2.165	3.150	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*40, GE40-AL	CGWTL/R...	3.69
40D80140R/L	0.157	3.150	5.512	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*40, GE40-AL	CGWTL/R...	3.69
40D140500R/L	0.157	5.512	19.685	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*40, GE40-AL	CGWTL/R...	3.69
50S3545R/L	0.197	1.378	1.772	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*50	CGWTL/R...	3.69
50S4555R/L	0.197	1.772	2.165	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*50	CGWTL/R...	3.69
50S5575R/L	0.197	2.165	2.953	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*50	CGWTL/R...	3.69
50S75130R/L	0.197	2.953	5.118	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*50	CGWTL/R...	3.69
50S130500R/L	0.197	5.118	19.685	0.551	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.057	G*50	CGWTL/R...	3.69
50D3545R/L	0.197	1.378	1.772	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*50	CGWTL/R...	3.69
50D4555R/L	0.197	1.772	2.165	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*50	CGWTL/R...	3.69
50D5575R/L	0.197	2.165	2.953	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*50	CGWTL/R...	3.69
50D75130R/L	0.197	2.953	5.118	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*50	CGWTL/R...	3.69
50D130500R/L	0.197	5.118	19.685	0.866	0.750/1.0	0.750/1.0	5.906	0.750/1.0	2.372	G*50	CGWTL/R...	3.69

Toolholders are in stock with the designations of: a set of shank and blade; a shank; a blade. Combining the designations of a blade and a shank will make the designation of a set.
Please check the stock and place an order with the designation of a set or a shank+a blade.
Use right-hand shanks (CGWTR～) with left-hand blades (～L); and left-hand shanks (CGWTL～) with right-hand blades (～R).
Torque: Recommended clamping torque: lbs·ft

SPARE PARTS

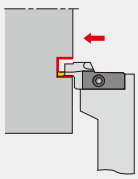
Designation	Clamping screw	Blade screw	Wrench
30S..., 40S...	CHHM5-18	CSHB-6	P-4
40D...	CM5X0.8X16	CSHB-6	P-4
50S...	CHHM5-18	CSHB-6	P-4
50D...	CM5X0.8X16	CSHB-6	P-4

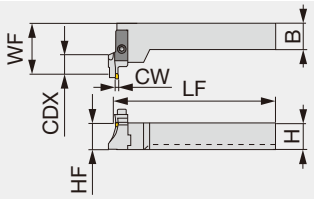
External
Internal
Face
Parting
Others

Reference pages: Inserts → F200 - F202, Standard cutting conditions → F205

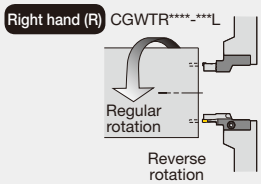
MY-T SERIES
#S/D##R/L+CGWTR/L

Blade for face grooving and turning toolholders (CGWSR/L-#S/D, CGWTR/L-#S/D)

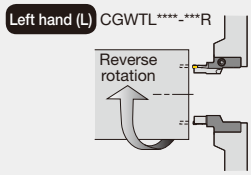




Right hand (R) shown. Dashed line: 20mm square shank.



Shank right
Blade left



Shank left
Blade right

Metric	CW	DAXN	DAXX	CDX	H	B	LF	HF	WF	Insert	Shank	Torque
30S3040R/L	3	30	40	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
30S4050R/L	3	40	50	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
30S5065R/L	3	50	65	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
30S6590R/L	3	65	90	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
30S90150R/L	3	90	150	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
30S150500R/L	3	150	500	10	20/25	20/25	150	20/25	52.25	G*30, GE30-AL	CGWTL/R...	5
40S3545R/L	4	35	45	14	20/25	20/25	150	20/25	52.25	G*40, GE40-AL	CGWTL/R...	5
40S4555R/L	4	45	55	14	20/25	20/25	150	20/25	52.25	G*40, GE40-AL	CGWTL/R...	5
40S5580R/L	4	55	80	14	20/25	20/25	150	20/25	52.25	G*40, GE40-AL	CGWTL/R...	5
40S80140R/L	4	80	140	14	20/25	20/25	150	20/25	52.25	G*40, GE40-AL	CGWTL/R...	5
40S140500R/L	4	140	500	14	20/25	20/25	150	20/25	52.25	G*40, GE40-AL	CGWTL/R...	5
40D3545R/L	4	35	45	22	20/25	20/25	150	20/25	60.25	G*40, GE40-AL	CGWTL/R...	5
40D4555R/L	4	45	55	22	20/25	20/25	150	20/25	60.25	G*40, GE40-AL	CGWTL/R...	5
40D5580R/L	4	55	80	22	20/25	20/25	150	20/25	60.25	G*40, GE40-AL	CGWTL/R...	5
40D80140R/L	4	80	140	22	20/25	20/25	150	20/25	60.25	G*40, GE40-AL	CGWTL/R...	5
40D140500R/L	4	140	500	22	20/25	20/25	150	20/25	60.25	G*40, GE40-AL	CGWTL/R...	5
50S3545R/L	5	35	45	14	20/25	20/25	150	20/25	52.25	G*50	CGWTL/R...	5
50S4555R/L	5	45	55	14	20/25	20/25	150	20/25	52.25	G*50	CGWTL/R...	5
50S5575R/L	5	55	75	14	20/25	20/25	150	20/25	52.25	G*50	CGWTL/R...	5
50S75130R/L	5	75	130	14	20/25	20/25	150	20/25	52.25	G*50	CGWTL/R...	5
50S130500R/L	5	130	500	14	20/25	20/25	150	20/25	52.25	G*50	CGWTL/R...	5
50D3545R/L	5	35	45	22	20/25	20/25	150	20/25	60.25	G*50	CGWTL/R...	5
50D4555R/L	5	45	55	22	20/25	20/25	150	20/25	60.25	G*50	CGWTL/R...	5
50D5575R/L	5	55	75	22	20/25	20/25	150	20/25	60.25	G*50	CGWTL/R...	5
50D75130R/L	5	75	130	22	20/25	20/25	150	20/25	60.25	G*50	CGWTL/R...	5
50D130500R/L	5	130	500	22	20/25	20/25	150	20/25	60.25	G*50	CGWTL/R...	5

Toolholders are in stock with the designations of: a set of shank and blade; a shank; a blade. Combining the designations of a blade and a shank will make the designation of a set.
Please check the stock and place an order with the designation of a set or a shank+a blade.
Use right-hand shanks (CGWTR～) with left-hand blades (～L); and left-hand shanks (CGWTL～) with right-hand blades (～R).
Torque: Recommended clamping torque: N·m

SPARE PARTS

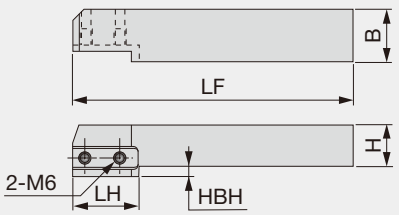


Designation	Clamping screw	Blade screw	Wrench
30S..., 40S...	CHHM5-18	CSHB-6	P-4
40D...	CM5X0.8X16	CSHB-6	P-4
50S...	CHHM5-18	CSHB-6	P-4
50D...	CM5X0.8X16	CSHB-6	P-4

Reference pages: Inserts → F200 - F202, Standard cutting conditions → F205

CGWSR/L

Shank for CGWSR/L-WG, -WG-L, -G, -CGD, -FL-G/TP, and -#S/D toolholders



Right hand (R) shown.

Inch	H	B	LF	LH	HBH
CGWSR/L12	0.750	0.750	5.400	1.310	0.250
CGWSR/L16	1.000	1.000	5.400	-	-

Metric	H	B	LF	LH	HBH
CGWSR/L2020	20	20	137	32.5	5
CGWSR/L2525	25	25	137	-	-

Note: Right hand tool holders (R) use right hand cartridges (R). Left hand tool holders (L) use left hand cartridges (L).

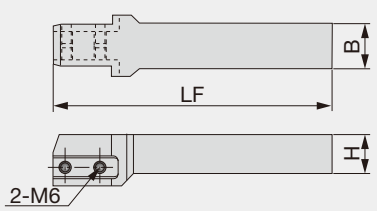
SPARE PARTS

Designation	Blade screw
CGWSR/L...	CSHB-6

MY-T SERIES

CGWSRL

Shank of toolholders. Vertical type with offset



Inch	H	B	LF
CGWSRL12	0.75	0.75	5.40
CGWSRL16	1.00	1.00	5.40

Note: Right (R) or Left (L) hand cartridges can be used in this toolholder

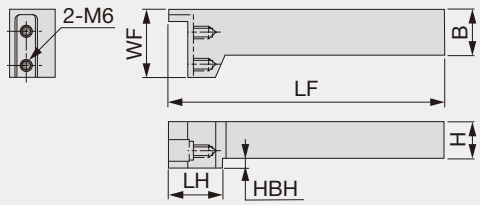
SPARE PARTS

Designation	Blade screw
CGWSRL...	CSHB-6

Reference pages: Inserts → F200 - F202, Standard cutting conditions → F205

CGWTR/L

Shank for CGWSR/L-WG, -WG-L, -G, -CGD, -FL-G/TP, and #S/D toolholders



Right hand (R) shown.

Inch	H	B	LF	LH	WF	HBH
CGWTR/L12	0.75	0.75	6.00	1.20	1.50	0.234
CGWTR/L16	1.00	1.00	6.00	-	1.50	-

Metric	H	B	LF	LH	WF	HBH
CGWTR/L2020	20	20	150	30.5	37	5
CGWTR/L2525	25	25	150	-	37	-

Note: Right hand tool holders (R) use left hand cartridges (L). Left hand tool holders (L) use right hand cartridges (R).

SPARE PARTS

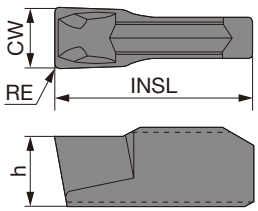
Designation	Blade screw
CGWTR/L...	CSHB-6

Reference pages: Inserts → F200 - F202, Standard cutting conditions → F205

INSERT

GE

For general grooving



P	Steel	★	☆	★	★			★		
M	Stainless	★		★	★					
K	Cast iron	☆		★	☆			☆		
N	Non-ferrous									
S	Superalloys			☆						
H	Hard materials									

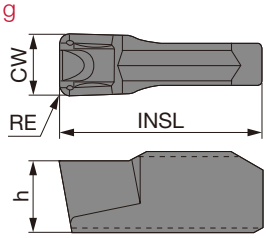
★ : First choice
☆ : Second choice

Designation	CW$^{+0.1}_{0}$ (mm)	CW$^{+0.004}_{0}$ (in)	RE (in)	Coated					Cermet				INSL (in)	h (in)
				T9225	T9125	AH120	GH730		NS9530					
GE20	2	0.079	0.008			●	●		●				0.394	0.138
GE30	3	0.118	0.008	●	▲	●	●		●				0.394	0.138
GE40	4	0.157	0.008	●	▲	●	●		●				0.394	0.157
GE50	5	0.197	0.008	●	▲	●	●		●				0.472	0.177

● : Line up
▲ : To be discontinued

GT

For turning



P	Steel	★	☆	★	★			★		
M	Stainless	★		★	★					
K	Cast iron	☆		★	☆			☆		
N	Non-ferrous									
S	Superalloys			☆						
H	Hard materials									

★ : First choice
☆ : Second choice

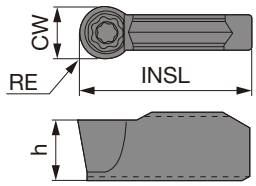
Designation	CW$^{+0.1}_{0}$ (mm)	CW$^{+0.004}_{0}$ (in)	RE (in)	Coated					Cermet				INSL (in)	h (in)
				T9225	T9125	AH120	GH730		NS9530					
GT30	3	0.118	0.016			●	●		●				0.394	0.138
GT40	4	0.157	0.016			●	●		●				0.394	0.157
GT50	5	0.197	0.016	●	▲	●	●		●				0.472	0.177

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F194 - F199, Standard cutting conditions → F205

GR

For profiling (full radius)



P	Steel	★	☆	★	★			★		
M	Stainless	★		★	★					
K	Cast iron	☆		★	☆			☆		
N	Non-ferrous									
S	Superalloys			☆						
H	Hard materials									

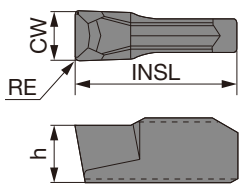
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated					Cermet					INSL (in)	h (in)
				T9225	T9125	AH120	GH730		NS9530						
GR30	3	0.118	0.059			●	●		●					0.394	0.138
GR40	4	0.157	0.079	●	▲	●	●		●					0.394	0.157
GR50	5	0.197	0.098	●	▲	●	●		●					0.472	0.177

● : Line up
▲ : To be discontinued

GF

For face grooving



P	Steel	★			★					
M	Stainless	★								
K	Cast iron	☆			☆					
N	Non-ferrous									
S	Superalloys									
H	Hard materials									

★ : First choice
☆ : Second choice

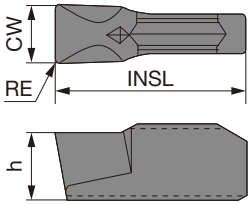
Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated			Cermet					INSL (in)	h (in)
				GH730			NS9530						
GF30	3	0.118	0.008	●			●					0.394	0.138
GF40	4	0.157	0.008	●			●					0.394	0.157
GF50	5	0.197	0.008	●			●					0.472	0.177

● : Line up

Reference pages: Toolholders → F194 - F199, Standard cutting conditions → F205

GN

For internal grooving



P	Steel	★	
M	Stainless	★	
K	Cast iron	☆	
N	Non-ferrous		
S	Superalloys		
H	Hard materials		

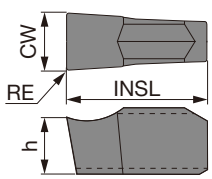
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated GH730	INSL (in)	h (in)
GN30	3	0.118	0.008	●	0.394	0.138
GN40	4	0.157	0.008	●	0.394	0.157
GN50	5	0.197	0.008	●	0.472	0.177

● : Line up

GE-AL

For aluminum and non-ferrous metal



P	Steel		
M	Stainless		
K	Cast iron		
N	Non-ferrous	★	
S	Superalloys		
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Uncoated KS05F	INSL (in)	h (in)
GE20-AL	2	0.079	0.008	●	0.394	0.138
GE30-AL	3	0.118	0.008	●	0.394	0.138
GE40-AL	4	0.157	0.008	●	0.394	0.157

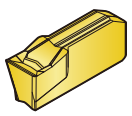
● : Line up

Reference pages: Toolholders → F194 - F199, Standard cutting conditions → F205

1 corner insert

Face grooving

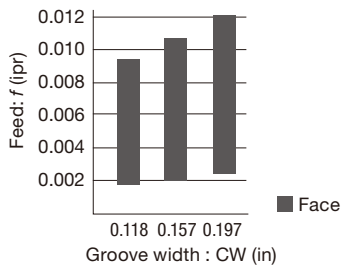
GF

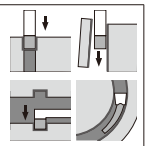


F201 page

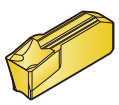
1st choice for face grooving
Low cutting force and good chip control for face grooving

CW = 0.118" - 0.197"





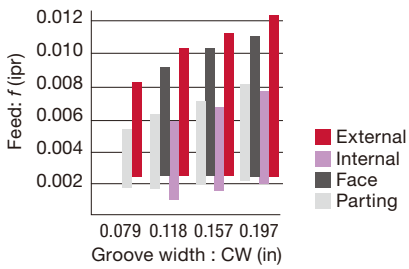
GE

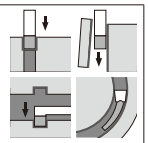


F200 page

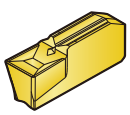
1st choice for external grooving and parting
Excellent chip control

CW = 0.079" - 0.197"





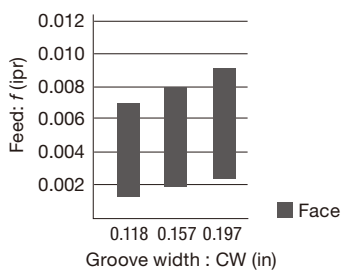
GN

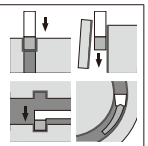


F202 page

1st choice for internal grooving
Low cutting force and good chip control for internal grooving

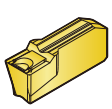
CW = 0.118" - 0.197"





External grooving and turning

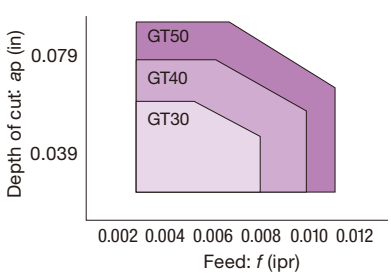
GT

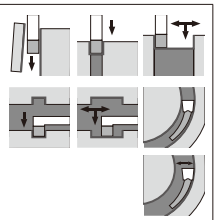


F200 page

1st choice for turning
Low cutting force and good chip control for traversing

CW = 0.118" - 0.197"

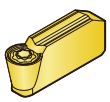




1 corner insert

Profiling

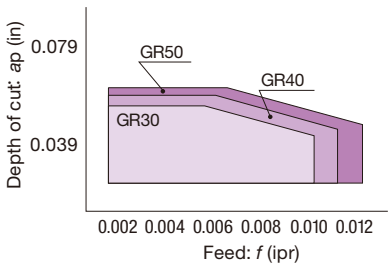
GR

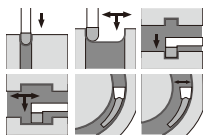


F201 page

Full radius type
Low cutting force and good chip control for profiling

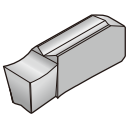
CW = 0.118" - 0.197"





For aluminum and non-ferrous metal

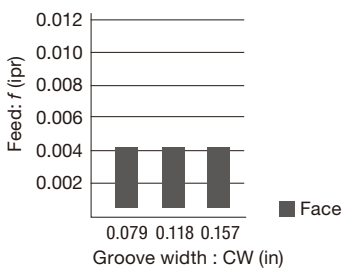
GE-AL

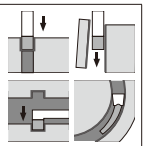


F202 page

Reduce cutting force and welding due to sharp chipbreaker

CW = 0.079" - 0.157"





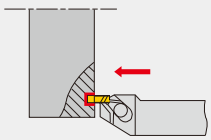
STANDARD CUTTING CONDITIONS

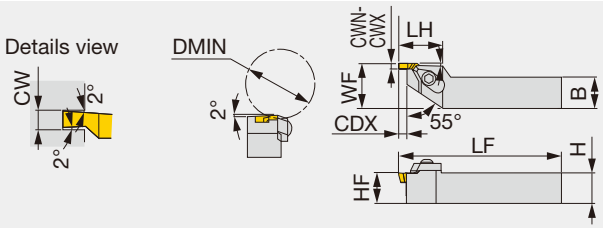
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)
P	Low carbon steel, Alloy steel (- HB150)	T9225	262 - 984
		NS9530	328 - 656
		GH730	164 - 591
	Medium carbon steel, Alloy steel (HB150 - 250)	T9225	262 - 722
		NS9530	262 - 591
		GH730	164 - 492
	High carbon steel, Alloy steel (HB250 -)	T9225	262 - 722
		NS9530	262 - 492
		GH730	164 - 394
M	Stainless steel	T9225	262 - 591
		GH730	164 - 394
K	Gray iron, Ductile cast iron	T9225	262 - 820
		GH730	164 - 591
N	Aluminum alloys, Non-ferrous metal	KS05F	656 - 984

1st choice for face grooving

Operation	Feed: *f* (ipr) Groove width: CW (in)		
	3 mm (0.118")	4 mm (0.157")	5 mm (0.197")
Face grooving (GE**)	0.0024 - 0.009	0.0024 - 0.009	0.0028 - 0.010
Face grooving (GF**)	0.0016 - 0.010	0.0020 - 0.010	0.0020 - 0.012
Traversing (GT**)	Depth of cut *ap* = 0.020 - 0.059 *f* = 0.0024 - 0.008	Depth of cut *ap* = 0.020 - 0.079 *f* = 0.0024 - 0.010	Depth of cut *ap* = 0.020 - 0.098 *f* = 0.0024 - 0.011
Traversing (GR**)	Depth of cut *ap* = 0.020 - 0.055 *f* = 0.002 - 0.010	Depth of cut *ap* = 0.020 - 0.059 *f* = 0.002 - 0.010	Depth of cut *ap* = 0.020 - 0.063 *f* = 0.002 - 0.012
Grooving for Aluminum alloys (GE**-AL)	0.0012 - 0.004	0.0012 - 0.004	-

For diameter compensation values in traversing, see page F111.
When vibration occurs in turning, please use the lower limit value in the above table.





Right hand (R) shown.

Metric	CWN	CWX	DMIN	CDX	H	B	LF	LH	HF	WF	Insert	Torque
GX-2525R/LF	1	4.5	55	1.5 - 6	25	25	150	35	25	32	XNL/R63...	5

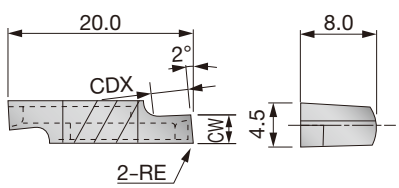
Use right-hand toolholders (GX-...RF) with left-hand inserts (XNL); and left-hand toolholders (GX-...LF)) with right-hand inserts (GBR).
Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamp set	Clamping screw	Shim	Shim screw	Wrench
GX-2525RF	CP81A	RT-1	SL-3R	BHM4-8	P-4
GX-2525LF	CP81A	RT-1	SL-3L	BHM4-8	P-4

INSERT

XNR/L



Left hand (L) shown.

		Cermet	Uncoated
P	Steel	★	★
M	Stainless		
K	Cast iron	☆	☆
N	Non-ferrous		
S	Superalloys		
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.002 (in)	CW±0.05 (mm)	RE (mm)	Cermet NS9530	Uncoated TH10	CDX (mm)
XNR6310-02	R	0.039	1	0.2	●	●	1.5
XNL6310-02	L	0.039	1	0.2	●	●	1.5
XNR6315-02	R	0.059	1.5	0.2	●	●	2.3
XNL6315-02	L	0.059	1.5	0.2	●	●	2.3
XNR6320-02	R	0.079	2	0.2	●	●	3
XNL6320-02	L	0.079	2	0.2	●	●	3
XNR6325-02	R	0.098	2.5	0.2	●	●	3.8
XNL6325-02	L	0.098	2.5	0.2	●	●	3.8
XNR6330-02	R	0.118	3	0.2	●	●	4.5
XNL6330-02	L	0.118	3	0.2	●	●	4.5
XNR6335-02	R	0.138	3.5	0.2	●	●	5.3
XNL6335-02	L	0.138	3.5	0.2	●	●	5.3
XNR6340-02	R	0.157	4	0.2	●	●	6
XNL6340-02	L	0.157	4	0.2	●	●	6
XNR6345-02	R	0.177	4.5	0.2	●	●	6
XNL6345-02	L	0.177	4.5	0.2	●	●	6

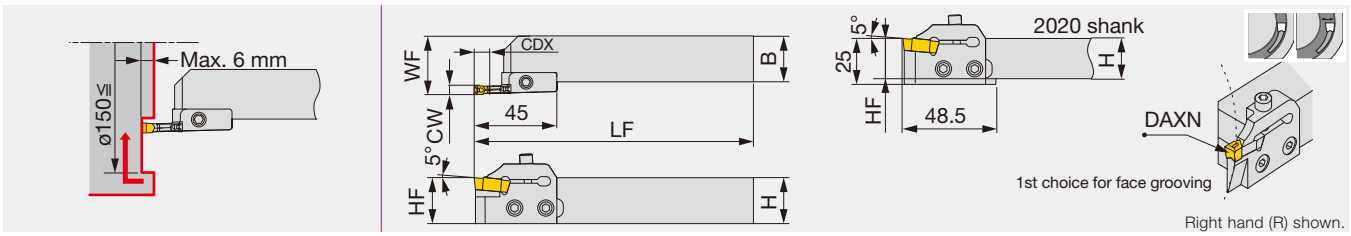
● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)		
				CW < 0.079"	CW = 0.079" - 0.157"	CW > 0.157"
P	Carbon steels	NS9530	262 - 656	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010
K	Cast irons, Light alloys	TH10	197 - 492	0.002 - 0.004	0.003 - 0.008	0.003 - 0.010

CGWSR/L-FLR/L5TP

Face grooving and turning toolholder



Metric	CW	DAXN	CDX	H	B	LF	HF	WF	Insert	Shank	Blade	Torque
CGWSR/L2020-FLR/L5TP	5	150	6	20	20	152	20	27	FLEX50R/L	CGWSR/L2020	FLR/L5TP	5
CGWSR/L2525-FLR/L5TP	5	150	6	25	25	152	25	32	FLEX50R/L	CGWSR/L2525	FLR/L5TP	5

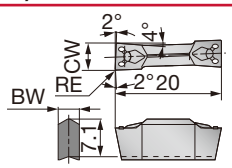
Toolholders are in stock with the designations of: a set of shank and blade; a shank; a blade. Combining the designations of a blade and a shank will make the designation of a set.
Please check the stock and place an order with the designation of a set or a shank+a blade.
Note: Use right-hand blades (CCWSR...) with right-hand shanks (FLR5TP); and left-hand blades (CGWSL...) with left-hand shanks (FLL5TP).
Torque: Recommended clamping torque: N·m

SPARE PARTS

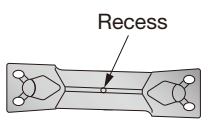
Designation	Clamping screw	Blade screw	Wrench
CGWSR/L***-FLR/L5TP	CHHM5-18	CSHB-6	P-4

INSERT

FLEX(R/L)



Right hand (R) shown.



To distinguish the insert hands, the V-shape surface (top surface) of a left-hand insert has a recess. (not of a right-hand insert)

		Coated			Carbide		Uncoated		
		T9225	T9125		NS9530		UX30		
P	Steel	★	☆		★		★		
M	Stainless	★					★		
K	Cast iron	☆			☆				
N	Non-ferrous								
S	Superalloys								
H	Hard materials								

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.002 (in)	CW±0.05 (mm)	RE (mm)	Coated T9225	Coated T9125	Carbide NS9530	Uncoated UX30	BW (mm)
FLEX30R	R	0.118	3	0.4			●		2.2
FLEX30L	L	0.118	3	0.4			●		2.2
FLEX40R	R	0.157	4	0.4			●		3.1
FLEX40L	L	0.157	4	0.4			●		3.1
FLEX50R	R	0.197	5	0.4	●	▲	●	●	4
FLEX50L	L	0.197	5	0.4	●	▲	●	●	4

● : Line up
▲ : To be discontinued

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) Grooving	Feed: *f* (ipr) Turning
P	Carbon steel	T9225	262 - 984	0.002 - 0.010	0.004 - 0.012
		NS9530	262 - 656	0.002 - 0.010	0.004 - 0.012
		UX30	197 - 492	0.002 - 0.010	0.004 - 0.012

CGP

External deep grooving and parting blade

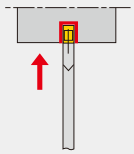


Fig.1

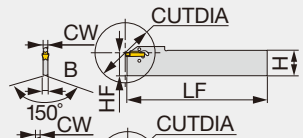
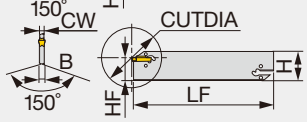


Fig.2



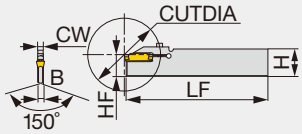


Fig.3

Inch	CW (in)	CW (mm)	Seat size	CUTDIA	H	B	LF	HF	Fig.	Torque
CGP26-1.4S	0.055	1.4	1	1.024	1.024	0.039	5.906	0.843	1	-
CGP32-1.4D	0.055	1.4	1	1.024	1.260	0.039	5.906	0.976	2	-
CGP26-2S	0.079	2	2	1.575	1.024	0.071	5.906	0.843	1	-
CGP32-2D	0.079	2	2	1.969	1.260	0.071	5.906	0.976	2	-
CGP26-3S	0.118	3	3	1.969	1.024	0.094	5.906	0.843	1	-
CGP32-3D	0.118	3	3	3.937	1.260	0.094	5.906	0.976	2	-
CGP26-4S	0.157	4	4	3.150	1.024	0.126	5.906	0.843	1	-
CGP32-4D	0.157	4	4	3.937	1.260	0.126	5.906	0.980	2	-
CGP45-4D	0.157	4	4	4.724	1.772	0.126	5.906	1.500	2	-
CGP32-5D	0.197	5	5	4.724	1.260	0.157	5.906	0.980	2	-
CGP32-6D	0.236	6	6	4.724	1.260	0.205	5.906	0.980	2	-
CGP32-8S-CL	0.315	8	8	3.150	1.260	0.244	5.906	0.980	3	2.21

When depth is deeper than (insert length - 0.059"), 1 corner type is recommended.
• CUTDIA: Max. parting dia.
Torque: Recommended clamping torque: lbs·ft

SPARE PARTS

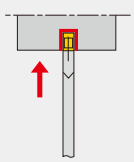


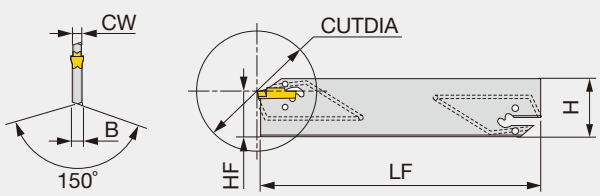
Designation	Clamping screw	Wrench	Wrench (Optional)
CGP**-1.4*	-	-	CRW23
CGP**-2/3/4/5/6	-	-	CRW33
CGP32-8S-CL	CM4X0.7X20-M0-A	P-3	-

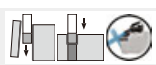
Wrench (CRW...) is not included. Please order it separately.

CGP32-CHP

External deep grooving and parting blade, with high pressure coolant capability







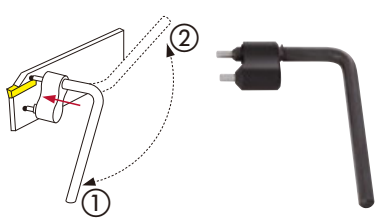
Inch	CW	Seat size	CUTDIA	H	B	LF	HF
CGP32-2D-CHP	0.079	2	1.968	1.260	0.071	5.906	0.976
CGP32-3D-CHP	0.118	3	3.937	1.260	0.094	5.906	0.976
CGP32-4D-CHP	0.157	4	3.937	1.260	0.126	5.906	0.980
CGP32-5D-CHP	0.197	5	4.724	1.260	0.157	5.906	0.980
CGP32-6D-CHP	0.236	6	4.724	1.260	0.205	5.906	0.980

When depth is deeper than (insert length - 0.059"), 1 corner type is recommended.
• CUTDIA Max. parting dia

SPARE PARTS


Designation	Sealing screw	Wrench (Optional)
CGP32-*D-CHP	SGC340	CRW33

Wrench (CRW...) is not included. Please order it separately.



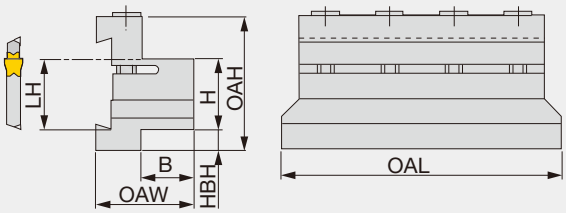
Caution

Newly developed clamp

Insert is clamped by the elastic deformation of upper jaw.
Low clamping stress increases the stability and tool life.

Reference pages: Inserts → F211 - F219, Standard cutting conditions → F224
Tool block → F210, K032

TUNGCUT
CTBF
Tool block for CGP blades (fixed clamp)



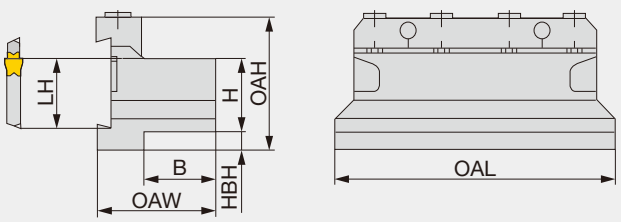
Right hand (R) shown.

Metric	H	B	OAL	LH	HBH	OAH	OAW	Blade (Optional)
CTBF25-45	25	22	110	38.1	25	66	40	CGP45...
CTBF32-45	32	28	120	38.1	18	66	45	CGP45...

SPARE PARTS

Designation	Clamping screw	Wrench
CTBF...	CM6X1.0X40-A	P-5

TUNGCUT
CTBU
Tool block for CGP blades



Right hand (R) shown.

Inch	H	B	OAL	LH	HBH	OAH	OAW	Blade (Optional)
CTBU12-26-U	0.750	1.690	3.386	0.843	0.354	1.690	1.496	CGP26...
CTBU16-26-U	1.000	1.770	4.331	0.843	0.197	1.770	1.654	CGP26...
CTBU12-32-U	0.750	1.970	3.937	0.976	0.512	1.970	1.496	CGP32...
CTBU16-32-U	1.000	1.970	4.331	0.976	0.315	1.970	1.654	CGP32...
CTBU20-32-U	1.250	2.130	4.331	0.976	0.197	2.130	1.890	CGP32...

Metric	H	B	OAL	LH	HBH	OAH	OAW	Blade (Optional)
CTBU20-26	20	21	86	21.4	9	43	38	CGP26...
CTBU25-26	25	23	110	21.4	5	45	43	CGP26...
CTBU20-32	20	19	100	24.8	13	50	38	CGP32...
CTBU25-32	25	23	110	24.8	8	50	42	CGP32...
CTBU32-32	32	29	110	24.8	5	54	48	CGP32...

Inch SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
CTBU12-26-U	CT-86	CM6X30-S	P-5
CTBU16-26-U	CT-100	CM6X30-S	P-5
CTBU12-32-U	CT-105	CM6X30-S	P-5
CTBU16-32-U	CT-110	CM6X30-S	P-5
CTBU20-32-U	CT-110	CM6X30-S	P-5

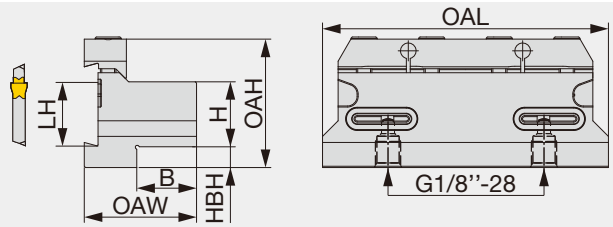
Metric SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
CTBU20-26	CT-86	CM6X30-S	P-5
CTBU25-26	CT-105	CM6X30-S	P-5
CTBU20-32	CT-100	CM6X30-S	P-5
CTBU25-32	CT-110	CM6X30-S	P-5
CTBU32-32	CT-110	CM6X30-S	P-5

Reference pages: Blade → F209

CTBU-CHP

Tool blocks for high pressure coolant



Inch	H	B	OAL	LH	HBH	OAH	OAW	Blade (Optional)
CTBU16-32-U-CHP	1.000	0.906	4.331	0.976	0.315	1.97	1.654	CGP32-*D-CHP

Applicable for 14 MPa coolant

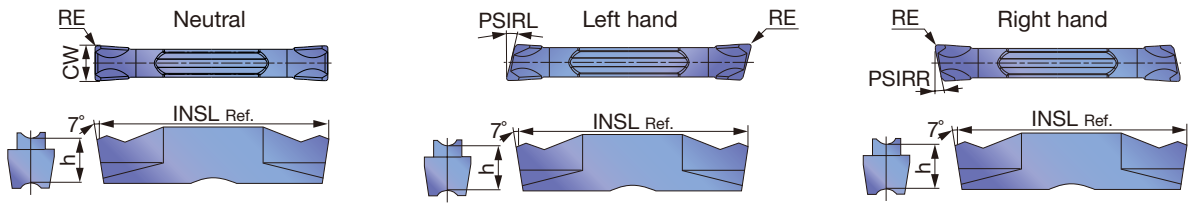
SPARE PARTS

Designation	Clamping screw	Clamp	Wrench	O-ring
CTBU16-32-U-CHP	SRM6X16DIN912-12.9	CT-110	P-5	OR14X2.5NN

INSERT

DGM

External grooving and parting, 2 corners



P	Steel	★	★	★	☆		☆			★		
M	Stainless	★		★	☆		★					
K	Cast iron	☆		★		☆	☆			☆		
N	Non-ferrous											
S	Superalloys			★	☆	★						
H	Hard materials											

★ : First choice
☆ : Second choice

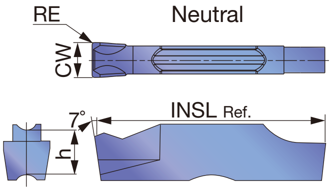
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet			INSL (in)	h (in)	PSIRL	PSIRR
						T9225	T9125	AH7025	AH725	AH905	GH130		NS9530						
DGM2-020	2	N	2	0.079	0.008	●	▲	●	●		●		●			0.787	0.197	0°	0°
DGM2-020-6R	2	R	2	0.079	0.008			●	●		●					0.787	0.197	0°	6°
DGM2-020-6L	2	L	2	0.079	0.008			●	●		●					0.787	0.197	6°	0°
DGM2-020-8R	2	R	2	0.079	0.008			●	●		●					0.787	0.197	0°	8°
DGM2-020-8L	2	L	2	0.079	0.008			●	●		●					0.787	0.197	8°	0°
DGM2-020-15R	2	R	2	0.079	0.008			●	●		●					0.787	0.197	0°	15°
DGM2-020-15L	2	L	2	0.079	0.008			●	●		●					0.787	0.197	15°	0°
DGM2-002-15R	2	R	2	0.079	0.0008				●		●					0.762	0.197	0°	15°
DGM2-002-15L	2	L	2	0.079	0.0008				●		●					0.762	0.197	15°	0°
DGM3-020	3	N	3	0.118	0.008	●	▲	●	●	●	●		●			0.787	0.197	0°	0°
DGM3-020-6R	3	R	3	0.118	0.008			●	●		●					0.787	0.197	0°	6°
DGM3-020-6L	3	L	3	0.118	0.008			●	●		●					0.787	0.197	6°	0°
DGM3-002-6R	3	R	3	0.118	0.0008				●		●					0.766	0.197	0°	6°
DGM3-002-6L	3	L	3	0.118	0.0008				●		●					0.766	0.197	6°	0°
DGM3-020-15R	3	R	3	0.118	0.008			●	●		●					0.787	0.197	0°	15°
DGM3-020-15L	3	L	3	0.118	0.008			●	●		●					0.787	0.197	15°	0°
DGM4-030	4	N	4	0.157	0.012	●	▲	●	●	●	●		●			0.787	0.197	0°	0°
DGM4-030-4R	4	R	4	0.157	0.012			●	●		●					0.787	0.197	0°	4°
DGM4-030-4L	4	L	4	0.157	0.012			●	●		●					0.787	0.197	4°	0°
DGM4-030-15R	4	R	4	0.157	0.012			●	●		●					0.787	0.197	0°	15°
DGM4-030-15L	4	L	4	0.157	0.012			●	●		●					0.787	0.197	15°	0°
DGM5-030	5	N	5	0.197	0.012	●	▲	●	●	●	●		●			0.984	0.217	0°	0°
DGM5-030-4R	5	R	5	0.197	0.012			●	●		●					0.984	0.217	0°	4°
DGM6-030	6	N	6	0.236	0.012	●	▲	●	●	●	●					0.984	0.217	0°	0°
DGM8-040	8	N	8	0.315	0.016	●	▲	●	●		●					1.181	0.264	0°	0°

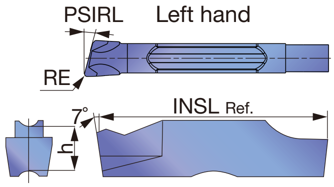
Reference pages: Toolholders → F209 - F210, Standard cutting conditions → F224

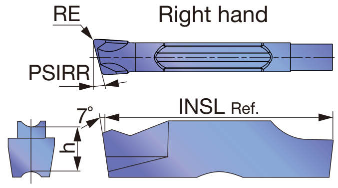
● : Line up ▲ : To be discontinued

SGM

External deep grooving and parting, 1corner







		AH7025	AH725	GH130
P	Steel	★	☆	☆
M	Stainless	★	☆	★
K	Cast iron	★		☆
N	Non-ferrous			
S	Superalloys	★	☆	
H	Hard materials			

★ : First choice
☆ : Second choice

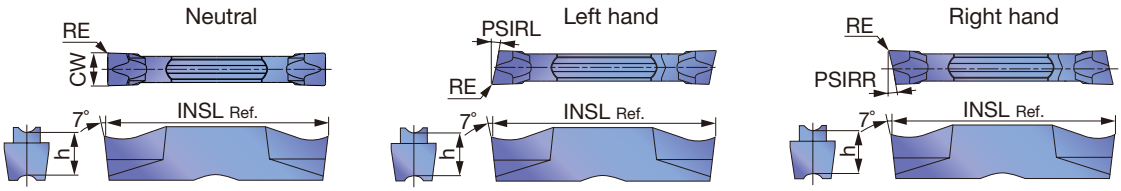
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	Coated AH725	Coated GH130	INSL (in)	h (in)	PSIRL	PSIRR
SGM2-020	2	N	2	0.079	0.008	●	●	●	0.787	0.197	0°	0°
SGM2-020-6R	2	R	2	0.079	0.008	●	●	●	0.787	0.197	0°	6°
SGM2-020-6L	2	L	2	0.079	0.008	●	●	●	0.787	0.197	6°	0°
SGM3-020	3	N	3	0.118	0.008	●	●	●	0.787	0.197	0°	0°
SGM3-020-6R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	6°
SGM3-020-6L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	6°	0°
SGM3-020-15R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	15°
SGM3-020-15L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	15°	0°
SGM4-030	4	N	4	0.157	0.012	●	●	●	0.787	0.197	0°	0°
SGM4-030-4R	4	R	4	0.157	0.012	●	●	●	0.787	0.197	0°	4°
SGM4-030-4L	4	L	4	0.157	0.012	●	●	●	0.787	0.197	4°	0°
SGM5-030	5	N	5	0.197	0.012	●	●	●	0.984	0.217	0°	0°
SGM6-030	6	N	6	0.236	0.012	●	●	●	0.984	0.217	0°	0°

● : Line up

Reference pages: Toolholders → F209 - F210, Standard cutting conditions → F224

DGS

External grooving and parting, 2 corners



P	Steel	★	★	★	☆	☆			★						
M	Stainless	★		★	☆	★									
K	Cast iron	☆		★		☆			☆						
N	Non-ferrous														
S	Superalloys			★	☆										
H	Hard materials														

★ : First choice
☆ : Second choice

Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated						Cermet				INSL (in)	h (in)	PSIRL	PSIRR
						T9225	T9125	AH7025	AH725	GH130		NS9530							
DGS1.4-016	1	N	1.4	0.055	0.006			●	●	●						0.630	0.169	0°	0°
DGS2-020	2	N	2	0.079	0.008	●	▲	●	●	●		●				0.787	0.197	0°	0°
DGS2-020-6R	2	R	2	0.079	0.008			●	●	●						0.787	0.197	0°	6°
DGS2-020-6L	2	L	2	0.079	0.008			●	●	●						0.787	0.197	6°	0°
DGS2-002-6R	2	R	2	0.079	0.0008				●	●						0.768	0.197	0°	6°
DGS2-002-6L	2	L	2	0.079	0.0008				●	●						0.768	0.197	6°	0°
DGS2-020-15R	2	R	2	0.079	0.008			●	●	●						0.787	0.197	0°	15°
DGS2-020-15L	2	L	2	0.079	0.008			●	●	●						0.787	0.197	15°	0°
DGS2-002-15R	2	R	2	0.079	0.0008				●	●						0.768	0.197	0°	15°
DGS2-002-15L	2	L	2	0.079	0.0008				●	●						0.768	0.197	15°	0°
DGS3-020	3	N	3	0.118	0.008	●	▲	●	●	●		●				0.787	0.197	0°	0°
DGS3-020-6R	3	R	3	0.118	0.008			●	●	●						0.787	0.197	0°	6°
DGS3-020-6L	3	L	3	0.118	0.008			●	●	●						0.787	0.197	6°	0°
DGS3-002-6R	3	R	3	0.118	0.0008				●	●						0.766	0.197	0°	6°
DGS3-002-6L	3	L	3	0.118	0.0008				●	●						0.766	0.197	6°	0°
DGS3-020-15R	3	R	3	0.118	0.008			●	●	●						0.787	0.197	0°	15°
DGS3-020-15L	3	L	3	0.118	0.008			●	●	●						0.787	0.197	15°	0°
DGS3-002-15R	3	R	3	0.118	0.0008				●	●						0.766	0.197	0°	15°
DGS3-002-15L	3	L	3	0.118	0.0008				●	●						0.766	0.197	15°	0°
DGS4-030	4	N	4	0.157	0.012	●	▲	●	●	●		●				0.787	0.197	0°	0°
DGS4-030-4R	4	R	4	0.157	0.012			●	●	●						0.787	0.197	0°	4°
DGS4-030-4L	4	L	4	0.157	0.012			●	●	●						0.787	0.197	4°	0°
DGS5-030	5	N	5	0.197	0.012	●	▲	●	●	●		●				0.984	0.217	0°	0°
DGS6-030	6	N	6	0.236	0.012	●	▲	●	●	●						0.984	0.217	0°	0°

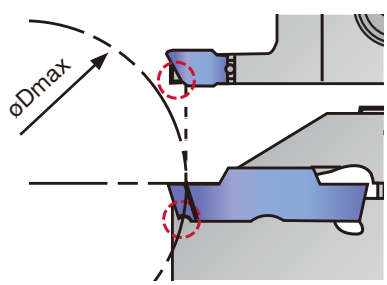
● : Line up
▲ : To be discontinued

Caution

The tool will interfere with the workpiece when grooving larger diameter than øDmax.

Designation	øDmax (in)
DGM2-002-15R/L	1.102
DGM3-002-15R/L	1.141
DGM4-030-15R/L	1.181
SGM3-020-15R/L	4.055

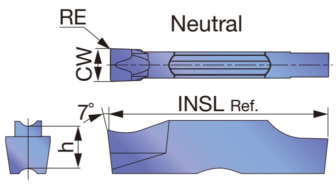
Designation	øDmax (in)
DGS2-002-15R/L	1.102
DGS3-002-15R/L	1.141
SGS3-020-15R/L	4.055
SGS3-002-15R/L	1.338

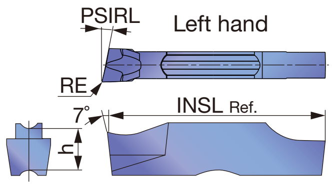


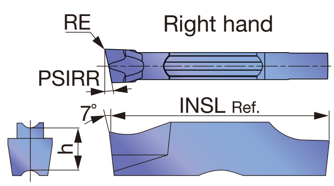
Reference pages: Toolholders → F209 - F210, Standard cutting conditions → F224

SGS

External deep grooving and parting, 1corner







		AH7025	AH725	GH130
P	Steel	★	☆	☆
M	Stainless	★	☆	★
K	Cast iron	★		☆
N	Non-ferrous			
S	Superalloys	★	☆	
H	Hard materials			

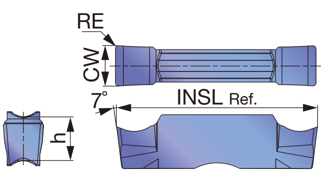
★ : First choice
☆ : Second choice

Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	Coated AH725	Coated GH130	INSL (in)	h (in)	PSIRL	PSIRR
SGS2-020	2	N	2	0.079	0.008	●	●	●	0.787	0.197	0°	0°
SGS2-020-6R	2	R	2	0.079	0.008	●	●	●	0.787	0.197	0°	6°
SGS2-020-6L	2	L	2	0.079	0.008	●	●	●	0.787	0.197	6°	0°
SGS2-020-15R	2	R	2	0.079	0.008	●	●	●	0.787	0.197	0°	15°
SGS2-020-15L	2	L	2	0.079	0.008	●	●	●	0.787	0.197	15°	0°
SGS3-020	3	N	3	0.118	0.008	●	●	●	0.787	0.197	0°	0°
SGS3-020-6R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	6°
SGS3-020-6L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	6°	0°
SGS3-002-6R	3	R	3	0.118	0.0008		●	●	0.780	0.197	0°	6°
SGS3-002-6L	3	L	3	0.118	0.0008		●	●	0.780	0.197	6°	0°
SGS3-020-15R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	15°
SGS3-020-15L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	15°	0°
SGS3-002-15R	3	R	3	0.118	0.0008		●	●	0.780	0.197	0°	15°
SGS3-002-15L	3	L	3	0.118	0.0008		●	●	0.780	0.197	15°	0°
SGS4-030	4	N	4	0.157	0.012	●	●	●	0.787	0.197	0°	0°
SGS5-030	5	N	5	0.197	0.012	●	●	●	0.984	0.217	0°	0°
SGS6-030	6	N	6	0.236	0.012	●	●	●	0.984	0.217	0°	0°

● : Line up

DGG

External grooving (for high precision)



		AH7025	NS9530	KS05F
P	Steel	★	★	
M	Stainless	★		
K	Cast iron	★	☆	☆
N	Non-ferrous			★
S	Superalloys	★		☆
H	Hard materials			

★ : First choice
☆ : Second choice

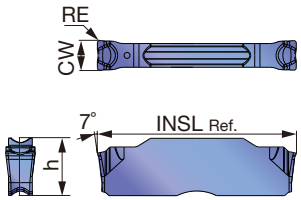
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated AH7025	Cermet NS9530	Uncoated KS05F	INSL (in)	h (in)
DGG200-020	2	2	0.079	0.008	●	●	●	0.787	0.197
DGG300-020	3	3	0.118	0.008	●	●	●	0.787	0.197
DGG400-040	4	4	0.157	0.016	●	●	●	0.787	0.197
DGG500-040	5	5	0.197	0.016	●	●	●	0.984	0.217
DGG600-040	6	6	0.236	0.016	●	●	●	0.984	0.217

● : Line up

Reference pages: Toolholders → F209 - F210, Standard cutting conditions → F224

DGL

External grooving and parting



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

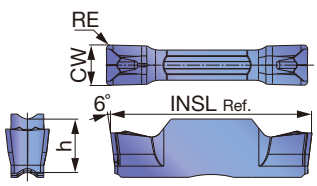
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	INSL (in)	h (in)
DGL3-025	3	3	0.118	0.010	●	0.787	0.197
DGL4-030	4	4	0.157	0.012	●	0.787	0.197
DGL5-030	5	5	0.197	0.012	●	0.984	0.217
DGL6-080	6	6	0.236	0.031	●	0.984	0.217

● : Line up

DTM

External face grooving and turning



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

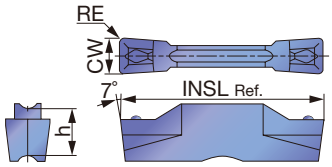
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	INSL (in)	h (in)
DTM3-030	3	3	0.118	0.012	●	0.787	0.197
DTM4-040	4	4	0.157	0.016	●	0.787	0.197
DTM4-080	4	4	0.157	0.031	●	0.787	0.197
DTM5-080	5	5	0.197	0.031	●	0.984	0.217
DTM6-080	6	6	0.236	0.031	●	0.984	0.217
DTM8-080	8	8	0.315	0.031	●	1.181	0.264

● : Line up

Reference pages: Toolholders → F209 - F210, Standard cutting conditions → F224

DTE

External face grooving and turning (for high precision)



P	Steel	★	★	★	☆	☆			★			
M	Stainless	★		★	☆	★						
K	Cast iron	☆		★		☆						
N	Non-ferrous											
S	Superalloys			★	☆							
H	Hard materials											

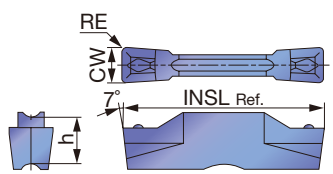
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated							Cermet				INSL (in)	h (in)
					T9225	T9125	AH7025	AH725	GH130			NS9530					
DTE265-015	3	2.65	0.104	0.006	●	▲	●	●	●			●				0.787	0.197
DTE300-020	3	3	0.118	0.008	●	▲	●	●	●			●				0.787	0.197
DTE300-040	3	3	0.118	0.016	●	▲	●	●	●			●				0.787	0.197
DTE315-015	3	3.15	0.124	0.006	●	▲	●	●	●			●				0.787	0.197
DTE400-040	4	4	0.157	0.016	●	▲	●	●	●			●				0.787	0.197
DTE400-080	4	4	0.157	0.031	●	▲	●	●	●			●				0.787	0.197
DTE415-015	4	4.15	0.163	0.006	●	▲	●	●	●			●				0.787	0.197
DTE478-055	5	4.78	0.188	0.022	●	▲	●	●	●			●				0.984	0.217
DTE500-040	5	5	0.197	0.016	●	▲	●	●	●			●				0.984	0.217
DTE500-080	5	5	0.197	0.031	●	▲	●	●	●			●				0.984	0.217
DTE515-015	5	5.15	0.203	0.006	●	▲	●	●	●							0.984	0.217
DTE600-080	6	6	0.236	0.031	●	▲	●	●	●							0.984	0.217
DTE600-120	6	6	0.236	0.047	●	▲	●	●	●							0.984	0.217
DTE800-080	8	8	0.315	0.031	●	▲	●	●	●							1.181	0.264
DTE800-120	8	8	0.315	0.047	●	▲	●	●	●							1.181	0.264

● : Line up
▲ : To be discontinued

DTE

External face grooving and turning



P	Steel	★	★		★	☆	☆			★		
M	Stainless	★			★	☆	★					
K	Cast iron	☆		★	★		☆					
N	Non-ferrous											
S	Superalloys				★	☆						
H	Hard materials											

★ : First choice
☆ : Second choice

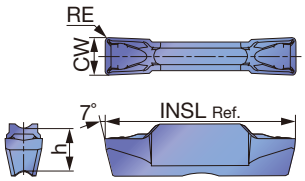
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet				INSL (in)	h (in)
					T9225	T9125	T515	AH7025	AH725	GH130		NS9530					
DTE3-040	3	3	0.118	0.016	●	▲	●	●	●	●		●				0.787	0.197
DTE4-040	4	4	0.157	0.016	●	▲	●	●	●	●		●				0.787	0.197
DTE5-040	5	5	0.197	0.016			●	●								0.984	0.217
DTE6-080	6	6	0.236	0.031			●	●								0.984	0.217

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F209 - F210, Standard cutting conditions → F224

DTX

External/Internal face grooving and turning



P	Steel	★	★	★	☆	☆			★			
M	Stainless	★		★	☆	★						
K	Cast iron	☆		★		☆			☆			
N	Non-ferrous											
S	Superalloys			★	☆							
H	Hard materials											

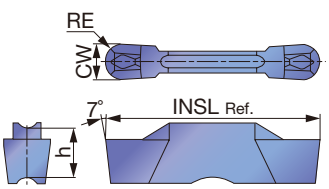
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated					Cermet					INSL (in)	h (in)
					T9225	T9125	AH7025	AH725	GH130	NS9530						
DTX3-030	3	3	0.118	0.012	●	▲	●	●	●	●					0.787	0.197
DTX4-040	4	4	0.157	0.016	●	▲	●	●	●	●					0.787	0.197
DTX5-040	5	5	0.197	0.016	●	▲	●	●	●	●					0.984	0.217
DTX6-080	6	6	0.236	0.031			●	●	●						0.984	0.197

● : Line up
▲ : To be discontinued

DTR

Profiling and undercutting (for high precision)



P	Steel	★	★	★	☆	☆			★			
M	Stainless	★		★	☆	★						
K	Cast iron	☆		★		☆			☆			
N	Non-ferrous											
S	Superalloys			★	☆							
H	Hard materials											

★ : First choice
☆ : Second choice

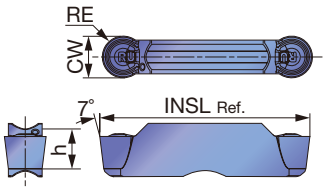
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated					Cermet					INSL (in)	h (in)
					T9225	T9125	AH7025	AH725	GH130	NS9530						
DTR300-150	3	3	0.118	0.059	●	▲	●	●	●	●					0.787	0.197
DTR400-200	4	4	0.157	0.079	●	▲	●	●	●	●					0.787	0.197
DTR478-239	5	4.78	0.188	0.094	●	▲	●	●	●	●					0.984	0.217
DTR500-250	5	5	0.197	0.098	●	▲	●	●	●	●					0.984	0.217
DTR600-300	6	6	0.236	0.118	●	▲	●	●	●						0.984	0.217

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F209 - F210, Standard cutting conditions → F224

DTR

Profiling and undercutting



P	Steel	★	★	★	☆		☆			★			
M	Stainless	★		★	☆		★						
K	Cast iron	☆		★		☆	☆			☆			
N	Non-ferrous												
S	Superalloys			★	☆	★							
H	Hard materials												

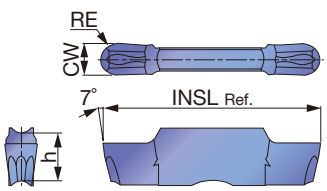
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated								Cermet				INSL (in)	h (in)
					T9225	T9125	AH7025	AH725	AH905	GH130			NS9530					
DTR3-150	3	3	0.118	0.059	●	▲	●	●	●	●			●				0.787	0.197
DTR4-200	4	4	0.157	0.079	●	▲	●	●	●	●			●				0.787	0.197
DTR5-250	5	5	0.197	0.098	●	▲	●	●	●	●			●				0.984	0.217
DTR6-300	6	6	0.236	0.118	●	▲	●	●		●							0.984	0.217
DTR8-400	8	8	0.315	0.157	●	▲	●	●		●							1.181	0.264

● : Line up
▲ : To be discontinued

DTIU

Profiling and undercutting (for high precision)



P	Steel	★	☆	☆									
M	Stainless	★	☆	★									
K	Cast iron	★		☆									
N	Non-ferrous												
S	Superalloys	★	☆										
H	Hard materials												

★ : First choice
☆ : Second choice

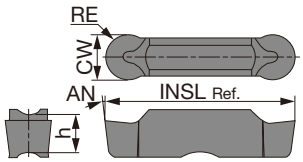
Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Coated												INSL (in)	h (in)
					AH7025	AH725	GH130											
DTIU300-150	3	3	0.118	0.059	●	●	●										0.787	0.197
DTIU400-200	4	4	0.157	0.079	●	●	●										0.787	0.197
DTIU500-250	5	5	0.197	0.098	●	●	●										0.984	0.217
DTIU600-300	6	6	0.236	0.118	●	●	●										0.984	0.217

● : Line up

Reference pages: Toolholders → F209 - F210, Standard cutting conditions → F224

DTA

Aluminum wheel machining (for high precision)



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

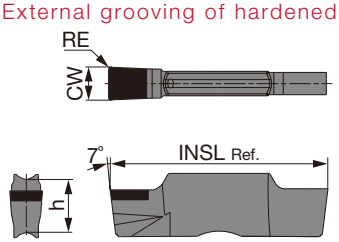
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.02 (mm)	CW±0.0008 (in)	RE (in)	Uncoated TH10	INSL (in)	h (in)	AN
DTA600-300	6	6	0.236	0.118	●	0.984	0.217	7°
DTA800-400	8	8	0.315	0.157	●	1.181	0.264	10°

● : Line up

SGN

External grooving of hardened steel



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	CBN BX360	INSL (in)	h (in)
SGN200-020	2	2	0.079	0.008	●	0.787	0.197
SGN300-020	3	3	0.118	0.008	●	0.787	0.197
SGN400-020	4	4	0.157	0.008	●	0.787	0.197

● : Line up

Reference pages: Toolholders → F209 - F210, Standard cutting conditions → F224

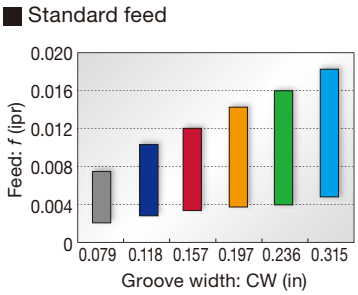
External grooving and parting

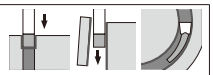
DGM type (2 corners) SGM type (1 corner)

F211, F212 page

1st choice for grooving and parting

Smooth chip evacuation
Well-designed edge with high strength
Handed insert available
CW = 0.079" - 0.315"



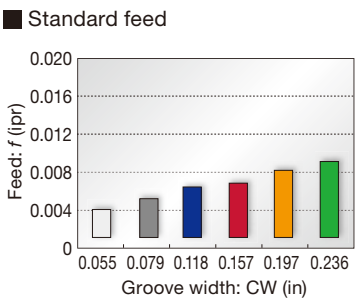


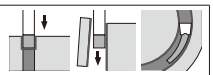
DGS type (2 corners) SGS type (1 corner)

F213, F214 page

Lower cutting force and superior sharpness

Unique-designed edge and chipbreaker
Handed insert available
CW = 0.055" - 0.236"



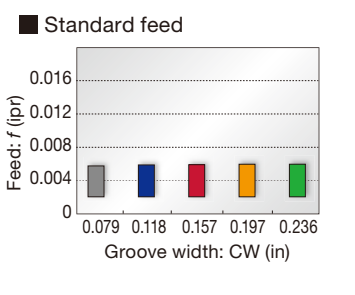


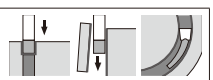
DGG type (2 corners)

F214 page

For non-ferrous materials and titanium

Chipbreaker with low cutting force
Sharp cutting edge that prevents vibration and delivers fine surface finish
CW = 0.079" - 0.236"



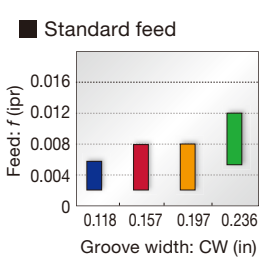


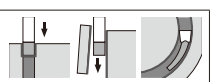
DGL type (2 corners)

F215 page

1st choice for mild steel

Chipbreaker with excellent chip control at low feed
Suitable for mild steel that often has difficulties with chip control
CW = 0.118" - 0.236"



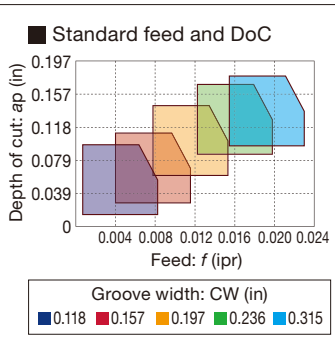


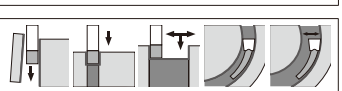
DTM type (2 corners)

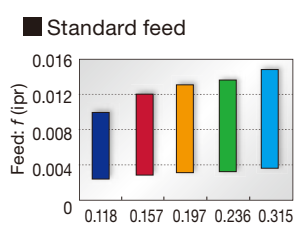
F215 page

General purpose

1st choice for grooving and turning
Suitable for light to medium cutting
Excellent chip control in machining steel, alloy steel, stainless steel, and heat-resistant alloy
CW = 0.118" - 0.315"







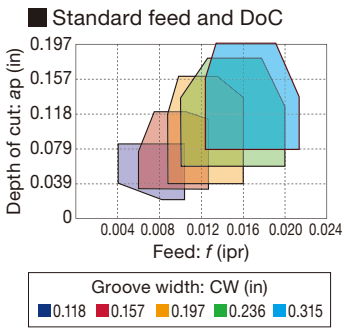
External grooving and turning

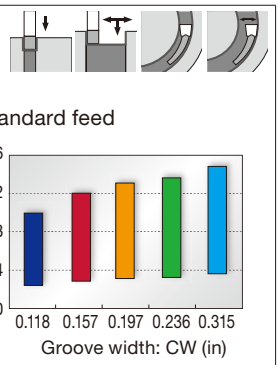
DTE type (2 corners)

F216 page

General purpose

Unique chipbreaker makes chips shorter
Molded and ground inserts available
CW = 0.118" - 0.315"



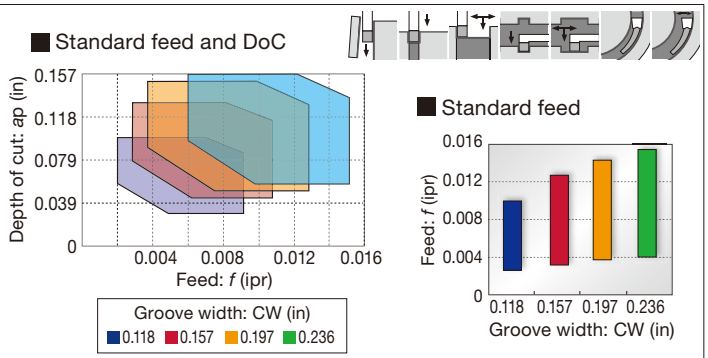


DTX type (2 corners)

F217 page

Multi-functional type

Well balanced sharpness and strength
Multi-functional insert
CW = 0.118" - 0.236"



Profiling and undercutting

DTR type (2 corners)

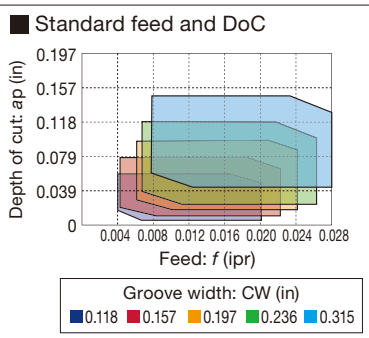
Molded

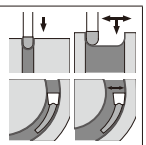
Ground

F217, F218 page

Full radius type

Excellent chip control
Molded and ground inserts available
CW = 0.118" - 0.315"



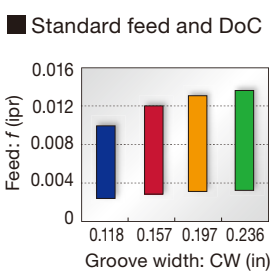


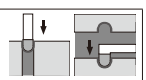
DTIU type (2 corners)

F218 page

Full radius type

Excellent chip control
For undercutting
CW = 0.118" - 0.236"





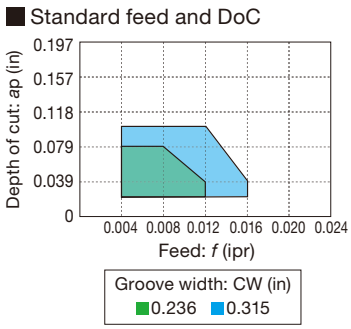
Aluminum wheel machining

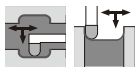
DTA type (2 corners)

F219 page

Full radius type

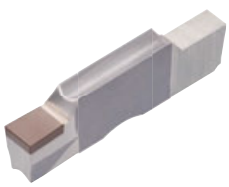
Excellent chip control
For aluminum wheel profiling
Ground insert
CW = 0.236" - 0.315"





External grooving of hardened steel

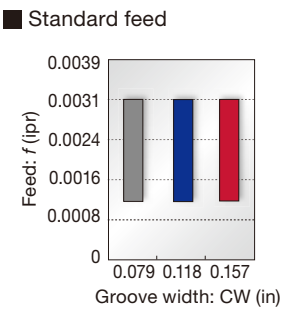
SGN-CBN type (1 corner)

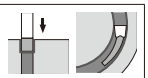


F219 page

For hardened steel cutting

Optimum cutting edge shape for grooving of hardened steels
High tolerance width for finishing
CW = 0.079" - 0.157"
(CW = ±0.001")



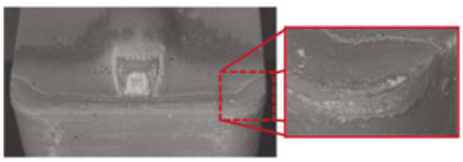


AH7025 Cutting performance

First choice grade for grooving
AH7025 grade: Tungaloy's unique coating technology for drastically improved reliability

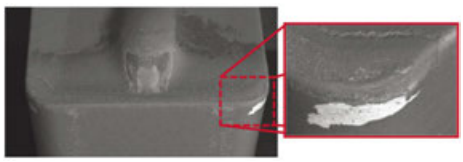
Tool life comparison

AH7025



Tool wear after 60 grooves

Conventional grade



Tool wear after 30 grooves

P Alloy steel (4140)

Insert	: DTE3-040 AH7025
Cutting speed	: *Vc* = 492 sfm
Feed	: *f* = 0.007 ipr
Groove depth	: 0.669"
Machining	: External grooving
Coolant	: Wet

AH7025 provides stability, while preventing coating from peeling off even after machining twice the number of passes compared to the conventional grade.

→ **The combination of Nano-multi-layered AlTiN Coating with high Al content and tough substrate provides highly efficient machining in various grooving operations.**

Grades

AH7025 P M K S

- First choice for various applications
- New PVD coating with high Al content provides excellent adhesion strength
- Improved wear and chipping resistance

AH725 P M S

- Recommended for various applications
- Newly developed coating with well controlled crystal structure and fracture resistance
- Improved adhesion strength

T515 K

- First recommended grade for cast iron
- Excellent wear resistance in high-speed machining

T9225 P

- Suitable for steel machining at high speeds
- New CVD coating and substrate deliver an outstanding balance of wear and chipping resistance

NS9530 P

- Advanced cermet for finish cutting of steel
- Innovative grade with incredible fracture and high wear resistance

GH130 P M K

- Recommended for interrupted machining
- TiCNO PVD coating layer with high wear resistance
- High hardness wear resistance

AH905 S

- Remarkable for machining of heat resistant alloys
- Exclusive coating layer improves adhesion strength and wear resistance

KS05F N S

- Recommended for non-ferrous materials and titanium

TH10 N

- Recommended for non-ferrous materials

BX360 H

- Suitable for hardened steel machining
- Ideal balance of wear and chipping resistance due to the optimum CBN content and grain size

STANDARD CUTTING CONDITIONS

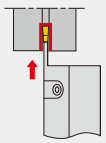
ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 4135, etc.	< 300 HB	First choice	AH7025, AH725	164 - 591
		< 300 HB	Priority for wear resistance	T9225	262 - 984
		< 300 HB	Priority for impact resistance	GH130	164 - 394
		< 300 HB	Priority for surface finish	NS9530	262 - 722
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	< 200 HB	First choice	AH7025, AH725	164 - 394
		< 200 HB	Priority for impact resistance	GH130	164 - 394
K	Gray cast iron No.250B, No.300B, etc.	-	First choice	T515, AH7025	164 - 591
		-	Priority for impact resistance	GH130	164 - 591
	Ductile cast iron 60-40-18, 60-55-06, etc.	-	First choice	T515, AH7025	164 - 394
		-	Priority for impact resistance	GH130	164 - 394
N	Aluminum alloys Si < 12%	-	First choice	TH10	328 - 1640
		-	First choice	KS05F	328 - 1969
S	Superalloys Inconel 718, etc.	< HRC 40	First choice	AH7025	66 - 197
		< HRC 40	Priority for wear resistance	AH905	66 - 262
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	First choice	AH905	66 - 262
		< HRC 40	Priority for impact resistance	AH7025, AH725	66 - 262
		< HRC 40	Priority for surface finish	KS05F	66 - 197
H	Hardened steel 4137, etc.	> HRC 50	First choice	BX360	262 - 492

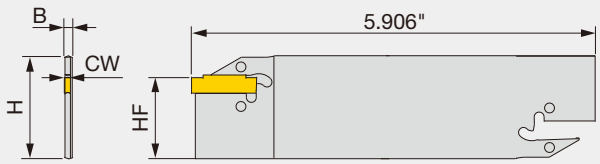
*See page F220 - F222 for feed: *f* (ipr).

MY-T SERIES

CCH-W

External grooving and parting blade, for 2 corner inserts





Inch	CW	CUTDIA	H	B	HF	Insert
CCH32-W20	0.079	1.3	(1.26)	0.063	0.968	WGE20, WGE20R/L
CCH32-W30	0.118	1.3	(1.26)	0.087	0.968	WG*30, WGE30R/L
CCH32-W40	0.157	1.65	(1.26)	0.126	0.965	WG*40, WGE40R/L
CCH32-W50	0.197	1.65	(1.26)	0.165	0.965	WG*50, WGE50R/L

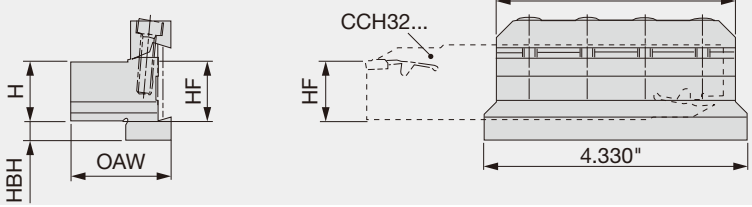
SPARE PARTS

Designation	Wrench (Optional)
CCH32-W...	CRW33

MY-T SERIES

CCBS-32

Tool block for CCH blade



Inch	H	HF	HBH	OAW	Blade*
CCBS12-32-U	0.75	0.75	0.55	1.49	CCH32...
CCBS16-32-U	1.00	1.00	0.30	1.66	CCH32...
CCBS20-32-U	1.25	1.25	0.21	1.66	CCH32...

* Blade sold separately.

SPARE PARTS



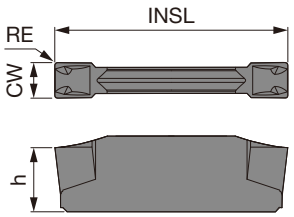
Designation	Clamp	Screw	Wrench
CCBS**-32-U	CC-32	CM6X25	P-5

Reference pages: Inserts → F226 - F227, Standard cutting conditions → F227

INSERT

WGE

For external grooving and parting



P	Steel	★	☆	★	★			★		
M	Stainless	★		★	★					
K	Cast iron	☆		★	☆			☆		
N	Non-ferrous									
S	Superalloys			☆						
H	Hard materials									

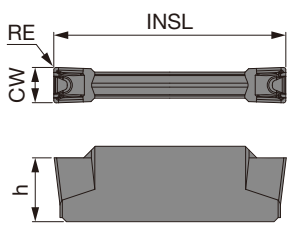
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated					Cermet				INSL (in)	h (in)
				T9225	T9125	AH120	GH730		NS9530					
WGE20	2	0.079	0.008	●	▲	●	●		●				0.787	0.185
WGE30	3	0.118	0.008	●	▲	●	●		●				0.787	0.217
WGE40	4	0.157	0.008	●	▲	●	●		●				0.984	0.224
WGE50	5	0.197	0.008	●	▲	●	●		●				0.984	0.232

● : Line up
▲ : To be discontinued

WGT

For turning (External grooving and parting)



P	Steel	★	☆	★	★			★		
M	Stainless	★		★	★					
K	Cast iron	☆		★	☆			☆		
N	Non-ferrous									
S	Superalloys			☆						
H	Hard materials									

★ : First choice
☆ : Second choice

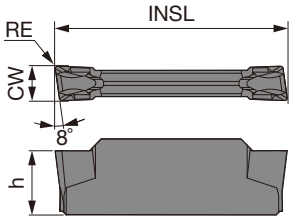
Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated					Cermet				INSL (in)	h (in)
				T9225	T9125	AH120	GH730		NS9530					
WGT30	3	0.118	0.016	●	▲	●	●		●				0.787	0.217
WGT40	4	0.157	0.016	●	▲	●	●		●				0.984	0.224
WGT50	5	0.197	0.016	●	▲	●	●		●				0.984	0.232

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F225

WGE(R/L)

For parting (with hand)



Right hand (R) shown.

P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	☆
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated AH120	Coated GH730	INSL (in)	h (in)
WGE20R	R	2	0.079	0.008		●	0.787	0.185
WGE20L	L	2	0.079	0.008		●	0.787	0.185
WGE30R	R	3	0.118	0.008	●	●	0.787	0.217
WGE30L	L	3	0.118	0.008		●	0.787	0.217
WGE40R	R	4	0.157	0.008		●	0.984	0.224
WGE40L	L	4	0.157	0.008		●	0.984	0.224
WGE50R	R	5	0.197	0.008		●	0.984	0.232
WGE50L	L	5	0.197	0.008		●	0.984	0.232

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)
P	Low carbon steel Alloy steel (~ HB150)	T9225	262 - 984
		NS9530	328 - 656
		GH730	164 - 591
	Medium carbon steel Alloy steel (HB150 ~ 250)	T9225	262 - 722
		NS9530	262 - 591
		GH730	164 - 492
	High carbon steel Alloy steel (HB250 ~)	T9225	262 - 722
		NS9530	262 - 492
		GH730	164 - 492
M	Stainless steel	T9225	262 - 591
		GH730	164 - 394
K	Gray iron, Ductile cast iron	T9225	262 - 820
		GH730	164 - 591

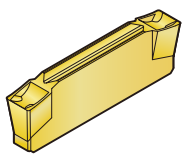
Operation	Feed: *f* (ipr) Groove width: CW (in) 2 mm (0.079")	3 mm (0.118")	4 mm (0.157")	5 mm (0.197")
Grooving (WGE**)	0.0024 - 0.008	0.0024 - 0.010	0.0028 - 0.011	0.0028 - 0.012
Parting (WGE**R/L)	0.0016 - 0.004	0.0016 - 0.006	0.0016 - 0.006	0.0016 - 0.006
Turning (WGT**)	-	*ap* = 0.020 - 0.059 *f* = 0.0024 - 0.008	*ap* = 0.020 - 0.079 *f* = 0.0024 - 0.010	*ap* = 0.020 - 0.098 *f* = 0.0024 - 0.011

Reference pages: Toolholders → F225

2 corner insert

External grooving and parting

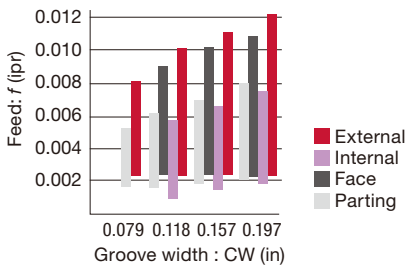
WGE



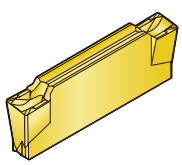
F226 page

1st choice for external grooving and parting
Excellent chip control for grooving

CW = 0.079" - 0.197"



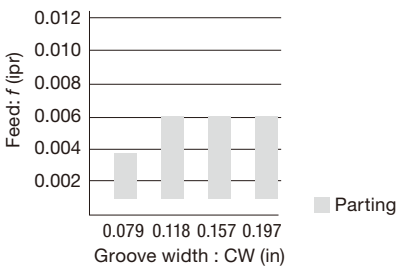
WGE R/L



F227 page

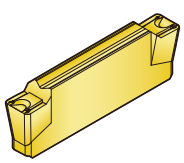
Handed insert
Minimize burr generation when workpiece is cut off

CW = 0.079" - 0.197"



External grooving and turning

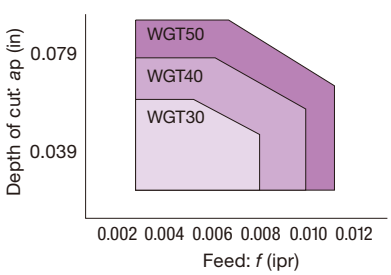
WGT



F226 page

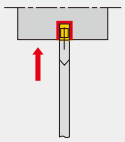
1st choice for turning
Low cutting force and good chip control for traversing

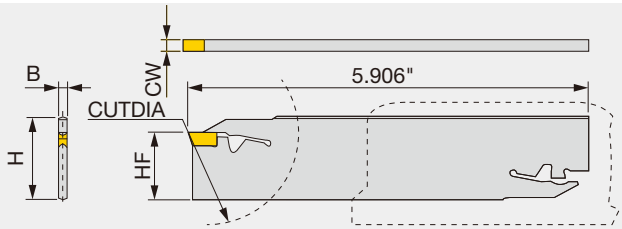
CW = 0.118" - 0.197"



CCH

External grooving and parting blade, for 1 corner inserts





Inch	CW	CUTDIA	H	B	HF	Insert
CCH26-30	0.118	2.76	0.979	0.087	0.843	GE30,GE30R/L,GE30-AL
CCH26-40	0.157	2.76	0.968	0.126	0.837	GE40,GE40R/L,GE40-AL
CCH32-30U	0.118	3.94	1.230	0.087	0.968	GE30,GE30R/L,GE30-AL
CCH32-40U	0.157	3.94	1.220	0.126	0.963	GE40,GE40R/L,GE40-AL
CCH32-50U	0.197	4.72	1.210	0.165	0.958	GE50,GE50R/L,GE50-AL

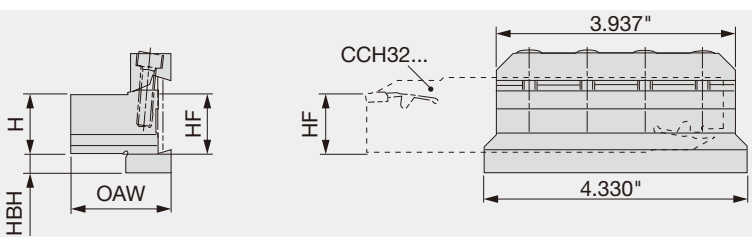
CUTDIA: Max. parting dia.

SPARE PARTS

Designation	Wrench
CCH**-...	CTL-2

CCBS-32

Tool block for CCH blade



Inch	H	HF	HBH	OAW	Blade
CCBS12-32-U	0.750	0.75	0.55	1.49	CCH32...
CCBS16-32-U	1.000	1.00	0.30	1.66	CCH32...
CCBS20-32-U	1.250	1.25	0.21	1.66	CCH32...



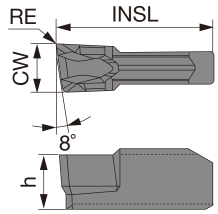
SPARE PARTS

Designation	Clamp	Screw	Wrench
CCBS**-32-U	CC-32	CM6X25	P-5

Reference pages: Inserts → F230 - F232, Standard cutting conditions → F235

GE-R/L

For parting (with hand)



Right hand (R) shown.

		AH120	GH730
P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	☆
N	Non-ferrous		
S	Superalloys	☆	
H	Hard materials		

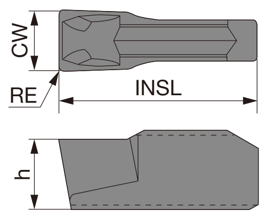
★ : First choice
☆ : Second choice

Designation	HAND	CW $^{+0.1}_{0}$ (mm)	CW $^{+0.004}_{0}$ (in)	RE (in)	Coated AH120	Coated GH730	INSL (in)	h (in)
GE30R	R	3	0.118	0.008	●	●	0.394	0.138
GE30L	L	3	0.118	0.008		●	0.394	0.138
GE40R	R	4	0.157	0.008	●	●	0.394	0.157
GE40L	L	4	0.157	0.008		●	0.394	0.157
GE50R	R	5	0.197	0.008		●	0.472	0.177
GE50L	L	5	0.197	0.008	●	●	0.472	0.177

● : Line up

GE

For general grooving



		T9225	T9125	AH120	GH730	NS9530
P	Steel	★	☆	★	★	★
M	Stainless	★		★	★	
K	Cast iron	☆		★	☆	☆
N	Non-ferrous					
S	Superalloys			☆		
H	Hard materials					

★ : First choice
☆ : Second choice

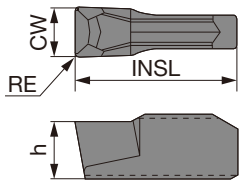
Designation	CW $^{+0.1}_{0}$ (mm)	CW $^{+0.004}_{0}$ (in)	RE (in)	Coated T9225	Coated T9125	Coated AH120	Coated GH730	Cermet NS9530	INSL (in)	h (in)
GE20	2	0.079	0.008			●	●	●	0.394	0.138
GE30	3	0.118	0.008	●	▲	●	●	●	0.394	0.138
GE40	4	0.157	0.008	●	▲	●	●	●	0.394	0.157
GE50	5	0.197	0.008	●	▲	●	●	●	0.472	0.177

● : Line up
▲ : To be discontinued

Reference pages: Toolholders → F229, Standard cutting conditions → F235

GF

For face grooving



P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

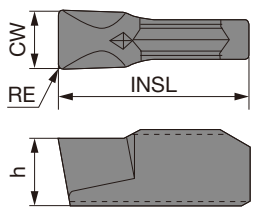
★ : First choice
☆ : Second choice

Designation	CW$^{+0.1}_{0}$ (mm)	CW$^{+0.004}_{0}$ (in)	RE (in)	Coated GH730	Cermet NS9530	INSL (in)	h (in)
GF30	3	0.118	0.008	●	●	0.394	0.138
GF40	4	0.157	0.008	●	●	0.394	0.157
GF50	5	0.197	0.008	●	●	0.472	0.177

● : Line up

GN

For internal grooving



P	Steel	★
M	Stainless	★
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

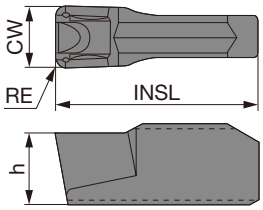
Designation	CW$^{+0.1}_{0}$ (mm)	CW$^{+0.004}_{0}$ (in)	RE (in)	Coated GH730	INSL (in)	h (in)
GN30	3	0.118	0.008	●	0.394	0.138
GN40	4	0.157	0.008	●	0.394	0.157
GN50	5	0.197	0.008	●	0.472	0.177

● : Line up

Reference pages: Toolholders → F229, Standard cutting conditions → F235

GT

For turning



P	Steel	★	☆	★	★			★		
M	Stainless	★		★	★					
K	Cast iron	☆		★	☆			☆		
N	Non-ferrous									
S	Superalloys			☆						
H	Hard materials									

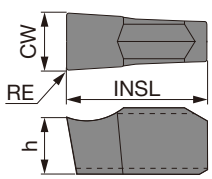
★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Coated					Cermet					INSL (in)	h (in)
				T9225	T9125	AH120	GH730		NS9530						
GT30	3	0.118	0.016			●	●		●					0.394	0.138
GT40	4	0.157	0.016			●	●		●					0.394	0.157
GT50	5	0.197	0.016	●	▲	●	●		●					0.472	0.177

● : Line up
▲ : To be discontinued

GE-AL

For aluminum and non-ferrous metal



P	Steel									
M	Stainless									
K	Cast iron									
N	Non-ferrous	★								
S	Superalloys									
H	Hard materials									

★ : First choice
☆ : Second choice

Designation	$CW^{+0.1}_{0}$ (mm)	$CW^{+0.004}_{0}$ (in)	RE (in)	Uncoated										INSL (in)	h (in)
				KS05F											
GE20-AL	2	0.079	0.008	●										0.394	0.138
GE30-AL	3	0.118	0.008	●										0.394	0.138
GE40-AL	4	0.157	0.008	●										0.394	0.157

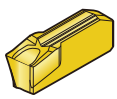
● : Line up

Reference pages: Toolholders → F229, Standard cutting conditions → F235

1 corner insert

External grooving and parting

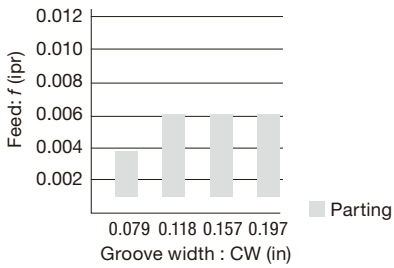
GE R/L



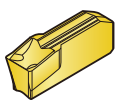
F230 page

Handed insert
Minimize burr generation when workpiece is cut off

CW = 0.118" - 0.197"



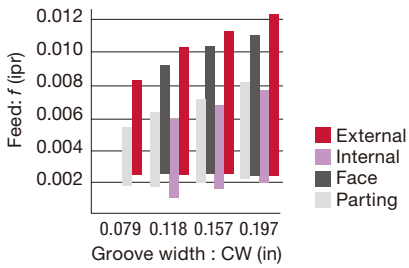
GE

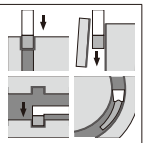


F230 page

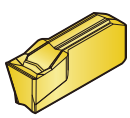
1st choice for external grooving and parting
Excellent chip control

CW = 0.079" - 0.197"





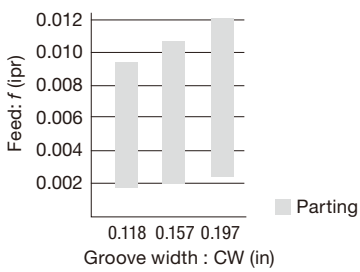
GF

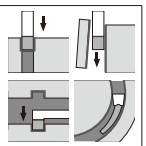


F231 page

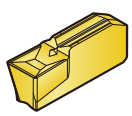
1st choice for face grooving
Low cutting force and good chip control for face grooving

CW = 0.118" - 0.197"





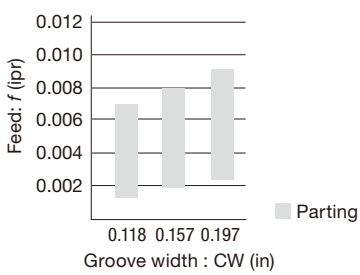
GN

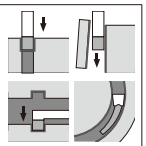


F231 page

1st choice for internal grooving
Low cutting force and good chip control for internal grooving

CW = 0.118" - 0.197"

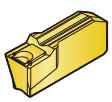




1 corner insert

External grooving and turning

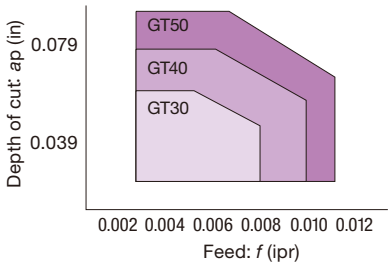
GT

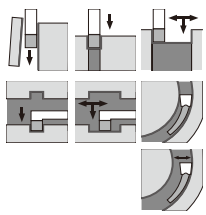


F232 page

1st choice for turning
Low cutting force and good chip control for traversing

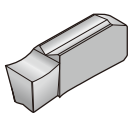
CW = 0.118" - 0.197"





For aluminum and non-ferrous metal

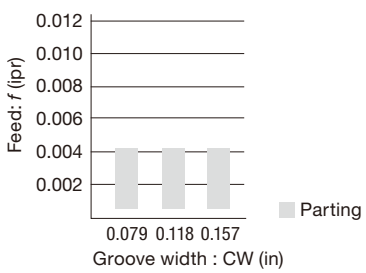
GE-AL

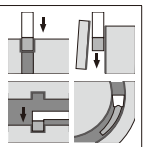


F232 page

Reduce cutting force and welding due to sharp chipbreaker

CW = 0.079" - 0.157"





STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)
P	Low carbon steel, Alloy steel (- HB150)	T9225	262 - 984
		NS9530	328 - 656
		GH730	164 - 591
	Medium carbon steel, Alloy steel (HB150 - 250)	T9225	262 - 722
		NS9530	262 - 591
		GH730	164 - 492
	High carbon steel, Alloy steel (HB250 -)	T9225	262 - 722
		NS9530	262 - 492
		GH730	164 - 394
M	Stainless steel	T9225	262 - 591
		GH730	164 - 394
K	Gray iron, Ductile cast iron	T9225	262 - 820
		GH730	164 - 591
N	Aluminum alloys, Non-ferrous metal	KS05F	656 - 984

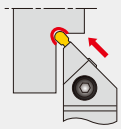
For Parting off

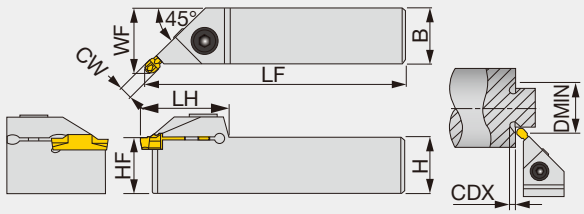
Operation	Feed: *f* (ipr) Groove width: CW (in)			
	2 mm (0.079")	3 mm (0.118")	4 mm (0.157")	5 mm (0.197")
Grooving (GE**)	0.0024 - 0.008	0.0024 - 0.010	0.0028 - 0.011	0.0028 - 0.012
Parting off (GE**R/L)	0.0016 - 0.004	0.0016 - 0.006	0.0016 - 0.006	0.0016 - 0.006
Traversing (GT**)	-	Depth of cut *ap* = 0.020 - 0.059 *f* = 0.0024 - 0.008	Depth of cut *ap* = 0.020 - 0.079 *f* = 0.0024 - 0.010	Depth of cut *ap* = 0.020 - 0.098 *f* = 0.0024 - 0.011
Parting off for Aluminum alloys (GE**-AL)	0.0012 - 0.004	0.0012 - 0.004	0.0012 - 0.004	-

For diameter compensation values in traversing, see page F111.

CGEUR/L

External 45° undercutting toolholder





Right hand (R) shown.

Metric	CW	DMIN	Seat size	CDX	H	B	LF	LH	HF	WF (1)	Insert	Torque
CGEUR/L1616-3T02	3	32	3	2.8	16	16	110	30	16	19.3	DTIU...	5
CGEUR/L2020-3T02	3	32	3	2.8	20	20	125	30	20	23.3	DTIU...	5
CGEUR/L2525-3T02	3	32	3	2.8	25	25	150	30	25	28.3	DTIU...	5
CGEUR/L1616-4T02	4	32	4	2.8	16	16	110	31	16	19.5	DTIU...	8.5
CGEUR/L2020-4T02	4	32	4	2.8	20	20	125	31	20	23.5	DTIU...	8.5
CGEUR/L2525-4T02	4	32	4	2.8	25	25	150	31	25	28.5	DTIU...	8.5
CGEUR/L2525-6T03	6	34	5, 6	3.4	25	25	150	35	25	28.9	DTIU...	8.5

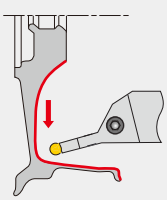
(1) "WF" value is calculated with groove width "CW" shown in the table.
Torque: Recommended clamping torque: N·m

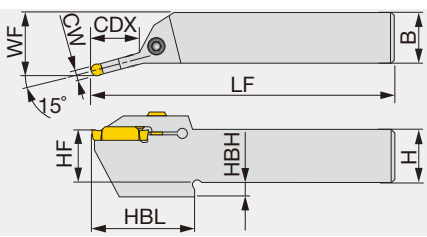
SPARE PARTS

Designation	Clamping screw	Wrench
CGEUR/L****-3T02	CM5X0.8X16-A	P-4
CGEUR/L1616-4T02	CM6X1X16-A	P-5
CGEUR/L2020-4T02	CM6X1X20-A	P-5
CGEUR/L2525-4T02/6T03	CM6X1X25-A	P-5

CTER/L-15A

Square shank toolholder for profiling aluminum wheel





Right hand (R) shown.

Metric	CW	Seat size	CDX	H	B	LF	HF	WF	HBH	HBL	Insert	Torque
CTER/L2525-6T25-15A	6	6	25	25	25	150	25	32.2	7	50.5	DTA...	5
CTER/L2525-8T30-15A	8	8	30	25	25	150	25	32.9	7	55	DTA...	5

Torque: Recommended clamping torque: N·m

SPARE PARTS

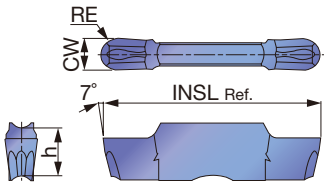
Designation	Clamping screw	Wrench
CTER/L2525-****-15A	CM6X1X25-A	P-5

Reference pages: Inserts → F237, Standard cutting conditions → F238

INSERT

DTIU

Profiling and undercutting (for high precision)



P	Steel	★	☆	☆	
M	Stainless	★	☆	★	
K	Cast iron	★		☆	
N	Non-ferrous				
S	Superalloys	★	☆		
H	Hard materials				

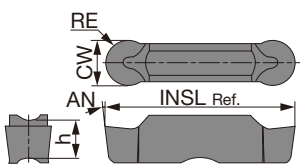
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.0008 (in)	CW±0.02 (mm)	RE (mm)	Coated AH7025	Coated AH725	Coated GH130	INSL (in)	h (in)
DTIU300-150	3	0.118	3	1.5	●	●	●	0.787	0.197
DTIU400-200	4	0.157	4	2	●	●	●	0.787	0.197
DTIU500-250	5	0.197	5	2.5	●	●	●	0.984	0.217
DTIU600-300	6	0.236	6	3	●	●	●	0.984	0.217

● : Line up

DTA

Aluminum wheel machining (for high precision)



P	Steel				
M	Stainless				
K	Cast iron				
N	Non-ferrous	★			
S	Superalloys				
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.0008 (in)	CW±0.02 (mm)	RE (mm)	Uncoated TH10	INSL (in)	h (in)	AN
DTA600-300	6	0.236	6	3	●	0.984	0.217	7°
DTA800-400	8	0.315	8	4	●	1.181	0.264	10°

● : Line up

Reference pages: Toolholders → F236, Standard cutting conditions → F238

STANDARD CUTTING CONDITIONS

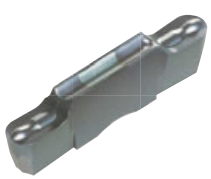
ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 4135, etc.	< 300 HB	First choice	AH7025, AH725	164 - 591
		< 300 HB	Priority for wear resistance	T9225	262 - 984
		< 300 HB	Priority for impact resistance	GH130	164 - 394
		< 300 HB	Priority for surface finish	NS9530	262 - 722
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	< 200 HB	First choice	AH7025, AH725	164 - 394
		< 200 HB	Priority for impact resistance	GH130	164 - 394
K	Gray cast iron No.250B, No.300B, etc.	-	First choice	T515, AH7025	164 - 591
		-	Priority for impact resistance	GH130	164 - 591
	Ductile cast iron 60-40-18, 60-55-06, etc.	-	First choice	T515, AH7025	164 - 394
		-	Priority for impact resistance	GH130	164 - 394
N	Aluminum alloys Si < 12%	-	First choice	TH10	328 - 1640
		-	First choice	KS05F	328 - 1969
S	Superalloys Inconel 718, etc.	< HRC 40	First choice	AH7025	66 - 197
		< HRC 40	Priority for wear resistance	AH905	66 - 262
	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	First choice	AH905	66 - 262
		< HRC 40	Priority for impact resistance	AH7025, AH725	66 - 262
		< HRC 40	Priority for surface finish	KS05F	66 - 197
H	Hardened steel 4137, etc.	> HRC 50	First choice	BX360	262 - 492

*Please see below for feed: *f* (ipr).

TUNGCUT - Chipbreaker Guide

Profiling and undercutting

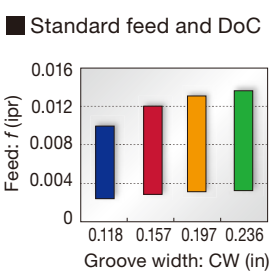
DTIU type (2 corners)

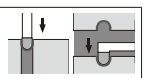


F237 page

Full radius type

Excellent chip control
For undercutting
CW = 0.118" - 0.236"





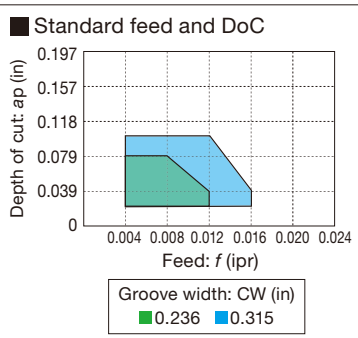
Aluminum wheel machining

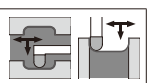
DTA type (2 corners)

F237 page

Full radius type

Excellent chip control
For aluminum wheel profiling
Ground insert
CW = 0.236" - 0.315"



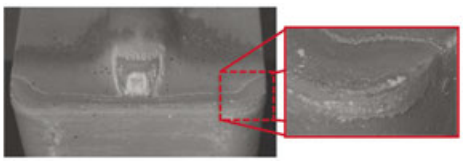


AH7025 Cutting performance

First choice grade for grooving
AH7025 grade: Tungaloy's unique coating technology for drastically improved reliability

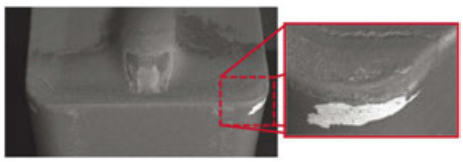
Tool life comparison

AH7025



Tool wear after 60 grooves

Conventional grade



Tool wear after 30 grooves

P Alloy steel (4140)

Insert	: DTE3-040 AH7025
Cutting speed	: *Vc* = 492 sfm
Feed	: *f* = 0.007 ipr
Groove depth	: 0.669"
Machining	: External grooving
Coolant	: Wet

AH7025 provides stability, while preventing coating from peeling off even after machining twice the number of passes compared to the conventional grade.

→ **The combination of Nano-multi-layered AlTiN Coating with high Al content and tough substrate provides highly efficient machining in various grooving operations.**

Grades

AH7025 P M K S

- First choice for various applications
- New PVD coating with high Al content provides excellent adhesion strength
- Improved wear and chipping resistance

AH725 P M S

- Recommended for various applications
- Newly developed coating with well controlled crystal structure and fracture resistance
- Improved adhesion strength

T515 K

- First recommended grade for cast iron
- Excellent wear resistance in high-speed machining

T9225 P

- Suitable for steel machining at high speeds
- New CVD coating and substrate deliver an outstanding balance of wear and chipping resistance

NS9530 P

- Advanced cermet for finish cutting of steel
- Innovative grade with incredible fracture and high wear resistance

GH130 P M K

- Recommended for interrupted machining
- TiCNO PVD coating layer with high wear resistance
- High hardness wear resistance

AH905 S

- Remarkable for machining of heat resistant alloys
- Exclusive coating layer improves adhesion strength and wear resistance

KS05F N S

- Recommended for non-ferrous materials and titanium

TH10 N

- Recommended for non-ferrous materials

BX360 H

- Suitable for hardened steel machining
- Ideal balance of wear and chipping resistance due to the optimum CBN content and grain size

PARTS FOR COOLANT HOSE

Connecting hose

Fig.1

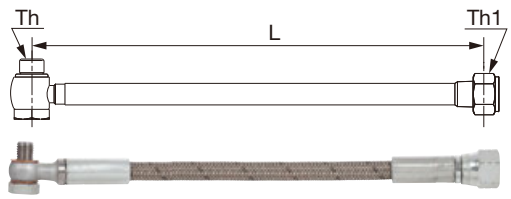
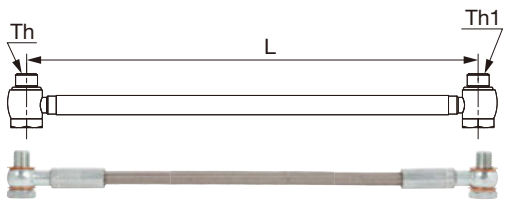
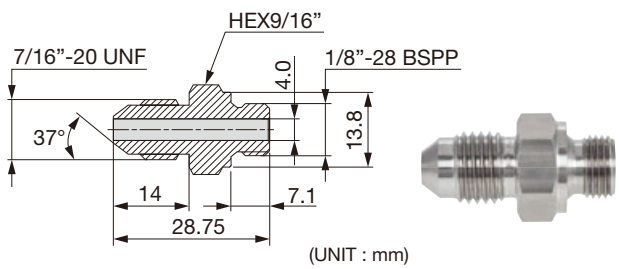


Fig.2



Designation	Length L (in)	Screw Th	Screw Th1	Max. pressure (Mpa)	Fig.
CHP-HOSE-G1/8-7/16-200BS	7.874	G1/8"-28 BSPP	7/16"-20 UNF	26	1
CHP-HOSE-G1/8-7/16-250BS	9.843	G1/8"-28 BSPP	7/16"-20 UNF	26	1
CHP-HOSE-5/16-7/16-200BS	7.874	5/16"-24UNF	7/16"-20 UNF	20	1
CHP-HOSE-5/16-G1/8-200BS	7.874	5/16"-24UNF	G1/8"-28 BSPP	20	1
CHP-HOSE-G1/8-G1/8-200BB	7.874	G1/8"-28 BSPP	G1/8"-28 BSPP	26	2
CHP-HOSE-G1/8-G1/8-250BB	9.843	G1/8"-28 BSPP	G1/8"-28 BSPP	26	2

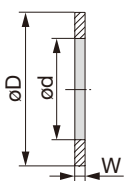
Connector



(UNIT : mm)

Designation
CHP-NIPPLE-G1/8-7/16UNF

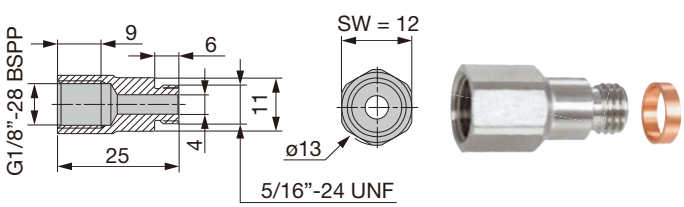
Seal washer



Designation	øD	ød	W
CHP-COPPER-SEAL1/8	0.591	0.394	0.039
CHP-COPPER-SEAL5/16	0.469	0.321	0.053
CHP-COPPER-SEAL5/16-2.5	0.370	0.315	0.098

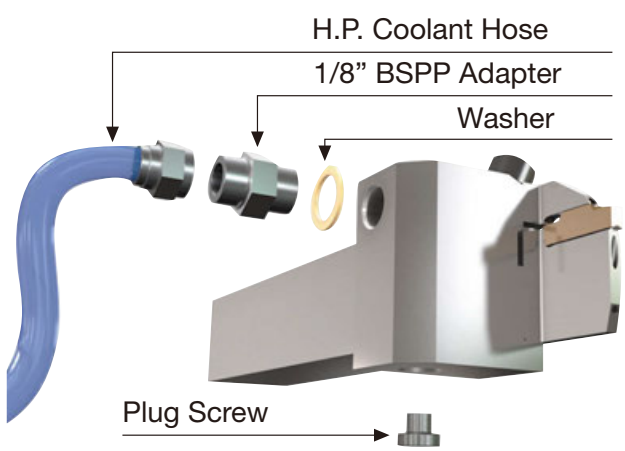
(UNIT : in)

Connector for small lathe with seal washer



(UNIT : mm)

Designation
CHP-CONECTOR5/16-G1/8



Miniature Machining

Miniature Machining - Content structure

- Products are listed by application.
- In the same application, products are listed by cutting edge shape.
- The same cutting edge shape are sorted by insert.
- Items are listed by product series.
- Toolholders in the catalog are our standard stock items.

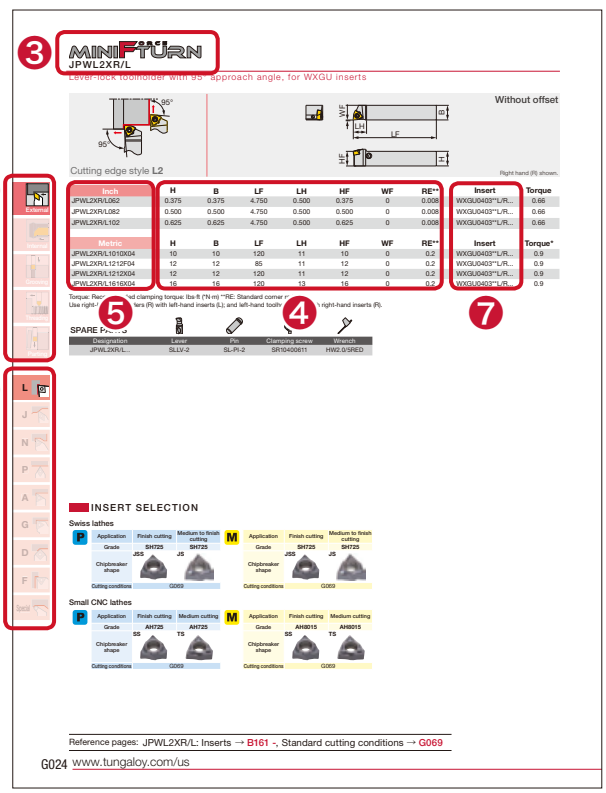
How to use the page

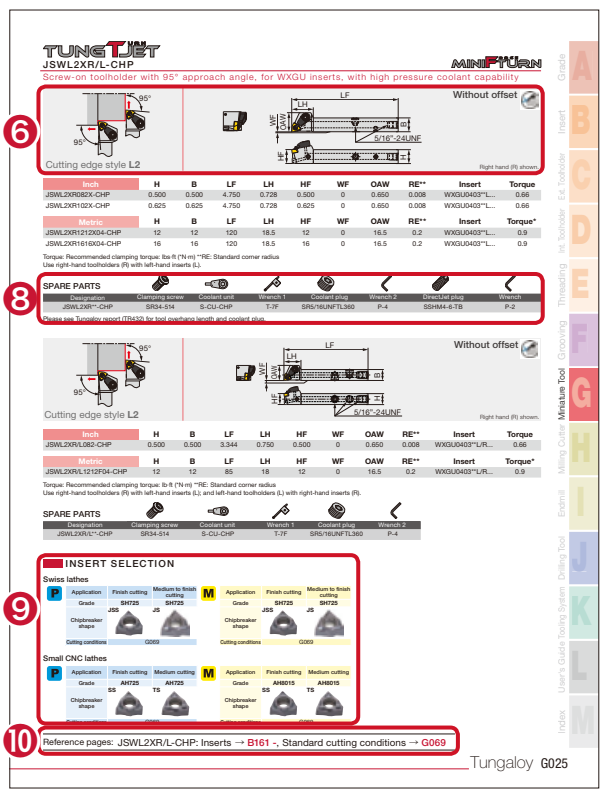
Method ① Select the application and the cutting edge shape described at the left end of each page, jump to the page on the left index, and choose a designation you need (❺) in the dimension table (❹). Applicable inserts are shown in (❼) and (❾).

Method ② Select the cutting edge on G003 and check the details on the product page.

Method ③ Select the series name on G003 and check the details on each page.

Method ④ Select an item from Quick Guide on G004 - G019.





❶ : Application
❷ : Cutting edge shape
❸ : Tool series name
❹ : Dimension table
❺ : Toolholder designation
e.g. right-hand, 25x25 square shank

→ **JSDJ2XR 082 X-CHP**

❻ : Dimension drawing (conforming to ISO13399)
❼ : Applicable insert
❽ : Spare parts
❾ : Insert selection
❿ : Reference page

When ordering
- Please specify the designation and quantity.

e.g. **JSWL2XR082X-CHP** ... 1 (one toolholder per package)
* Inserts are not included. Please order those separately.

Main products

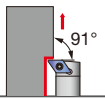
L 95° G023
J 93° G031
N 63° G047
P 62.5° G050
A 91° G051
G 91° G053
D 45° G054
F 91° G055
Special G056

		Inch	Metric
	**MINIFORCE TURN** Economical double-sided inserts with excellent sharpness G022 - G024, G026, G031 - G032 G035, G040, G042 - G043, G069	✓	✓
	**J-SERIES** Toolholders for small-part machining G004 - G008, G013, G015 G027 - G030, G036, G038 - G039 G044, G046 - G056, G058, G060 - G069, G096 - G102, G108 - G110, F103 - F110	✓	✓
	**TETRAMINICUT** Unique insert pocket geometry for grooving with high quality and precision CW = 0.013" - 0.118" (0.33 - 3.0 mm) G012 - G013, G016, G080 - G090 F006 - F007, F037 - F048	✓	✓
	**TETRAFORCECUT** 4-cornered insert with good clamping rigidity for highly precise grooving and parting CW = 0.020" - 0.125" (0.5 - 3.18 mm) G013, G091 - G095, F006 - F007, F049 - F057	✓	✓
	**DUOJUSTCUT** Innovative clamping system for high rigidity in parting CW = 0.039" - 0.079" (1.0 - 2.0 mm) G014, G016 G111 - G112, G114 - G119	✓	✓
	**TUNGCUT** Multi-functional tool series for various grooving operations CW = 0.055" - 0.157" (1.4 - 4.0 mm) G015, G102 - G130, F006 - F036 F116 - F136, F171 - F192	✓	✓
	**TINYMINITURN** Solid boring bar for turning small diameters with high precision G019, G070 - G079		✓
	**TUNGHEAVYGROOVE** Highly rigid clamping for wide grooving and profiling in one pass CW = 0.394" - 0.984" (10 - 25 mm) G014, G103 - G104 F006 - F007, F089 - F092	✓	

Miniature External Turning - Quick Guide

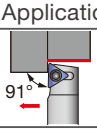
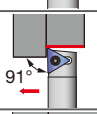
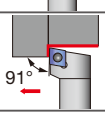
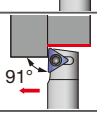
Facing

Metric

Application	Designation	Insert: Positive type	Insert: Negative type	Shank size (mm): 0	10	20	30	Clamping style	Page
	**JSDFCR/L** Cutting edge angle 91° Insert: DC□□	✓		12		16		Screw-on clamping with offset	G055

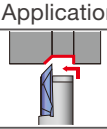
External Turning

Metric

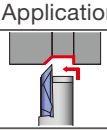
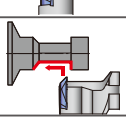
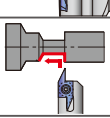
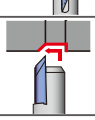
Application	Designation	Insert: Positive type	Insert: Negative type	Shank size (mm): 0	10	20	30	Clamping style	Page
	**JTTACR/L** Cutting edge angle 91° Insert: TC□□	✓		8		16		Back side clamping without offset	G051
	**JSTACR/L** Cutting edge angle 91° Insert: TC□□	✓		8		16		Screw-on clamping without offset	G051
	**JSCGCR/L** Cutting edge angle 91° Insert: CC□□	✓		12		16		Screw-on clamping with offset	G053
	**JTTANR/L** Cutting edge angle 91° Insert: TN□□		✓	12		16		Back side clamping without offset	G060

Back Turning

Inch

Application	Designation	Insert: Positive type	Insert: Negative type	Shank size (in): 0	0.375	0.500	0.750	1.000	Clamping style	Page
	**JSTBR/L** Insert: JTBR/L3□□	✓		0.375"				0.625"	Screw-on clamping	G061

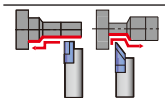
Metric

Application	Designation	Insert: Positive type	Insert: Negative type	Shank size (mm): 0	10	20	30	Clamping style	Page
	**JSTBR/L** Insert: JTBR/L3□□	✓		10		16		Screw-on clamping	G061
	**JS-TBL3** Insert: JTBR3□□	✓		ø19.05				ø25.4	Screw-on clamping	G061
	**JSEGR/L** Insert: J10ER/L□□	✓		10		16		Screw-on clamping	G064
	**JSXBR/L** Insert: JXBR/L8□□	✓		10			25	Screw-on clamping	G067

Miniature External Turning - Quick Guide

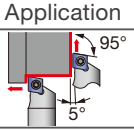
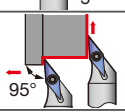
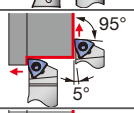
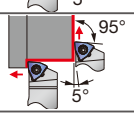
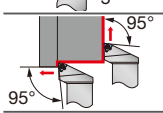
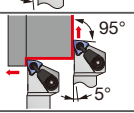
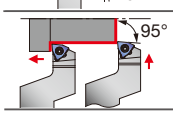
Front & Reverse Turning

Metric

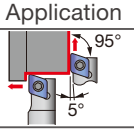
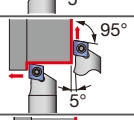
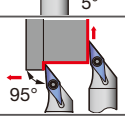
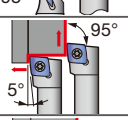
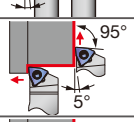
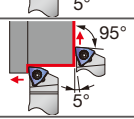
Application	Designation	Insert: Positive type	Insert: Negative type	Shank size (mm): 0 10 20 30	Clamping style	Page
	**JSXGR/L** Insert: JXFR/L8 JXRR/L8	✓		10 — 25	Screw-on clamping	G056

External Turning & Facing

Inch

Application	Designation	Insert: MiniForce-Turn	Insert: ISO Positive type	Insert: ISO Negative type	Shank size (in): 0 0.375 0.500 0.750 1.000	Clamping style	Page
	**JSCL2CR/L** Cutting edge angle 95° Insert: CC□□		✓		0.375" — 0.625"	Screw-on clamping without offset	G027
	**JSVL2PR/L** Cutting edge angle 95° Insert: VP□□		✓		0.500" — 0.625"	Screw-on clamping without offset	G030
	**JPWL2XR/L** Cutting edge angle 95° Insert: WXGU	✓	✓		0.375" — 0.625"	Side clamping without offset	G024
	**JSWL2XR/L** Cutting edge angle 95° Insert: WXGU	✓	✓		0.375" — 0.625"	Screw-on clamping without offset	G023
	**JSWLXR/L** Cutting edge angle 95° Insert: WXGU	✓	✓		0.750" — 1.000"	Screw-on clamping with offset	C034
	**JSWL2XR/L-CHP** Cutting edge angle 95° Insert: WXGU	✓	✓		0.500" — 0.625"	Screw-on clamping without offset	G025
	**JSWLXR-F** Cutting edge angle 95° Insert: WXGU	✓	✓		0.500" — 0.625"	Screw-on clamping with offset	G026

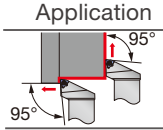
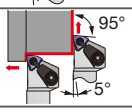
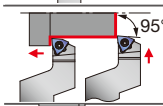
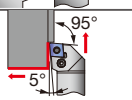
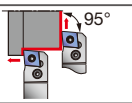
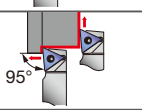
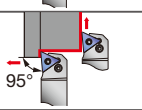
Metric

Application	Designation	Insert: MiniForce-Turn	Insert: ISO Positive type	Insert: ISO Negative type	Shank size (mm): 0 10 20 30	Clamping style	Page
	**JTCL2CR/L** Cutting edge angle 95° Insert: CC□□		✓		8 — 16	Back side clamping without offset	G028
	**JSCL2CR/L** Cutting edge angle 95° Insert: CC□□		✓		10 — 16	Screw-on clamping without offset	G027
	**JSVL2PR/L** Cutting edge angle 95° Insert: VP□□		✓		10 — 16	Screw-on clamping without offset	G030
	**JSCLCR/L** Cutting edge angle 95° Insert: CC□□		✓		8 — 16	Screw-on clamping with offset	G029
	**JPWL2XR/L** Cutting edge angle 95° Insert: WXGU	✓	✓		10 — 16	Side clamping without offset	G024
	**JSWL2XR/L** Cutting edge angle 95° Insert: WXGU	✓	✓		10 — 20	Screw-on clamping without offset	G023

Miniature External Turning - Quick Guide

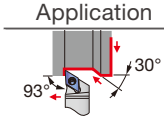
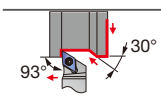
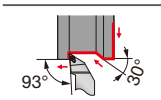
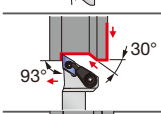
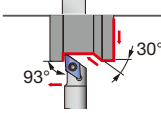
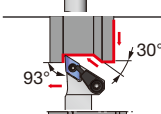
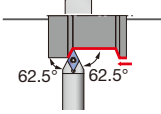
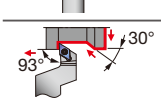
External Turning & Facing

Metric

Application	Designation	Insert: MiniForce-Turn	Insert: ISO Positive type	Insert: ISO Negative type	Shank size (mm)	Clamping style	Page
	**JSWLXR/L** Cutting edge angle 95° Insert: WXGU	✓	✓		20 25	Screw-on clamping with offset	C034
	**JSWL2XR/L-CHP** Cutting edge angle 95° Insert: WXGU	✓	✓		12 16	Screw-on clamping without offset	G025
	**JSWLXR-F** Cutting edge angle 95° Insert: WXGU	✓	✓		10 16	Screw-on clamping with offset	G026
	**PCLNR** Cutting edge angle 95° Insert: CN☐☐			✓	20	Lever-lock clamping with offset	G057
	**PCL2NR** Cutting edge angle 95° Insert: CN☐☐			✓	20	Lever-lock clamping without offset	G057
	**JTTLNR/L** Cutting edge angle 95° Insert: TN☐☐			✓	12 16	Back side clamping without offset	G058
	**PTL2NR/L** Cutting edge angle 95° Insert: TN☐☐			✓	20	Lever-lock clamping without offset	G058

External Turning & Profiling

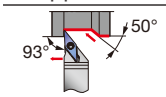
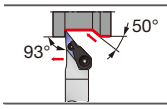
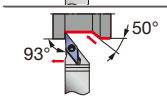
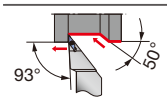
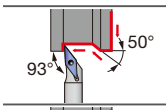
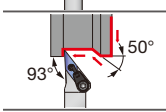
Inch

Application	Designation	Insert: MiniForce-Turn	Insert: ISO Positive type	Insert: ISO Negative type	Shank size (in)	Clamping style	Page
	**JPDJ2XR/L** Cutting edge angle 93° Insert: DXGU	✓	✓		0.375" 0.625"	Side clamping without offset	G032
	**JSDJ2XR/L** Cutting edge angle 93° Insert: DXGU	✓	✓		0.375" 0.625"	Screw-on clamping without offset	G031
	**JSDJXR/L** Cutting edge angle 93° Insert: DXGU	✓	✓		0.750" 1.000"	Screw-on clamping with offset	C042
	**JSDJ2XR/L-CHP** Cutting edge angle 93° Insert: DXGU	✓	✓		0.500" 0.625"	Screw-on clamping without offset	G033
	**JSDJ2CR/L** Cutting edge angle 93° Insert: DC☐☐		✓		0.375" 0.625"	Screw-on clamping without offset	G036
	**JSDJ2CR/L-CHP** Cutting edge angle 93° Insert: DC☐☐		✓		0.500"	Screw-on clamping without offset	G037
	**JSDNCN** Cutting edge angle 62.5° Insert: DC☐☐		✓		0.375" 0.625"	Screw-on clamping with offset	G047
	**JSDJXR-F** Cutting edge angle 93° Insert: DXGU	✓	✓		0.500" 0.625"	Screw-on clamping with offset	G034

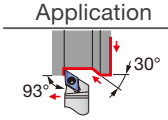
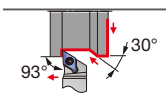
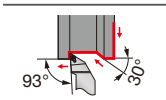
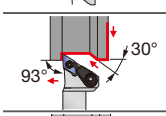
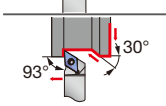
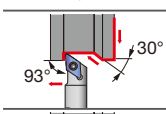
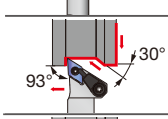
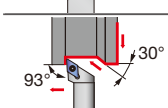
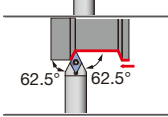
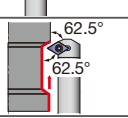
Miniature External Turning - Quick Guide

External Turning & Profiling

Inch

Application	Designation	Insert: MiniForce-Turn	Insert: ISO Positive type	Insert: ISO Negative type	Shank size (in)	Clamping style	Page
	**JPVJ2XR/L** Cutting edge angle 93° Insert: VXGU	✓	✓		0.375" – 0.625"	Side clamping without offset	G040
	**JSVJ2XR/L-CHP** Cutting edge angle 93° Insert: VXGU	✓	✓		0.500" – 0.625"	Screw-on clamping without offset	G041
	**JSVJ2XR/L** Cutting edge angle 93° Insert: VXGU	✓	✓		0.375" – 0.625"	Screw-on clamping without offset	G040
	**JSVJXR/L** Cutting edge angle 93° Insert: VXGU	✓	✓		0.750" – 1.000"	Screw-on clamping with offset	C059
	**JSVJ2BR/L** Cutting edge angle 93° Insert: VB□□		✓		0.375" – 0.625"	Screw-on clamping without offset	G044
	**JSVJ2BR/L-CHP** Cutting edge angle 93° Insert: VB□□		✓		0.500"	Screw-on clamping without offset	G045

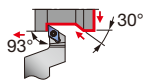
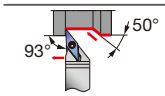
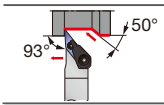
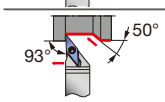
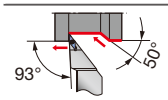
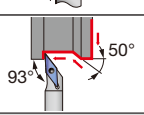
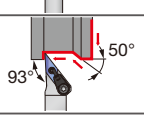
Metric

Application	Designation	Insert: MiniForce-Turn	Insert: ISO Positive type	Insert: ISO Negative type	Shank size (mm)	Clamping style	Page
	**JPDJ2XR/L** Cutting edge angle 93° Insert: DXGU		✓		10 – 16	Side clamping without offset	G032
	**JSDJ2XR/L** Cutting edge angle 93° Insert: DXGU		✓		10 – 20	Screw-on clamping without offset	G031
	**JSDJXR/L** Cutting edge angle 93° Insert: DXGU		✓		20 – 25	Screw-on clamping with offset	C042
	**JSDJ2XR/L-CHP** Cutting edge angle 93° Insert: DXGU	✓	✓		12 – 16	Screw-on clamping without offset	G033
	**JTDJ2CR/L** Cutting edge angle 93° Insert: DC□□		✓		10 – 16	Back side clamping without offset	G036
	**JSDJ2CR/L** Cutting edge angle 93° Insert: DC□□		✓		8 – 16	Screw-on clamping without offset	G036
	**JSDJ2CR/L-CHP** Cutting edge angle 93° Insert: DC□□		✓		12 – 16	Screw-on clamping without offset	G037
	**JSDJCR/L** Cutting edge angle 93° Insert: DC□□		✓		8 – 16	Screw-on clamping with offset	G038
	**JSDNCN** Cutting edge angle 62.5° Insert: DC□□		✓		10 – 16	Screw-on clamping with offset	G047
	**JSDN3CR/L** Cutting edge angle 62.5° Insert: DC□□		✓		12 – 16	Screw-on clamping with offset	G048

Miniature External Turning - Quick Guide

External Turning & Profiling

Metric

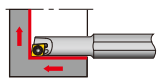
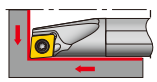
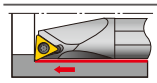
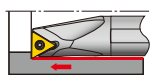
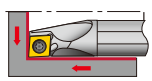
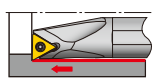
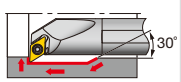
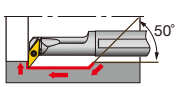
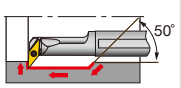
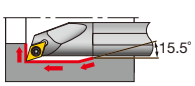
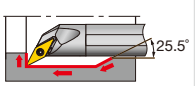
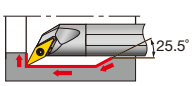
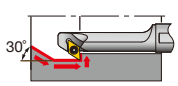
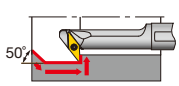
Application	Designation	Insert: MiniForce-Turn	Insert: ISO Positive type	Insert: ISO Negative type	Shank size (mm)	Clamping style	Page
	**JSDJXR-F** Cutting edge angle 93° Insert: DXGU	✓	✓		10 16	Screw-on clamping with offset	G034
	**JPVJ2XR/L** Cutting edge angle 93° Insert: VXGU	✓	✓		10 16	Side clamping without offset	G040
	**JSVJ2XR/L-CHP** Cutting edge angle 93° Insert: VXGU		✓		12 16	Screw-on clamping without offset	G041
	**JSVJ2XR/L** Cutting edge angle 93° Insert: VXGU	✓	✓		10 20	Screw-on clamping without offset	G040
	**JSVJXR/L** Cutting edge angle 93° Insert: VXGU	✓	✓		20 25	Screw-on clamping with offset	C059
	**JSVJ2BR/L** Cutting edge angle 93° Insert: VB□□		✓		10 16	Screw-on clamping without offset	G044
	**JSVJ2BR/L-CHP** Cutting edge angle 93° Insert: VB□□		✓		12	Screw-on clamping without offset	G045

Miniature Internal Turning - Quick Guide

Positive type

StreamJet-Bar

Inch

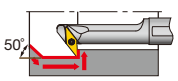
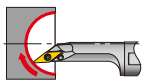
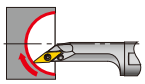
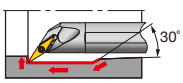
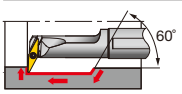
Application	Description & Application	ISO insert	Y-Pro	Shank material	Shank size (in)	Min. bore diameter: DMIN (in) 0 0.400 0.800 1.200 1.600 2.000	Page
	**SEXPR/L** Boring & Internal facing Insert: EP□□	✓		Steel Carbide	ø0.313" ø0.313"	ø0.250" ø0.250"	D040 D041
	**SCLCR/L** Boring & Internal facing Insert: CC□□	✓		Steel Carbide	ø0.375"- ø1.000" ø0.375"- ø1.000"	ø0.500" ø1.250" ø0.500" ø1.250"	D022
	**STUPR/L** Boring Insert: TP□□	✓		Steel Carbide	ø0.313"- ø1.000" ø0.438"- ø1.000"	ø0.438" ø1.250" ø0.438" ø0.875"	D066
	**STFPR/L** Blind hole boring Insert: TP□□	✓		Carbide	ø0.375"- ø1.000"	ø0.500" ø1.000"	D050
	**SCLPR/L** Boring & Internal facing Insert: CP□□	✓		Steel Carbide	ø0.375"- ø0.625" ø0.375"- ø0.625"	ø0.500" ø0.875" ø0.500" ø0.875"	D025
	**STFCR/L** Blind hole boring Insert: TC□□	✓		Carbide	ø0.375"- ø0.750"	ø0.500" ø1.000"	D049
	**SDUCR/L** Boring & Internal profiling Insert: DC□□	✓		Steel Carbide	ø0.375"- ø0.750" ø0.375"- ø0.750"	ø0.625" ø1.000" ø0.625" ø1.000"	D058
	**SVUCR/L** Boring & Internal profiling Insert: VC□□	✓		Steel	ø0.625"- ø0.750"	ø0.875" ø1.000"	D076
	**SVUBR/L** Boring & Internal profiling Insert: VB□□	✓		Steel	ø0.750"	ø1.000"	D072
	**SDQCR/L** Boring & Internal profiling Insert: DC□□	✓		Steel	ø0.375"- ø0.625"	ø0.625" ø0.875"	D085
	**SVQCR/L** Boring & Internal profiling Insert: VC□□	✓		Steel	ø0.500"- ø0.625"	ø0.688" ø1.000"	D090
	**SVQBR/L** Boring & Internal profiling Insert: VB□□	✓		Steel	ø0.625"	ø1.000"	D088
	**SDZCR/L** Internal retracting Insert: DC□□	✓		Steel	ø0.625"	ø0.875"	D094
	**SVZCR/L** Internal retracting Insert: VC□□	✓		Steel	ø0.500"- ø0.750"	ø0.750" ø1.000"	D099

Miniature Internal Turning - Quick Guide

Positive type

StreamJet-Bar

Inch

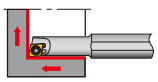
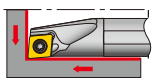
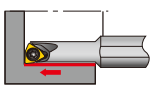
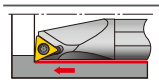
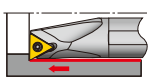
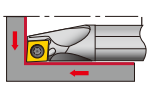
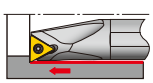
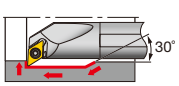
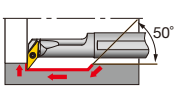
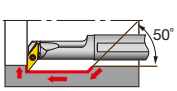
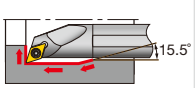
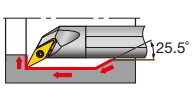
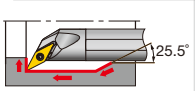
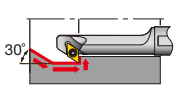
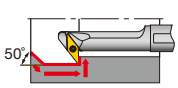
Application	Description & Application	ISO insert	Y-Pro	Shank material	Shank size (in)	Min. bore diameter: DMIN (in) 0 0.400 0.800 1.200 1.600 2.000	Page
	**SVZBR/L** Internal retracting Insert: VB□□	✓		Steel	ø0.750"	ø1.000"	D098
	**SVJCR/L** Internal sphere cutting Insert: VC□□	✓		Steel	ø0.625"	ø1.000"	D044
	**SVJBR/L** Internal sphere cutting Insert: VB□□	✓		Steel	ø0.625"	ø1.000"	D043
	**SYQBR/L** Internal undercut & profiling Insert: YW□□		✓	Steel Carbide	ø0.500"- ø0.625" ø0.500"- ø0.625"	ø0.750" ø0.875" ø0.750" ø0.875"	D092
	**SYUBR/L** Boring & Internal profiling Insert: YW□□		✓	Steel Carbide	ø0.625" ø0.500"- ø0.625"	ø1.000" ø0.875" ø1.000"	D084

Miniature Internal Turning - Quick Guide

Positive type

StreamJet-Bar

Metric

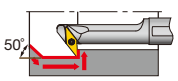
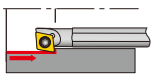
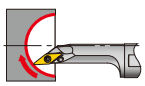
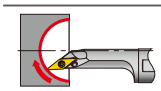
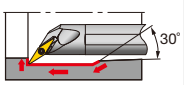
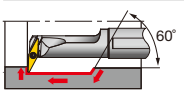
Application	Description & Application	ISO insert	Y-Pro	Shank material	Shank size (mm)	Min. bore diameter: DMIN (mm) 0 10 20 30 40 50	Page
	**SEXPR/L** Boring & Internal facing Insert: EP□□	✓		Steel Carbide	ø4 - ø8 ø4 - ø8	ø4.5 ø7 ø4.5 ø7	D040 D041
	**SCLCR/L** Boring & Internal facing Insert: CC□□	✓		Steel Carbide	ø4 - ø25 ø4 - ø25	ø5 ø27 ø5 ø27	D023 D024
	**SWUBR/L** Boring Insert: WB□□	✓		Steel Carbide	ø5 - ø8 ø5 - ø8	ø6 ø8 ø6 ø8	D083
	**STUPR/L** Boring Insert: TP□□	✓		Steel Carbide	ø7 - ø32 ø7 - ø25	ø8 ø34 ø8 ø27	D067 D068
	**STFPR/L** Blind hole boring Insert: TP□□	✓		Steel Carbide	ø8 - ø25 ø8 - ø20	ø10 ø27 ø10 ø22	D050
	**SCLPR/L** Boring & Internal facing Insert: CP□□	✓		Steel Carbide	ø8 - ø25 ø8 - ø16	ø10 ø27 ø10 ø20	D026 D027
	**STFCR/L** Blind hole boring Insert: TC□□	✓		Steel Carbide	ø10 - ø16 ø10 - ø16	ø12 ø18 ø12 ø18	D049
	**SDUCR/L** Boring & Internal profiling Insert: DC□□	✓		Steel Carbide	ø10 - ø25 ø10 - ø20	ø13 ø32 ø13 ø27	D058
	**SVUCR/L** Boring & Internal profiling Insert: VC□□	✓		Steel Carbide	ø12 - ø25 ø12 - ø25	ø16 ø32 ø18 ø32	D076
	**SVUBR/L** Boring & Internal profiling Insert: VB□□	✓		Steel Carbide	ø16 - ø25 ø16 - ø25	ø20 ø32 ø24.5 ø34	D072
	**SDQCR/L** Boring & Internal profiling Insert: DC□□	✓		Steel Carbide	ø10 - ø25 ø10 - ø20	ø13 ø30 ø13 ø25	D085 D086
	**SVQCR/L** Boring & Internal profiling Insert: VC□□	✓		Steel Carbide	ø10 - ø16 ø10 - ø16	ø13.5 ø21.5 ø13.5 ø21.5	D090
	**SVQBR/L** Boring & Internal profiling Insert: VB□□	✓		Steel Carbide	ø12 - ø25 ø12 - ø25	ø17 ø30.5 ø17 ø30.5	D088
	**SDZCR/L** Internal retracting Insert: DC□□	✓		Steel Carbide	ø12 - ø25 ø12 - ø16	ø14 ø25 ø18 ø22	D094
	**SVZCR/L** Internal retracting Insert: VC□□	✓		Steel	ø12	ø16	D099

Miniature Internal Turning - Quick Guide

Positive type

StreamJet-Bar

Metric

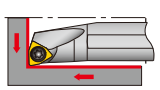
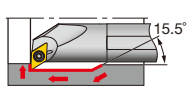
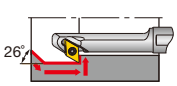
Application	Description & Application	ISO insert	Y-Pro	Shank material	Shank size (mm)	Min. bore diameter: DMIN (mm) 0 10 20 30 40 50	Page
	**SVZBR/L** Internal retracting Insert: VB□□	✓		Steel	ø16 - ø32	ø20 ø40	D098
	**SEZPR/L** Internal retracting Insert: EP□□	✓		Steel Carbide	ø4 - ø5 ø4 - ø5	ø5.5 ø6.5 ø5.5 ø6.5	D097
	**SVJCR/L** Internal sphere cutting Insert: VC□□	✓		Steel	ø12 - ø16	ø16 ø20	D044
	**SVJBR/L** Internal sphere cutting Insert: VB□□	✓		Steel	ø20 - ø25	ø25 ø30	D043
	**SYQBR/L** Internal undercut & profiling Insert: YW□□		✓	Steel Carbide	ø12 - ø16 ø12 - ø16	ø17 ø21.5 ø17 ø21.5	D092
	**SYUBR/L** Boring & Internal profiling Insert: YW□□		✓	Steel Carbide	ø16 ø12 - ø16	ø20 ø20 ø24.5	D084

Miniature Internal Turning - Quick Guide

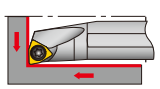
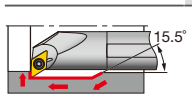
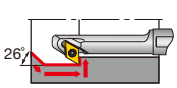
Double-sided insert with positive cutting edges

MiniForce-Turn

Inch

Application	Description & Application	MiniForce-Turn	Shank material	Shank size (in)	Min. bore diameter: DMIN (in) 0 0.400 0.800 1.200 1.600 2.000	Page
	**SWLXR/L** Boring & Internal facing Insert: WXGU	✓	Steel Carbide	ø0.375" - ø1.000" ø0.375" - ø1.000"	ø0.500" ø1.250" ø0.500" ø1.250"	D034
	**SDXXR/L** Boring & Internal profiling Insert: DXGU	✓	Steel Carbide	ø0.375" - ø1.000" ø0.375" - ø1.000"	ø0.625" ø1.250" ø0.625" ø1.250"	D042
	**SDZXR/L** Internal retracting Insert: DXGU	✓	Steel	ø0.500" - ø0.750"	ø0.625" ø0.875"	D093

Metric

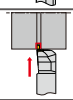
Application	Description & Application	MiniForce-Turn	Shank material	Shank size (mm)	Min. bore diameter: DMIN (mm) 0 10 20 30 40 50	Page
	**SWLXR/L** Boring & Internal facing Insert: WXGU	✓	Steel Carbide	ø10 - ø20 ø10 - ø20	ø12 ø22 ø12 ø22	D034
	**SDXXR/L** Boring & Internal profiling Insert: DXGU	✓	Steel Carbide	ø10 - ø20 ø10 - ø20	ø13 ø24 ø13 ø24	D042
	**SDZXR/L** Internal retracting Insert: DXGU	✓	Steel Carbide	ø12 - ø20 ø12 - ø16	ø14 ø20 ø18 ø22	D093

Miniature Grooving - Quick Guide

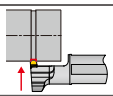
External Grooving

TetraMini-Cut

Inch

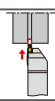
Application	Designation	Insert	Shank size (in) 0 0.375 0.500 0.750 1.250	Groove width (in)	Max. groove depth (in)	Page
	**STCR/L-18-CHP**	TC*18R/L...	ø0.500" ø0.625"	0.013" - 0.118"	0.031" - 0.138"	G080 G081
	**STCR/L-18**	TC*18R/L...	ø0.375" ø1.000"	0.013" - 0.118"	0.031" - 0.138"	G080

Metric

Application	Designation	Insert	Shank size (mm) 0 10 20 30	Groove width (mm)	Max. groove depth (mm)	Page
	**JS-STCL18**	TC*18R...	ø14 ø25.4	0.33 - 3.0	0.8 - 3.5	G081

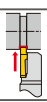
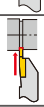
TetraForce-Cut

Inch

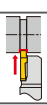
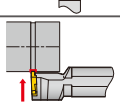
Application	Designation	Insert	Shank size (in) 0 0.375 0.500 0.750 1.000	Groove width (in)	Max. groove depth (in)	Page
	**STCR/L-27**	TC*27...	ø0.375" ø1.000"	0.020" - 0.125"	0.039" - 0.252"	G090

J-series

Inch

Application	Designation	Insert	Shank size (in) 0 0.375 0.500 0.750 1.000	Groove width (in)	Max. groove depth (in)	Page
	**JSTGR/L**	JTGR/L3...	ø0.375" ø0.625"	0.013" - 0.118"	0.028" - 0.102"	G096
	**JSVGR/L**	JVGR/L...	ø0.375" ø0.625"	0.013" - 0.079"	0.028" - 0.217"	G101

Metric

Application	Designation	Insert	Shank size (mm) 0 10 20 30	Groove width (mm)	Max. groove depth (mm)	Page
	**JSTGR/L**	JTGR/L3...	10 16	0.33 - 3.0	0.7 - 2.6	G096
	**JS-TGL3**	JTGR3...	ø19.05 ø25.4	0.33 - 3.0	0.7 - 2.6	G096
	**JSVGR/L**	JVGR/L...	10 16	0.33 - 2.0	0.7 - 5.5	G101
	**JSXGR/L**	JXGR/L8...	10 25	0.7 - 2.0	4.5 - 6.0	G100

Miniature Grooving - Quick Guide

External Grooving

GTGN

Inch

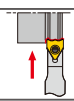
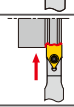
Application	Designation	Insert	Shank size (in) 0 0.375 0.500 0.750 1.000 1.250	Groove width (in)	Max. groove depth (in)	Page
	**CER/L**	GTGN-16E…	ø0.750" ø1.250"	0.039" - 0.089"	0.049" - 0.071"	F087

Metric

Application	Designation	Insert	Shank size (mm) 0 10 20 30 40	Groove width (mm)	Max. groove depth (mm)	Page
	**CER/L**	GTGN-16E…	12 20	1.0 - 2.25	1.0 - 6.4	F087

TungHeavyGroove

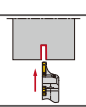
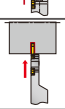
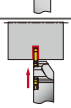
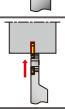
Inch

Application	Designation	Insert	Shank size (in) 0 0.375 0.500 0.750 1.000	Groove width (in)	Max. groove depth (in)	Page
	**FPGN**	PSGB…	ø0.500" ø1.000"	0.394" - 0.984"	Wide grooving and profiling	G103
	**SPGN**	PSGB…	ø0.500" ø1.000"	0.394" - 0.984"	Wide grooving and profiling	G103

Parting

DuoJustCut

Inch

Application	Designation	Insert	Shank size (in) 0 0.375 0.500 0.750 1.000	Groove width (in)	Max. parting diameter (mm)	Page
	**JSXXR/L-X-CHP**	JXPG…	ø0.500" ø0.625"	0.039" - 0.079"	ø20	G112
	**JSXXR/L-X-S-CHP** **JSXXR/L-F-S-CHP**	JXPG…	ø0.500" ø0.625"	0.039" - 0.079"	ø20	G113
	**JSXXR/L**	JXPG…	ø0.375" ø0.625"	0.039" - 0.079"	ø20	G111
	**JSXXR/L-S**	JXPG…	ø0.375" ø0.500"	0.039" - 0.079"	ø20	G111

Miniature Parting - Quick Guide

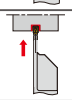
Parting

TungCut

Inch

Application	Designation	Insert	Shank size (in) 0 0.375 0.500 0.750 1.000	Groove width (in)	Max. parting diameter (in)	Page
	**JCTER/L-CHP**	DG.../SG...	ø0.500" – ø0.750"	0.079"	ø1.260"	G121
	**JCTER/L**	DG.../SG...	ø0.500" – ø0.625"	0.079" - 0.118"	ø1.260"	G120

Metric

Application	Designation	Insert	Shank size (mm) 0 10 20 30 40	Groove width (mm)	Max. parting diameter (mm)	Page
	**JCTER/L-CHP**	DG.../SG...	12 – 20	1.4 - 3.0	ø32	G121
	**JCTER/L**	DG.../SG...	10 – 20	1.4 - 3.0	ø32	G120
	**CGER/L**	DG.../SG...	10 – 20	1.4 - 3.0	ø55	G121

My-T

Metric

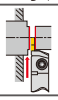
Application	Designation	Insert	Shank size (mm) 0 10 20 30	Groove width (mm)	Max. parting diameter (mm)	Page
	**JCGSSR/L**	GE20...	10 – 25	2.0	ø32	F063

J-series

Inch

Application	Designation	Insert	Shank size (in) 0 0.375 0.500 0.750 1.000	Groove width (in)	Max. parting diameter (in)	Page
	**JCCWSR/L**	JCC*200F...	ø0.375" – ø0.625"	0.079"	ø0.787"	F105

Metric

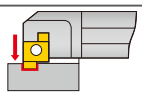
Application	Designation	Insert	Shank size (mm) 0 10 20 30	Groove width (mm)	Max. parting diameter (mm)	Page
	**JCCWSR/L**	JCC*200F...	10 – 25	2.0	ø20	F105
	**JCGWSR/L**	JCGN200F...	10 – 16	2.0	ø20	F106

Miniature Grooving - Quick Guide

Internal Grooving

SNG

Metric

Application	Designation	Insert	Shank size (mm) 0 10 20 30	Groove width (mm)	Max. groove depth (mm)	Min. bore diameter (mm)	Page
	**SNGR/L**	*GR/L...	ø8.0 — ø20.0	1.0 - 3.5	1.5 - 3.0	8.0 - 24.0	F159

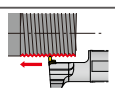
External Threading

TetraMini-Cut

Inch

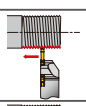
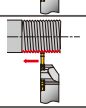
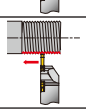
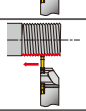
Application	Designation	Insert	Shank size (in) 0 0.375 0.500 0.750 1.000	Corner R (mm)	Pitch (mm)	Page
	**STCR/L-18-CHP**	TCT18R/L...	ø0.500" — ø1.000"	0.05 - 0.2	0.4 - 3.0	G080 G081
	**STCR/L-18**	TCT18R/L...	ø0.375" — ø1.000"	0.05 - 0.2	0.4 - 3.0	G080

Metric

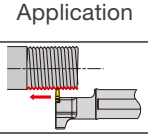
Application	Designation	Insert	Shank size (mm) 0 10 20 30	Corner R (mm)	Pitch (mm)	Page
	**JS-STCL18**	TCT18R...	ø14 — ø25.4	0.05 - 0.2	0.4 - 3.0	G081

DuoJust-Cut

Inch

Application	Designation	Insert	Shank size (in) 0 0.375 0.500 0.750 1.000	Corner R (mm)	Pitch (mm)	Page
	**JSXXR/L-X-CHP**	JXTG12...	ø0.500" — ø0.625"	0.05Max. - 0.1	0.2 - 1.5	G112
	**JSXXR/L-X-S-CHP** **JSXXR/L-F-S-CHP**	JXTG12...	ø0.500" — ø0.625"	0.05Max. - 0.1	0.2 - 1.5	G113
	**JSXXR/L**	JXTG12...	ø0.375" — ø0.625"	0.05Max. - 0.1	0.2 - 1.5	G111
	**JSXXR/L-S**	JXTG12...	ø0.375" — ø0.500"	0.05Max. - 0.1	0.2 - 1.5	G111

Metric

Application	Designation	Insert	Shank size (mm) 0 10 20 30	Corner R (mm)	Pitch (mm)	Page
	**JS-SXXL09**	JXTG12R...	ø19.05 — ø25.4	0.05Max. - 0.1	0.2 - 1.5	G115

Miniature Threading - Quick Guide

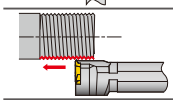
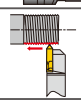
External Threading

J-series

Inch

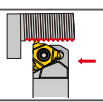
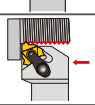
Application	Designation	Insert	Shank size (in) 0 0.375 0.500 0.750 1.000	Corner R (mm)	Pitch (mm)	Page
	**JSTTR/L**	JTTR/L3...	ø0.375" ø0.625"	0.05 - 0.1	0.5 - 1.0	G109

Metric

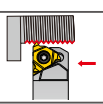
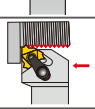
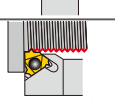
Application	Designation	Insert	Shank size (mm) 0 10 20 30	Corner R (mm)	Pitch (mm)	Page
	**JSTTR/L**	JTTR/L3...	10 16	0.05 - 0.1	0.5 - 1.0	G109
	**JS-TTL3**	JTTR3...	ø19.05 ø25.4	0.05 - 0.1	0.5 - 1.0	G109
	**JSXBR/L**	JXT*R6000F	10 25	0.03	0.5 - 1.0	G108

TungThread

Inch

Application	Designation	Insert	Shank size (in) 0 0.375 0.500 0.750 1.000 1.250	Corner R (mm)	Pitch (mm)	Page
	**JSE2R16-CHP**	16ER/L...	ø0.500" ø0.625"	0.05 - 0.22	0.5 - 3.0	G105
	**CER/L**	16ER/L...	ø0.750" ø1.250"	0.05 - 0.22	0.5 - 3.0	F087

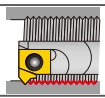
Metric

Application	Designation	Insert	Shank size (mm) 0 10 20 30 40	Corner R (mm)	Pitch (mm)	Page
	**JSE2R16-CHP**	16ER/L...	12 16	0.05 - 0.22	0.5 - 3.0	G105
	**CER/L**	16ER/L...	12 25	0.05 - 0.22	0.5 - 3.0	F087
	**B-S/CER/L**	16ER/L...	-	0.05 - 0.22	0.5 - 3.0	G106
	**BC-SER**	16ER/L...	-	0.05 - 0.22	0.5 - 3.0	G107

Internal Threading

TungThread

Metric

Application	Designation	Insert	Shank size (mm) 0	10	20	30	Groove width (mm)	Max. groove depth (mm)	Min. bore diameter (mm)	Page
	**SNR/L**	6IR/L...	8				-	0.5 - 2.0	8.0 - 10.0	E036

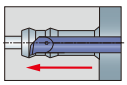
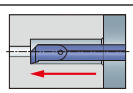
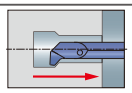
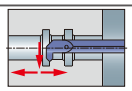
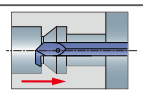
Miniature Internal Turning - Quick Guide

TinyMini-Turn - Solid carbide tools for small diameter turning

Boring, profiling & chamfering

TinyMini-Turn

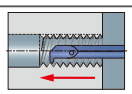
Metric

Application	Description & Application	Shank Size	Min. bore diameter: DMIN (mm) 0 2 4 6 8 10	Page
	**JBT** Boring, profiling & chamfering	ø4 & ø7	ø0.6 – ø7	G070
	**JBP** Face grooving	ø4 & ø7	ø2.8 – ø5	G071
	**JBU** Back boring & chamfering	ø7	ø5	G071
	**JBC** Boring & 45° chamfering	ø7	ø5 – ø6.8	G071
	**JBB** Back boring	ø4 & ø7	ø3 – ø7	G072

Threading

TinyMini-Turn

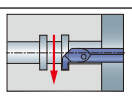
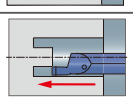
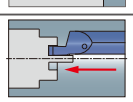
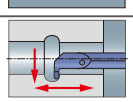
Metric

Application	Description & Application	Shank Size	Min. bore diameter: DMIN (mm) 0 2 4 6 8 10	Page
	**JBI** Threading (Metric thread)	ø4 & ø7	ø4 – ø7	G072

Internal Grooving

TinyMini-Turn

Metric

Application	Description & Application	Shank Size	Groove width	Min. bore diameter: DMIN (mm) 0 2 4 6 8 10 12 14 15	Page
	**JBG** Internal Grooving	ø4 & ø7	0.5 - 2	ø2 – ø6.8	G073
	**JBF** Face grooving	ø7	1 - 3	ø6 – ø15	G074
	**JBS** Face grooving (for shaft)	ø7	2	ø6	G074
	**JBR** Boring & profiling (full radius type)	ø7	1	ø5 – ø6.8	G075

TUNGTURN TJET

Thru-coolant holder system

High pressure coolant is supplied through the holder to facilitate smooth chip evacuation, improved chip breaking and reduced machine down-time

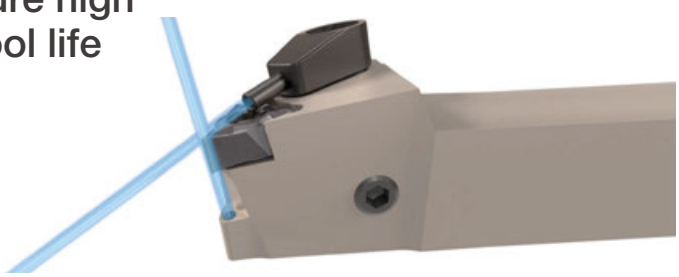
External coolant supply at normal pressure

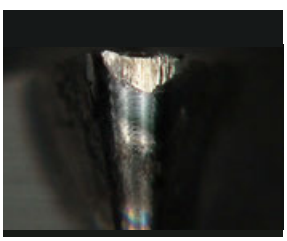
High pressure coolant (7 MPa)

Coolant jets from two outlets ensure high cutting efficiency and extended tool life

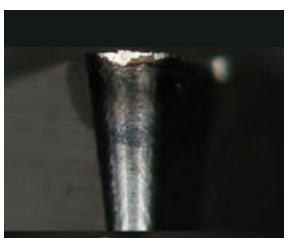
Directly to the cutting edge

Reliable chip control
Reduces crater and notch wears

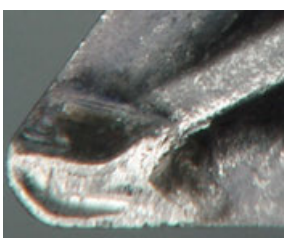




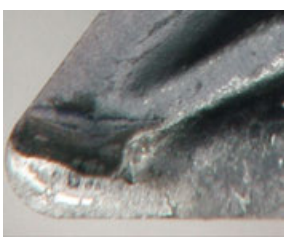
Excessive wear with external coolant supply (at normal pressure)



High pressure coolant (7 MPa)



Excessive crater wear with external coolant supply (at normal pressure)



High pressure coolant (7 MPa)

Reference pages: G025, G028, G033, G037, G041, G045, G080, G091 - G095, G112 - G113

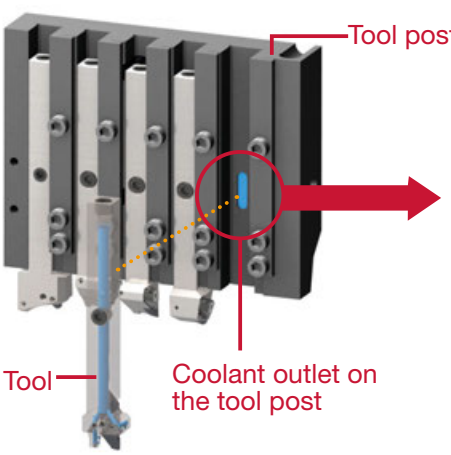
Tube-free design streamlines tool setup.
Through-coolant supply enables high productivity.

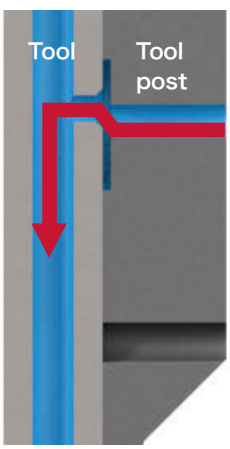
Conventional

Direct connection without coolant tube

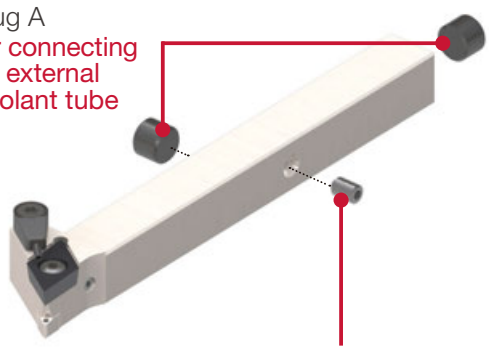
No need for coolant tube setup. Eliminates chip entanglement on tubes and streamlines tool replacement.

Coolant is supplied from the tool post directly to the tools.





Plug A
for connecting an external coolant tube

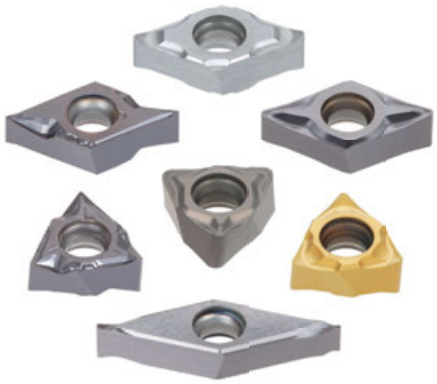


Plug B
for direct connection without coolant tube

Use a non-coolant-through tool when a coolant supply is not needed through the tool.

Nozzle tube delivers coolant directly to the cutting edge

Reference pages : G025, G028, G033, G037, G041, G045, G080, G091, G105, G112 - G113, G121

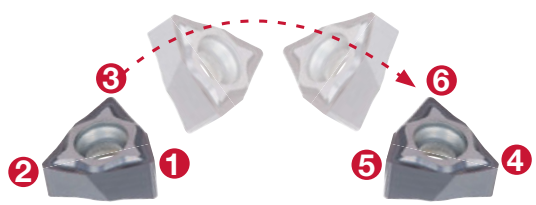


Economical double-sided positive insert

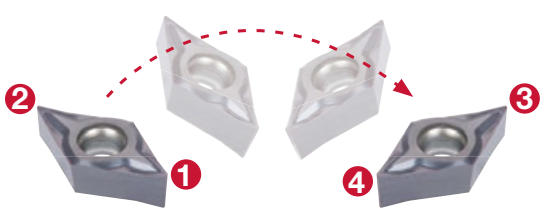
Innovative geometry and seat interface ensures stability and high performance.

Insert

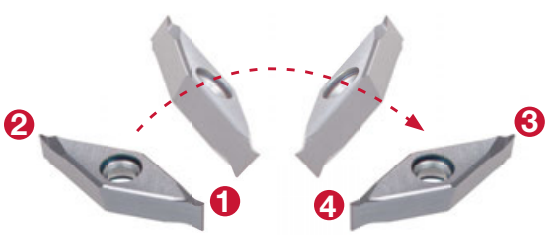
WXGU0403·· 6 positive cutting edges



DXGU0703·· 4 positive cutting edges

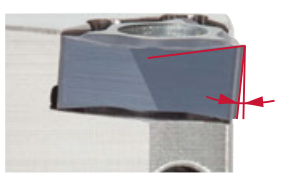


VXGU09T2·· 4 positive cutting edges

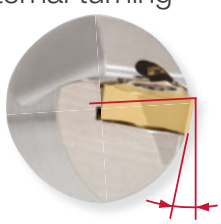


High rake angle

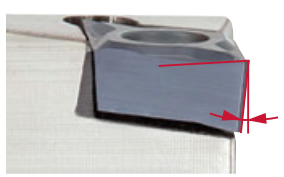
External turning



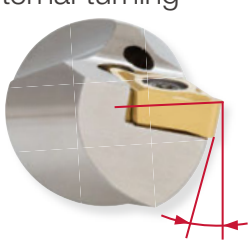
Internal turning



External turning



Internal turning

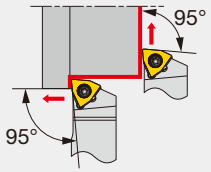


External turning

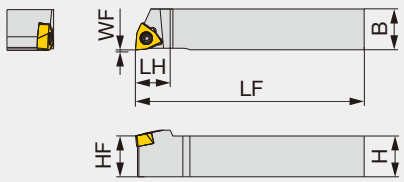
Reference pages : G023 - G024, G026, G031 - G032, G035, G040, G042 - G043, G069

JSWL2XR/L

Screw-on toolholder with 95° approach angle, for WXGU inserts



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSWL2XR/L062	0.375	0.375	4.750	0.500	0.375	0	0.008	WXGU0403**L/R...	0.66
JSWL2XR/L082	0.500	0.500	4.750	0.500	0.500	0	0.008	WXGU0403**L/R...	0.66
JSWL2XR/L102	0.625	0.625	4.750	0.500	0.625	0	0.008	WXGU0403**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSWL2XR/L1010X04	10	10	120	11	10	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1212F04	12	12	85	11	12	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1212X04	12	12	120	11	12	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L1616X04	16	16	120	13	16	0	0.2	WXGU0403**L/R...	0.9
JSWL2XR/L2020H04	20	20	100	13	20	0	0.2	WXGU0403**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS


Designation	Clamping screw	Wrench
JSWL2XR/L...	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JSS	JS
Cutting conditions	G069	


M

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JSS	JS
Cutting conditions	G069	


Small CNC lathes

P

Application	Finish cutting	Medium cutting
Grade	AH725	AH725
Chipbreaker shape	SS	TS
Cutting conditions	G069	

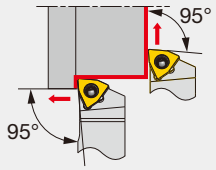

M

Application	Finish cutting	Medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	SS	TS
Cutting conditions	G069	

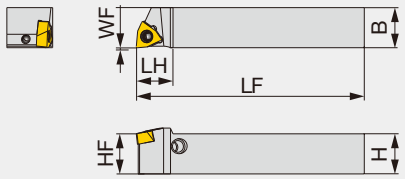

Reference pages: JSWL2XR/L: Inserts → B161 -, Standard cutting conditions → G069

JPWL2XR/L

Lever-lock toolholder with 95° approach angle, for WXGU inserts



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JPWL2XR/L062	0.375	0.375	4.750	0.500	0.375	0	0.008	WXGU0403**L/R...	0.66
JPWL2XR/L082	0.500	0.500	4.750	0.500	0.500	0	0.008	WXGU0403**L/R...	0.66
JPWL2XR/L102	0.625	0.625	4.750	0.500	0.625	0	0.008	WXGU0403**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JPWL2XR/L1010X04	10	10	120	11	10	0	0.2	WXGU0403**L/R...	0.9
JPWL2XR/L1212F04	12	12	85	11	12	0	0.2	WXGU0403**L/R...	0.9
JPWL2XR/L1212X04	12	12	120	11	12	0	0.2	WXGU0403**L/R...	0.9
JPWL2XR/L1616X04	16	16	120	13	16	0	0.2	WXGU0403**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Lever	Pin	Clamping screw	Wrench
JPWL2XR/L...	SLLV-2	SL-PI-2	SR10400611	HW2.0/5RED

INSERT SELECTION

Swiss lathes

P

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JSS	JS
Cutting conditions	G069	

M

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JSS	JS
Cutting conditions	G069	

Small CNC lathes

P

Application	Finish cutting	Medium cutting
Grade	AH725	AH725
Chipbreaker shape	SS	TS
Cutting conditions	G069	

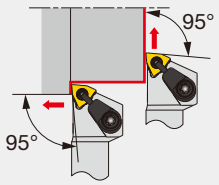
M

Application	Finish cutting	Medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	SS	TS
Cutting conditions	G069	

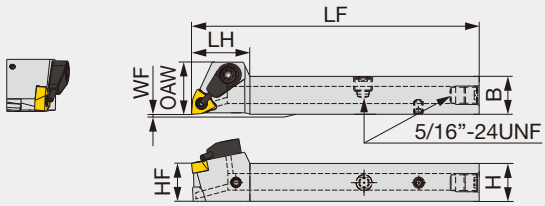
Reference pages: JPWL2XR/L: Inserts → B161 -, Standard cutting conditions → G069

JSWL2XR/L-CHP

Screw-on toolholder with 95° approach angle, for WXGU inserts, with high pressure coolant capability



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque
JSWL2XR082X-CHP	0.500	0.500	4.750	0.728	0.500	0	0.650	0.008	WXGU0403**L...	0.66
JSWL2XR102X-CHP	0.625	0.625	4.750	0.728	0.625	0	0.650	0.008	WXGU0403**L...	0.66

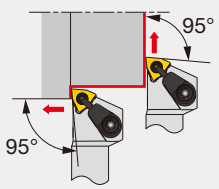
Metric	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSWL2XR1212X04-CHP	12	12	120	18.5	12	0	16.5	0.2	WXGU0403**L...	0.9
JSWL2XR1616X04-CHP	16	16	120	18.5	16	0	16.5	0.2	WXGU0403**L...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

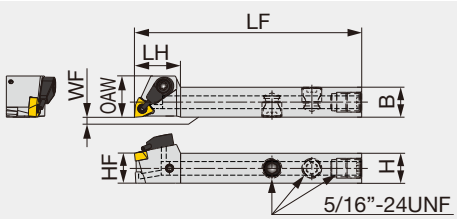
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench
JSWL2XR**-CHP	SR34-514	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Please see Tungaloy report (TR432) for tool overhang length and coolant plug.



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque
JSWL2XR/L082-CHP	0.500	0.500	3.344	0.750	0.500	0	0.650	0.008	WXGU0403**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSWL2XR/L1212F04-CHP	12	12	85	18	12	0	16.5	0.2	WXGU0403**L/R...	0.9

Torque: Recommended clamping torque: lb·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2
JSWL2XR/L**-CHP	SR34-514	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4

INSERT SELECTION

Swiss lathes

P

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JSS 	JS 
Cutting conditions	G069	

M

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JSS 	JS 
Cutting conditions	G069	

Small CNC lathes

P

Application	Finish cutting	Medium cutting
Grade	AH725	AH725
Chipbreaker shape	SS 	TS 
Cutting conditions	G069	

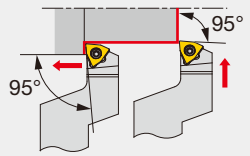
M

Application	Finish cutting	Medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	SS 	TS 
Cutting conditions	G069	

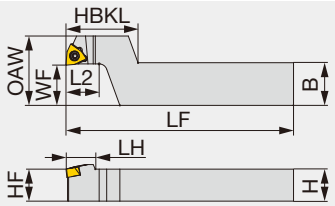
Reference pages: JSWL2XR/L-CHP: Inserts → B161 -, Standard cutting conditions → G069

JSWLXR-F

Screw-on stepped-head toolholder with 95° approach angle, for WXGU inserts



Cutting edge style **L**



Right hand (R) shown.

Inch	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque
JSWLXR082-F10	0.500	0.625	4.750	0.500	1.100	0.500	0.500	0.625	1.000	0.008	WXGU22**L...	0.66
JSWLXR102-F10	0.625	0.750	4.750	0.500	1.100	0.500	0.625	0.625	1.000	0.008	WXGU22**L...	0.66

Metric	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSWLXR1016X04-F15	10	16	120	12	27	11	10	15	26	0.2	WXGU0403**L...	0.9
JSWLXR1216F04-F15	12	16	85	12	27	11	12	15	26	0.2	WXGU0403**L...	0.9
JSWLXR1216X04-F15	12	16	120	12	27	11	12	15	26	0.2	WXGU0403**L...	0.9
JSWLXR1620X04-F15	16	20	120	12	27	11	16	15	26	0.2	WXGU0403**L...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS


Designation	Clamping screw	Wrench
JSWLXR**-F10, JSWLXR**-F15	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P	Application	Finish cutting	Medium to finish cutting
	Grade	SH725	SH725
	Chipbreaker shape	JSS 	JS 
	Cutting conditions	G069	

M	Application	Finish cutting	Medium to finish cutting
	Grade	SH725	SH725
	Chipbreaker shape	JSS 	JS 
	Cutting conditions	G069	

Small CNC lathes

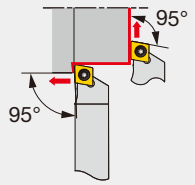
P	Application	Finish cutting	Medium cutting
	Grade	AH725	AH725
	Chipbreaker shape	SS 	TS 
	Cutting conditions	G069	

M	Application	Finish cutting	Medium cutting
	Grade	AH8015	AH8015
	Chipbreaker shape	SS 	TS 
	Cutting conditions	G069	

Reference pages: JSWLXR-F: Inserts → B161 -, Standard cutting conditions → G069

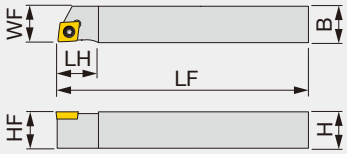
JSCL2CR/L

Screw-on toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L2**

Without offset



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSCL2CR/L062	0.375	0.375	5.000	0.438	0.375	0.375	0.008	CC**21.5...	0.89
JSCL2CR/L082	0.500	0.500	5.000	0.438	0.500	0.500	0.008	CC**21.5...	0.89
JSCL2CR/L103	0.625	0.625	5.000	0.625	0.625	0.625	0.008	CC**32.5...	0.89

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSCL2CR/L1010X06	10	10	120	12	10	10	0.2	CC**0602...	1.2
JSCL2CR/L1212F06	12	12	85	12	12	12	0.2	CC**0602...	1.2
JSCL2CR/L1212X06	12	12	120	12	12	12	0.2	CC**0602...	1.2
JSCL2CR/L1212F09	12	12	85	16	12	12	0.2	CC**09T3...	1.2
JSCL2CR/L1212X09	12	12	120	16	12	12	0.2	CC**09T3...	1.2
JSCL2CR/L1616X09	16	16	120	16	16	16	0.2	CC**09T3...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JSCL2CR/L062/082, JSCL2CR/L**06	CSTB-2.5	T-8F
JSCL2CR/L103, JSCL2CR/L**09	CSTB-4SD	T-8F

INSERT SELECTION

P

Application	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

M

Application	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

K

Application	medium to finish cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finish cutting	Medium cutting
Grade	DX120	TH10	KS05F
Chipbreaker shape	T-DIA	with rake W20	AL
Cutting conditions	B026		

S

Application	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Chipbreaker shape	JS	JS
Cutting conditions	G069	

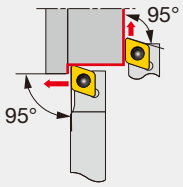
H

Application	Precision finishing	Finish cutting
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: JSCL2CR/L: Inserts → B111 -, CBN → B182, PCD → B196 -

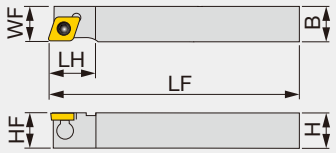
JTCL2CR/L

Back-clamp toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L2**

Without offset



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JTCL2CR/L1010X06	10	10	120	12	10	10	0.2	CC**0602...	0.9
JTCL2CR/L1212F09	12	12	85	16	12	12	0.2	CC**09T3...	1.2
JTCL2CR/L1212X09	12	12	120	16	12	12	0.2	CC**09T3...	1.2
JTCL2CR/L1616X09	16	16	120	16	16	16	0.2	CC**09T3...	1.2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

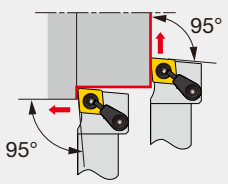
SPARE PARTS



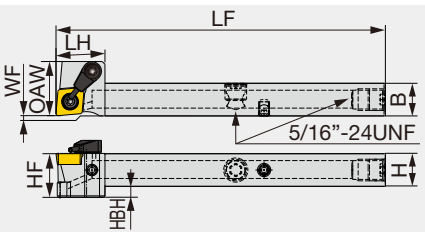
Designation	Clamp	Clamping screw	Wrench
JTCL2CR/L**06	JCP-2	JDS-3525	P-2F
JTCL2CR/L**09	JCP-3	JDS-5040	P-2.5F

JSCL2CR-CHP

Screw-on toolholder with 95° approach angle, for positive 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	HBH	WF	OAW	RE**	Insert	Torque
JSCL2CR083X-CHP	0.500	0.500	4.750	0.709	0.500	0.031	0	0.787	0.008	CC**09T3...	0.89
JSCL2CR103X-CHP	0.625	0.625	4.750	0.709	0.625	-	0	0.787	0.008	CC**09T3...	0.89

Metric	H	B	LF	LH	HF	HBH	WF	OAW	RE**	Insert	Torque*
JSCL2CR1212X09-CHP***	12	12	120	18	12	4	0	20	0.2	CC**09T3...	1.2
JSCL2CR1212X09B-CHP	12	12	120	18	12	1.5	0	20	0.2	CC**09T3...	1.2
JSCL2CR1616X09-CHP	16	16	120	18	16	0	0	20	0.2	CC**09T3...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
*** : This item will be replaced with a new product in the future.

SPARE PARTS



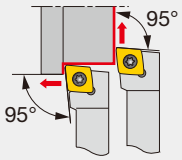
Designation	Clamping screw	Coolant unit	Wrench
JSCL2CR**-CHP	CSTB-4SD	S-CU-CHP	T-8F

Reference pages: JTCL2CR/L, JSCL2CR-CHP: Inserts → B111 -, CBN → B182, PCD → B196 -

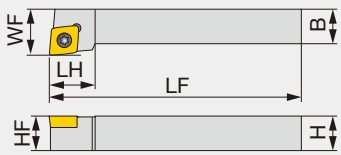
J-SERIES

JSCLCR/L

Screw-on toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSCLCR/L0808H06	8	8	100	12	8	10	0.4	CC**0602...	1.2
JSCLCR/L1010H06	10	10	100	12	10	12	0.4	CC**0602...	1.2
JSCLCR/L1212H09	12	12	100	16	12	16	0.8	CC**09T3...	1.2
JSCLCR/L1616H09	16	16	100	16	16	20	0.8	CC**09T3...	1.2

SPARE PARTS

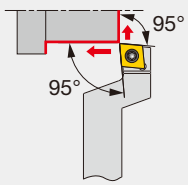
Designation	Clamping screw	Wrench
JSCLCR/L**H06	CSTB-2.5	T-8F
JSCLCR/L**H09	CSTB-4SD	T-8F

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

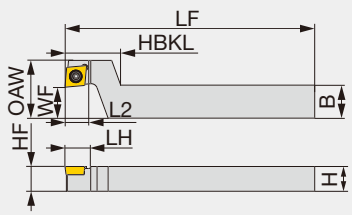
J-SERIES

JSCLCR-F

Screw-on stepped-head toolholder with 95° approach angle, for positive 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque
JSCLCR1216F09-F15	12	16	85	12	27	12.5	12	15	28	0.2	CC**09T3...	1.2
JSCLCR1216X09-F15	12	16	120	12	27	12.5	12	15	28	0.2	CC**09T3...	1.2
JSCLCR1620X09-F15	16	20	120	12	27	12.5	16	15	28	0.2	CC**09T3...	1.2

SPARE PARTS

Designation	Clamping screw	Wrench
JSCLCR**F15	CSTB-4SD	T-8F

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

INSERT SELECTION

P

Application	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

M

Application	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

K

Application	Medium to finish cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finish cutting	Medium cutting
Grade	DX120	TH10	KS05F
Chipbreaker shape	T-DIA (with rake)	W20	AL
Cutting conditions	B026		

S

Application	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Chipbreaker shape	JS	JS
Cutting conditions	G069	

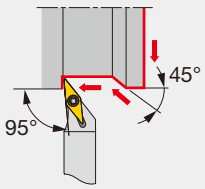
H

Application	Precision finishing	Finish cutting
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: JSCLCR/L, JSCLCR-F: Inserts → B111 -, CBN → B182, PCD → B196 -

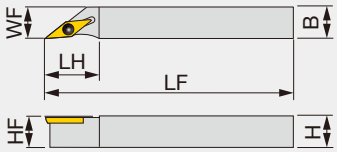
JSVL2PR/L

Screw-on toolholder with 95° approach angle, for positive 35° rhombic inserts



Cutting edge style **L2**

Without offset



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSVL2PR/L082	0.500	0.500	5.000	0.813	0.500	0.500	0.008	VP**1103...	0.89
JSVL2PR/L102	0.625	0.625	5.000	0.813	0.625	0.625	0.008	VP**1103...	0.89

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVL2PR/L1010X08	10	10	120	16	10	10	0.2	VP**0802...	0.6
JSVL2PR/L1010K08	10	10	125	16	10	10	0.2	VP**0802...	0.6
JSVL2PR/L1212F08	12	12	85	16	12	12	0.2	VP**0802...	0.6
JSVL2PR/L1212F11	12	12	85	21	12	12	0.2	VP**1103...	1.2
JSVL2PR/L1212X08	12	12	120	16	12	12	0.2	VP**0802...	0.6
JSVL2PR/L1212X11	12	12	120	21	12	12	0.2	VP**1103...	1.2
JSVL2PR/L1212K08	12	12	125	16	12	12	0.2	VP**0802...	0.6
JSVL2PR/L1616X08	16	16	120	16	16	16	0.2	VP**0802...	0.6
JSVL2PL1616K08	16	16	125	16	16	16	0.2	VP**0802...	0.6
JSVL2PR/L1616X11	16	16	120	21	16	16	0.2	VP**1103...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JSVL2PR/L082/102	CSTB-2.5	T-8F
JSVL2PR/L**08	CSTB-2L	T-6F
JSVL2PR/L**11	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Finish cutting	Finish cutting
Grade	SH725	SH725
Chipbreaker shape	JRP	JSP
Cutting conditions	G069	

M

Application	Finish cutting	Finish cutting
Grade	SH725	SH725
Chipbreaker shape	JRP	JSP
Cutting conditions	G069	

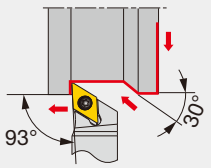
S

Application	Finish cutting	Finish cutting
Grade	SH725	SH725
Chipbreaker shape	JRP	JSP
Cutting conditions	G069	

Reference pages: JSVL2PR/L: Inserts → B157 -

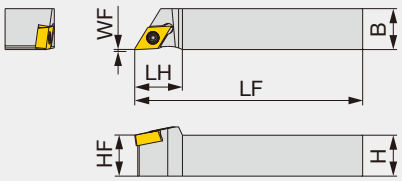
JSDJ2XR/L

Screw-on toolholder with 93° approach angle, for DXGU inserts



Cutting edge style **J2**

Without offset



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSDJ2XR/L062	0.375	0.375	4.750	0.625	0.375	0	0.008	DXGU0703**L/R...	0.66
JSDJ2XR/L082	0.500	0.500	4.750	0.625	0.500	0	0.008	DXGU0703**L/R...	0.66
JSDJ2XR/L102	0.625	0.625	4.750	0.625	0.625	0	0.008	DXGU0703**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSDJ2XR/L1010X07	10	10	120	14	10	0	0.2	DXGU0703**L/R...	0.9
JSDJ2XR/L1212F07	12	12	85	14	12	0	0.2	DXGU0703**L/R...	0.9
JSDJ2XR/L1212X07	12	12	120	14	12	0	0.2	DXGU0703**L/R...	0.9
JSDJ2XR/L1616X07	16	16	120	18	16	0	0.2	DXGU0703**L/R...	0.9
JSDJ2XR/L2020H07	20	20	100	18	20	0	0.2	DXGU0703**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS


Designation	Clamping screw	Wrench
JSDJ2XR/L...	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JSS	JS
Cutting conditions	G069	

M

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JSS	JS
Cutting conditions	G069	

Small CNC lathes

P

Application	Finish cutting	Medium cutting
Grade	AH725	AH725
Chipbreaker shape	SS	TS
Cutting conditions	G069	

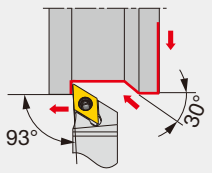
M

Application	Finish cutting	Medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	SS	TS
Cutting conditions	G069	

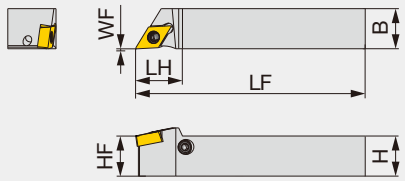
Reference pages: JSDJ2XR/L: Inserts → B127 -, Standard cutting conditions → G069

JPDJ2XR/L

Lever-lock toolholder with 93° approach angle, for DXGU inserts



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JPDJ2XR/L062	0.375	0.375	4.750	0.625	0.375	0	0.008	DXGU22**L/R...	0.66
JPDJ2XR/L082	0.500	0.500	4.750	0.625	0.500	0	0.008	DXGU22**L/R...	0.66
JPDJ2XR/L102	0.625	0.625	4.750	0.625	0.625	0	0.008	DXGU22**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JPDJ2XR/L1010X07	10	10	120	14	10	0	0.2	DXGU0703**L/R...	0.9
JPDJ2XR/L1212F07	12	12	85	14	12	0	0.2	DXGU0703**L/R...	0.9
JPDJ2XR/L1212X07	12	12	120	14	12	0	0.2	DXGU0703**L/R...	0.9
JPDJ2XR/L1616X07	16	16	120	18	16	0	0.2	DXGU0703**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Lever	Pin	Clamping screw	Wrench
JPDJ2XR/L...	SLLV-2	SL-PI-2	SR10400611	HW2.0/5RED

INSERT SELECTION

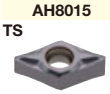
Swiss lathes

P	Application	Finish cutting	Medium to finish cutting
	Grade	SH725	SH725
	Chipbreaker shape	JSS 	JS 
	Cutting conditions	G069	

M	Application	Finish cutting	Medium to finish cutting
	Grade	SH725	SH725
	Chipbreaker shape	JSS 	JS 
	Cutting conditions	G069	

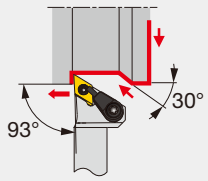
Small CNC lathes

P	Application	Finish cutting	Medium cutting
	Grade	AH725	AH725
	Chipbreaker shape	SS 	TS 
	Cutting conditions	G069	

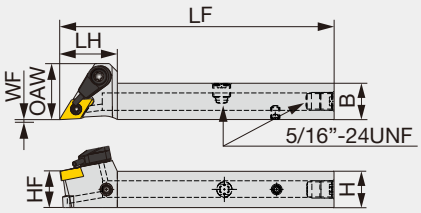
M	Application	Finish cutting	Medium cutting
	Grade	AH8015	AH8015
	Chipbreaker shape	SS 	TS 
	Cutting conditions	G069	

Reference pages: JPDJ2XR/L: Inserts → B127 -, Standard cutting conditions → G069

Screw-on toolholder with 93° approach angle, for DXGU inserts, with high pressure coolant capability



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque
JSDJ2XR082X-CHP	0.500	0.500	4.750	0.748	0.500	0	0.728	0.008	DXGU0703**L...	0.66
JSDJ2XR102X-CHP	0.625	0.625	4.750	0.748	0.625	0	0.728	0.008	DXGU0703**L...	0.66

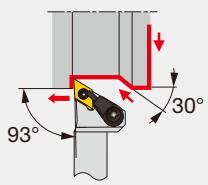
Metric	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSDJ2XR1212X07-CHP	12	12	120	19	12	0	18.5	0.2	DXGU0703**L...	0.9
JSDJ2XR1616X07-CHP	16	16	120	19	16	0	18.5	0.2	DXGU0703**L...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

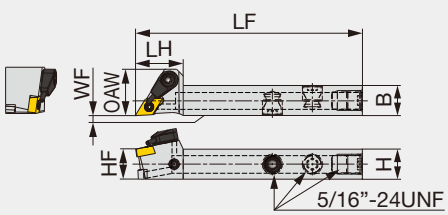
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSDJ2XR**-CHP	SR34-514	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Please see Tungaloy report (TR432) for tool overhang length and coolant plug.



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque
JSDJ2XR/L082-CHP	0.500	0.500	3.344	0.750	0.500	0	0.730	0.008	DXGU0703**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSDJ2XR/L1212F07-CHP	12	12	85	19	12	0	18.5	0.2	DXGU0703**L/R...	0.9

Torque: Recommended clamping torque: lb·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2
JSDJ2XR/L**-CHP	SR34-514	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4

INSERT SELECTION

Swiss lathes

P

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JSS	JS
Cutting conditions	G069	

M

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JSS	JS
Cutting conditions	G069	

Small CNC lathes

P

Application	Finish cutting	Medium cutting
Grade	AH725	AH725
Chipbreaker shape	SS	TS
Cutting conditions	G069	

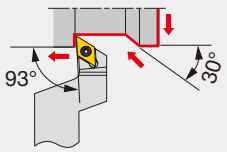
M

Application	Finish cutting	Medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	SS	TS
Cutting conditions	G069	

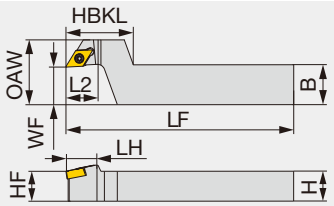
Reference pages: JSDJ2XR/L-CHP: Inserts → B127 -, Standard cutting conditions → G069

JSDJXR-F

Screw-on stepped-head toolholder with 93° approach angle, for DXGU inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque
JSDJXR082-F10	0.500	0.625	4.750	0.500	1.130	0.625	0.500	0.625	1.000	0.008	DXGU0703**L...	0.66
JSDJXR102-F10	0.625	0.750	4.750	0.500	1.130	0.625	0.625	0.625	1.000	0.008	DXGU0703**L...	0.66

Metric	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSDJXR1016X07-F15	10	16	120	12	27	14	10	15	26	0.2	DXGU0703**L...	0.9
JSDJXR1216F07-F15	12	16	85	12	27	14	12	15	26	0.2	DXGU0703**L...	0.9
JSDJXR1216X07-F15	12	16	120	12	27	14	12	15	26	0.2	DXGU0703**L...	0.9
JSDJXR1620X07-F15	16	20	120	12	27	14	16	15	26	0.2	DXGU0703**L...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS


Designation	Clamping screw	Wrench
JSDJXR**-F...	SR34-514	T-7F

INSERT SELECTION

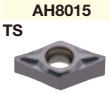
Swiss lathes

P	Application	Finish cutting	Medium to finish cutting
	Grade	SH725	SH725
	Chipbreaker shape	JSS 	JS 
	Cutting conditions	G069	

M	Application	Finish cutting	Medium to finish cutting
	Grade	SH725	SH725
	Chipbreaker shape	JSS 	JS 
	Cutting conditions	G069	

Small CNC lathes

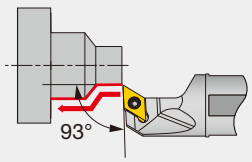
P	Application	Finish cutting	Medium cutting
	Grade	AH725	AH725
	Chipbreaker shape	SS 	TS 
	Cutting conditions	G069	

M	Application	Finish cutting	Medium cutting
	Grade	AH8015	AH8015
	Chipbreaker shape	SS 	TS 
	Cutting conditions	G069	

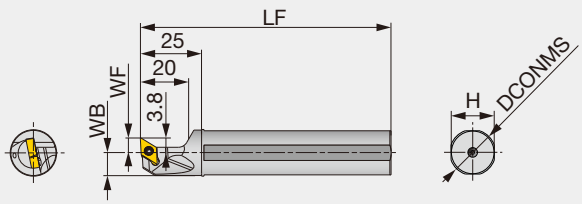
Reference pages: JSDJXR-F: Inserts → B127 -, Standard cutting conditions → G069

JS-SDUXL

Screw-on round-shank toolholder with 93° approach angle, for DXGU inserts



Cutting edge style **U**



Left hand (L) shown.

Inch	DCONMS	WF	LF	H	WB	RE**	Insert	Torque
JS159F-SDUXL07	0.625	0.236	3.346	0.591	0.303	0.008	DXGU0703**L...	0.66
JS19G-SDUXL07	0.750	0.236	3.543	0.709	0.366	0.008	DXGU0703**L...	0.66
JS19X-SDUXL07	0.750	0.236	4.724	0.709	0.366	0.008	DXGU0703**L...	0.66
JS254X-SDUXL07	1.000	0.394	4.724	0.945	0.492	0.008	DXGU0703**L...	0.66

Metric	DCONMS	WF	LF	H	WB	RE**	Insert	Torque*
JS14H-SDUXL07	14	6	100	13	6.75	0.2	DXGU0703**L...	0.9
JS159F-SDUXL07	15.875	6	85	15	7.687	0.2	DXGU0703**L...	0.9
JS16F-SDUXL07	16	6	85	15	7.75	0.2	DXGU0703**L...	0.9
JS19G-SDUXL07	19.05	6	90	18	9.275	0.2	DXGU0703**L...	0.9
JS19X-SDUXL07	19.05	6	120	18	9.275	0.2	DXGU0703**L...	0.9
JS20G-SDUXL07	20	6	90	19	9.75	0.2	DXGU0703**L...	0.9
JS20X-SDUXL07	20	6	120	19	9.75	0.2	DXGU0703**L...	0.9
JS22X-SDUXL07	22	10	120	21	10.75	0.2	DXGU0703**L...	0.9
JS25H-SDUXL07	25	10	100	24	12.25	0.2	DXGU0703**L...	0.9
JS254X-SDUXL07	25.4	10	120	24	12.45	0.2	DXGU0703**L...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use left-hand toolholders (L) with left-hand inserts (L).

SPARE PARTS

Designation	Clamping screw	Wrench
JS**-SDUXL07	SR34-514	T-7F

INSERT SELECTION

Swiss lathes

P

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JSS	JS
Cutting conditions	G069	

M

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JSS	JS
Cutting conditions	G069	

Small CNC lathes

P

Application	Finish cutting	Medium cutting
Grade	AH725	AH725
Chipbreaker shape	SS	TS
Cutting conditions	G069	

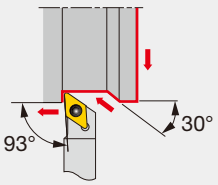
M

Application	Finish cutting	Medium cutting
Grade	AH8015	AH8015
Chipbreaker shape	SS	TS
Cutting conditions	G069	

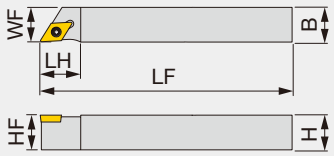
Reference pages: JS-SDUXL: Inserts → B127 -, Standard cutting conditions → G069

JSDJ2CR/L

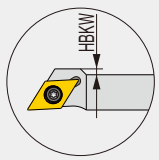
Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J2**



Without offset



JSDJ2CR/L1010X11
JSDJ2CR/L1212F11
JSDJ2CR/L1212X11

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	HBKW	RE**	Insert	Torque
JSDJ2CR/L062	0.375	0.375	5.000	0.563	0.375	0.380	-	0.008	DC**0702...	0.89
JSDJ2CR/L082	0.500	0.500	5.000	0.563	0.500	0.500	-	0.008	DC**0702...	0.89
JSDJ2CR/L103	0.625	0.625	5.000	0.813	0.625	0.630	-	0.008	DC**11T3...	0.89

Metric	H	B	LF	LH	HF	WF	HBKW	RE**	Insert	Torque*
JSDJ2CR/L0808F07	8	8	85	14	8	8	-	0.2	DC**0702...	1.2
JSDJ2CR/L1010X07	10	10	120	14	10	10	-	0.2	DC**0702...	1.2
JSDJ2CR/L1010X11	10	10	120	20	10	10	4	0.2	DC**11T3...	1.2
JSDJ2CR/L1212F07	12	12	85	14	12	12	-	0.2	DC**0702...	1.2
JSDJ2CR/L1212F11	12	12	85	20	12	12	2	0.2	DC**11T3...	1.2
JSDJ2CR/L1212X07	12	12	120	14	12	12	-	0.2	DC**0702...	1.2
JSDJ2CR/L1212X11	12	12	120	20	12	12	2	0.2	DC**11T3...	1.2
JSDJ2CR/L1616X11	16	16	120	20	16	16	-	0.2	DC**11T3...	1.2

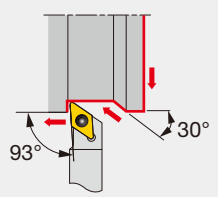
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

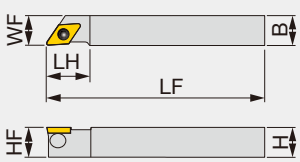
Designation	Clamping screw	Wrench
JSDJ2CR/L062/082, JSDJ2CR/L**07	CSTB-2.5	T-8F
JSDJ2CR/L103, JSDJ2CR/L**11	CSTB-4SD	T-8F

JTDJ2CR/L

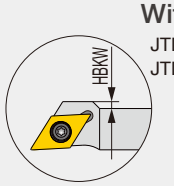
Back-clamp toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J2**



Without offset



JTDJ2CR/L1212F11
JTDJ2CR/L1212X11

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	HBKW	RE**	Insert	Torque
JTDJ2CR/L1010X07	10	10	120	14	10	10	-	0.2	DC**0702...	0.9
JTDJ2CR/L1212F07	12	12	85	14	12	12	-	0.2	DC**0702...	0.9
JTDJ2CR/L1212X07	12	12	120	14	12	12	-	0.2	DC**0702...	0.9
JTDJ2CR/L1212F11	12	12	85	20	12	12	2	0.2	DC**11T3...	1.2
JTDJ2CR/L1212X11	12	12	120	20	12	12	2	0.2	DC**11T3...	1.2
JTDJ2CR/L1616X11	16	16	120	20	16	16	-	0.2	DC**11T3...	1.2

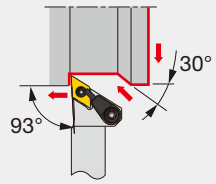
Torque: Recommended clamping torque: N·m **RE: Standard corner radius

SPARE PARTS

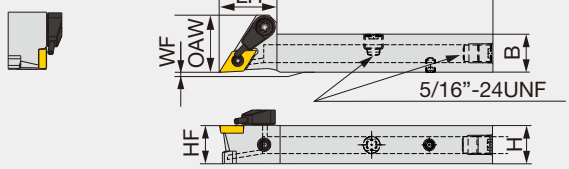
Designation	Clamp	Clamping screw	Wrench
JTDJ2CR/L**07	JCP-2	JDS-3525	P-2F
JTDJ2CR/L**11	JCP-3	JDS-5040	P-2.5F

Reference pages: JSDJ2CR/L, JTDJ2CR/L: Inserts → B121 -, CBN → B184-, PCD → B196 -

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts, with high pressure coolant capability



Cutting edge style **J2**



Without offset

Right hand (R) shown.

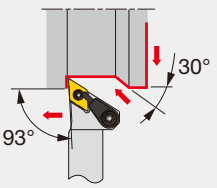
Metric	H	B	LF	LH	HF	WF	OAW	RE	Insert	Torque
JSDJ2CR1212X11-CHP	12	12	120	19	12	0	20.5	0.2	DC**11T3...	1.2
JSDJ2CR1616X11-CHP	16	16	120	19	16	0	20.5	0.2	DC**11T3...	1.2

Torque: Recommended clamping torque: N·m **RE: Standard corner radius

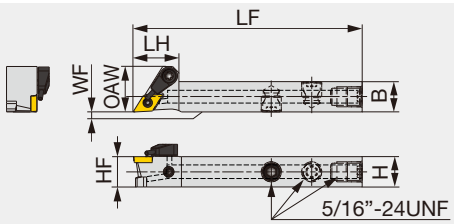
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSDJ2CR**11-CHP	CSTB-4SD	S-CU-CHP	T-8F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Please see Tungaloy report (TR432) for tool overhang length and coolant plug.



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE	Insert	Torque
JSDJ2CR/L082-CHP	0.500	0.500	3.344	0.710	0.500	0.500	0.710	0.2	DC**0702...	0.89

Metric	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSDJ2CR/L1212F07-CHP	12	12	85	18	12	0	18	0.2	DC**0702...	1.2
JSDJ2CR/L1212F11-CHP	12	12	85	19	12	0	20.5	0.2	DC**11T3...	1.2

Torque: Recommended clamping torque: lb·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2
JSDJ2CR/L082-CHP, JSDJ2CR/L1212F07-CHP	CSTB-2.5	S-CU-CHP	T-8F	SR5/16UNFTL360	P-4
JSDJ2CR/L1212F11-CHP	CSTB-4SD	S-CU-CHP	T-8F	SR5/16UNFTL360	P-4

INSERT SELECTION

P

Application	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

M

Application	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

K

Application	Medium to finish cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Chipbreaker shape	T-DIA with rake	AL
Cutting conditions	B026	

S

Application	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Chipbreaker shape	JS	JS
Cutting conditions	G069	

H

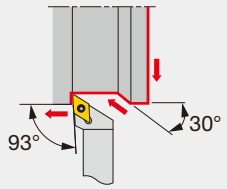
Application	Precision finishing	Finish cutting
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: JSDJ2CR/L-CHP: Inserts → B121 -, CBN → B184 -, PCD → B196 -

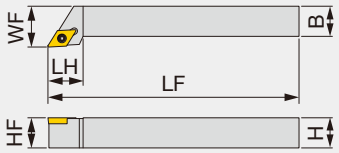
J-SERIES

JSDJCR/L

Screw-on toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSDJCR/L0808H07	8	8	100	14	8	10	0.4	DC**0702...	1.2
JSDJCR/L1010H11	10	10	100	18	10	12	0.8	DC**11T3...	1.2
JSDJCR/L1212H07	12	12	100	14	12	16	0.4	DC**0702...	1.2
JSDJCR/L1212H11	12	12	100	18	12	16	0.8	DC**11T3...	1.2
JSDJCR/L1616H11	16	16	100	18	16	20	0.8	DC**11T3...	1.2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

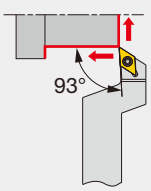
SPARE PARTS

Designation	Clamping screw	Wrench
JSDJC**H07	CSTB-2.5	T-8F
JSDJC**H11	CSTB-4SD	T-8F

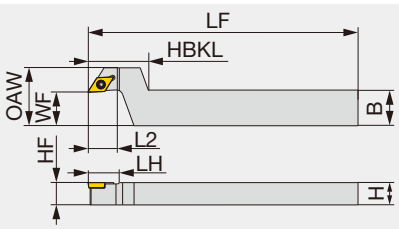
J-SERIES

JSDJCR-F

Screw-on stepped-head toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque
JSDJCR1016X07-F15	10	16	120	12.5	27	14	10	15	26	0.2	DC**0702...	1.2
JSDJCR1216F07-F15	12	16	85	12.5	27	14	12	15	26	0.2	DC**0702...	1.2
JSDJCR1216X07-F15	12	16	120	12.5	27	14	12	15	26	0.2	DC**0702...	1.2
JSDJCR1216F11-F15	12	16	85	12.5	27	20	12	15	28	0.2	DC**11T3...	1.2
JSDJCR1216X11-F15	12	16	120	12.5	27	20	12	15	28	0.2	DC**11T3...	1.2
JSDJCR1620X11-F15	16	20	120	12.5	27	20	16	15	28	0.2	DC**11T3...	1.2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

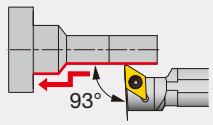
SPARE PARTS

Designation	Clamping screw	Wrench
JSDJCR**07-F15	CSTB-2.5	T-8F
JSDJCR**11-F15	CSTB-4SD	T-8F

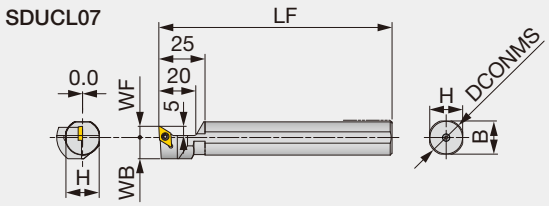
Reference pages: JSDJCR/L, JSDJCR-F: Inserts → **B121 -**, CBN → **B184 -**, PCD → **B196 -**

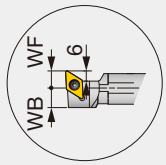
JS-SDUCL

Screw-on round-shank toolholder with 93° approach angle, for positive 55° rhombic inserts



Cutting edge style **U**





Left hand (L) shown.

Metric	DCONMS	WF	LF	H	B	WB	RE**	Insert	Torque
JS19K-SDUCL07	19.05	6	125	18	18	11.5	0.4	DC**0702...	1.2
JS20K-SDUCL07	20	6	125	19	19	11.5	0.4	DC**0702...	1.2
JS22K-SDUCL07	22	6	125	21	21	11.5	0.4	DC**0702...	1.2
JS19K-SDUCL11	19.05	10	125	18	18	11.5	0.8	DC**11T3...	1.2
JS20K-SDUCL11	20	10	125	19	19	11.5	0.8	DC**11T3...	1.2
JS22K-SDUCL11	22	11	125	21	21	11.5	0.8	DC**11T3...	1.2
JS25K-SDUCL11	25.4	12	125	24	24	12.7	0.8	DC**11T3...	1.2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JS**K-SDUCL07	CSTB-2.5	T-8F
JS**K-SDUCL11	CSTB-4SD	T-8F

INSERT SELECTION

P

Application	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

M

Application	Precision Finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

K

Application	Medium to finish cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finish cutting	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	T-DIA (with rake)	T-DIA	AL
Cutting conditions	B026		

S

Application	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Chipbreaker shape	JS	JS
Cutting conditions	G069	

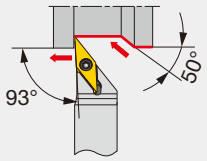
H

Application	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

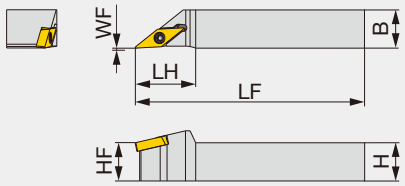
Reference pages: JS-SDUCL: Inserts → B121 -, CBN → B184 -, PCD → B196 -

MINIFORCE TURN
JSVJ2XR/L

Screw-on toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSVJ2XR/L067	0.375	0.375	4.750	0.669	0.375	0	0.008	VXGU09T2**L/R...	0.66
JSVJ2XR/L087	0.500	0.500	4.750	0.748	0.500	0	0.008	VXGU09T2**L/R...	0.66
JSVJ2XR/L107	0.625	0.625	4.750	0.748	0.625	0	0.008	VXGU09T2**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVJ2XR/L1010X09	10	10	120	17	10	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1212F09	12	12	85	19	12	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1212X09	12	12	120	19	12	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L1616X09	16	16	120	19	16	0	0.2	VXGU09T2**L/R...	0.9
JSVJ2XR/L2020H09	20	20	100	19	20	0	0.2	VXGU09T2**L/R...	0.9

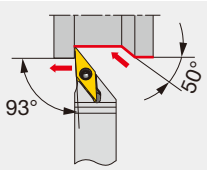
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L). Use left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

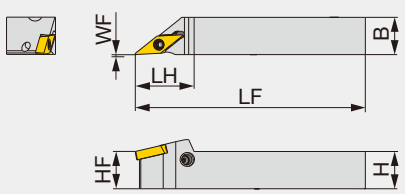
Designation	Clamping screw	Wrench
JSVJ2XR/L...	SR34-508	T-7F

MINIFORCE TURN
JPVJ2XR/L

Lever-lock toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JPVJ2XR/L067	0.375	0.375	4.750	0.669	0.375	0	0.008	VXGU09T2**L/R...	0.66
JPVJ2XR/L087	0.500	0.500	4.750	0.748	0.500	0	0.008	VXGU09T2**L/R...	0.66
JPVJ2XR/L107	0.625	0.625	4.750	0.748	0.625	0	0.008	VXGU09T2**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JPVJ2XR/L1010X09	10	10	120	19	10	0	0.2	VXGU09T2**L/R...	0.9
JPVJ2XR/L1212F09	12	12	85	19	12	0	0.2	VXGU09T2**L/R...	0.9
JPVJ2XR/L1212X09	12	12	120	19	12	0	0.2	VXGU09T2**L/R...	0.9
JPVJ2XR/L1616X09	16	16	120	19	16	0	0.2	VXGU09T2**L/R...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L). Use left-hand toolholders (L) with right-hand inserts (R).

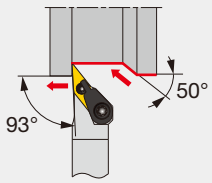
SPARE PARTS

Designation	Lever	Pin	Clamping screw	Wrench
JPVJ2XR/L...	SLLV-1	SL-PI-2	SR10400611	HW2.0/5RED

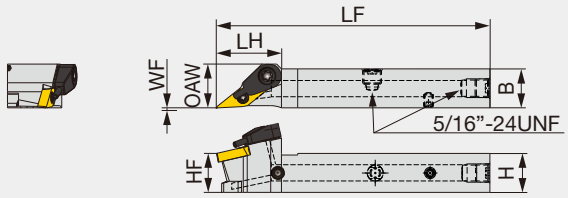
Reference pages: JSVJ2XR/L, JPVJ2XR/L: Inserts → B158, Standard cutting conditions → G069

JSVJ2XR/L-CHP

Screw-on toolholder with 93° approach angle, for VXGU inserts, with high pressure coolant capability



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque
JSVJ2XR087X-CHP	0.500	0.500	4.750	0.768	0.500	0	0.528	0.008	VXGU09T2**L...	0.66
JSVJ2XR107X-CHP	0.625	0.625	4.750	0.768	0.625	0	0.625	0.008	VXGU09T2**L...	0.66

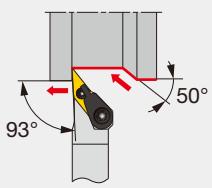
Metric	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSVJ2XR1212X09-CHP	12	12	120	19.5	12	0	13.4	0.2	VXGU09T2**L...	0.9
JSVJ2XR1616X09-CHP	16	16	120	19.5	16	0	16	0.2	VXGU09T2**L...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

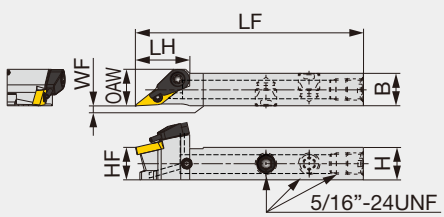
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSVJ2XR**-CHP	SR34-508	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Please see Tungaloy report (TR432) for tool overhang length and coolant plug.



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque
JSVJ2XR/L087-CHP	0.500	0.500	4.750	0.748	0.500	0	0.020	0.008	VXGU09T2**L/R...	0.66

Metric	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSVJ2XR/L1212F09-CHP	12	12	85	20	12	0	13.5	0.2	VXGU09T2**L/R...	0.9

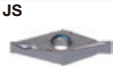
Torque: Recommended clamping torque: lb·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L); and left-hand toolholders (L) with right-hand inserts (R).

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2
JSVJ2XR/L**-CHP	SR34-508	S-CU-CHP	T-7F	SR5/16UNFTL360	P-4

INSERT SELECTION

P

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JRP 	JS 
Cutting conditions	G069	

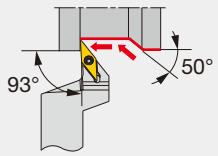
M

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JRP 	JS 
Cutting conditions	G069	

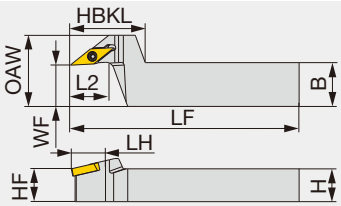
Reference pages: JSVJ2XR/L-CHP: Inserts → B158, Standard cutting conditions → G069

JSVJXR-F

Screw-on stepped-head toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **J**



Right hand (R) shown.

Inch	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque
JSVJXR087-F10	0.500	0.625	4.750	0.500	1.130	0.750	0.500	0.625	1.000	0.008	VXGU09T2**L...	0.66
JSVJXR107-F10	0.625	0.750	4.750	0.500	1.130	0.750	0.625	0.625	1.000	0.008	VXGU09T2**L...	0.66

Metric	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque*
JSVJXR1016X09-F15	10	16	120	12	27	19	10	15	26	0.2	VXGU09T2**L...	0.9
JSVJXR1216F09-F15	12	16	85	12	27	19	12	15	26	0.2	VXGU09T2**L...	0.9
JSVJXR1216X09-F15	12	16	120	12	27	19	12	15	26	0.2	VXGU09T2**L...	0.9
JSVJXR1620X09-F15	16	20	120	12	27	19	16	15	26	0.2	VXGU09T2**L...	0.9

Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS


Designation	Clamping screw	Wrench
JSVJXR**-F10, JSVJXR**-F15	SR34-508	T-7F

INSERT SELECTION

P

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JRP 	JS 
Cutting conditions	G069	

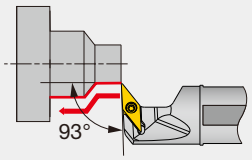
M

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JRP 	JS 
Cutting conditions	G069	

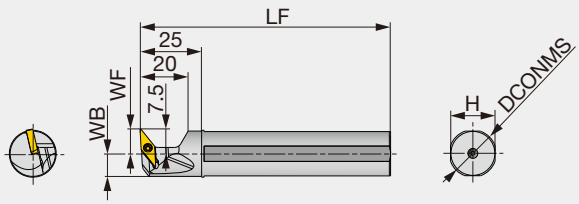
Reference pages: JSVJXR-F: Inserts → B158, Standard cutting conditions → G069

JS-SVUXL

Screw-on round-shank toolholder with 93° approach angle, for VXGU inserts



Cutting edge style **U**



Left hand (L) shown.

Inch	DCONMS	WF	LF	H	WB	RE**	Insert	Torque
JS159F-SVUXL09	0.625	0.394	3.346	0.591	0.303	0.008	VXGU09T2**L...	0.66
JS19G-SVUXL09	0.750	0.394	3.543	0.709	0.362	0.008	VXGU09T2**L...	0.66
JS19X-SVUXL09	0.750	0.394	4.724	0.709	0.362	0.008	VXGU09T2**L...	0.66
JS254X-SVUXL09	1.000	0.394	4.724	0.945	0.488	0.008	VXGU09T2**L...	0.66

Metric	DCONMS	WF	LF	H	WB	RE**	Insert	Torque*
JS159F-SVUXL09	15.875	10	85	15	7.7	0.2	VXGU09T2**L...	0.9
JS16F-SVUXL09	16	10	85	15	7.7	0.2	VXGU09T2**L...	0.9
JS19G-SVUXL09	19.05	10	90	18	9.2	0.2	VXGU09T2**L...	0.9
JS19X-SVUXL09	19.05	10	120	18	9.2	0.2	VXGU09T2**L...	0.9
JS20G-SVUXL09	20	10	90	19	9.7	0.2	VXGU09T2**L...	0.9
JS20X-SVUXL09	20	10	120	19	9.7	0.2	VXGU09T2**L...	0.9
JS22X-SVUXL09	22	10	120	21	10.7	0.2	VXGU09T2**L...	0.9
JS25H-SVUXL09	25	10	100	24	12.2	0.2	VXGU09T2**L...	0.9
JS254X-SVUXL09	25.4	10	120	24	12.4	0.2	VXGU09T2**L...	0.9

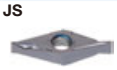
Torque: Recommended clamping torque: lbs·ft (*N·m) **RE: Standard corner radius
Use left-hand toolholders (L) with left-hand inserts (L).

SPARE PARTS


Designation	Clamping screw	Wrench
JS**-SVUXL09	SR34-508	T-7F

INSERT SELECTION

P

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JRP 	JS 
Cutting conditions	G069	

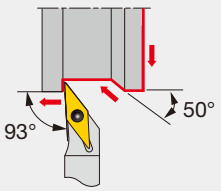
M

Application	Finish cutting	Medium to finish cutting
Grade	SH725	SH725
Chipbreaker shape	JRP 	JS 
Cutting conditions	G069	

Reference pages: JS-SVUXL: Inserts → B158, Standard cutting conditions → G069

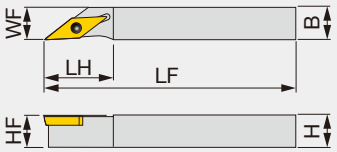
JSVJ2BR/L

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts



Cutting edge style **J2**

Without offset



Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSVJ2BR/L062	0.375	0.375	5.000	0.813	0.375	0.375	0.008	VB**1103...	0.89
JSVJ2BR/L082	0.500	0.500	5.000	0.813	0.500	0.500	0.008	VB**1103...	0.89
JSVJ2BR/L102	0.625	0.625	5.000	0.813	0.625	0.625	0.008	VB**1103...	0.89

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSVJ2BR/L1010X11	10	10	120	21	10	10	0.2	VB**1103...	1.2
JSVJ2BR/L1212F11	12	12	85	21	12	12	0.2	VB**1103...	1.2
JSVJ2BR/L1212X11	12	12	120	21	12	12	0.2	VB**1103...	1.2
JSVJ2BR/L1616X11	16	16	120	21	16	16	0.2	VB**1103...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS


Designation	Clamping screw	Wrench
JSVJ2BR/L...	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Chipbreaker shape	JS	JS	J10
Cutting conditions	G069		

M

Application	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Chipbreaker shape	JS	JS	J10
Cutting conditions	G069		

K

Application	Medium to finish cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

S

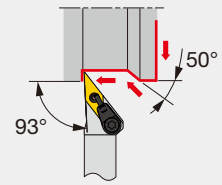
Application	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Chipbreaker shape	JS	JS
Cutting conditions	G069	

H

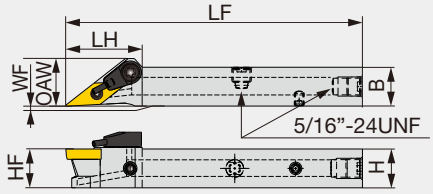
Application	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: JSVJ2BR/L: Inserts → B152 -, CBN → B191 -

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts, with high pressure coolant capability



Cutting edge style **J2**



Without offset

Right hand (R) shown.

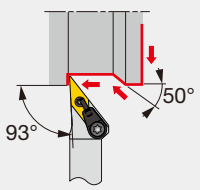
Metric	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque
JSVJ2BR1212X11-CHP	12	12	120	23.6	12	0	14.7	0.2	VB**1103...	1.2
JSVJ2BR1616X11-CHP	16	16	120	23.6	16	0	16	0.2	VB**1103...	1.2

Torque: Recommended clamping torque: N·m **RE: Standard corner radius

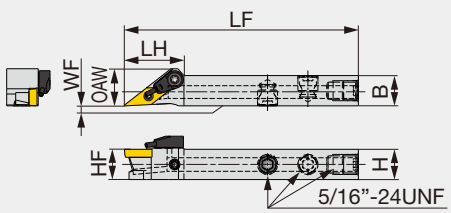
SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSVJ2BR**11-CHP	CSTB-2.5	S-CU-CHP	T-8F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Please see Tungaloy report (TR432) for tool overhang length and coolant plug.



Cutting edge style **J2**



Without offset

Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque
JSVJ2BR/L082-CHP	0.500	0.500	3.344	0.930	0.500	0	0.610	0.008	VB**1103...	0.89

Metric	H	B	LF	LH	HF	WF	OAW	RE**	Insert	Torque*
JSVJ2BR/L1212F11-CHP	12	12	85	23.6	12	0	14.7	0.2	VB**1103...	1.2

Torque: Recommended clamping torque: lb·ft (*N·m) **RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Coolant unit	Wrench 1	Coolant plug	Wrench 2
JSVJ2BR/L**-CHP	CSTB-2.5	S-CU-CHP	T-8F	SR5/16UNFTL360	P-4

INSERT SELECTION

P

Application	Finish cutting	Medium to Finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Chipbreaker shape	JS	JS	J10
Cutting conditions	G069		

M

Application	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Chipbreaker shape	JS	JS	J10
Cutting conditions	G069		

K

Application	Medium to finish cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

S

Application	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Chipbreaker shape	JS	JS
Cutting conditions	G069	

H

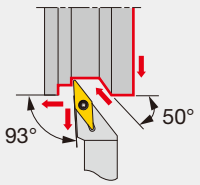
Application	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: JSVJ2BR/L-CHP: Inserts → B152 -, CBN → B191 -

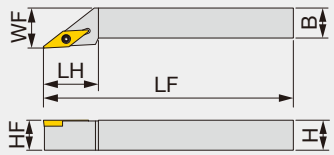
J-SERIES

JSVJBR/L

Screw-on toolholder with 93° approach angle, for positive 35° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSVJBR/L1010H11	10	10	100	20	10	12	0.4	VB**1103...	1.2
JSVJBR/L1212H11	12	12	100	22	12	16	0.4	VB**1103...	1.2
JSVJBR/L1616H11	16	16	100	22	16	20	0.4	VB**1103...	1.2

SPARE PARTS

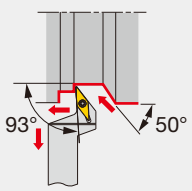
Designation	Clamping screw	Wrench
JSVJBR/L...	CSTB-2.5	T-8F

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

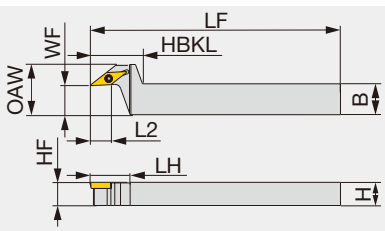
J-SERIES

JSVJBR-F

Screw-on stepped-head toolholder with 93° approach angle, for positive 35° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	H	B	LF	L2	HBKL	LH	HF	WF	OAW	RE**	Insert	Torque
JSVJBR1216F11-F15	12	16	85	12.6	27	21	12	15	26	0.2	VB**1103...	1.2
JSVJBR1216X11-F15	12	16	120	12.6	27	21	12	15	26	0.2	VB**1103...	1.2
JSVJBR1620X11-F15	16	20	120	12.6	27	21	16	15	26	0.2	VB**1103...	1.2

SPARE PARTS

Designation	Clamping screw	Wrench
JSVJBR**-F15	CSTB-2.5	T-8F

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

INSERT SELECTION

P

Application	Finish cutting	Medium to Finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Chipbreaker shape	JS	JS	J10
Cutting conditions	G069		

M

Application	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Chipbreaker shape	JS	JS	J10
Cutting conditions	G069		

K

Application	Medium to finish cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

S

Application	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Chipbreaker shape	JS	JS
Cutting conditions	G069	

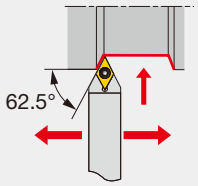
H

Application	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

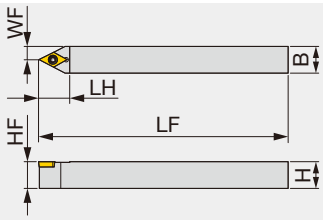
Reference pages: JSVJBR/L, JSVJBR-F: Inserts → B152 -, CBN → B191 -

JSDNCN

Screw-on toolholder with 62.5° approach angle, for positive 55° rhombic inserts



Cutting edge style **N**



Inch	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSDNCN062	0.375	0.375	5.000	0.563	0.375	0.188	0.008	DC**0702...	0.89
JSDNCN082	0.500	0.500	5.000	0.563	0.500	0.250	0.008	DC**0702...	0.89
JSDNCN103	0.625	0.625	5.000	0.813	0.625	0.313	0.008	DC**11T3...	0.89

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque*
JSDNCN1010X07	10	10	120	15	10	5	0.2	DC**0702...	1.2
JSDNCN1010X11	10	10	120	21	10	5	0.2	DC**11T3...	1.2
JSDNCN1212F07	12	12	85	15	12	6	0.2	DC**0702...	1.2
JSDNCN1212X07	12	12	120	15	12	6	0.2	DC**0702...	1.2
JSDNCN1212F11	12	12	85	21	12	6	0.2	DC**11T3...	1.2
JSDNCN1212X11	12	12	120	21	12	6	0.2	DC**11T3...	1.2
JSDNCN1616X11	16	16	120	21	16	8	0.2	DC**11T3...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JSDNCN062/082, JSDNCN**07	CSTB-2.5	T-8F
JSDNCN103, JSDNCN**11	CSTB-4SD	T-8F

INSERT SELECTION

P

Application	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

M

Application	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

K

Application	Medium to finish cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finish cutting	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	T-DIA	with rake T-DIA	AL
Cutting conditions	B026		

S

Application	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Chipbreaker shape	JS	JS
Cutting conditions	G069	

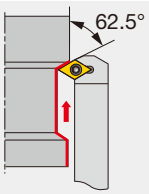
H

Application	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

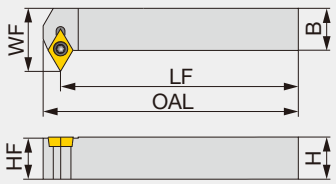
Reference pages: JSDNCN: Inserts → B121 -, CBN → B184 - , PCD → B196 -

JSDN3CR/L

Screw-on toolholder with 62.5° approach angle (N3-style), for positive 55° rhombic inserts



Cutting edge style **N3**



Right hand (R) shown.

Metric	H	B	OAL	LF	HF	WF	RE**	Insert	Torque
JSDN3CR1212H07	12	12	105	100	12	18	0.4	DC**0702...	1.2
JSDN3CR1616H11	16	16	107	100	16	25	0.8	DC**11T3...	1.2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JSDN3CR1212H07	CSTB-2.5	T-8F
JSDN3CR1616H11	CSTB-4SD	T-8F

INSERT SELECTION

P

Application	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

M

Application	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

K

Application	Medium to finish cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finish cutting	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	T-DIA	with rake T-DIA	AL
Cutting conditions	B026		

S

Application	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Chipbreaker shape	JS	JS
Cutting conditions	G069	

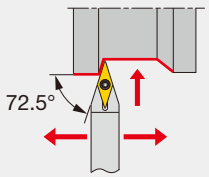
H

Application	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

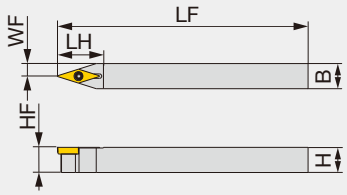
Reference pages: JSDN3CR/L: Inserts → B121 -, CBN → B184 - , PCD → B196 -

JSVNBN

Screw-on toolholder with 72.5° approach angle, for positive 35° rhombic inserts



Cutting edge style **N**



Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSVNBN1010X11	10	10	120	22	10	5	0.2	VB**1103...	1.2
JSVNBN1212F11	12	12	85	22	12	6	0.2	VB**1103...	1.2
JSVNBN1212X11	12	12	120	22	12	6	0.2	VB**1103...	1.2
JSVNBN1616X11	16	16	120	22	16	8	0.2	VB**1103...	1.2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JSVNBN...	CSTB-2.5	T-8F

INSERT SELECTION

P

Application areas	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Chipbreaker shape	JS	JS	J10
Cutting conditions	G069		

M

Application	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Chipbreaker shape	JS	JS	J10
Cutting conditions	G069		

K

Application	Medium to finish cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

S

Application	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Chipbreaker shape	JS	JS
Cutting conditions	G069	

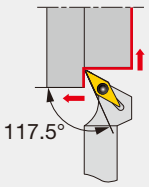
H

Application	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

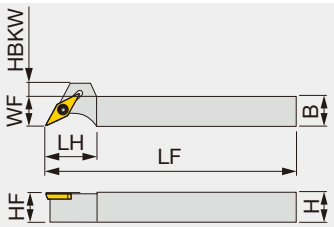
Reference pages: JSVNBN: Inserts → B152 -, CBN → B191 -

JSVP2PR/L

Screw-on toolholder with 117.5° approach angle, for positive 35° rhombic inserts



Cutting edge style **P2**



Without offset

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	HBKW	RE**	Insert	Torque
JSVP2PR/L1010K08	10	10	125	16	10	10	4	0.2	VP**0802...	0.6
JSVP2PR/L1010K11	10	10	125	20	10	10	8	0.2	VP**1103...	1.2
JSVP2PR/L1212K08	12	12	125	16	12	12	2	0.2	VP**0802...	0.6
JSVP2PR/L1212K11	12	12	125	20	12	12	6	0.2	VP**1103...	1.2
JSVP2PR/L1616K08	16	16	125	16	16	16	2	0.2	VP**0802...	0.6
JSVP2PR/L1616K11	16	16	125	20	16	16	6	0.2	VP**1103...	1.2

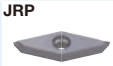
Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

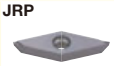

Designation	Clamping screw	Wrench
JSVP2PR/L**08	CSTB-2L	T-6F
JSVP2PR/L**11	CSTB-2.5	T-8F

INSERT SELECTION

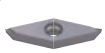
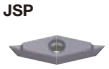
P

Application	Finish cutting	Finish cutting
Grade	SH725	SH725
Chipbreaker shape	JRP 	JSP 
Cutting conditions	G069	

M

Application	Finish cutting	Finish cutting
Grade	SH725	SH725
Chipbreaker shape	JRP 	JSP 
Cutting conditions	G069	

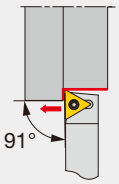
S

Application	Finish cutting	Finish cutting
Grade	SH725	SH725
Chipbreaker shape	JRP 	JSP 
Cutting conditions	G069	

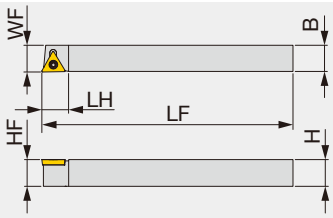
Reference pages: JSVP2PR/L: Inserts → B157 -

J-SERIES
JSTACR/L

Screw-on toolholder with 91° approach angle, for positive 60° triangular inserts



Cutting edge style **A**



Without offset

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSTACR/L0808K08	8	8	125	10	8	8	0.2	TC**0802...	0.6
JSTACR/L1010K08	10	10	125	10	10	10	0.2	TC**0802...	0.6
JSTACR/L1212K11	12	12	125	12	12	12	0.4	TC**1102...	1.2
JSTACR/L1616H11	16	16	100	12	16	16	0.4	TC**1102...	1.2

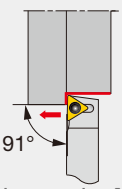
Torque: Recommended clamping torque: N·m **RE: Standard corner radius

SPARE PARTS

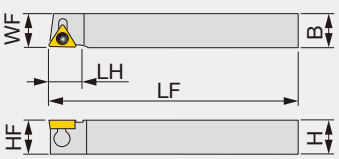
Designation	Clamping screw	Wrench
JSTACR/L**K08	CSTB-2L	T-6F
JSTACR/L**11	CSTB-2.5	T-8F

J-SERIES
JTTACR/L

Back-clamp toolholder with 91° approach angle, for positive 60° triangular inserts



Cutting edge style **A**



Without offset

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JTTACL0810K08	8	10	125	10	8	10	0.2	TC**0802...	0.9
JTTACR/L1212M11	12	12	150	12	12	12	0.4	TC**1102...	0.9
JTTACR/L1616M11	16	16	150	12	16	16	0.4	TC**1102...	0.9

Torque: Recommended clamping torque: N·m **RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
JTTACL0810K08	JCP-1	JDS-3525	P-2F
JTTACR/L**M11	JCP-2	JDS-3525	P-2F

INSERT SELECTION

P

Application	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

M

Application	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

K

Application	Medium to finish cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

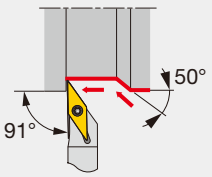
N

Application	Precision finishing	Medium cutting
Grade	DX120	KS05F
Chipbreaker shape	T-DIA	with rake AL
Cutting conditions	B026	

Reference pages: JSTACR/L, JTTACR/L: Inserts → **B139 -**, PCD → **B196**

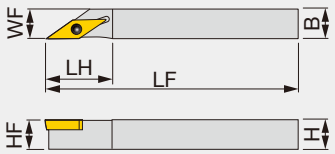
JSVABR/L

Screw-on toolholder with 91° approach angle, for positive 35° rhombic inserts



Cutting edge style **A**

Without offset



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSVABR/L1010K11	10	10	125	21	10	10	0.2	VB**1103...	1.2
JSVABL1212K11	12	12	125	21	12	12	0.2	VB**1103...	1.2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JSVABR/L...	CSTB-2.5	T-8F

INSERT SELECTION

P

Application	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Chipbreaker shape	JS	JS	J10
Cutting conditions	G069		

M

Application	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	AH725	SH725
Chipbreaker shape	JS	JS	J10
Cutting conditions	G069		

K

Application	Medium to finish cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

S

Application	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Chipbreaker shape	JS	JS
Cutting conditions	G069	

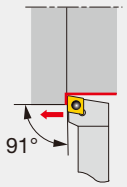
H

Application	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

Reference pages: JSVABR/L: Inserts → B152 -, CBN → B191 -

JSCGCR/L

Screw-on toolholder with 91° approach angle, for positive 80° rhombic inserts



Cutting edge style **G**

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSCGCR/L1212H06	12	12	100	12	12	16	0.4	CC**0602...	1.2
JSCGCR/L1616H09	16	16	100	16	16	20	0.8	CC**09T3...	1.2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JSCGCR/L1212H06	CSTB-2.5	T-8F
JSCGCR/L1616H09	CSTB-4SD	T-8F

INSERT SELECTION

P

Application	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

M

Application	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

K

Application	Medium to finish cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finish cutting	Medium cutting
Grade	DX120	TH10	KS05F
Chipbreaker shape	T-DIA	with rake W20	AL
Cutting conditions	B026		

S

Application	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Chipbreaker shape	JS	JS
Cutting conditions	G069	

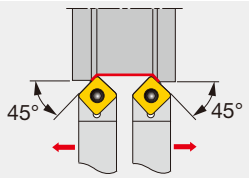
H

Application	Precision finishing	Finish cutting
Grade	BXM10	BXM20
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

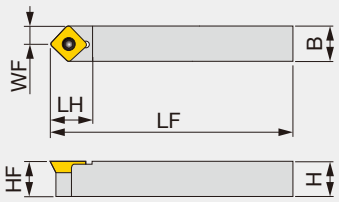
Reference pages: JSCGCR/L: Inserts → B111 -, CBN → B182, PCD → B196 -

SSDC/PN

Screw-on toolholder with 45° approach angle, for positive square inserts



Cutting edge style **D**



Metric	H	B	LF	LH	HF	WF	RE**	Insert
SSDCN1010K07	10	10	125	12	10	5	0.4	SC**0702...
SSDPN1010H	10	10	100	12	10	5	0.4	SP*P042...
SSDCN1212K09	12	12	125	15	12	6	0.8	SC**09T3...
SSDPN1212H	12	12	100	12	12	6	0.4	SP*P042...
SSDCN1616H09	16	16	100	15	16	8	0.8	SC**09T3...
SSDPN1616H	16	16	100	14	16	8	0.8	SP*M322...

**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Shim screw	Shim	Wrench 1	Wrench 2
SSDCN1010K07	CSTB-3	-	-	-	T-9F
SSDPN1010H	CSTA-NO3	-	-	-	T-9F
SSDCN1212K09	CSTB-4	-	-	-	T-15F
SSDPN1212H	CSTA-NO3	-	-	-	T-9F
SSDCN1616H09	CSTB-3.5L	DTS5-3.5	SSS32	P-3.5	T-15F
SSDPN1616H	CSTA-NO5	-	-	-	T-9F

INSERT SELECTION

P

Application	Medium to finish cutting	Medium cutting
Grade	AH725	AH725
Chipbreaker shape	PS 	PM 
Cutting conditions	B020	

M

Application	Medium cutting
Grade	AH725
Chipbreaker shape	PM 
Cutting conditions	B022

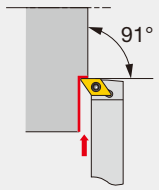
K

Application	Medium to finish cutting
Grade	T515
Chipbreaker shape	CM 
Cutting conditions	B024

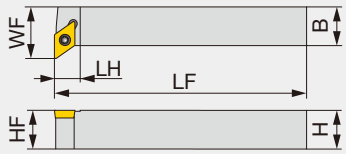
Reference pages: SSDC/PN: Inserts → B135 -

JSDFCR/L

Screw-on toolholder for facing with 91° approach angle, for positive 55° rhombic inserts



Cutting edge style **F**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JSDFCR/L1212H07	12	12	100	8	12	16	0.4	DC**0702...	1.2
JSDFCR/L1616H11	16	16	100	10.5	16	22	0.8	DC**11T3...	1.2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamping screw	Wrench
JSDFCR/L1212H07	CSTB-2.5	T-8F
JSDFCR/L1616H11	CSTB-4SD	T-8F

INSERT SELECTION

P

Application	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

M

Application	Precision finishing	Finish cutting	Medium to finish cutting	Medium to finish cutting
Grade	SH725	SH725	AH725	SH725
Chipbreaker shape	01	JS	JS	J10
Cutting conditions	G069			

K

Application	Medium to finish cutting
Grade	T515
Chipbreaker shape	CM
Cutting conditions	B024

N

Application	Precision finishing	Finish cutting	Medium cutting
Grade	DX120	DX140	KS05F
Chipbreaker shape	T-DIA	with rake T-DIA	AL
Cutting conditions	B026		

S

Application	Finish cutting	Medium to finish cutting
Grade	SH725	AH725
Chipbreaker shape	JS	JS
Cutting conditions	G069	

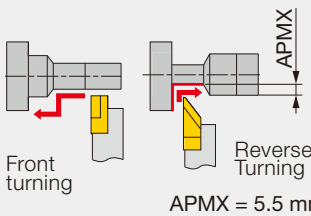
H

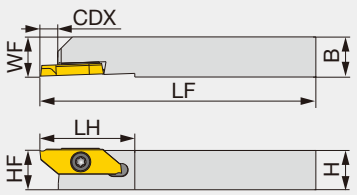
Application	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B030	

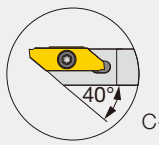
Reference pages: JSDFCR/L: Inserts → B121 -, CBN → B184 -, PCD → B196 -

JSXGR/L

Screw-on toolholder for front/reverse turning and external grooving







Without offset

C-type

Right hand (R) shown.

Metric	H	B	LF	LH	CDX	HF	WF	Insert
JSXGR/L1010K8-C	10	10	125	29	6.7	10	10	JXFR/L8..., JXRR/L8...
JSXGR/L1212K8-C	12	12	125	29	6.7	12	12	JXFR/L8..., JXRR/L8...
JSXGR/L1616K8	16	16	125	29	6.5	16	16	JXFR/L8..., JXRR/L8...
JSXGR/L2020K8	20	20	125	29	6.5	20	20	JXFR/L8..., JXRR/L8...
JSXGR/L2525K8	25	25	125	29	6.5	25	25	JXFR/L8..., JXRR/L8...

Can be used with JXG insert for parting and grooving.
Can be wrenched also from the back with a double-head screw.

SPARE PARTS

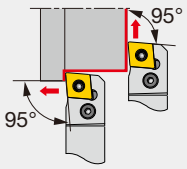
Designation	Clamping screw	Wrench 1	Wrench 2 *Optional
JSXGR/L...	CSTB-4SD	T-8F	(T-8L)

External
Internal
Grooving
Threading
Parting
L
J
N
P
A
G
D
F
Special

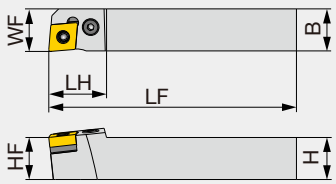
Reference pages: JSXGR/L: Inserts → B163

PCL2NR

Lever-lock toolholder with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style **L2**



Without offset

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PCL2NR2020H12	20	20	100	26	20	20	0.8	CN/GN**1204...	3

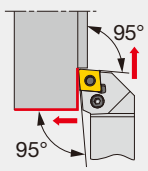
Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

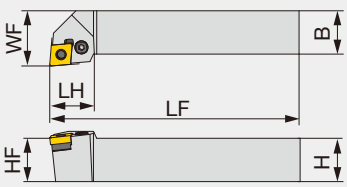
Designation	Shim	Clamping screw	Lever	Spring pin	Wrench
PCL2NR2020H12	LSC42	LCS4	LCL4	LSP4	P-3

PCLNR

Lever-lock toolholder with 95° approach angle, for negative 80° rhombic inserts



Cutting edge style **L**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PCLNR2020H12	20	20	100	26	20	25	0.8	CN/GN**1204...	3

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Lever	Spring pin	Wrench
PCLNR2020H12	LSC42	LCS4	LCL4	LSP4	P-3

INSERT SELECTION

P

Application	Precision finishing	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Finish cutting	Medium cutting
Grade	DX140	TH10
Chipbreaker shape	T-DIA	P
Cutting conditions	B014	

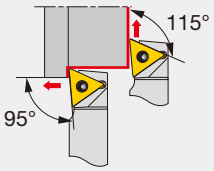
S

Application	Precision finishing	Finish cutting	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

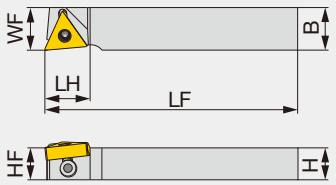
Reference pages: PCL2NR, PCLNR: Inserts → B056 -, CBN → B172 -, PCD → B194 -

JTTLNR/L

Back-clamp toolholder with 95° approach angle, for negative 60° triangular inserts



Cutting edge style **L**



Without offset

Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JTTLNR/L1216F16	12	16	85	17	12	16	0.4	TN**1604...	1
JTTLNR/L1216X16	12	16	120	17	12	16	0.4	TN**1604...	1
JTTLNR/L1616X16	16	16	120	17	16	16	0.4	TN**1604...	1

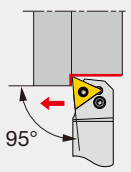
Torque: Recommended clamping torque: N·m **RE: Standard corner radius

SPARE PARTS

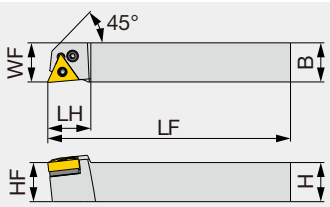
Designation	Clamp	Clamping screw	Wrench
JTTLNR/L...	JCP-3N	JDS-5040	P-2.5F

PTL2NR/L

Lever-lock toolholder with 95° approach angle, for negative 60° triangular inserts



Cutting edge style **L2**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PTL2NR/L2020H16	20	20	100	22	20	20	0.4	TN**1604...	2

Torque: Recommended clamping torque: N·m **RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Wrench	Spring pin	Lever
PTL2NR/L...	LST317 D30	LCS3	P-2.5	LSP3	LCL3

INSERT SELECTION

P

Application	Precision finishing	Finish cutting		Medium cutting	Medium to heavy cutting
Grade	SH725	SH725	GT9530	T9215	T9215
Chipbreaker shape	01	JRP	TSF	TM	TH
Cutting conditions	G069		B008		

M

Application	Precision finishing	Finish cutting	Medium cutting
Grade	SH725	SH725	T6130
Chipbreaker shape	01	JRP	SM
Cutting conditions	G069		B010

K

Application	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finish cutting	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA	with rake T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finish cutting	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

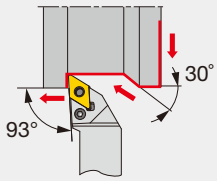
H

Application	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

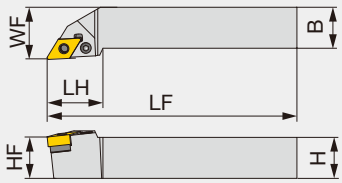
Reference pages: JTTLNR/L, PTL2NR/L: Inserts → B086 -, CBN → B178 -, PCD → B194 -

PDJNR

Lever-lock toolholder with 93° approach angle, for negative 55° rhombic inserts



Cutting edge style **J**



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
PDJNR2020H15	20	20	100	32	20	25	0.8	DN**1504...	3

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Shim	Clamping screw	Lever	Spring pin	Wrench
PDJNR2020H15	LSD42	LCS4	LCL4	LSP4	P-3

INSERT SELECTION

P

Application	Precision finishing	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	NS9530	GT9530	T9215	T9215
Chipbreaker shape	TF	TSF	TM	TH
Cutting conditions	B008			

M

Application	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	T6120	T6130	T6130
Chipbreaker shape	SF	SM	SH
Cutting conditions	B010		

K

Application	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finish cutting	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finish cutting	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

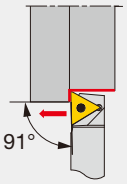
H

Application	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

Reference pages: PDJNR: Inserts → B067 -, CBN → B174 -, PCD → B194 -

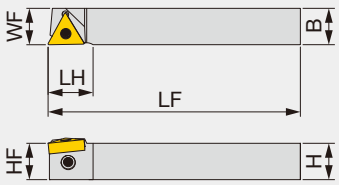
JTTANR/L

Back-clamp toolholder with 91° approach angle, for negative 60° triangular inserts



Cutting edge style **A**

Without offset



Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	RE**	Insert	Torque
JTTANR/L1216K16	12	16	125	19.8	12	16	0.4	TN**1604...	1.2
JTTANR/L1616K16	16	16	125	19.8	16	16	0.4	TN**1604...	1.2

Torque: Recommended clamping torque: N·m
**RE: Standard corner radius

SPARE PARTS

Designation	Clamp	Clamping screw	Wrench
JTTANR/L...	JCP-3N	JDS-5040	P-2.5F

INSERT SELECTION

P

Application	Precision finishing	Finish cutting		Medium cutting	Medium to heavy cutting
Grade	SH725	SH725	GT9530	T9215	T9215
Chipbreaker shape	01	JRP	TSF	TM	TH
Cutting conditions	G069		B008		

M

Application	Precision finishing	Finish cutting	Medium cutting
Grade	SH725	SH725	T6130
Chipbreaker shape	01	JRP	SM
Cutting conditions	G069		B010

K

Application	Finish cutting	Medium cutting	Medium to heavy cutting
Grade	T515	T515	T515
Chipbreaker shape	All-round	All-round	All-round
Cutting conditions	B012		

N

Application	Precision finishing	Finish cutting	Medium cutting
Grade	DX120	DX140	TH10
Chipbreaker shape	T-DIA with rake	T-DIA	P
Cutting conditions	B014		

S

Application	Precision finishing	Finish cutting	Medium cutting
Grade	BX950	AH8005	AH8005
Chipbreaker shape	T-CBN	HRF	HRM
Cutting conditions	B016		

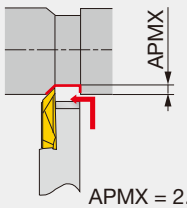
H

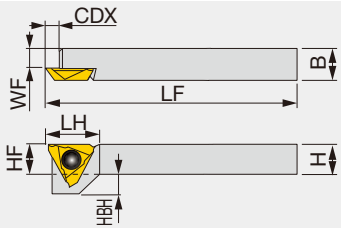
Application	Precision finishing	Finish cutting
Grade	BXM10	BXM10
Chipbreaker shape	T-CBN	T-CBN
Cutting conditions	B018	

Reference pages: JTTANR/L: Inserts → B086 -, CBN → B178 -, PCD → B194 -

JSTBR/L

Screw-on toolholder for back turning





Right hand (R) shown.

Inch	H	B	LF	LH	CDX	HF	WF	HBH	Insert	Torque
JSTBR/L063	0.375	0.375	5.000	0.625	0.197	0.375	0.219	0.250	JTBR/L3...	0.89
JSTBR/L083	0.500	0.500	5.000	0.625	0.197	0.500	0.313	0.125	JTBR/L3...	0.89
JSTBR/L103	0.625	0.625	5.000	0.625	0.197	0.625	0.469	-	JTBR/L3...	0.89

Metric	H	B	LF	LH	CDX	HF	WF	HBH	Insert	Torque*
JSTBR/L1010X3	10	10	120	15	5	10	6	5	JTBR/L3...	1.2
JSTBL1010K3	10	10	125	15	5	10	6	5	JTBR/L3...	1.2
JSTBR/L1212F3	12	12	85	15	5	12	8	3	JTBR/L3...	1.2
JSTBR/L1212X3	12	12	120	15	5	12	8	3	JTBR/L3...	1.2
JSTBR/L1616X3	16	16	120	15	5	16	12	-	JTBR/L3...	1.2

Torque: Recommended clamping torque: lbs·ft (*N·m)

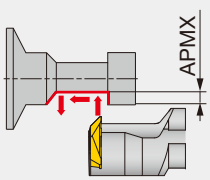
SPARE PARTS

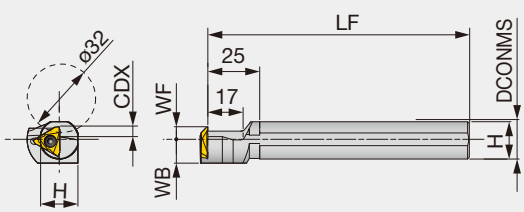
Designation	Clamping screw	Wrench
JSTBR/L...	CSTB-4SD	T-8F

J-SERIES

JS-TBL3

Screw-on toolholder for back turning





Right hand (R) shown.

Metric	DCONMS	H	LF	CDX	WF	WB	Insert	Torque
JS19K-TBL3	19.05	18	125	4.5	6	11.5	JTBR3...	3
JS20K-TBL3	20	19	125	4.5	6	11.5	JTBR3...	3
JS22K-TBL3	22	21	125	4.5	6	11.5	JTBR3...	3
JS25K-TBL3	25.4	24	125	4.5	10	12.7	JTBR3...	3

Torque: Recommended clamping torque: N·m

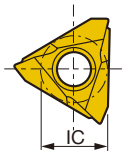
SPARE PARTS

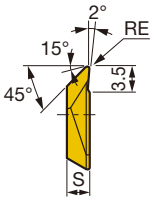
Designation	Clamping screw	Wrench
JS**-TBL3	CSTB-4S	T-15F

Reference pages: JSTBR/L, JS-TBL3: Inserts, Standard cutting conditions → G062

INSERT

JTB (Sharp edge)





Right hand (R) shown.

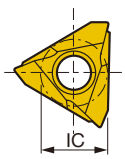
P	Steel	★	☆			★						
M	Stainless	★	☆									
K	Cast iron	★				☆			☆			
N	Non-ferrous								★			
S	Superalloys	☆	☆						★			
H	Hard materials								★			

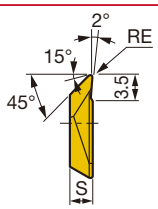
★ : First choice
☆ : Second choice

Designation	HAND	RE (in)	Coated				Cermet				Uncoated				IC (mm)	S (mm)	Max. depth of cut (mm)
			SH725	J740			NS9530				TH10						
JTBR3000F	R	0.0012	●	●							●				9.438	3.18	2.5
JTBL3000F	L	0.0012	●	●							●				9.438	3.18	2.5
JTBR3005F	R	0.002	●	●							●				9.438	3.18	2.5
JTBL3005F	L	0.002	●	●							●				9.438	3.18	2.5
JTBR3010F	R	0.004	●	●			●				●				9.438	3.18	2.5
JTBL3010F	L	0.004	●	●			●				●				9.438	3.18	2.5
JTBR3015F	R	0.006	●	●											9.438	3.18	2.5
JTBL3015F	L	0.006	●												9.438	3.18	2.5

● : Line up

JTBR/L (Honed edge)





Right hand (R) shown.

P	Steel	★				★						
M	Stainless	★										
K	Cast iron	★				☆						
N	Non-ferrous											
S	Superalloys	☆										
H	Hard materials											

★ : First choice
☆ : Second choice

Designation	HAND	RE (in)	Coated				Coated cermet				IC (mm)	S (mm)	Max. depth of cut (mm)
			J740				J9530						
JTBR3000	R	0.002	●				●				9.438	3.18	2.5
JTBL3000	L	0.002	●								9.438	3.18	2.5
JTBR3005	R	0.004	●				●				9.438	3.18	2.5
JTBL3005	L	0.004	●								9.438	3.18	2.5

● : Line up

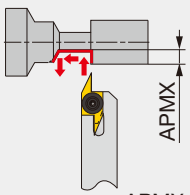
Reference pages: Toolholders → G061

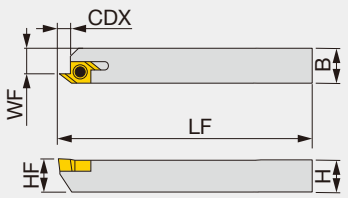
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Steel 1045, etc.	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
		NS9530	164 - 492	0.0004 - 0.004
		J9530	164 - 492	0.0004 - 0.004
	Free-cutting steel	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
M	Stainless steel 303, etc.	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
		NS9530	164 - 492	0.0004 - 0.004
		J9530	164 - 492	0.0004 - 0.004
N	Aluminum alloys, Brass Si < 12%, 5056, 6061, etc.	TH10	33 - 656	0.0004 - 0.004
S	Difficult-to-machine material, Titanium alloys Ti-6Al-4V, etc.	TH10	33 - 98	0.0004 - 0.004

JSEGR/L

Screw-on toolholder for back turning





Metric	H	B	LF	CDX	HF	WF	Insert	Torque
JSEGR/L1010K10	10	10	125	3.3	10	7.5	J10ER/L...	1.2
JSEGR/L1212K10	12	12	125	3.3	12	9.5	J10ER/L...	1.2
JSEGR/L1616K10	16	16	125	3.3	16	13.5	J10ER/L...	1.2

Torque: Recommended clamping torque: N·m

SPARE PARTS


Designation	Clamping screw	Wrench
JSEGR/L...	CSTB-2.5	T-8F

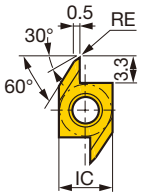
STANDARD CUTTING CONDITIONS (J10E type insert)

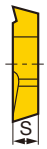
ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Steel 1045, etc.	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
		NS9530	164 - 492	0.0004 - 0.004
		J9530	164 - 492	0.0004 - 0.004
	Free-cutting steel	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
M	Stainless steel 303, etc.	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
		NS9530	164 - 492	0.0004 - 0.004
		J9530	164 - 492	0.0004 - 0.004
N	Aluminum alloys, Brass Si < 12%, 5056, 6061, etc.	TH10	33 - 656	0.0004 - 0.004
S	Difficult-to-machine material, Titanium alloys Ti-6Al-4V, etc.	TH10	33 - 98	0.0004 - 0.004

Reference pages: JSEGR/L: Inserts → G065

INSERT

J10E (Sharp edge)





Right hand (R) shown.

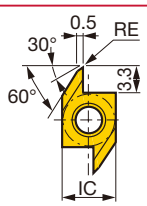
P	Steel	★	☆			★						
M	Stainless	★	☆									
K	Cast iron	★				☆			☆			
N	Non-ferrous								★			
S	Superalloys	☆							★			
H	Hard materials								★			

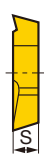
★ : First choice
☆ : Second choice

Designation	HAND	RE (mm)	Coated				Cermet				Uncoated				IC (mm)	S (mm)	Max. depth of cut (mm)
			SH725	J740			NS9530				TH10						
J10ER/L005BF	R	0.05	●	●							●				6.35	3.18	3
J10ER/L005BF	L	0.05	●	●							●				6.35	3.18	3
J10ER/L010BF	R	0.1	●	●							●				6.35	3.18	3
J10ER/L010BF	L	0.1	●	●							●				6.35	3.18	3
J10ER/L015BF	R	0.15	●				●								6.35	3.18	3
J10ER/L015BF	L	0.15	●				●								6.35	3.18	3

● : Line up

J10E (Honed edge)





Right hand (R) shown.

P	Steel	★			★							
M	Stainless	★										
K	Cast iron	★			☆							
N	Non-ferrous											
S	Superalloys	☆										
H	Hard materials											

★ : First choice
☆ : Second choice

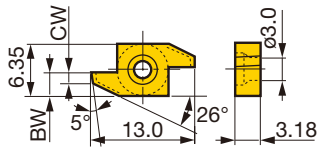
Designation	HAND	RE (mm)	Coated			Coated cermet							IC (mm)	S (mm)	Max. depth of cut (mm)
			J740			J9530									
J10ER005B	R	0.05	●			●							6.35	3.18	3
J10EL005B	L	0.05	●										6.35	3.18	3
J10ER010B	R	0.1	●			●							6.35	3.18	3
J10EL010B	L	0.1	●										6.35	3.18	3

● : Line up

Reference pages: Toolholders → G064

INSERT

10E (Insert blank)



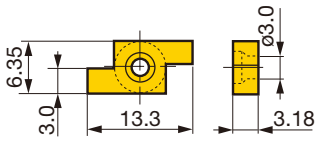
Right hand (R) shown.

Designation	HAND	Uncoated TH10
10ER100B	R	●
10EL100B	L	●
10ER150B	R	●
10EL150B	L	●

● : Line up

Note: Right hand holder (JSEGR...) use right hand insert (10ER...) and left hand holder (JSEGL...) use left hand insert (10EL...)

10E (Insert blank)



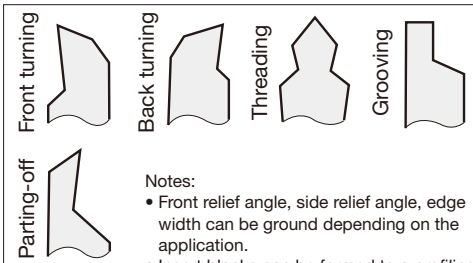
Right hand (R) shown.

Designation	HAND	Uncoated TH10
10ER300	R	●
10EL300	L	●

● : Line up

Note: Right hand holder (JSEGR...) use right hand insert (10ER...) and left hand holder (JSEGL...) use left hand insert (10EL...)

Formed examples of insert blanks



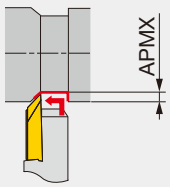
Notes:
- Front relief angle, side relief angle, edge width can be ground depending on the application.
- Insert blanks can be formed to a profiling tool which has a width up to 0.118".

Standard cutting conditions

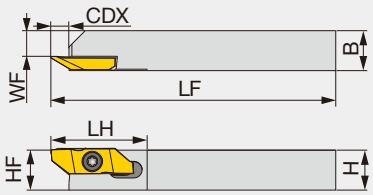
Operations	Workpiece material		Carbon steel	Stainless steel	Brass
Lateral feed (external turning)	Cutting speed (sfm)		~ 330	~ 160	~ 650
	Feed (ipr)	Roughing	~ 0.002	~ 0.001	~ 0.004
		Medium	~ 0.001	~ 0.001	~ 0.002
		Finishing	~ 0.0007	~ 0.0006	~ 0.0016
Parting-off Grooving Forming	Cutting speed (sfm)		~ 260	~ 100	~ 500
	Feed (ipr)	Roughing	~ 0.0007	~ 0.0006	~ 0.002
		Medium	~ 0.0006	~ 0.0004	~ 0.001
		Finishing	~ 0.0004	~ 0.0003	~ 0.0006

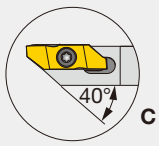
JSXBR/L

Screw-on toolholder for back turning and threading



APMX = 5.5 mm





C type

Right hand (R) shown.

Metric	H	B	LF	LH	CDX	HF	WF	Insert
JSXBR/L1010K8-C	10	10	125	29	6.7	10	5.7	JXBR/L8..., JXT*R...
JSXBR/L1212K8-C	12	12	125	29	6.7	12	7.7	JXBR/L8..., JXT*R...
JSXBR/L1616K8	16	16	125	29	6.4	16	11.7	JXBR/L8..., JXT*R...
JSXBR/L2020K8	20	20	125	29	6.4	20	15.7	JXBR/L8..., JXT*R...
JSXBR/L2525K8	25	25	125	29	6.4	25	20.7	JXBR/L8..., JXT*R...

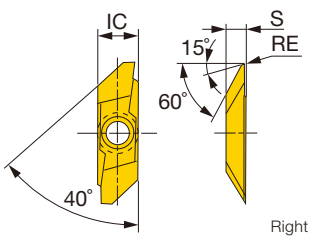
Can be used with JXT insert for threading.
Can be wrenched also from the back with a double-head screw.

SPARE PARTS

Designation	Clamping screw	Wrench
JSXBR/L...	CSTB-4SD	T-8F

INSERT

JXB (Sharp edge)



Right hand (R) shown.

P	Steel	★	
M	Stainless	★	
K	Cast iron	★	☆
N	Non-ferrous		★
S	Superalloys	☆	★
H	Hard materials		★

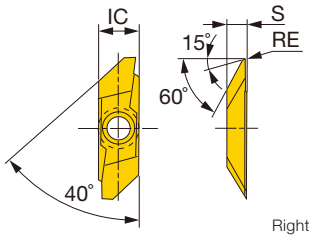
★ : First choice
☆ : Second choice

Designation	HAND	RE (mm)	Coated	Uncoated	IC (mm)	S (mm)	Max. depth of cut (mm)
			J740	TH10			
JXBR8000F	R	0.03	●	●	8	3.97	5.5
JXBL8000F	L	0.03	●	●	8	3.97	5.5
JXBR8005F	R	0.05	●	●	8	3.97	5.5
JXBL8005F	L	0.05	●	●	8	3.97	5.5
JXBR8010F	R	0.1	●	●	8	3.97	5.5
JXBL8010F	L	0.1	●	●	8	3.97	5.5
JXBR8015F	R	0.15	●	●	8	3.97	5.5
JXBL8015F	L	0.15	●	●	8	3.97	5.5

● : Line up

Reference pages: JSXBR/L: Inserts → G067 -, Standard cutting conditions → G068

JXB (Honed edge)



Right hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	RE (mm)	Coated J740	IC (mm)	S (mm)	Max. depth of cut (mm)
JXBR/L8005	R	0.05	●	8	3.97	5.5
JXBR/L8005	L	0.05	●	8	3.97	5.5
JXBR/L8010	R	0.1	●	8	3.97	5.5
JXBR/L8010	L	0.1	●	8	3.97	5.5
JXBR/L8015	R	0.15	●	8	3.97	5.5
JXBR/L8015	L	0.15	●	8	3.97	5.5

● : Line up

STANDARD CUTTING CONDITIONS (JXB type insert)

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) Grooving	Turning
P	Steel 1045, etc.	J740	33 - 328	0.0004 - 0.0012	0.0008 - 0.004
	Free-cutting steel	J740	33 - 328	0.0004 - 0.0012	0.0008 - 0.004
M	Stainless steel 303, etc.	J740	33 - 328	0.0004 - 0.0008	0.0008 - 0.003
N	Aluminum alloys, Brass Si < 12%, 5056, 6061, etc.	TH10	164 - 656	0.0004 - 0.0020	0.0008 - 0.004
S	Difficult-to-machine material, Titanium alloys Ti-6Al-4V, etc.	TH10	33 - 98	0.0004 - 0.0008	0.0008 - 0.002

Reference pages: Toolholders → G067

MINIFORCE TURN

STANDARD CUTTING CONDITIONS

FOR EXTERNAL TURNING

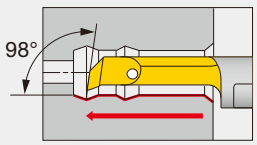
Applications	ISO	Workpiece material	Priority	Chip breaker	Grade	Cutting speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed *f* (ipr)
For swiss type automatic lathes	P	Low carbon steel, Carbon steel 1045, etc. Low alloy steel, Alloy steel 4140, etc.	First choice	JS	SH725	164 - 590	0.004 - 0.118	0.001 - 0.004
			With high sharpness	JSS	SH725	164 - 590	0.004 - 0.059	0.001 - 0.004
	M	Stainless steel (Austenitic) 304, etc. Stainless steel (Martensitic and ferritic) 430, etc. Stainless steel (Precipitation hardened) 174, etc.	First choice	JS	SH725	164 - 590	0.004 - 0.049	0.001 - 0.004
			With high sharpness	JSS	SH725	164 - 590	0.004 - 0.059	0.001 - 0.004
For small size CNC lathes	P	Low carbon steel, Carbon steel 1045, etc. Low alloy steel, Alloy steel 4140, etc.	First choice	SS	AH725	164 - 590	0.006 - 0.059	0.002 - 0.008
				TS	AH725	164 - 590	0.012 - 0.079	0.003 - 0.012
			For improved surface finish	SS	NS9530	164 - 656	0.006 - 0.059	0.002 - 0.008
				TS	NS9530	164 - 656	0.012 - 0.079	0.003 - 0.012
			For wear resistance	SS	GT9530	164 - 820	0.006 - 0.059	0.002 - 0.008
				TS	GT9530	164 - 820	0.012 - 0.079	0.003 - 0.012
	M	Stainless steel (Austenitic) 304, etc. Stainless steel (Martensitic and ferritic) 430, etc. Stainless steel (Precipitation hardened) 174, etc.	First choice	SS	AH8015	164 - 492	0.006 - 0.059	0.002 - 0.008
			For impact resistance	TS	AH8015	164 - 492	0.012 - 0.079	0.003 - 0.012

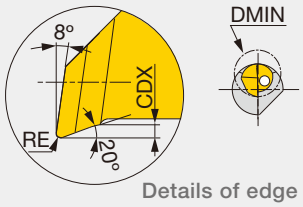
J-SERIES

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Priority	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steel, Carbon steel 1045, etc. Low alloy steel, Alloy steel 4140, etc.	First choice	SH725	164 - 656	0.0004 - 0.008
		For impact resistance	AH725	164 - 656	0.0004 - 0.008
M	Stainless steel (Austenitic) 304, etc. Stainless steel (Martensitic and ferritic) 430, etc. Stainless steel (Precipitation hardened) 174, etc.	First choice	SH725	164 - 656	0.0004 - 0.008
		For impact resistance	AH725	164 - 656	0.0004 - 0.008
S	Titanium alloys Ti-6Al-4V, etc. Superalloys Inconel718, etc.	First choice	SH725	66 - 262	0.0004 - 0.008
		For impact resistance	AH725	66 - 262	0.0004 - 0.008

Solid boring bar for boring, profiling and chamfering





Details of edge

Right hand (R) shown.

Metric	SH730	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{+0.05}_{0}$
JBTR04020004-D006	●	0.6	4	-	0.5	18.5	2	0.08	0.04
JBTR04030004-D006	●	0.6	4	-	0.5	19.5	3	0.08	0.04
JBTR04045005-D010	●	1	4	-	0.9	21	4.5	0.1	0.05
JBTR04065005-D010	●	1	4	-	0.9	23	6.5	0.1	0.05
JBTR04040005-D020	●	2	4	-	1.7	20.5	4	0.1	0.05
JBTR04090005-D020	●	2	4	-	1.7	25.5	9	0.1	0.05
JBTR04140005-D020	●	2	4	-	1.7	30.5	14	0.1	0.05
JBTR/L04090010-D028	●	2.8	4	0.6	2.6	25.5	9	0.2	0.1
JBTR/L04150010-D028	●	2.8	4	0.6	2.6	31.5	15	0.2	0.1
JBTR/L04190010-D028	●	2.8	4	0.6	2.6	35.5	19	0.2	0.1
JBTR/L04090010-D040	●	4	4	1.5	3.5	25.5	9	0.3	0.1
JBTR/L04150010-D040	●	4	4	1.5	3.5	31.5	15	0.3	0.1
JBTR/L04190010-D040	●	4	4	1.5	3.5	35.5	19	0.3	0.1
JBTR04230010-D040	●	4	4	1.5	3.5	39.5	23	0.3	0.1
JBTR04270010-D040	●	4	4	1.5	3.5	43.5	27	0.3	0.1
JBTR/L07090015-D050	●	5	7	0.9	4.4	25	9	0.5	0.15
JBTR/L07140015-D050	●	5	7	0.9	4.4	30	14	0.5	0.15
JBTR/L07190015-D050	●	5	7	0.9	4.4	35	19	0.5	0.15
JBTR/L07240015-D050	●	5	7	0.9	4.4	40	24	0.5	0.15
JBTR/L07290015-D050	●	5	7	0.9	4.4	45	29	0.5	0.15
JBTR07340015-D050	●	5	7	0.9	4.4	50	34	0.5	0.15
JBTR/L07140015-D060	●	6	7	1.8	5.3	30	14	0.5	0.15
JBTR/L07210015-D060	●	6	7	1.8	5.3	37	21	0.5	0.15
JBTR/L07240015-D060	●	6	7	1.8	5.3	40	24	0.5	0.15
JBTR/L07290015-D060	●	6	7	1.8	5.3	45	29	0.5	0.15
JBTR07340015-D060	●	6	7	1.8	5.3	50	34	0.5	0.15
JBTR07410015-D060	●	6	7	1.8	5.3	57	41	0.5	0.15
JBTR/L07190015-D068	●	6.8	7	2.8	6.3	35	19	0.6	0.15
JBTR07240015-D068	●	6.8	7	2.8	6.3	40	24	0.6	0.15
JBTR/L07290015-D068	●	6.8	7	2.8	6.3	45	29	0.6	0.15
JBTR/L07340015-D070	●	7	7	2.8	6.3	50	34	0.6	0.15
JBTR07390015-D070	●	7	7	2.8	6.3	55	39	0.6	0.15
JBTR07440015-D070	●	7	7	2.8	6.3	60	44	0.6	0.15
JBTR07490015-D070	●	7	7	2.8	6.3	65	49	0.6	0.15

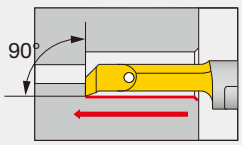
● : Line up

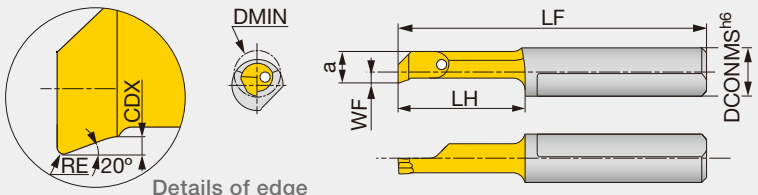
External
Internal
Grooving
Threading
Parting

Reference pages: JBT R/L: Standard cutting conditions → G078

JBP R

Solid boring bar for boring and chamfering



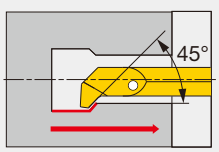


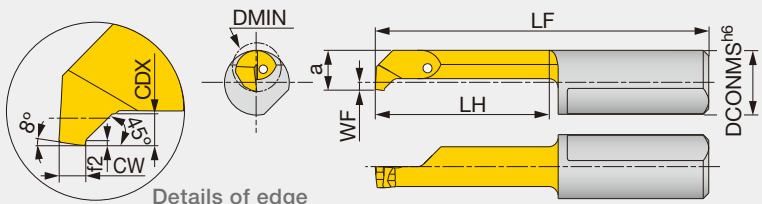
Metric	SH730	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{+0.05}_{0}$
JBPR04090010-D028	●	2.8	4	0.9	2.6	25.5	9	0.2	0.1
JBPR04150010-D028	●	2.8	4	0.9	2.6	31.5	15	0.2	0.1
JBPR04090010-D040	●	4	4	1.5	3.5	25.5	9	0.3	0.1
JBPR04150010-D040	●	4	4	1.5	3.5	31.5	15	0.3	0.1
JBPR07140015-D050	●	5	7	0.9	4.4	30	14	0.5	0.15
JBPR07190015-D050	●	5	7	0.9	4.4	35	19	0.5	0.15

● : Line up

JBU R

Solid boring bar for back boring and chamfering



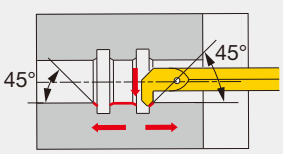


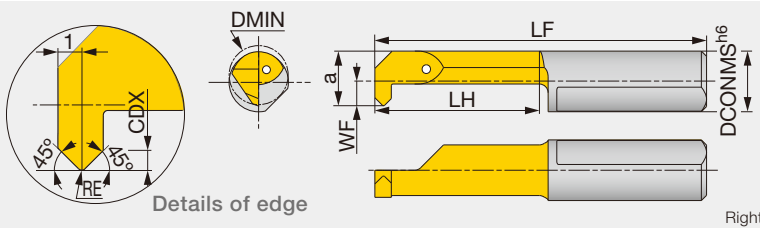
Metric	SH730	DMIN	DCONMS	WF	a	LF	LH	f2	CDX	CW $^{+0.05}_{0}$
JBUR07140010-D050	●	5	7	0.9	4.4	30	14	0.2	1	1
JBUR07190010-D050	●	5	7	0.9	4.4	35	19	0.2	1	1

● : Line up

JBC R

Solid boring bar for boring and 45° chamfering





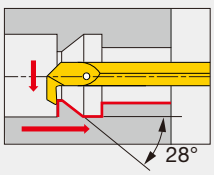
Metric	SH730	DMIN	DCONMS	WF	a	LF	LH	CDX	RE $^{\pm 0.05}$
JBCR07140020-D050	●	5	7	0.9	4.4	30	14	0.7	0.2
JBCR07190020-D050	●	5	7	0.9	4.4	35	19	0.7	0.2
JBCR07190020-D068	●	6.8	7	2.8	6.3	35	19	0.7	0.2

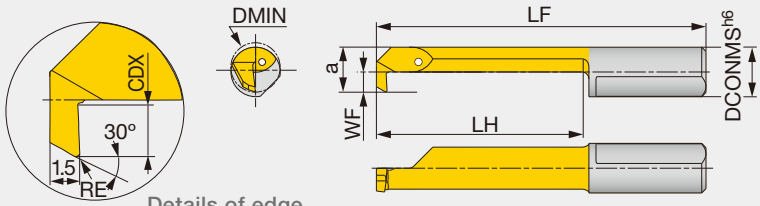
● : Line up

Reference pages: JBP R, JBU R, JBC R: Standard cutting conditions → G078

JBB R

Solid boring bar for back boring





Details of edge

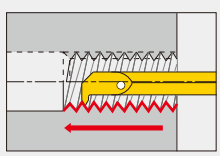
Right hand (R) shown.

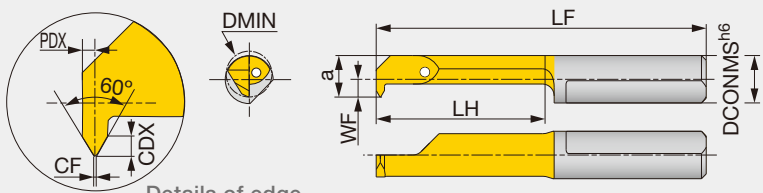
Metric	SH730	DMIN	DCONMS	WF	a	LF	LH	CDX	RE +0.05
JBBR04140020-D030	●	3	4	0.6	2.6	30	14	0.5	0.2
JBBR04190020-D030	●	3	4	0.6	2.6	35	19	0.5	0.2
JBBR04140015-D040	●	4	4	1.5	3.5	30	14	0.8	0.15
JBBR04240015-D040	●	4	4	1.5	3.5	40	24	0.8	0.15
JBBR07190020-D050	●	5	7	0.9	4.4	35	19	1	0.2
JBBR07290020-D050	●	5	7	0.9	4.4	45	29	1	0.2
JBBR07190020-D060	●	6	7	1.8	5.3	35	19	1.8	0.2
JBBR07290020-D060	●	6	7	1.8	5.3	45	29	1.8	0.2
JBBR07190020-D070	●	7	7	2.8	6.3	35	19	2.5	0.2
JBBR07290020-D070	●	7	7	2.8	6.3	45	29	2.5	0.2

● : Line up

JBI R

Solid boring bar for threading (metric)





Details of edge

Right hand (R) shown.

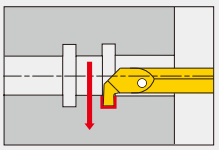
Metric	SH730	Pitch	DMIN	CF 0 -0.02	DCONMS	WF	a	LF	LH	CDX	PDX
JBIR04140050-D040	●	0.5	4	0.06	4	1.5	3.5	30	14	0.3	0.35
JBIR07140050-D050	●	0.5	5	0.06	7	0.9	4.4	30	14	0.3	0.35
JBIR07140075-D050	●	0.75	5	0.09	7	0.9	4.4	30	14	0.4	0.45
JBIR07140100-D048	●	1	4.8	0.12	7	0.9	4.4	30	14	0.6	0.55
JBIR07140100-D060	●	1	6	0.12	7	1.8	5.3	30	14	0.6	0.55
JBIR07140125-D060	●	1.25	6	0.15	7	1.8	5.3	30	14	0.7	0.65
JBIR07140150-D060	●	1.5	6	0.18	7	1.8	5.3	30	14	0.8	0.75
JBIR07140150-D070	●	1.5	7	0.18	7	2.8	6.3	30	14	0.8	0.75

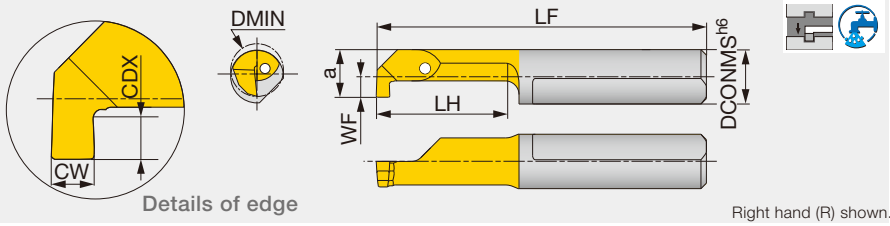
● : Line up

Reference pages: JBB R, JBI R: Standard cutting conditions → G078 - G079

JBG R/L

Solid boring bar for internal grooving





Metric	SH730	CW $^{+0.05}_{0}$	DMIN	DCONMS	WF	a	LF	LH	CDX
JBGR04050050-D020	●	0.5	2	4	0.2	1.8	21	5	0.4
JBGR04100050-D020	●	0.5	2	4	0.2	1.8	26	10	0.4
JBGR04050070-D030	●	0.7	3	4	0.7	2.7	21	5	0.6
JBGR04100070-D030	●	0.7	3	4	0.7	2.7	26	10	0.6
JBGR04090100-D040	●	1	4	4	1.5	3.5	25.5	9	0.8
JBGR04150100-D040	●	1	4	4	1.5	3.5	31.5	15	0.8
JBGR07090100-D050	●	1	5	7	0.9	4.4	25	9	1
JBGR07140100-D050	●	1	5	7	0.9	4.4	30	14	1
JBGR07090150-D050	●	1.5	5	7	0.9	4.4	25	9	1
JBGR07140150-D050	●	1.5	5	7	0.9	4.4	30	14	1
JBGR07090200-D050	●	2	5	7	0.9	4.4	25	9	1
JBGR07190200-D050	●	2	5	7	0.9	4.4	35	19	1
JBGR/L07090100-D060	●	1	6	7	1.8	5.3	25	9	1.8
JBGR07140100-D060	●	1	6	7	1.8	5.3	30	14	1.8
JBGR07210100-D060	●	1	6	7	1.8	5.3	37	21	1.8
JBGR07290100-D060	●	1	6	7	1.8	5.3	45	29	1.8
JBGR/L07090150-D060	●	1.5	6	7	1.8	5.3	25	9	1.8
JBGR07140150-D060	●	1.5	6	7	1.8	5.3	30	14	1.8
JBGR07210150-D060	●	1.5	6	7	1.8	5.3	37	21	1.8
JBGR07240150-D060	●	1.5	6	7	1.8	5.3	40	24	1.8
JBGR07290150-D060	●	1.5	6	7	1.8	5.3	45	29	1.8
JBGR07090200-D060	●	2	6	7	1.8	5.3	25	9	1.8
JBGR07140200-D060	●	2	6	7	1.8	5.3	30	14	1.8
JBGR07210200-D060	●	2	6	7	1.8	5.3	37	21	1.8
JBGR07240200-D060	●	2	6	7	1.8	5.3	40	24	1.8
JBGR07290200-D060	●	2	6	7	1.8	5.3	45	29	1.8
JBGR07090100-D068	●	1	6.8	7	2.7	6.2	25	9	2.5
JBGR07140100-D068	●	1	6.8	7	2.7	6.2	30	14	2.5
JBGR07210100-D068	●	1	6.8	7	2.7	6.2	37	21	2.5
JBGR07090150-D068	●	1.5	6.8	7	2.7	6.2	25	9	2.5
JBGR07140150-D068	●	1.5	6.8	7	2.7	6.2	30	14	2.5
JBGR07210150-D068	●	1.5	6.8	7	2.7	6.2	37	21	2.5
JBGR07290150-D068	●	1.5	6.8	7	2.7	6.2	45	29	2.5
JBGR07090200-D068	●	2	6.8	7	2.7	6.2	25	9	2.5
JBGR/L07140200-D068	●	2	6.8	7	2.7	6.2	30	14	2.5
JBGR07210200-D068	●	2	6.8	7	2.7	6.2	37	21	2.5
JBGR07250200-D068	●	2	6.8	7	2.7	6.2	40	25	2.5
JBGR07290200-D068	●	2	6.8	7	2.7	6.2	45	29	2.5

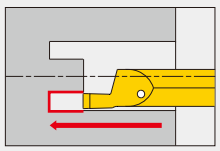
Corner radius: less than 0.004" (0.1 mm)

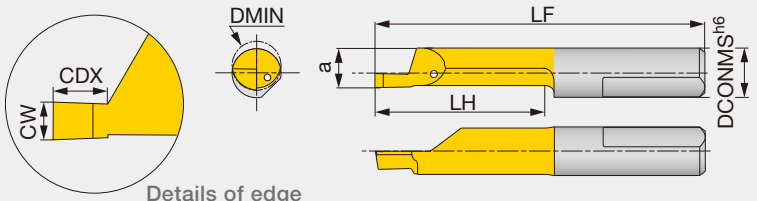
● : Line up

Reference pages: JBG R/L: Standard cutting conditions → G079

JBF R/L

Solid boring bar for face grooving





Right hand (R) shown.

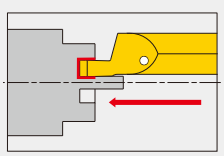
Metric	SH730	CW $^{+0.05}_{0}$	DMIN	DCONMS	a	LF	LH	CDX
JBFR07110100-D060	●	1	6	7	5.2	26	10	1.5
JBFR07110150-D060	●	1.5	6	7	5.2	26	10	2
JBFR07110200-D060	●	2	6	7	5.2	26	10	3
JBFR07110100-D080	●	1	8	7	5.9	27	11	1.5
JBFR07110150-D080	●	1.5	8	7	5.9	27	11	2.5
JBFR07110200-D080	●	2	8	7	5.9	27	11	3
JBFR07110250-D080	●	2.5	8	7	5.9	27	11	3.5
JBFR07110300-D080	●	3	8	7	5.9	27	11	3.5
JBFR/L07210150-D080	●	1.5	8	7	5.9	36	21	2.5
JBFR07210200-D080	●	2	8	7	5.9	36	21	3
JBFR07210250-D080	●	2.5	8	7	5.9	36	21	3.5
JBFR07210300-D080	●	3	8	7	5.9	36	21	3.5
JBFR/L07300200-D080	●	2	8	7	5.9	46	30	3
JBFR07300300-D080	●	3	8	7	5.9	46	30	3.5
JBFR07200200-D080	●	2	8	7	5.9	36	20	3
JBFR07200250-D150	●	2.5	15	7	5.9	36	20	20
JBFR07200300-D150	●	3	15	7	5.9	36	20	20
JBFR07300300-D150	●	3	15	7	5.9	46	30	30

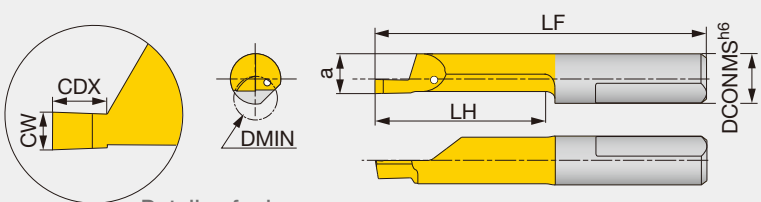
Corner radius: less than 0.004" (0.1 mm)

● : Line up

JBS R

Solid boring bar for face grooving (for shaft)





Right hand (R) shown.

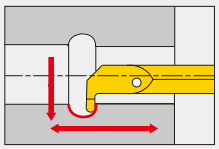
Metric	SH730	CW $^{+0.05}_{0}$	DMIN	DCONMS	a	LF	LH	CDX
JBSR07200200-D060	●	2	6	7	5.2	36	20	4

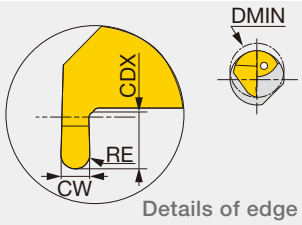
Corner radius: less than 0.004" (0.1 mm)

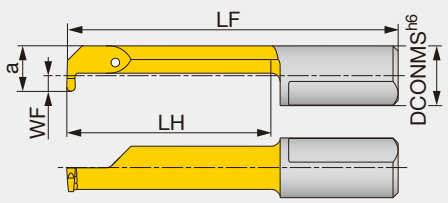
● : Line up

Reference pages: JBF R/L, JBS R: Standard cutting condition → G079

Solid boring bar for boring and profiling







Right hand (R) shown.

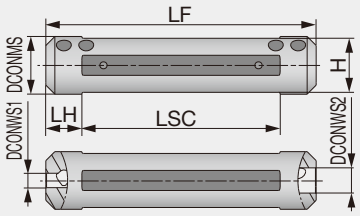
Metric	SH730	CW $^{+0.05}_{0}$	DMIN	DCONMS	WF	a	LF	LH	CDX	RE
JBRR07190050-D050	●	1	5	7	0.9	4.4	35	19	1	0.5
JBRR07240050-D060	●	1	6	7	1.8	5.3	40	24	1.8	0.5
JBRR07290050-D068	●	1	6.8	7	2.8	6.3	45	29	2.5	0.5

● : Line up

Reference pages: JBR R: Standard cutting conditions → G078

JBBS

Sleeve for external coolant supply



Metric	DCONMS	DCONWS1	DCONWS2	LF	LH	LSC	H
JBBS12-4-4	12	4	4	75	10	55	10.3
JBBS127-4-4	12.7	4	4	76.2	10	56.2	11.6
JBBS14-4-4	14	4	4	75	10	55	12
JBBS159-4-7	15.875	4	7	76.2	10	56.2	14
JBBS16-4-7	16	4	7	75	10	55	15
JBBS19-4-7	19.05	4	7	89	10	69	17.2
JBBS20-4-7	20	4	7	90	10	70	18
JBBS22-4-7	22	4	7	90	10	70	20
JBBS25-4-7	25	4	7	100	10	80	23
JBBS254-4-7	25.4	4	7	90	10	70	23.4

SPARE PARTS

Designation	Clamping screw	Wrench
JBBS12-4-4	SSHM5-4PF-S	P-2.5
JBBS127-4-4	SSHM5-6PF-S	P-2.5
JBBS14-4-4	SSHM5-4PF-S	P-2.5
JBBS**-4-7	SSHM5-6PF-S	P-2.5

TINY MINI TURN

JBBS-C

Sleeve for internal coolant supply

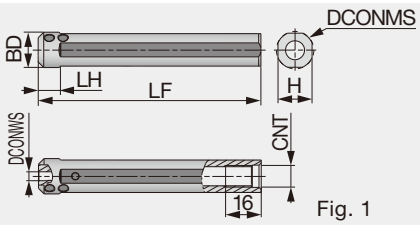


Fig. 1

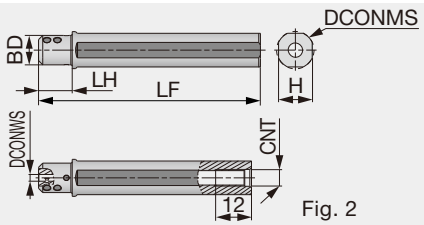


Fig. 2

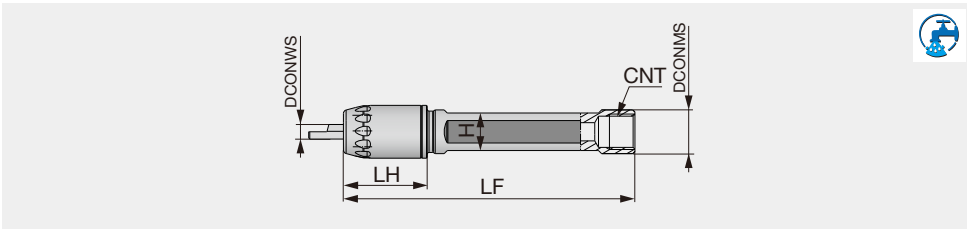
Metric	DCONMS	BD	DCONWS	LF	LH	H	CNT	Fig.
JBBS159-4-L100C	15.875	15.875	4	100	10	14.58	R1/8	1
JBBS159-7-L100C	15.875	15.875	7	100	10	14.58	R1/8	1
JBBS16-4-L100C	16	16	4	100	10	15	R1/8	1
JBBS16-7-L100C	16	16	7	100	10	15	R1/8	1
JBBS19-4-L100C	19.05	17.5	4	100	20	17.2	R1/8	2
JBBS19-7-L100C	19.05	17.5	7	100	20	17.2	R1/8	2
JBBS20-4-L100C	20	17.5	4	100	20	18	R1/8	2
JBBS20-7-L100C	20	17.5	7	100	20	18	R1/8	2
JBBS22-4-L100C	22	17.5	4	100	20	20	R1/8	2
JBBS22-7-L100C	22	17.5	7	100	20	20	R1/8	2
JBBS25-4-L100C	25	18	4	100	23	23	R1/8	2
JBBS25-7-L100C	25	18	7	100	23	23	R1/8	2
JBBS254-4-L100C	25.4	18	4	100	23	23.4	R1/8	2
JBBS254-7-L100C	25.4	18	7	100	23	23.4	R1/8	2

SPARE PARTS

Designation	Clamping screw	Wrench
JBBS**-4-L100C	SSHM5-6PF-S	P-2.5
JBBS**-7-L100C	SSHM5-4PF-S	P-2.5

JBBSA-C

Collet chuck sleeve for solid carbide bars



Metric	DCONMS	DCONWS	LF	LH	H	CNT
JBBSA16-4-L100C	16	4	100	23	14	Rc1/8
JBBSA16-7-L100C	16	7	100	23	14	Rc1/8
JBBSA20-4-L120C	20	4	120	23	18	Rc1/8
JBBSA20-7-L120C	20	7	120	23	18	Rc1/8

SPARE PARTS

Designation	Cap	Wrench
JBBSA**-4-L100C	CAP-A-4	WRENCH-A-4
JBBSA**-7-L100C	CAP-A-7	WRENCH-A-7

STANDARD CUTTING CONDITIONS

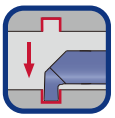
Boring, profiling, chamfering, back boring

ISO	Workpiece material	Grade	Cutting speed		Feed	
			Vc (m/min)	*Vc* (sfm)	*f* (mm/rev)	*f* (ipr)
P	Low carbon steel 1015, 1025, etc.	SH730	40 - 140	131 - 459	0.01 - 0.08 *	0.0004 - 0.003 *
P	Carbon steel, Alloy steel 1055, 4140, etc.	SH730	40 - 140	131 - 459	0.01 - 0.08 *	0.0004 - 0.003 *
P	Prehardened steel NAK80, PX5, etc.	SH730	40 - 140	131 - 459	0.01 - 0.08 *	0.0004 - 0.003 *
M	Stainless steel 304, 316, etc.	SH730	40 - 140	131 - 459	0.01 - 0.08 *	0.0004 - 0.003 *
K	Gray cast iron No.250B, No.300B, etc.	SH730	30 - 100	98 - 328	0.01 - 0.08 *	0.0004 - 0.003 *
K	Ductile cast iron 65-45-12, 80-55-06, etc.	SH730	30 - 100	98 - 328	0.01 - 0.08 *	0.0004 - 0.003 *
N	Aluminium alloys, Copper alloys Si < 12%	SH730	90 - 200	295 - 656	0.01 - 0.08 *	0.0004 - 0.003 *
S	Titanium alloys Ti-6Al-4V, etc.	SH730	30 - 100	98 - 328	0.01 - 0.08 *	0.0004 - 0.003 *
S	Superalloys Inconel718, etc.	SH730	30 - 100	98 - 328	0.01 - 0.08 *	0.0004 - 0.003 *

* JBTR/L04020004-D006, JBTR/L04030004-D006 : Max. *f* = 0.0004 ipr (0.01 mm/rev)

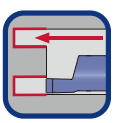
Threading (metric thread)

ISO	Workpiece material	Grade	Cutting speed		Number of passes Pitch (mm)				
			Vc (m/min)	*Vc* (sfm)	0.5 (0.020")	0.75 (0.030")	1 (0.039")	1.25 (0.049")	1.5 (0.059")
P	Low carbon steel 1015, 1025, etc.	SH730	40 - 140	131 - 459	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
P	Carbon steel, Alloy steel 1055, 4140, etc.	SH730	40 - 140	131 - 459	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
P	Prehardened steel NAK80, PX5, etc.	SH730	40 - 140	131 - 459	6 - 8	8 - 10	10 - 12	12 - 15	15 - 18
M	Stainless steel 304, 316, etc.	SH730	40 - 140	131 - 459	8	10	12	15	18
K	Gray cast iron No.250B, No.300B, etc.	SH730	30 - 100	98 - 328	7	9	12	14	17
K	Ductile cast iron 65-45-12, 80-55-06, etc.	SH730	30 - 100	98 - 328	7	9	12	14	17
N	Aluminium alloys, Copper alloys Si < 12%	SH730	90 - 200	295 - 656	6	8	10	12	15



Internal grooving

ISO	Workpiece material	Grade	Cutting speed		Feed	
			Vc (m/min)	*Vc* (sfm)	*f* (mm/rev)	*f* (ipr)
P	Low carbon steel 1015, 1025, etc.	SH730	40 - 140	131 - 459	0.01 - 0.03	0.0004 - 0.001
P	Carbon steel, Alloy steel 1055, 4140, etc.	SH730	40 - 140	131 - 459	0.01 - 0.03	0.0004 - 0.001
P	Prehardened steel NAK80, PX5, etc.	SH730	40 - 140	131 - 459	0.01 - 0.03	0.0004 - 0.001
M	Stainless steel 304, 316, etc.	SH730	40 - 140	131 - 459	0.01 - 0.03	0.0004 - 0.001
K	Gray cast iron No.250B, No.300B, etc.	SH730	30 - 100	98 - 328	0.01 - 0.03	0.0004 - 0.001
K	Ductile cast iron 65-45-12, 80-55-06, etc.	SH730	30 - 100	98 - 328	0.01 - 0.03	0.0004 - 0.001
N	Aluminium alloys, Copper alloys Si < 12%	SH730	90 - 200	295 - 656	0.01 - 0.03	0.0004 - 0.001
S	Titanium alloys Ti-6Al-4V, etc.	SH730	30 - 100	98 - 328	0.01 - 0.03	0.0004 - 0.001
S	Superalloys Inconel718, etc.	SH730	30 - 100	98 - 328	0.01 - 0.03	0.0004 - 0.001

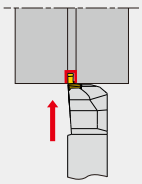


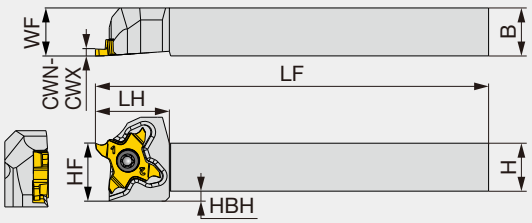
Face grooving

ISO	Workpiece material	Grade	Cutting speed		Feed	
			Vc (m/min)	*Vc* (sfm)	*f* (mm/rev)	*f* (ipr)
P	Low carbon steel 1015, 1025, etc.	SH730	40 - 140	131 - 459	0.01 - 0.05	0.0004 - 0.002
P	Carbon steel, Alloy steel 1055, 4140, etc.	SH730	40 - 140	131 - 459	0.01 - 0.05	0.0004 - 0.002
P	Prehardened steel NAK80, PX5, etc.	SH730	40 - 140	131 - 459	0.01 - 0.05	0.0004 - 0.002
M	Stainless steel 304, 316, etc.	SH730	40 - 140	131 - 459	0.01 - 0.05	0.0004 - 0.002
K	Gray cast iron No.250B, No.300B, etc.	SH730	30 - 100	98 - 328	0.01 - 0.05	0.0004 - 0.002
K	Ductile cast iron 65-45-12, 80-55-06, etc.	SH730	30 - 100	98 - 328	0.01 - 0.05	0.0004 - 0.002
N	Aluminium alloys, Copper alloys Si < 12%	SH730	90 - 200	295 - 656	0.01 - 0.05	0.0004 - 0.002
S	Titanium alloys Ti-6Al-4V, etc.	SH730	30 - 100	98 - 328	0.01 - 0.05	0.0004 - 0.002
S	Superalloys Inconel718, etc.	SH730	30 - 100	98 - 328	0.01 - 0.05	0.0004 - 0.002

STCR/L-18

External grooving and threading toolholder





Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HF	WF	HBH	Insert	Torque
STCR/L06-18	0.013	0.118	0.375	0.375	4.750	0.740	0.375	0.375	0.177	TC*18...	0.89
STCR/L08-18	0.013	0.118	0.500	0.500	4.750	0.740	0.500	0.500	0.098	TC*18...	0.89
STCR/L10-18	0.013	0.118	0.625	0.625	4.750	0.740	0.625	0.625	-	TC*18...	0.89
STCR/L12-18	0.013	0.118	0.750	0.750	4.750	0.900	0.750	1.000	-	TC*18...	0.89
STCR/L16-18	0.013	0.118	1.000	1.000	5.500	0.900	1.000	1.250	-	TC*18...	0.89

The right hand insert (TC*18R...) is used for the right hand toolholders (STCR...), and the left hand insert is used for the left hand toolholders
Torque: Recommended clamping torque: lbs·ft

SPARE PARTS

Designation	Clamping screw	Wrench
STCR**18	CSTC-4L100DL	T-1008/5
STCL**18	CSTC-4L100DR	T-1008/5

Left-Hand Insert

TCP18**L**...

Right-Hand Insert

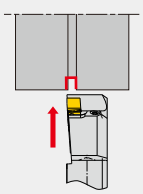
TCP18**R**...

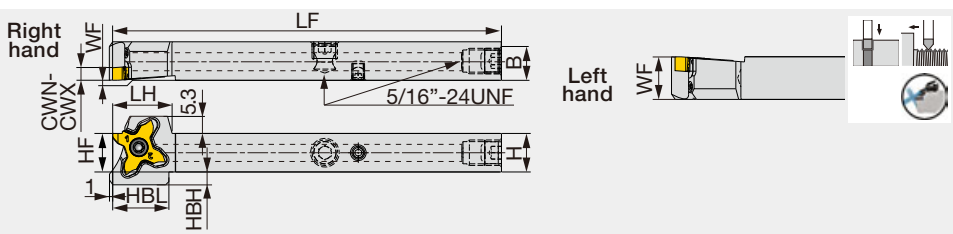
TUNGTJET

STCR/L-18-CHP

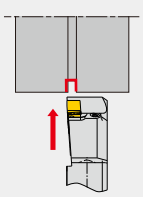
TETRAMINI CUT

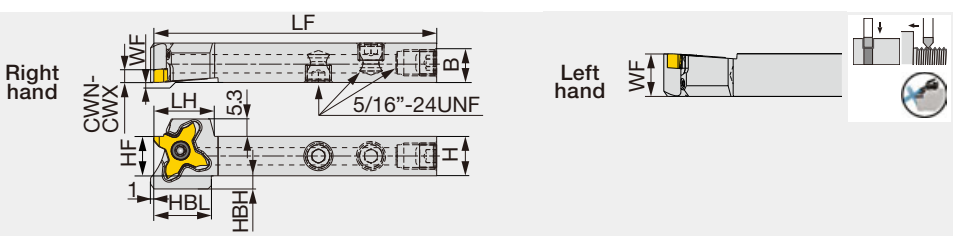
External grooving and threading toolholder, with high pressure coolant capability





Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF	HBH	Insert	Torque
STCR/L08X18-CHP (1)	0.013	0.118	0.500	0.500	4.750	0.728	0.689	0.500	0/0.500	0.130	TC*18...	0.89
STCR/L10X18-CHP (1)	0.013	0.118	0.625	0.625	4.750	0.728	-	0.625	0/0.625	-	TC*18...	0.89





Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF	HBH	Insert	Torque
STCR/L08F18-CHP	0.013	0.118	0.500	0.500	3.344	0.728	0.689	0.500	0/0.500	0.130	TC*18...	0.89

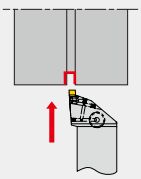
SPARE PARTS

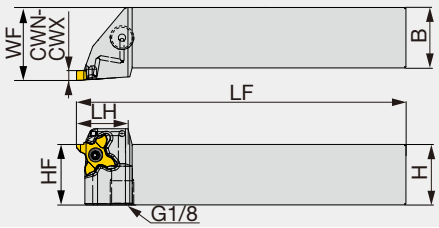
Designation	Clamping screw	Wrench
STCL**18-CHP	CSTC-4L100DR	T-1008/5
STCR**18-CHP	CSTC-4L100DL	T-1008/5

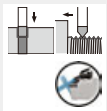
Use the right hand insert (TC*18R...) with the right hand toolholders (STCR...).
Use the left hand insert (TC*18...) with the left hand holder (STCL...).
(1) Compatible to the direct internal coolant supply system without the use of external coolant hose.
Torque: Recommended clamping torque: lbs·ft

Reference pages: STCR/L-18: Inserts → G083 - G088, Standard cutting conditions → G089 - G090

Threading tool - for external theading with high pressure coolant capability







Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF	HBH	Insert	Torque
STCR/L12-18-CHP	0.013	0.118	0.750	0.750	4.750	0.900	-	0.750	1.000	-	TC*18...	0.89
STCR/L16-18-CHP	0.013	0.118	1.000	1.000	5.500	.900	-	1.000	1.250	-	TC*18...	0.89

Use the right hand insert (TC*18R...) with the right hand toolholders (STCR...). Use the left hand insert (TC*18L) with the left hand holder (STCL...).
Torque: Recommended clamping torque: lbs·ft

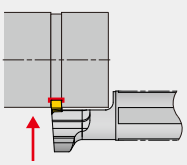
SPARE PARTS

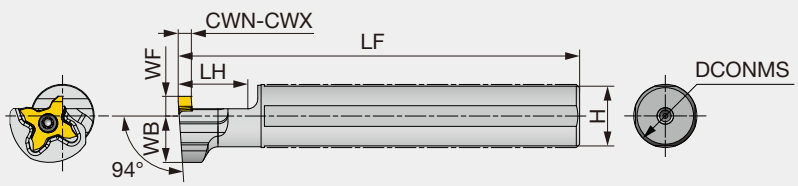
Designation	Clamping screw	Wrench
STCL**18-CHP	CSTC-4L100DR	T-1008/5
STCR**18-CHP	CSTC-4L100DL	T-1008/5

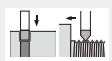
TETRAMCUT MINI

JS-STCL18

External grooving and threading toolholder with round shank, for Swiss lathes







Left-hand (L) shown.

Metric	CWN	CWX	DCONMS	H	LF	LH	WB	WF	Insert	Torque
JS14H-STCL18	0.33	3	14	13	100	20	14	6	TC*18R...	1.2
JS159F-STCL18	0.33	3	15.875	15	85	20	14	6	TC*18R...	1.2
JS16F-STCL18	0.33	3	16	15	85	20	14	6	TC*18R...	1.2
JS19G-STCL18	0.33	3	19.05	18	90	20	14	6	TC*18R...	1.2
JS19X-STCL18	0.33	3	19.05	18	120	20	14	6	TC*18R...	1.2
JS20G-STCL18	0.33	3	20	19	90	20	14	6	TC*18R...	1.2
JS20X-STCL18	0.33	3	20	19	120	20	14	6	TC*18R...	1.2
JS22X-STCL18	0.33	3	22	21	120	20	12.25	10	TC*18R...	1.2
JS25H-STCL18	0.33	3	25	24	100	20	12.25	10	TC*18R...	1.2
JS254X-STCL18	0.33	3	25.4	24	120	20	12.25	10	TC*18R...	1.2

The left hand toolholder (STCL...) is used with the right hand inserts (TC*18R...)
Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamping screw	Wrench
JS...STCL18	CSTC-4L100DL	T-1008/5

Reference pages: STCR/L-18-CHP: Inserts → G083 - G088, Standard cutting conditions → G089 - G090

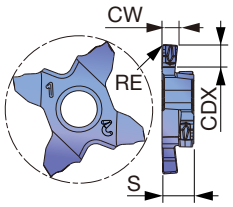
Selection guide for TetraMini-Cut inserts

Groove width		Corner rad.		TCS18R (G083)	TCG18R/L (G084 - 85)	TCP18R/L (G086)	TCP18R/L-F (G087)
				AH7025	AH7025	AH725	SH725
CW (in)	CW (mm)	RE (in)	RE (mm)	Honed edge	Honed edge	Lightly honed edge	Sharp edge
0.013	0.33	0.002	0.05			●	●
0.017	0.43	0.002	0.05			●	●
0.020	0.50	0.002	0.05			●	●
0.030	0.75	0.002	0.05			●	●
0.037	0.95	0.002	0.05			●	●
0.039	1.00	0.002	0.05				●
		0.004	0.1	●	●	●	●
0.047	1.20	0.002	0.05				●
		0.004	0.1	●	●	●	●
0.049	1.25	0.002	0.05				●
		0.004	0.1	●	●	●	●
		0.008	0.2	●	●		
0.051	1.30	0.008	0.2	●	●		
0.055	1.40	0.004	0.1	●	●	●	●
		0.008	0.2	●	●		
0.057	1.45	0.002	0.05				●
		0.004	0.1	●	●	●	●
		0.008	0.2		●		
0.059	1.50	0.002	0.05				●
		0.004	0.1	●	●	●	●
		0.008	0.2	●	●		
0.063	1.60	0.008	0.2	●	●		
0.067	1.70	0.008	0.2	●	●		
0.069	1.75	0.002	0.05				●
		0.004	0.1	●	●	●	●
		0.008	0.2	●	●		
0.073	1.85	0.008	0.2	●	●		
0.077	1.95	0.008	0.2	●	●		
0.079	2.00	0.002	0.05				●
		0.004	0.1	●	●	●	●
		0.008	0.2	●	●		
0.089	2.25	0.008	0.2	●	●		
0.091	2.30	0.008	0.2	●	●		
0.098	2.50	0.004	0.1	●	●	●	●
		0.008	0.2	●	●		
		0.012	0.3	●	●		
0.104	2.65	0.012	0.3	●	●		
0.110	2.80	0.012	0.3	●	●		
0.118	3.00	0.004	0.1	●	●	●	●
		0.008	0.2	●	●		
		0.012	0.3	●	●		

● : Line up

INSERT

TCS18R (3D chipbreaker, honed edge)



P	Steel	★			
M	Stainless	★			
K	Cast iron	★			
N	Non-ferrous				
S	Superalloys	★			
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)	S (in)
TCS18R100-010	R	1	0.039	0.004	●	0.079	0.157
TCS18R120-010	R	1.2	0.047	0.004	●	0.079	0.157
TCS18R125-010	R	1.25	0.049	0.004	●	0.079	0.157
TCS18R125-020	R	1.25	0.049	0.008	●	0.079	0.157
TCS18R130-020	R	1.3	0.051	0.008	●	0.138	0.157
TCS18R140-010	R	1.4	0.055	0.004	●	0.138	0.157
TCS18R140-020	R	1.4	0.055	0.008	●	0.138	0.157
TCS18R145-010	R	1.45	0.057	0.004	●	0.138	0.157
TCS18R150-010	R	1.5	0.059	0.004	●	0.138	0.157
TCS18R150-020	R	1.5	0.059	0.008	●	0.138	0.157
TCS18R160-020	R	1.6	0.063	0.008	●	0.138	0.157
TCS18R170-020	R	1.7	0.067	0.008	●	0.138	0.157
TCS18R175-010	R	1.75	0.069	0.004	●	0.138	0.157
TCS18R175-020	R	1.75	0.069	0.008	●	0.138	0.157
TCS18R185-020	R	1.85	0.073	0.008	●	0.138	0.157
TCS18R195-020	R	1.95	0.077	0.008	●	0.138	0.157
TCS18R200-010	R	2	0.079	0.004	●	0.138	0.157
TCS18R200-020	R	2	0.079	0.008	●	0.138	0.157
TCS18R225-020	R	2.25	0.089	0.008	●	0.138	0.157
TCS18R230-020	R	2.3	0.091	0.008	●	0.138	0.157
TCS18R250-010	R	2.5	0.098	0.008	●	0.138	0.157
TCS18R250-020	R	2.5	0.098	0.008	●	0.138	0.157
TCS18R250-030	R	2.5	0.098	0.012	●	0.138	0.157
TCS18R265-030	R	2.65	0.104	0.012	●	0.138	0.157
TCS18R280-030	R	2.8	0.110	0.012	●	0.138	0.157
TCS18R300-010	R	3	0.118	0.004	●	0.138	0.157
TCS18R300-020	R	3	0.118	0.008	●	0.138	0.157
TCS18R300-030	R	3	0.118	0.012	●	0.138	0.157

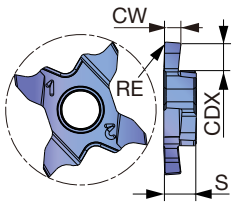
See page G089 for precautions of processing.

5 pieces per package
● : Line up

Reference pages: Toolholders → G080 - G081, Standard cutting conditions → G089 - G090

INSERT

TCG18R/L (with edge preparation)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)	S (in)
TCG18R100-010	R	1	0.039	0.004	●	0.079	0.157
TCG18L100-010	L	1	0.039	0.004	●	0.079	0.157
TCG18R120-010	R	1.2	0.047	0.004	●	0.079	0.157
TCG18L120-010	L	1.2	0.047	0.004	●	0.079	0.157
TCG18R125-010	R	1.25	0.049	0.004	●	0.079	0.157
TCG18L125-010	L	1.25	0.049	0.004	●	0.079	0.157
TCG18R125-020	R	1.25	0.049	0.008	●	0.079	0.157
TCG18L125-020	L	1.25	0.049	0.008	●	0.079	0.157
TCG18R130-020	R	1.3	0.051	0.008	●	0.079	0.157
TCG18L130-020	L	1.3	0.051	0.008	●	0.079	0.157
TCG18R140-010	R	1.4	0.055	0.004	●	0.138	0.157
TCG18L140-010	L	1.4	0.055	0.004	●	0.138	0.157
TCG18R140-020	R	1.4	0.055	0.008	●	0.138	0.157
TCG18L140-020	L	1.4	0.055	0.008	●	0.138	0.157
TCG18R145-010	R	1.45	0.057	0.004	●	0.138	0.157
TCG18L145-010	L	1.45	0.057	0.004	●	0.138	0.157
TCG18R145-020	R	1.45	0.057	0.008	●	0.138	0.157
TCG18L145-020	L	1.45	0.057	0.008	●	0.138	0.157
TCG18R150-010	R	1.5	0.059	0.004	●	0.138	0.157
TCG18L150-010	L	1.5	0.059	0.004	●	0.138	0.157
TCG18R150-020	R	1.5	0.059	0.008	●	0.138	0.157
TCG18L150-020	L	1.5	0.059	0.008	●	0.138	0.157
TCG18R160-020	R	1.6	0.063	0.008	●	0.138	0.157
TCG18L160-020	L	1.6	0.063	0.008	●	0.138	0.157
TCG18R170-020	R	1.7	0.067	0.008	●	0.138	0.157
TCG18L170-020	L	1.7	0.067	0.008	●	0.138	0.157
TCG18R175-010	R	1.75	0.069	0.004	●	0.138	0.157
TCG18L175-010	L	1.75	0.069	0.004	●	0.138	0.157
TCG18R175-020	R	1.75	0.069	0.008	●	0.138	0.157
TCG18L175-020	L	1.75	0.069	0.008	●	0.138	0.157
TCG18R185-020	R	1.85	0.073	0.008	●	0.138	0.157
TCG18L185-020	L	1.85	0.073	0.008	●	0.138	0.157
TCG18R195-020	R	1.95	0.077	0.008	●	0.138	0.157
TCG18L195-020	L	1.95	0.077	0.008	●	0.138	0.157

See page G089 for precautions of processing.

5 pieces per package
● : Line up

Reference pages: Toolholders → G080 - G081, Standard cutting conditions → G089 - G090

P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH7025	CDX (in)	S (in)
TCG18R200-010	R	2	0.079	0.004	●	0.138	0.157
TCG18L200-010	L	2	0.079	0.004	●	0.138	0.157
TCG18R200-020	R	2	0.079	0.008	●	0.138	0.157
TCG18L200-020	L	2	0.079	0.008	●	0.138	0.157
TCG18R225-020	R	2.25	0.089	0.008	●	0.138	0.157
TCG18L225-020	L	2.25	0.089	0.008	●	0.138	0.157
TCG18R230-020	R	2.3	0.091	0.008	●	0.138	0.157
TCG18L230-020	L	2.3	0.091	0.008	●	0.138	0.157
TCG18R250-010	R	2.5	0.098	0.004	●	0.138	0.157
TCG18L250-010	L	2.5	0.098	0.004	●	0.138	0.157
TCG18R250-020	R	2.5	0.098	0.008	●	0.138	0.157
TCG18L250-020	L	2.5	0.098	0.008	●	0.138	0.157
TCG18R250-030	R	2.5	0.098	0.012	●	0.138	0.157
TCG18L250-030	L	2.5	0.098	0.012	●	0.138	0.157
TCG18R265-030	R	2.65	0.104	0.012	●	0.138	0.157
TCG18L265-030	L	2.65	0.104	0.012	●	0.138	0.157
TCG18R280-030	R	2.8	0.110	0.012	●	0.138	0.157
TCG18L280-030	L	2.8	0.110	0.012	●	0.138	0.157
TCG18R300-010	R	3	0.118	0.004	●	0.138	0.157
TCG18L300-010	L	3	0.118	0.004	●	0.138	0.157
TCG18R300-020	R	3	0.118	0.008	●	0.138	0.157
TCG18L300-020	L	3	0.118	0.008	●	0.138	0.157
TCG18R300-030	R	3	0.118	0.012	●	0.138	0.157
TCG18L300-030	L	3	0.118	0.012	●	0.138	0.157

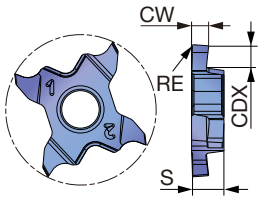
See page G089 for precautions of processing.

5 pieces per package
● : Line up

Reference pages: Toolholders → G080 - G081, Standard cutting conditions → G089 - G090

INSERT

TCP18R/L (lightly honed edge)



P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	★		
H	Hard materials			

★ : First choice
☆ : Second choice

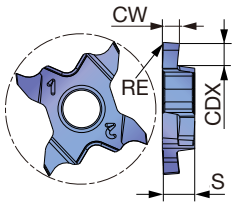
Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	S (in)
TCP18R033-005	R	0.33	0.013	0.002	●	0.031	0.157
TCP18L033-005	L	0.33	0.013	0.002	●	0.031	0.157
TCP18R043-005	R	0.43	0.017	0.002	●	0.047	0.157
TCP18L043-005	L	0.43	0.017	0.002	●	0.047	0.157
TCP18R050-005	R	0.50	0.020	0.002	●	0.047	0.157
TCP18L050-005	L	0.50	0.020	0.002	●	0.047	0.157
TCP18R075-005	R	0.75	0.030	0.002	●	0.079	0.157
TCP18L075-005	L	0.75	0.030	0.002	●	0.079	0.157
TCP18R095-005	R	0.95	0.037	0.002	●	0.079	0.157
TCP18L095-005	L	0.95	0.037	0.002	●	0.079	0.157
TCP18R100-010	R	1	0.039	0.004	●	0.079	0.157
TCP18L100-010	L	1	0.039	0.004	●	0.079	0.157
TCP18R120-010	R	1.2	0.047	0.004	●	0.079	0.157
TCP18L120-010	L	1.2	0.047	0.004	●	0.079	0.157
TCP18R125-010	R	1.25	0.049	0.004	●	0.079	0.157
TCP18L125-010	L	1.25	0.049	0.004	●	0.079	0.157
TCP18R140-010-35	R	1.4	0.055	0.004	●	0.138	0.157
TCP18L140-010-35	L	1.4	0.055	0.004	●	0.138	0.157
TCP18R145-010	R	1.45	0.057	0.004	●	0.079	0.157
TCP18L145-010	L	1.45	0.057	0.004	●	0.079	0.157
TCP18R145-010-35	R	1.45	0.057	0.004	●	0.138	0.157
TCP18L145-010-35	L	1.45	0.057	0.004	●	0.138	0.157
TCP18R150-010	R	1.5	0.059	0.004	●	0.079	0.157
TCP18L150-010	L	1.5	0.059	0.004	●	0.079	0.157
TCP18R150-010-35	R	1.5	0.059	0.004	●	0.138	0.157
TCP18L150-010-35	L	1.5	0.059	0.004	●	0.138	0.157
TCP18R175-010	R	1.75	0.069	0.004	●	0.079	0.157
TCP18L175-010	L	1.75	0.069	0.004	●	0.079	0.157
TCP18R175-010-35	R	1.75	0.069	0.004	●	0.138	0.157
TCP18L175-010-35	L	1.75	0.069	0.004	●	0.138	0.157
TCP18R200-010	R	2	0.079	0.004	●	0.098	0.157
TCP18L200-010	L	2	0.079	0.004	●	0.098	0.157
TCP18R200-010-35	R	2	0.079	0.004	●	0.138	0.157
TCP18L200-010-35	L	2	0.079	0.004	●	0.138	0.157
TCP18R250-010	R	2.5	0.098	0.004	●	0.098	0.157
TCP18L250-010	L	2.5	0.098	0.004	●	0.098	0.157
TCP18R250-010-35	R	2.5	0.098	0.004	●	0.138	0.157
TCP18L250-010-35	L	2.5	0.098	0.004	●	0.138	0.157
TCP18R300-010	R	3	0.118	0.004	●	0.098	0.157
TCP18L300-010	L	3	0.118	0.004	●	0.098	0.157
TCP18R300-010-35	R	3	0.118	0.004	●	0.138	0.157
TCP18L300-010-35	L	3	0.118	0.004	●	0.138	0.157

See page G089 for precautions of processing.

5 pieces per package
● : Line up

Reference pages: Toolholders → G080 - G081, Standard cutting conditions → G089 - G090

TCP18R/L-F (sharp edge)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

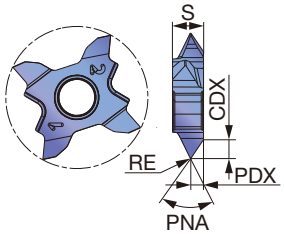
Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated SH725	CDX (in)	S (in)
TCP18R033F-005	R	0.33	0.013	0.002	●	0.031	0.157
TCP18L033F-005	L	0.33	0.013	0.002	●	0.031	0.157
TCP18R043F-005	R	0.43	0.017	0.002	●	0.047	0.157
TCP18L043F-005	L	0.43	0.017	0.002	●	0.047	0.157
TCP18R050F-005	R	0.5	0.020	0.002	●	0.047	0.157
TCP18L050F-005	L	0.5	0.020	0.002	●	0.047	0.157
TCP18R075F-005	R	0.75	0.030	0.002	●	0.079	0.157
TCP18L075F-005	L	0.75	0.030	0.002	●	0.079	0.157
TCP18R095F-005	R	0.95	0.037	0.002	●	0.079	0.157
TCP18L095F-005	L	0.95	0.037	0.002	●	0.079	0.157
TCP18R100F-005	R	1	0.039	0.002	●	0.079	0.157
TCP18R100F-010	R	1	0.039	0.004	●	0.079	0.157
TCP18L100F-010	L	1	0.039	0.004	●	0.079	0.157
TCP18R120F-005	R	1.2	0.047	0.002	●	0.079	0.157
TCP18R120F-010	R	1.2	0.047	0.004	●	0.079	0.157
TCP18L120F-010	L	1.2	0.047	0.004	●	0.079	0.157
TCP18R125F-005	R	1.25	0.049	0.002	●	0.079	0.157
TCP18R125F-010	R	1.25	0.049	0.004	●	0.079	0.157
TCP18L125F-010	L	1.25	0.049	0.004	●	0.079	0.157
TCP18R140F-010-35	R	1.4	0.055	0.004	●	0.138	0.157
TCP18R145F-005-35	R	1.45	0.057	0.002	●	0.138	0.157
TCP18R145F-010	R	1.45	0.057	0.004	●	0.079	0.157
TCP18L145F-010	L	1.45	0.057	0.004	●	0.079	0.157
TCP18R145F-010-35	R	1.45	0.057	0.004	●	0.138	0.157
TCP18L145F-010-35	L	1.45	0.057	0.004	●	0.138	0.157
TCP18R150F-005-35	R	1.5	0.059	0.002	●	0.138	0.157
TCP18R150F-010	R	1.5	0.059	0.004	●	0.079	0.157
TCP18L150F-010	L	1.5	0.059	0.004	●	0.079	0.157
TCP18R150F-010-35	R	1.5	0.059	0.004	●	0.138	0.157
TCP18L150F-010-35	L	1.5	0.059	0.004	●	0.138	0.157
TCP18R175F-005-35	R	1.75	0.069	0.002	●	0.138	0.157
TCP18R175F-010	R	1.75	0.069	0.004	●	0.079	0.157
TCP18L175F-010	L	1.75	0.069	0.004	●	0.079	0.157
TCP18R175F-010-35	R	1.75	0.069	0.004	●	0.138	0.157
TCP18L175F-010-35	L	1.75	0.069	0.004	●	0.138	0.157
TCP18R200F-005-35	R	2	0.079	0.002	●	0.138	0.157
TCP18R200F-010	R	2	0.079	0.004	●	0.098	0.157
TCP18L200F-010	L	2	0.079	0.004	●	0.098	0.157
TCP18R200F-010-35	R	2	0.079	0.004	●	0.138	0.157
TCP18L200F-010-35	L	2	0.079	0.004	●	0.138	0.157
TCP18R250F-010	R	2.5	0.098	0.004	●	0.098	0.157
TCP18L250F-010	L	2.5	0.098	0.004	●	0.098	0.157
TCP18R250F-010-35	R	2.5	0.098	0.004	●	0.138	0.157
TCP18L250F-010-35	L	2.5	0.098	0.004	●	0.138	0.157
TCP18R300F-010	R	3	0.118	0.004	●	0.098	0.157
TCP18L300F-010	L	3	0.118	0.004	●	0.098	0.157
TCP18R300F-010-35	R	3	0.118	0.004	●	0.138	0.157
TCP18L300F-010-35	L	3	0.118	0.004	●	0.138	0.157

See page G089 for precautions of processing.

5 pieces per package
● : Line up

Reference pages: Toolholders → G080 - G081, Standard cutting conditions → G089 - G090

TCT18R/L (for threading)



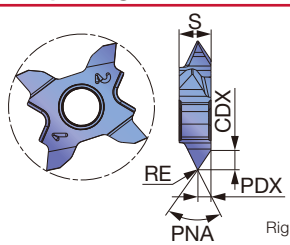
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	RE (in)	Coated	Pitch min		Pitch max		PDX (in)	CDX (in)	PNA	S (in)
			AH725	(in)	(mm)	(in)	(mm)				
TCT18R-60N-010	R	0.004	●	0.031	0.8	0.118	3	0.063	0.105	60°	0.157
TCT18L-60N-010	L	0.004	●	0.031	0.8	0.118	3	0.063	0.105	60°	0.157
TCT18R-60N-020	R	0.008	●	0.031	0.8	0.118	3	0.063	0.101	60°	0.157
TCT18L-60N-020	L	0.008	●	0.031	0.8	0.118	3	0.063	0.101	60°	0.157

● : Line up

TCT18FR (sharp edge for threading)



Right-hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

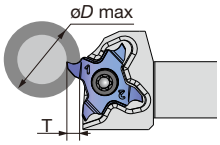
Designation	HAND	RE (in)	Coated	Pitch min		Pitch max		PDX (in)	CDX (in)	PNA	S (in)
			SH725	(in)	(mm)	(in)	(mm)				
TCT18FR-60A-005	R	0.004	●	0.016	0.4	0.039	1	0.024	0.039	60°	0.157
TCT18FR-60A-010	L	0.004	●	0.039	1	0.079	2	0.039	0.064	60°	0.157

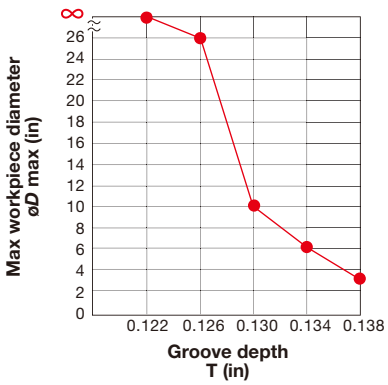
● : Line up

External
Internal
Grooving
Threading
Parting

Reference pages: Toolholders → G080 - G081, Standard cutting conditions → G090

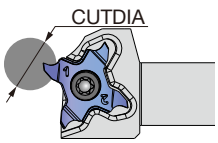
PRECAUTIONS OF PROCESSING





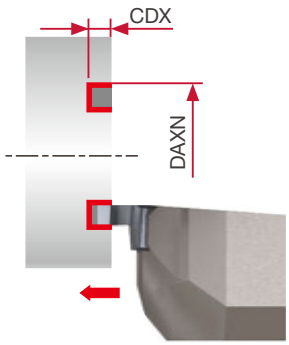
*Groove depth and max workpiece diameter (ø*D* max)

Maximum workpiece diameter is limited relative to depth of cut in order to avoid collision between insert and workpiece.



Max workpiece diameter CUTDIA (in)
0.276

Minimum diameter for face grooving



Minimum face diameter DAXN (in)	Maximum groove depth CDX (in)
2.559	0.118

STANDARD CUTTING CONDITIONS

TCS18R (3D chipbreaker), TCG18R/L (honed edge)

ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) TCG	Feed: *f* (ipr) TCS
P	Low carbon steel 1015, etc.	AH7025	262 - 591	0.001 - 0.005	0.001 - 0.006
P	Carbon steel, Alloy steel 1055, etc.	AH7025	262 - 591	0.001 - 0.005	0.001 - 0.006
P	Prehardened steel NAK80, PX5, etc.	AH7025	262 - 591	0.001 - 0.005	0.001 - 0.006
M	Stainless steel S30400, etc.	AH7025	164 - 394	0.001 - 0.005	0.001 - 0.006
K	Gray cast iron No.250B, No.300B, etc.	AH7025	164 - 591	0.001 - 0.005	0.001 - 0.006
K	Ductile cast iron 60-40-18, 80-55-06, etc.	AH7025	164 - 591	0.001 - 0.005	0.001 - 0.006
S	Titanium alloys Ti-6Al-4V, etc.	AH7025	98 - 262	0.001 - 0.005	0.001 - 0.006
S	Superalloys Inconel718, etc.	AH7025	66 - 197	0.001 - 0.005	0.001 - 0.006

TCP18R/L (lightly honed edge) / TCP18R/L-F (sharp edge)

ISO	Workpiece materials	Priority	Grades	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steel 1015, etc.	First choice	SH725	262 - 591	0.001 - 0.004
P		Toughness	AH725	262 - 591	0.001 - 0.004
P	Carbon steel, Alloy steel 1055, etc.	First choice	SH725	262 - 591	0.001 - 0.004
P		Toughness	AH725	262 - 591	0.001 - 0.004
P	Prehardened steel NAK80, PX5, etc.	First choice	SH725	262 - 591	0.001 - 0.004
P		Toughness	AH725	262 - 591	0.001 - 0.004
M	Stainless steel S30400, etc.	First choice	SH725	164 - 394	0.001 - 0.004
M		Toughness	AH725	164 - 394	0.001 - 0.004
K	Gray cast iron No.250B, No.300B, etc.	First choice	AH725	164 - 591	0.001 - 0.004
K		Sharpness	SH725	164 - 591	0.001 - 0.004
K	Ductile cast iron 60-40-18, 80-55-06, etc.	First choice	AH725	164 - 591	0.001 - 0.004
K		Sharpness	SH725	164 - 591	0.001 - 0.004
S	Titanium alloys Ti-6Al-4V, etc.	First choice	SH725	98 - 262	0.001 - 0.004
S		Toughness	AH725	98 - 262	0.001 - 0.004
S	Superalloys Inconel718, etc.	First choice	SH725	66 - 197	0.001 - 0.004
S		Toughness	AH725	66 - 197	0.001 - 0.004

STANDARD CUTTING CONDITIONS

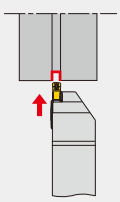
TCT18R/L (for threading / lightly honed edge) / TCT18FR (for threading / sharp edge)

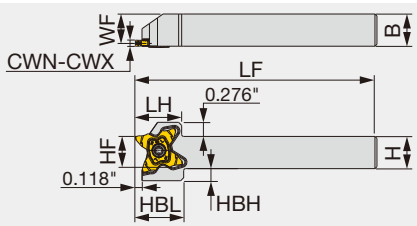
ISO	Workpiece material	Priority	Grades	Cutting speed *Vc* (sfm)	Pitch (in)	TPI
P	Low carbon steel 1015, etc.	First choice	SH725	197 - 492	0.016 - 0.079	64 - 12
		Toughness	AH725	197 - 492	0.031 - 0.118	32 - 8
	Carbon steel, Alloy steel 1055, etc.	First choice	SH725	197 - 492	0.016 - 0.079	64 - 12
		Toughness	AH725	197 - 492	0.031 - 0.118	32 - 8
	Prehardened steel NAK80, PX5, etc.	First choice	SH725	197 - 492	0.016 - 0.079	64 - 12
		Toughness	AH725	197 - 492	0.031 - 0.118	32 - 8
M	Stainless steel S30400, etc.	First choice	SH725	164 - 262	0.016 - 0.079	64 - 12
		Toughness	AH725	164 - 262	0.031 - 0.118	32 - 8
K	Gray cast iron No.250B, No.300B, etc.	First choice	AH725	164 - 328	0.031 - 0.118	32 - 8
		Sharpness	SH725	164 - 328	0.016 - 0.079	64 - 12
	Ductile cast iron 60-40-18, 80-55-06, etc.	First choice	AH725	164 - 328	0.031 - 0.118	32 - 8
		Sharpness	SH725	164 - 328	0.016 - 0.079	64 - 12
S	Titanium alloys Ti-6Al-4V, etc.	First choice	SH725	98 - 328	0.016 - 0.079	64 - 12
		Toughness	AH725	98 - 328	0.031 - 0.118	32 - 8
	Superalloys Inconel718, etc.	First choice	SH725	98 - 328	0.016 - 0.079	64 - 12
		Toughness	AH725	98 - 328	0.031 - 0.118	32 - 8

TETRA FORCE CUT

STCR/L-27

External grooving toolholder





Right hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HBL	HF	WF	HBH	Insert	Torque
STCR/L06-27	0.02	0.125	0.375	0.375	5.000	0.906	0.945	0.375	0.315	0.374	TC*27...	1.84
STCR/L08-27	0.02	0.125	0.500	0.500	5.000	0.906	0.945	0.500	0.440	0.287	TC*27...	1.84
STCR/L10-27	0.02	0.125	0.625	0.625	5.000	0.906	0.945	0.625	0.570	0.236	TC*27...	1.84
STCR/L12-27	0.02	0.125	0.750	0.750	5.000	0.906	0.945	0.750	0.690	0.118	TC*27...	1.84
STCR/L16-27	0.02	0.125	1.000	1.000	5.000	0.906	-	1.000	0.940	-	TC*27...	1.84

Torque: Recommended clamping torque: lbs·ft

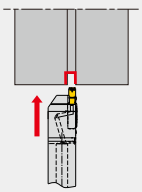
SPARE PARTS

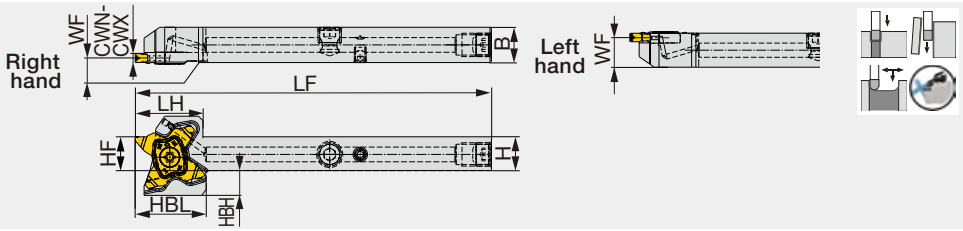
Designation	Screw	Wrench
STCR**-27	SR16-212-01397L	T-2010/5
STCL**-27	SR16-212-01397	T-2010/5

Reference pages: STCR/L-27:
Inserts → G092 - G095, Standard cutting conditions → G095

STCR/L08-27-CHP

Grooving and parting-off tool with high pressure coolant capability





Inch	CWN	CWX	H	B	LF	LH	HF	WF(1)	HBH	HBL	Insert	Torque
STCR/L08-27-CHP	0.020	0.125	0.500	0.500	4.750	0.906	0.500	0.590/0.441	0.287	0.945	TC*27...	1.84

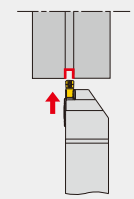
Make sure to avoid tool interferences when used on Swiss machines
Torque: Recommended clamping torque: lb·ft
(1) The above WF value is valid when an insert width of CW=3 is mounted.

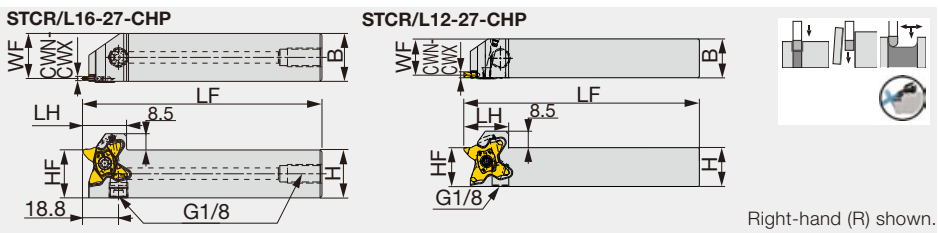
SPARE PARTS

Designation	Screw	Wrench
STCR**-27-CHP	SR16-212-01397L	T-2010/5
STCL**-27-CHP	SR16-212-01397	T-2010/5

STCR/L12/16-27-CHP

External grooving and parting-off toolholder, high pressure coolant compatible





Right-hand (R) shown.

Inch	CWN	CWX	H	B	LF	LH	HF	WF	Insert	Torque
STCR/L12-27-CHP	0.02	0.125	0.750	0.750	5.000	0.906	0.750	0.690	TC*27...	1.84
STCR/L16-27-CHP	0.02	0.125	1.000	1.000	4.920	0.906	1.000	0.940	TC*27...	1.84

Torque: Recommended clamping torque: lbs·ft

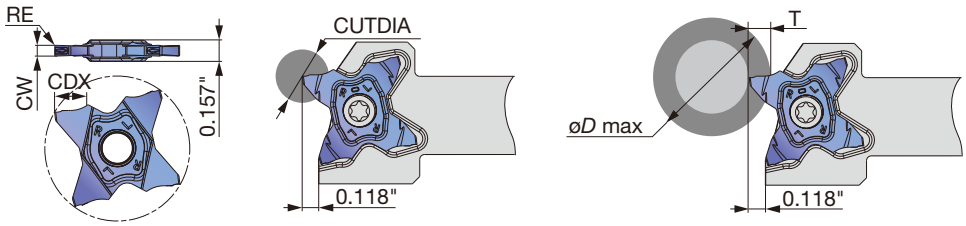
SPARE PARTS

Designation	Screw	Wrench
STCR**-27-CHP	SR16-212-01397L	T-2010/5
STCL**-27-CHP	SR16-212-01397	T-2010/5

Reference pages: STCR/L08-27-CHP, STCR/L12/16-27-CHP:
Inserts → G092 - G095, Standard cutting conditions → G095

INSERT - FOR GROOVING AND PARTING OFF

TCS27



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

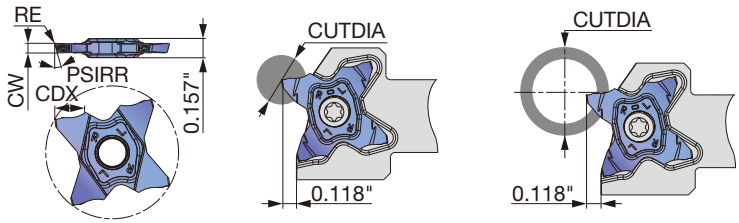
Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)											
							T≤0.039	T≤0.079	T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCS27-050-000	0.5	0.020	0	●	0.039	0.079	∞	-	-	-	-	-	-	-	-	-	-	-
TCS27-050-004	0.5	0.020	0.0016	●	0.098	0.197	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-075-010	0.75	0.030	0.004	●	0.098	0.197	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-080-000	0.8	0.031	0	●	0.063	0.126	∞	-	-	-	-	-	-	-	-	-	-	-
TCS27-100-006	1	0.039	0.0024	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-100-010	1	0.039	0.004	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-104-000	1.04	0.041	0	●	0.079	0.157	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-120-000	1.2	0.047	0	●	0.079	0.157	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-125-010	1.25	0.049	0.004	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-125-020	1.25	0.049	0.008	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-140-000	1.4	0.055	0	●	0.079	0.157	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-147-000	1.47	0.058	0	●	0.098	0.197	∞	∞	-	-	-	-	-	-	-	-	-	-
TCS27-150-010	1.5	0.059	0.004	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-150-020	1.5	0.059	0.008	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-157-015	1.57	0.062	0.006	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-170-010	1.7	0.067	0.004	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-175-010	1.75	0.069	0.004	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-175-020	1.75	0.069	0.008	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-178-018	1.78	0.070	0.007	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-185-020	1.85	0.073	0.008	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-196-015	1.96	0.077	0.006	●	0.118	0.236	∞	∞	∞	-	-	-	-	-	-	-	-	-
TCS27-200-010	2	0.079	0.004	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCS27-200-020	2	0.079	0.008	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCS27-222-015	2.22	0.087	0.006	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-230-020	2.3	0.091	0.008	●	0.138	0.276	∞	∞	∞	23.622	-	-	-	-	-	-	-	-
TCS27-239-015	2.39	0.094	0.006	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-247-020	2.47	0.097	0.008	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-250-010	2.5	0.098	0.004	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-250-030	2.5	0.098	0.012	●	0.224	0.449	∞	∞	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-270-010	2.7	0.106	0.004	●	0.244	0.488	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	-
TCS27-287-020	2.87	0.113	0.008	●	0.244	0.488	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	-
TCS27-300-000	3	0.118	0	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCS27-300-020	3	0.118	0.008	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCS27-300-030	3	0.118	0.012	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCS27-300-040	3	0.118	0.016	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCS27-315-015	3.15	0.124	0.006	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.677
TCS27-318-020	3.18	0.125	0.008	●	0.252	0.504	∞	∞	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.677

5 pieces per package
● : Line up

Reference pages: Toolholders → G090 - G091, Standard cutting conditions → G095

INSERT- FOR PARTING OFF

TCS27-R/L



Right hand (R) shown.

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

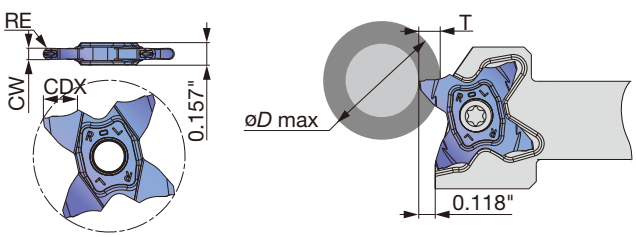
★ : First choice
☆ : Second choice

Designation	HAND	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	PSIRL	PSIRR	Max. parting off dia. CUTDIA (in) Solid bar	Max. parting off dia. CUTDIA (in) Tube
TCS27-100-15R	R	1	0.039	0.0024	●	0.138	0°	15°	0.276	23.622
TCS27-100-15L	L	1	0.039	0.0024	●	0.138	15°	0°	0.276	23.622
TCS27-150-6R	R	1.5	0.059	0.0024	●	0.224	0°	6°	0.449	1.378
TCS27-150-6L	L	1.5	0.059	0.0024	●	0.224	6°	0°	0.449	1.378
TCS27-150-15R	R	1.5	0.059	0.0024	●	0.224	0°	15°	0.449	1.378
TCS27-150-15L	L	1.5	0.059	0.0024	●	0.224	15°	0°	0.449	1.378
TCS27-200-6R	R	2	0.079	0.004	●	0.252	0°	6°	0.504	1.181
TCS27-200-6L	L	2	0.079	0.004	●	0.252	6°	0°	0.504	1.181
TCS27-200-15R	R	2	0.079	0.004	●	0.252	0°	15°	0.504	1.181
TCS27-200-15L	L	2	0.079	0.004	●	0.252	15°	0°	0.504	1.181

5 pieces per package
● : Line up

INSERT- FOR GROOVING AND PROFILING

TCS27 (Full R)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

★ : First choice
☆ : Second choice

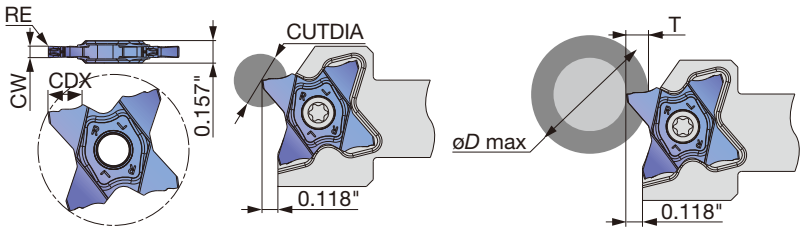
Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	Relation of groove depth (T) and Max. diameter (øD max) (in) T≤0.039 T≤0.079 T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCS27-157-079	1.57	0.062	0.031	●	0.118	∞	-	-	-	-	-	-	-	-	-
TCS27-200-100	2	0.079	0.039	●	0.118	∞	-	-	-	-	-	-	-	-	-
TCS27-239-120	2.39	0.094	0.047	●	0.224	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCS27-300-150	3	0.118	0.059	●	0.252	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165

5 pieces per package
● : Line up

Reference pages: Toolholders → G090 - G091, Standard cutting conditions → G095

INSERT- FOR GROOVING AND PARTING OFF

TCM27



P	Steel	★		
M	Stainless	★		
K	Cast iron	★		
N	Non-ferrous			
S	Superalloys	★		
H	Hard materials			

★ : First choice
☆ : Second choice

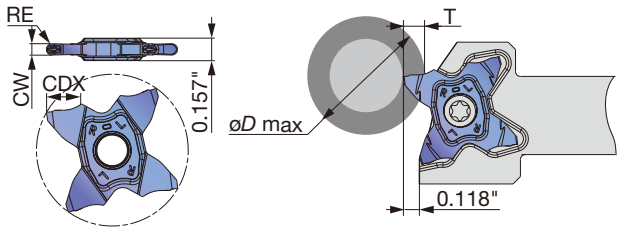
Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)								
							T≤0.039 T≤0.079 T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCM27-150-010	1.5	0.059	0.004	●	0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-150-020	1.5	0.059	0.008	●	0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-157-015	1.57	0.062	0.006	●	0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-170-010	1.7	0.067	0.004	●	0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-175-010	1.75	0.069	0.004	●	0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-175-020	1.75	0.069	0.008	●	0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-178-018	1.78	0.070	0.007	●	0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-185-020	1.85	0.073	0.008	●	0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-196-015	1.96	0.077	0.006	●	0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-200-010	2	0.079	0.004	●	0.252	0.504	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCM27-200-020	2	0.079	0.008	●	0.252	0.504	∞	23.622	11.024	7.087	5.118	4.134	3.346	2.362	1.969	1.181
TCM27-222-015	2.22	0.087	0.006	●	0.138	0.276	∞	23.622	-	-	-	-	-	-	-	-
TCM27-230-020	2.3	0.091	0.008	●	0.138	0.276	∞	23.622	-	-	-	-	-	-	-	-
TCM27-239-015	2.39	0.094	0.006	●	0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-247-020	2.47	0.097	0.008	●	0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-250-010	2.5	0.098	0.004	●	0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-250-030	2.5	0.098	0.012	●	0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-270-010	2.7	0.106	0.004	●	0.244	0.488	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	-
TCM27-287-020	2.87	0.113	0.008	●	0.244	0.488	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	-
TCM27-300-000	3	0.118	0	●	0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCM27-300-020	3	0.118	0.008	●	0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCM27-300-030	3	0.118	0.012	●	0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCM27-300-040	3	0.118	0.016	●	0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165
TCM27-315-015	3.15	0.124	0.006	●	0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.677
TCM27-318-020	3.18	0.125	0.008	●	0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.677

5 pieces per package
● : Line up

Reference pages: Toolholders → G090 - G091, Standard cutting conditions → G095

INSERT - FOR GROOVING AND PROFILING

TCM27 (Full R)



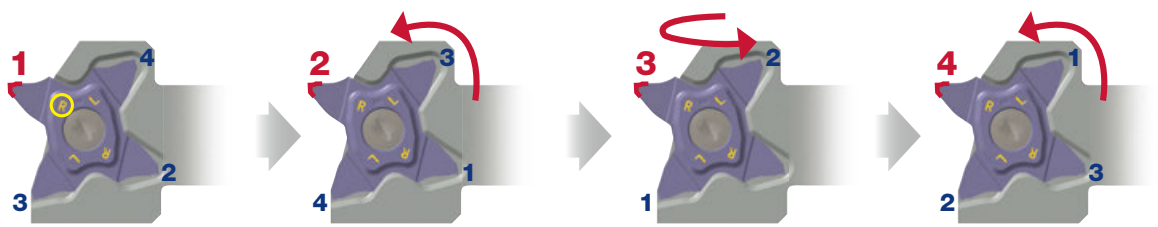
P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated AH725	CDX (in)	CUTDIA (in)	Relation of groove depth (T) and Max. diameter (øD max) (in)									
							T≤0.039 T≤0.079 T≤0.118	T≤0.138	T≤0.157	T≤0.177	T≤0.197	T≤0.217	T≤0.224	T≤0.236	T≤0.244	T≤0.252
TCM27-157-079	1.57	0.059	0.031	●	0.118	0.236	∞	-	-	-	-	-	-	-	-	-
TCM27-200-100	2	0.059	0.039	●	0.118	0.236	∞	23.622	-	-	-	-	-	-	-	-
TCM27-239-120	2.39	0.062	0.047	●	0.224	0.449	∞	23.622	11.024	7.087	5.118	1.969	1.378	-	-	-
TCM27-300-150	3	0.125	0.059	●	0.252	0.504	∞	23.622	11.024	7.087	5.315	4.134	3.740	3.346	3.071	2.165

5 pieces per package
● : Line up

HOW TO INDEX INSERTS



1. Right-hand edge (R) is used for the right-hand toolholders.
2. Rotate the insert
3. Flip over the insert
4. Rotate the insert

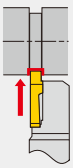
STANDARD CUTTING CONDITIONS

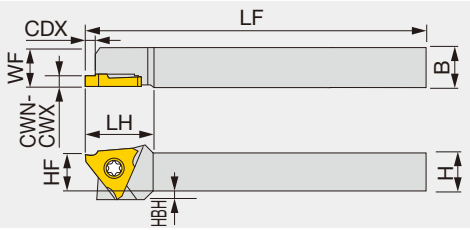
ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) Grooving, parting-off TCS	Grooving, parting-off TCM	Parting-off (with hand) TCS	Profiling (with full radius insert) TCS	Profiling (with full radius insert) TCM	Depth of cut for profiling (with full radius insert)
P	Steel 1045, etc.	AH725	330 - 660	0.002 - 0.006	0.002 - 0.010	0.0016 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
	Alloy steel 4137, etc.	AH725	165 - 590	0.002 - 0.006	0.002 - 0.010	0.0016 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
M	Stainless steel 304, etc.	AH725	165 - 490	0.002 - 0.006	0.002 - 0.008	0.0016 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
K	Gray cast iron No.250, etc.	AH725	165 - 590	0.002 - 0.006	0.002 - 0.010	0.0016 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
	Ductile cast iron 60-40-18, etc.	AH725	165 - 390	0.002 - 0.006	0.002 - 0.008	0.0016 - 0.005	0.002 - 0.004	0.002 - 0.006	0.020
S	Titanium alloys Ti-6Al-4V, etc.	AH725	100 - 200	0.002 - 0.006	0.002 - 0.006	0.0016 - 0.005	0.002 - 0.004	0.002 - 0.004	0.020
	Superalloys Inconel718, etc.	AH725	65 - 165	0.002 - 0.006	0.002 - 0.006	0.0016 - 0.005	0.002 - 0.004	0.002 - 0.004	0.020

Reference pages: Toolholders → G090 - G091

JSTGR/L

External grooving toolholder, for Swiss lathes





Without offset

Right hand (R) shown.

Inch	CWN	CWX	CDX	H	B	LF	LH	HF	WF	HBH	Insert	Torque
JSTGR/L063	0.013	0.118	0.028 - 0.102	0.375	0.375	5	0.75	0.375	0.375	0.100	JTGR/L3...	0.89
JSTGR/L083	0.013	0.118	0.028 - 0.102	0.500	0.500	5	0.75	0.500	0.500	-	JTGR/L3...	0.89
JSTGR/L103	0.013	0.118	0.028 - 0.102	0.625	0.625	5	0.75	0.625	0.625	-	JTGR/L3...	0.89

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	HBH	Insert	Torque*
JSTGR/L1010X3	0.33	3	0.7 - 2.6	10	10	120	18.5	10	10	2	JTGR/L3...	1.2
JSTGR/L1212F3	0.33	3	0.7 - 2.6	12	12	85	18.5	12	12	-	JTGR/L3...	1.2
JSTGR/L1212X3	0.33	3	0.7 - 2.6	12	12	120	18.5	12	12	-	JTGR/L3...	1.2
JSTGR/L1616X3	0.33	3	0.7 - 2.6	16	16	120	18.5	16	16	-	JTGR/L3...	1.2
JSTGL1616K3	0.33	3	0.7 - 2.6	16	16	125	18.5	16	16	-	JTGR/L3...	1.2

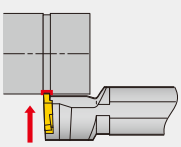
Can be wrenched also from the back with a double-head screw
Torque: Recommended clamping torque: lbs·ft (*N·m)

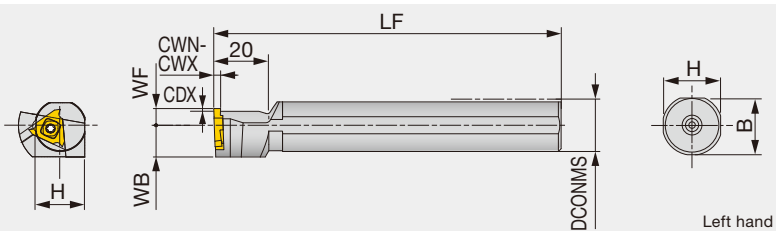
SPARE PARTS


Designation	Clamping screw	Wrench
JSTGR/L...	CSTB-4SD	T-8F (Optional T-8L)

JS-TGL3

External grooving toolholder, for Swiss lathes





Left hand (L) shown.

Metric	CWN	CWX	CDX	DCONMS	H	B	LF	WF	WB	Insert	Torque
JS19K-TGL3	0.33	3	0.7 - 2.6	19.05	18	18	125	6	11.5	JTGR3...	3
JS20K-TGL3	0.33	3	0.7 - 2.6	20	19	19	125	6	11.5	JTGR3...	3
JS22K-TGL3	0.33	3	0.7 - 2.6	22	21	21	125	6	11.5	JTGR3...	3
JS25K-TGL3	0.33	3	0.7 - 2.6	25.4	24	24	125	10	12.7	JTGR3...	3

Use left-hand toolholders (L) with right-hand inserts (R).
Torque: Recommended clamping torque: N·m

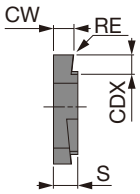
SPARE PARTS


Designation	Clamping screw	Wrench
JS***-TGL3	CSTB-4S	T-15F

Reference pages: JSTGR/L, JS-TGL3: Inserts → G097 - G098, Standard cutting conditions → G099

INSERT

JTG (Sharp edge)



Right hand (R) shown.

		Coated			Cermet		Uncoated					
P	Steel	★	★		★		☆					
M	Stainless	★	★									
K	Cast iron				☆		★					
N	Non-ferrous						★					
S	Superalloys						★					
H	Hard materials											

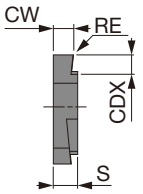
★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.05}_{0}$ (mm)	$CW^{+0.002}_{0}$ (in)	RE (in)	SH725	J740	NS9530	TH10	CDX (in)	IC (mm)	S (mm)
JTGR3033F	R	0.33	0.013	0.0012	●	●		●	0.028	9.53	3.18
JTGL3033F	L	0.33	0.013	0.0012		●		●	0.028	9.53	3.18
JTGR3033F-005	R	0.33	0.013	0.002	●				0.028	9.53	3.18
JTGR3043F	R	0.43	0.017	0.0012		●			0.043	9.53	3.18
JTGR3050F	R	0.5	0.020	0.0012	●	●	●	●	0.043	9.53	3.18
JTGL3050F	L	0.5	0.020	0.0012	●	●		●	0.043	9.53	3.18
JTGR3050F-005	R	0.5	0.020	0.002	●				0.043	9.53	3.18
JTGL3050F-005	L	0.5	0.020	0.002	●				0.043	9.53	3.18
JTGR3065F	R	0.65	0.026	0.0012	●	●			0.075	9.53	3.18
JTGR3065F-010	R	0.65	0.026	0.004	●				0.075	9.53	3.18
JTGR3075F	R	0.75	0.030	0.0012	●	●	●	●	0.075	9.53	3.18
JTGL3075F	L	0.75	0.030	0.0012	●	●	●	●	0.075	9.53	3.18
JTGR3075F-010	R	0.75	0.030	0.004	●				0.075	9.53	3.18
JTGL3075F-010	L	0.75	0.030	0.004	●				0.075	9.53	3.18
JTGR3080F	R	0.8	0.031	0.0012	●	●			0.075	9.53	3.18
JTGR3080F-010	R	0.8	0.031	0.004	●				0.075	9.53	3.18
JTGR3085F	R	0.85	0.033	0.0012	●	●			0.075	9.53	3.18
JTGR3095F	R	0.95	0.037	0.0012	●	●	●	●	0.075	9.53	3.18
JTGL3095F	L	0.95	0.037	0.0012	●	●		●	0.075	9.53	3.18
JTGR3095F-010	R	0.95	0.037	0.004	●				0.075	9.53	3.18
JTGL3095F-010	L	0.95	0.037	0.004	●				0.075	9.53	3.18
JTGR3100F	R	1	0.039	0.002	●	●	●	●	0.083	9.53	3.18
JTGL3100F	L	1	0.039	0.002	●	●		●	0.083	9.53	3.18
JTGR3100F-010	R	1	0.039	0.004	●				0.083	9.53	3.18
JTGL3100F-010	L	1	0.039	0.004	●				0.083	9.53	3.18
JTGR3110F	R	1.1	0.043	0.002	●	●			0.083	9.53	3.18
JTGR3120F	R	1.2	0.047	0.002	●	●			0.083	9.53	3.18
JTGR3120F-010	R	1.2	0.047	0.004	●				0.083	9.53	3.18
JTGR3125F	R	1.25	0.049	0.002	●	●	●	●	0.083	9.53	3.18
JTGL3125F	L	1.25	0.049	0.002	●	●		●	0.083	9.53	3.18
JTGR3125F-010	R	1.25	0.049	0.004	●				0.083	9.53	3.18
JTGL3125F-010	L	1.25	0.049	0.004	●				0.083	9.53	3.18
JTGR3130F	R	1.3	0.051	0.002	●	●			0.083	9.53	3.18
JTGR3140F	R	1.4	0.055	0.002	●	●			0.083	9.53	3.18
JTGR3140F-010	R	1.4	0.055	0.004	●				0.083	9.53	3.18
JTGR3145F	R	1.45	0.057	0.002	●	●	●	●	0.083	9.53	3.18
JTGL3145F	L	1.45	0.057	0.002		●		●	0.083	9.53	3.18
JTGR3145F-010	R	1.45	0.057	0.004	●				0.083	9.53	3.18
JTGR3150F	R	1.5	0.059	0.002	●	●	●	●	0.083	9.53	3.18
JTGL3150F	L	1.5	0.059	0.002	●	●		●	0.083	9.53	3.18
JTGR3150F-010	R	1.5	0.059	0.004	●				0.083	9.53	3.18
JTGL3150F-010	L	1.5	0.059	0.004	●				0.083	9.53	3.18

● : Line up

Reference pages: Toolholders → G096, Standard cutting conditions → G099

JTG (Sharp edge)



Right hand (R) shown.

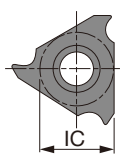
		Coated		Cermet	Uncoated
P	Steel	★	★	★	☆
M	Stainless	★	★		
K	Cast iron			☆	★
N	Non-ferrous				★
S	Superalloys				★
H	Hard materials				

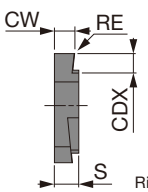
★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.05}_{0}$ (mm)	$CW^{+0.002}_{0}$ (in)	RE (in)	Coated SH725	Coated J740	Cermet NS9530	Uncoated TH10	CDX (in)	IC (mm)	S (mm)
JTGR3175F	R	1.75	0.069	0.002	●	●	●	●	0.083	9.53	3.18
JTGL3175F	L	1.75	0.069	0.002		●	●	●	0.083	9.53	3.18
JTGR3175F-010	R	1.75	0.069	0.004	●				0.083	9.53	3.18
JTGR3180F	R	1.8	0.071	0.002	●	●			0.083	9.53	3.18
JTGR3200F	R	2	0.079	0.002	●	●	●	●	0.102	9.53	3.18
JTGL3200F	L	2	0.079	0.002	●	●		●	0.102	9.53	3.18
JTGR3200F-010	R	2	0.079	0.004	●				0.102	9.53	3.18
JTGL3200F-010	L	2	0.079	0.004	●				0.102	9.53	3.18
JTGR3225F	R	2.25	0.089	0.002	●	●			0.102	9.53	3.18
JTGR3250F	R	2.5	0.098	0.002	●	●	●	●	0.102	9.53	3.18
JTGL3250F	L	2.5	0.098	0.002	●	●		●	0.102	9.53	3.18
JTGR3250F-010	R	2.5	0.098	0.004	●				0.102	9.53	3.18
JTGL3250F-010	L	2.5	0.098	0.004	●				0.102	9.53	3.18
JTGR3275F	R	2.75	0.108	0.002		●			0.102	9.53	3.18
JTGR3300F	R	3	0.118	0.002	●	●			0.102	9.53	3.18
JTGR3300F-010	R	3	0.118	0.004	●				0.102	9.53	3.18

● : Line up

JTG (honed edge)





Right hand (R) shown.

		Coated cermet
P	Steel	★
M	Stainless	
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	HAND	$CW^{+0.05}_{0}$ (mm)	$CW^{+0.002}_{0}$ (in)	RE (in)	Coated cermet J9530	CDX (in)	IC (mm)	S (mm)
JTGR3100	R	1	0.039	0.002	●	0.083	9.53	3.18
JTGR3125	R	1.25	0.049	0.002	●	0.083	9.53	3.18
JTGR3150	R	1.5	0.059	0.002	●	0.083	9.53	3.18
JTGR3200	R	2	0.079	0.002	●	0.102	9.53	3.18

● : Line up

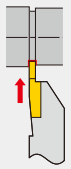
Reference pages: Toolholders → G096, Standard cutting conditions → G099

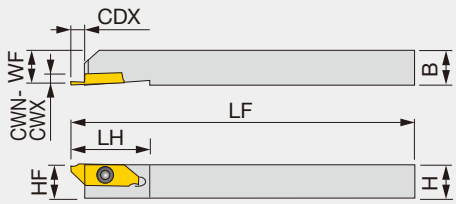
STANDARD CUTTING CONDITIONS (J-Series grooving tool)

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	General steel 1045, etc.	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
		NS9530	164 - 492	0.0004 - 0.004
		J9530	164 - 492	0.0004 - 0.004
	Free-cutting steel	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
M	Stainless steel 303, etc.	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
		NS9530	164 - 492	0.0004 - 0.004
		J9530	164 - 492	0.0004 - 0.004
N	Aluminium alloys, Brass Si < 12%, etc.	TH10	33 - 656	0.0004 - 0.004
S	Difficult-to-cut materials, Titanium alloys Ti-6Al-4V, etc.	TH10	33 - 98	0.0004 - 0.004

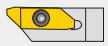
JSXGR/L

Screw-on toolholder for front turning, reverse turning and external grooving, for Swiss lathes





Without offset



1010, 1212 Shank

Right hand (R) shown.

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque
JSXGR/L1010K8-C	0.7	2	4.5 - 6	10	10	125	29	10	9.9	JXG...	1.3
JSXGR/L1212K8-C	0.7	2	4.5 - 6	12	12	125	29	12	11.9	JXG...	1.3
JSXGR/L1616K8	0.7	2	4.5 - 6	16	16	125	29	16	15.9	JXG...	1.3
JSXGR/L2020K8	0.7	2	4.5 - 6	20	20	125	29	20	19.9	JXG...	1.3
JSXGR/L2525K8	0.7	2	4.5 - 6	25	25	125	29	25	24.9	JXG...	1.3

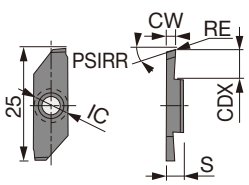
Can be wrenched also from the back with a double-head screw.
This toolholder can be used for JXF front-turning insert, JXR reverse-turning insert and JXG parting and grooving insert.
Torque: Recommended clamping torque: N·m

SPARE PARTS

Designation	Clamping screw	Wrench
JSXGR/L...	CSTB-4SD	T-8F (Optional T-8L)

INSERT

JXG (with hand, sharp edge)



Right hand (R) shown.

P	Steel	★			☆			
M	Stainless	★						
K	Cast iron				☆			
N	Non-ferrous				★			
S	Superalloys				★			
H	Hard materials							

★ : First choice
☆ : Second choice

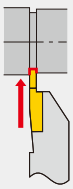
Designation	HAND	CW±0.001 (in)	CW±0.025 (mm)	RE (mm)	Coated J740	Uncoated TH10	CDX (mm)	IC (mm)	PSIRR	S (mm)
JXGR8070FA	R	0.028	0.7	0	●	●	4.5	8	15°	3.97
JXGL8070FA	L	0.028	0.7	0	●	●	4.5	8	15°	3.97
JXGR8070FA-005	R	0.028	0.7	0.05	●		4.5	8	15°	3.97
JXGR8100FA	R	0.039	1	0	●	●	6	8	15°	3.97
JXGL8100FA	L	0.039	1	0	●	●	6	8	15°	3.97
JXGR8100FA-005	R	0.039	1	0.05	●		6	8	15°	3.97
JXGR8100FA45	R	0.039	1	0	●	●	4.5	8	15°	3.97
JXGR8100FA45-005	R	0.039	1	0.05	●		4.5	8	15°	3.97
JXGR8150FA	R	0.059	1.5	0	●	●	6	8	15°	3.97
JXGL8150FA	L	0.059	1.5	0	●	●	6	8	15°	3.97
JXGR8150FA-005	R	0.059	1.5	0.05	●		6	8	15°	3.97
JXGR8150FA50	R	0.059	1.5	0	●	●	5	8	15°	3.97
JXGR8150FA50-005	R	0.059	1.5	0.05	●		5	8	15°	3.97
JXGR8180FA	R	0.071	1.8	0	●	●	6	8	15°	3.97
JXGR8180FA-005	R	0.071	1.8	0.05	●		6	8	15°	3.97
JXGR8200FA	R	0.079	2	0	●	●	6	8	15°	3.97
JXGL8200FA	L	0.079	2	0	●	●	6	8	15°	3.97
JXGR8200FA-005	R	0.079	2	0.05	●		6	8	15°	3.97
JXGR8200FN	R	0.079	2	0	●	●	6	8	0°	3.97
JXGL8200FN	L	0.079	2	0	●	●	6	8	0°	3.97
JXGR8200FN-005	R	0.079	2	0.05	●		6	8	0°	3.97

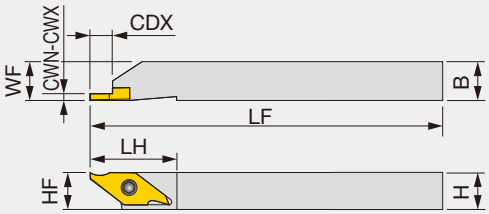
● : Line up

Reference pages: Standard cutting conditions → G102

JSVGR/L

External grooving toolholder, for Swiss lathes





Right hand (R) shown.

Inch	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque
JSVGR/L062.5	0.013	0.079	0.028 - 0.217	0.375	0.375	5	0.875	0.375	0.375	JVGR/L...	1.70
JSVGR/L082.5	0.013	0.079	0.028 - 0.217	0.500	0.500	5	0.875	0.500	0.500	JVGR/L...	1.70
JSVGR/L102.5	0.013	0.079	0.028 - 0.217	0.625	0.625	5	0.875	0.625	0.625	JVGR/L...	1.70

Metric	CWN	CWX	CDX	H	B	LF	LH	HF	WF	Insert	Torque*
JSVGR/L1010K-C	0.33	2	0.7 - 5.5	10	10	125	23	10	10	JVGR/L...	2.3
JSVGR/L1212K-C	0.33	2	0.7 - 5.5	12	12	125	23	12	12	JVGR/L...	2.3
JSVGR/L1616K	0.33	2	0.7 - 5.5	16	16	125	23	16	16	JVGR/L...	2.3

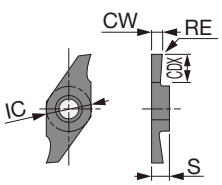
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS


Designation	Clamping screw	Wrench
JSVGR/L...	CSTB-3S	T-9F (Optional T-9L)

INSERT

JVG (with hand, sharp edge)



Right hand (R) shown.

P	Steel	★	★			★			☆	
M	Stainless	★	★							
K	Cast iron					☆			☆	
N	Non-ferrous								★	
S	Superalloys								★	
H	Hard materials									

★ : First choice
☆ : Second choice

Designation	HAND	CW$^{+0.05}_{0}$ (mm)	CW$^{+0.002}_{0}$ (in)	RE (in)	Coated SH725	Coated J740	Cermet NS9530	Uncoated TH10	CDX (in)	IC (mm)	S (mm)
JVGR033F	R	0.33	0.013	0	●	●		●	0.028	7.94	3.18
JVGL033F	L	0.33	0.013	0	●				0.028	7.94	3.18
JVGR050F	R	0.5	0.020	0	●	●		●	0.043	7.94	3.18
JVGL050F	L	0.5	0.020	0	●				0.043	7.94	3.18
JVGR075F	R	0.75	0.030	0	●	●		●	0.075	7.94	3.18
JVGL075F	L	0.75	0.030	0	●				0.075	7.94	3.18
JVGR095F	R	0.95	0.037	0	●	●		●	0.075	7.94	3.18
JVGL095F	L	0.95	0.037	0	●				0.075	7.94	3.18
JVGR100F	R	1	0.039	0	●	●	●	●	0.217	7.94	3.18
JVGL100F	L	1	0.039	0	●		●	●	0.217	7.94	3.18
JVGR125F	R	1.25	0.049	0	●	●		●	0.197	7.94	3.18
JVGL125F	L	1.25	0.049	0	●				0.197	7.94	3.18
JVGR150F	R	1.5	0.059	0	●	●	●	●	0.217	7.94	3.18
JVGL150F	L	1.5	0.059	0	●		●	●	0.217	7.94	3.18
JVGR200F	R	2	0.079	0	●	●	●	●	0.217	7.94	3.18
JVGL200F	L	2	0.079	0	●				0.217	7.94	3.18

● : Line up

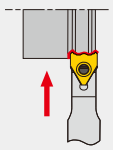
Reference pages: Standard cutting conditions → G102

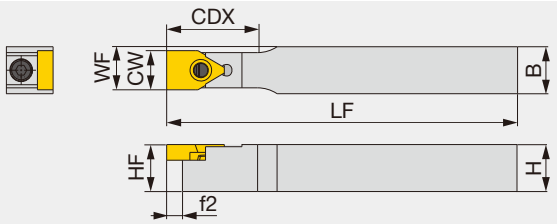
STANDARD CUTTING CONDITIONS (JXG and JVG inserts)

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	General steel 1045, etc.	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
		NS9530	164 - 492	0.0004 - 0.004
	Free-cutting steel	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
M	Stainless steel 303, etc.	SH725	164 - 656	0.0004 - 0.004
		J740	33 - 328	0.0004 - 0.004
		NS9530	164 - 492	0.0004 - 0.004
N	Aluminium alloys, Brass Si < 12%, etc.	TH10	33 - 656	0.0004 - 0.004
S	Difficult-to-cut materials, Titanium alloys Ti-6Al-4V, etc.	TH10	33 - 98	0.0004 - 0.004

FPGN

Lever-lock external wide profile grooving toolholder





Inch	CW	CDX	H	B	LF	HF	WF	f2	Insert	Torque
FPGN08-10T20	0.394	0.984	0.500	0.500	4.946	0.500	0.450	0.216	PSGB10...	1.62
FPGN10-10T20	0.394	0.984	0.625	0.625	4.946	0.625	0.510	0.216	PSGB10...	1.62
FPGN12-10T20	0.394	0.984	0.750	0.750	5.196	0.750	0.570	0.216	PSGB10...	1.62
FPGN10-15T25	0.590	1.181	0.625	0.625	4.946	0.625	0.610	0.216	PSGB15...	1.62
FPGN12-15T25	0.590	1.181	0.750	0.750	5.196	0.750	0.670	0.216	PSGB15...	1.62
FPGN12-20T32	0.787	1.456	0.750	0.750	5.196	0.750	0.770	0.216	PSGB20...	6.27
FPGN16-20T32	0.787	1.456	1.000	1.000	6.196	1.000	0.890	0.216	PSGB20...	6.27
FPGN16-25T36	0.984	1.614	1.000	1.000	6.196	1.000	0.990	0.216	PSGB25...	6.27

PSGB insert blank is available for tailored inserts.
Torque: Recommended clamping torque: lbs·ft

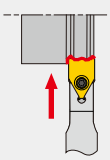
SPARE PARTS

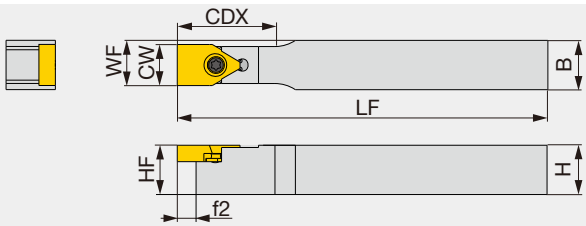



Designation	Lever	Clamping screw	Spring	Wrench
FPGN**-10T..., 15T...	FCL4	FCS3	BP-5	P-2.5
FPGN**-20T..., 25T...	FCL8	FCS6	BP-9	P-5

SPGN

Screw-on external wide profile grooving toolholder





Inch	CW	CDX	H	B	LF	HF	WF	f2	Insert	Torque
SPGN08-10T20	0.394	0.984	0.500	0.500	4.946	0.500	0.450	0.216	PSGB10	0.96
SPGN10-10T20	0.394	0.984	0.625	0.625	4.946	0.625	0.510	0.216	PSGB10	0.96
SPGN12-10T20	0.394	0.984	0.750	0.750	5.196	0.750	0.570	0.216	PSGB10	0.96
SPGN10-15T25	0.590	1.181	0.625	0.625	4.946	0.625	0.610	0.216	PSGB15	2.58
SPGN12-15T25	0.590	1.181	0.750	0.750	5.196	0.750	0.670	0.216	PSGB15	2.58
SPGN12-20T32	0.787	1.456	0.750	0.750	5.196	0.750	0.770	0.216	PSGB20	3.69
SPGN16-20T32	0.787	1.456	1.000	1.000	6.196	1.000	0.890	0.216	PSGB20	3.69
SPGN16-25T36	0.984	1.614	1.000	1.000	6.196	1.000	0.990	0.216	PSGB25	3.69

PSGB insert blank is available for tailored inserts.
Torque: Recommended clamping torque: lbs·ft

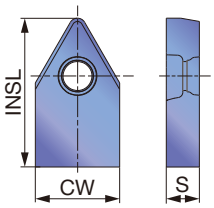
SPARE PARTS

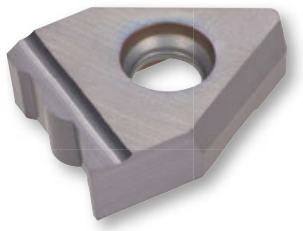

Designation	Clamping screw	Wrench
SPGN**-10T20	CSTB-3L081	T-8F
SPGN**-15T25	CSTB-4	T-15F
SPGN**-20T..., 25T...	CSTB-5	T-20F

Reference pages: FPGN, SPGN: Inserts, Standard cutting conditions → G104

INSERT

PSGB (Blank for wide profile grooving inserts*)





Specially tailored profile insert

P	Steel	☆	★
M	Stainless		★
K	Cast iron	★	
N	Non-ferrous	★	
S	Superalloys	☆	
H	Hard materials		

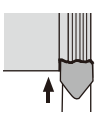
★ : First choice
☆ : Second choice

Designation	CW±0.025 (mm)	CW±0.001 (in)	Uncoated TH10	Uncoated UX30	INSL (in)	S (in)
PSGB10	10.2	0.402	●	●	0.709	0.157
PSGB15	15.2	0.598	●	●	0.787	0.197
PSGB20	20.2	0.795	●	●	1.062	0.256
PSGB25	25.2	0.992	●	●	1.062	0.256

*These are blanks (semi-finished products) for wide profile grooving inserts that can be tailored.

Package quantity = 5pcs.
● : Line up

STANDARD CUTTING CONDITIONS

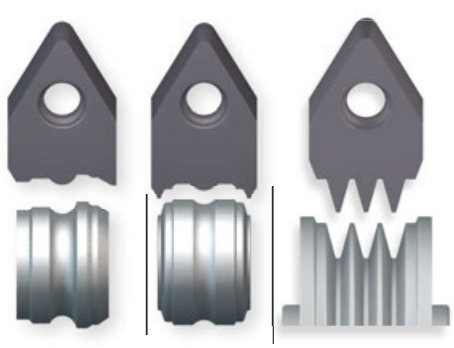


Wide profile grooving (PSGB insert)

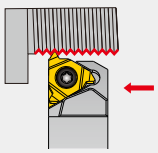
ISO	Workpiece material	Hardness (HB)	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 1055, etc.	< 200	UX30	165 - 490
P	Alloy steel 4140, 8620, etc.	< 300	UX30	165 - 390
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	< 200	UX30	165 - 390
K	Gray cast iron Class 25, Class 30, etc.	-	TH10	165 - 490
K	Ductile cast iron 60-40-18, 60-55-06, etc.	-	TH10	165 - 390
N	Aluminum alloys Si < 12%, etc.	-	TH10	330 - 1640

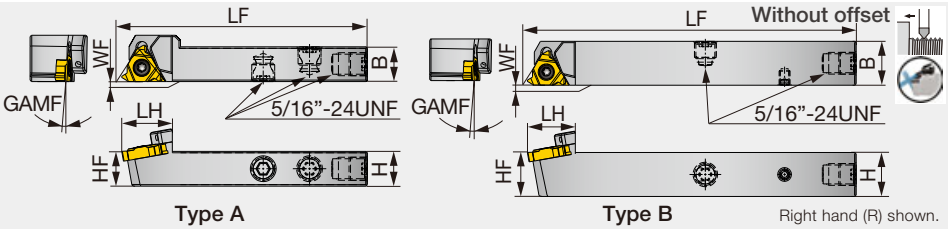
Custom shaped inserts can be supplied on customer's request, according to the designated final shape on part drawing.

Semi-finished blanks PSGB types are offered for purchase.



Reference pages: Toolholders → G103





Inch	H	B	LF	LH	HF	WF	GAMF	Type	Insert
JSE2R1212X16-CHP	0.500	0.500	4.750	0.748	0.500	0.000	1°	B	16ER...
JSE2R1616X16-CHP	0.625	0.625	4.750	0.748	0.625	0.000	1°	B	16ER...

Metric	H	B	LF	LH	HF	WF	GAMF	Type	Insert
JSE2R1212F16-CHP※	12	12	85	19	12	0	1°	A	16ER...
JSE2R1212X16-CHP	12	12	120	19	12	0	1°	B	16ER...
JSE2R1616X16-CHP	16	16	120	19	16	0	1°	B	16ER...

※ Connection with external coolant tube

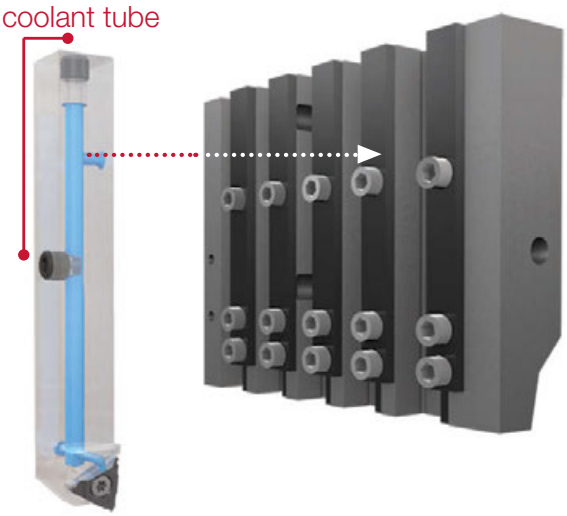
SPARE PARTS


Designation	Clamping screw	Wrench
JSE2R**16-CHP	CSTB-3.5	T-15F

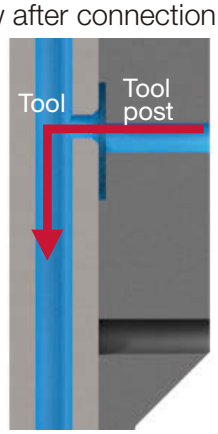
No need for coolant tube setup.
Eliminates chip entanglement on tubes and streamlines tool replacement.

Coolant is supplied from the tool post directly to the tools

Internal thread
Optional connection with external coolant tube



Detailed view of the coolant flow after connection

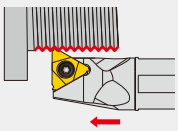


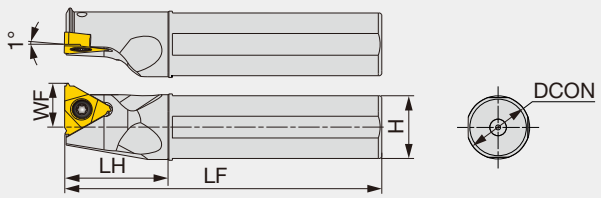
Reference pages: JSE2R16-CHP: Inserts → E010 -, Standard cutting conditions → E054

TUNGTHREAD

JS-SEL16

External threading toolholder for Swiss lathes





Right hand (R) shown.

Inch	DCON	H	LF	LH	WF	Insert
JS16F-SEL16	0.630	0.630	0.984	3.346	0.433	16ER...
JS19G-SEL16	0.750	0.750	1.181	3.543	0.492	16ER...
JS19X-SEL16	0.750	0.750	1.181	4.724	0.492	16ER...
JS20G-SEL16	0.787	0.787	1.181	3.543	0.512	16ER...
JS20X-SEL16	0.787	0.787	1.181	4.724	0.512	16ER...
JS25HSEL16	0.984	0.984	1.181	3.937	0.61	16ER...
JS254X-SEL16	1.181	0.984	1.181	4.724	0.618	16ER...

Metric	DCON	H	LF	LH	WF	Insert
JS16F-SEL16	16	15	85	25	11	16ER...
JS19G-SEL16	19.05	18	90	30	12.5	16ER...
JS19X-SEL16	19.05	18	120	30	12.5	16ER...
JS20G-SEL16	20	19	90	30	13	16ER...
JS20X-SEL16	20	19	120	30	13	16ER...
JS25HSEL16	25	24	100	30	15.5	16ER...
JS254X-SEL16	25.4	24	120	30	15.7	16ER...

Use left-hand toolholders (L) with right-hand inserts (R).

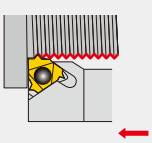
SPARE PARTS

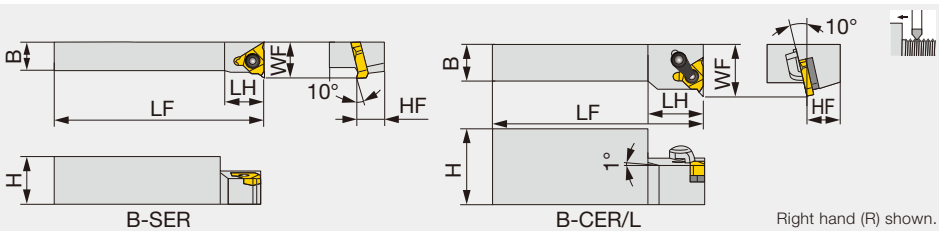
Designation	Clamping screw	Wrench
JS***-SEL16	CSTB-3.5	T-15F

TUNGTHREAD

B-S/CER/L

External threading toolholder for Swiss lathes





Right hand (R) shown.

Metric	H	B	LF	LH	HF	WF	Insert
B-SER10H16	20	10	100	15	10	16	16ER...
B-SER12K16	24	12	125	18	12	18	16ER...
B-CER/L16M16	32	16	150	24	16	22	16ER/L...

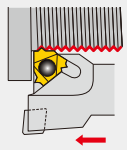
SPARE PARTS

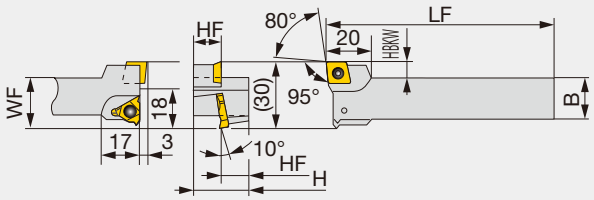
Designation	Clamp set	Shim set	Clamping screw	Wrench
B-SER**16	-	-	CSTB-3.5	T-15F
B-CER/L16M16	CSP16	A16-1	-	T-15F

Reference pages: JS-SEL16, B-S/CER/L: Inserts → E010 -, Standard cutting conditions → E054

BC-SER

External threading toolholder for multi-functional Swiss lathes





Right hand (R) shown.

Metric	H	B	LF	HF	WF	HBKW	Insert
BC-SER12K16	24	16	125	12	23	7	16ER..., CC*T09T3...

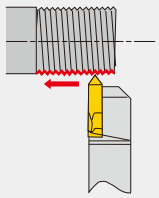
SPARE PARTS

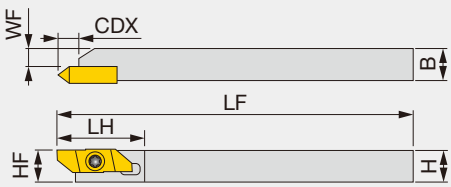
Designation	Clamping screw	Wrench
BC-SER12K16	CSTB-3.5	T-15F

Reference pages: BC-SER/L: Inserts → B111 - (CC*T09T3...), E010 - (16ER...),
Standard cutting conditions → E054

JSXBR/L

Screw-on external threading toolholder, for Swiss lathes





C-type

Right hand (R) shown.

Metric	H	B	LF	LH	CDX	HF	WF	Insert
JSXBR1010K8-C	10	10	125	29	6.4	10	5.7	JXT*R...
JSXBR1212K8-C	12	12	125	29	6.4	12	7.7	JXT*R...
JSXBR1616K8	16	16	125	29	6.4	16	11.7	JXT*R...
JSXBR2020K8	20	20	125	29	6.4	20	15.7	JXT*R...
JSXBR2525K8	25	25	125	29	6.4	25	20.7	JXT*R...

Can be wrenched from back side with both end torx screw.
This toolholder is compatible with JXB-type inserts and JXT-type inserts.

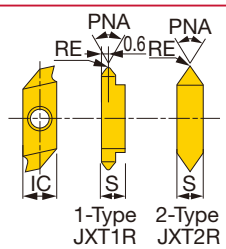
SPARE PARTS



Designation	Clamping screw	Wrench 1	Wrench 2 (optional)
JSXBR...	CSTB-4SD	T-8F	(T-8L)

INSERT

JXT (sharp edge)



		Coated	Uncoated			
Designation	RE (mm)	J740	TH10	PNA	IC (mm)	S (mm)
JXT1R6000F	0.03	●	●	60°	8	3.97
JXT2R6000F	0.03	●	●	60°	8	3.97

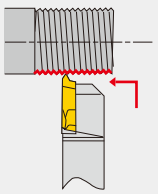
P	Steel	★	
M	Stainless	★	
K	Cast iron		
N	Non-ferrous		☆
S	Superalloys	☆	☆
H	Hard materials		☆

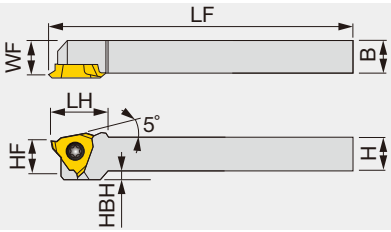
★ : First choice
☆ : Second choice

● : Line up

J-SERIES
JSTTR/L

Screw-on external threading toolholder, for Swiss lathes





Right hand (R) shown.

Inch	H	B	LF	LH	HF	WF	HBH	Insert
JSTTR/L063	0.375	0.375	5.000	0.6875	0.375	0.375	0.100	JTTR/L30...
JSTTR/L083	0.500	0.500	5.000	0.6875	0.500	0.500	-	JTTR/L30...
JSTTR/L103	0.625	0.625	5.000	0.6875	0.625	0.625	-	JTTR/L30...

Metric	H	B	LF	LH	HF	WF	HBH	Insert
JSTTR/L1010X3	10	10	120	18.5	10	9.5	2	JTTR/L30...
JSTTR/L1212F3	12	12	85	18.5	12	11.5	-	JTTR/L30...
JSTTR/L1212X3	12	12	120	18.5	12	11.5	-	JTTR/L30...
JSTTR/L1616X3	16	16	120	18.5	16	15.5	-	JTTR/L30...

Recommended clamping torque: 0.89 lbs·ft, 1.2 N·m

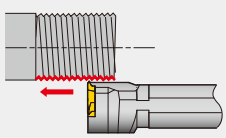
SPARE PARTS

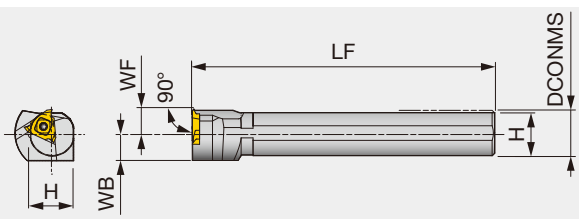


Designation	Clamping screw	Wrench 1	Wrench 2 (optional)
JSTTR/L...	CSTB-4SD	T-8F	(T-8L)

J-SERIES
JS-TTL3

Screw-on external threading toolholder, for Swiss lathes





Left hand (L) shown.

Metric	DCONMS	WF	LF	H	WB	Insert
JS19K-TTL3	19.05	10	125	18	11.5	JTTR30...
JS20K-TTL3	20	10	125	19	11.5	JTTR30...
JS22K-TTL3	22	10	125	21	11.5	JTTR30...
JS25K-TTL3	25.4	10	125	24	12.7	JTTR30...

Recommended clamping torque: 3.5 N·m

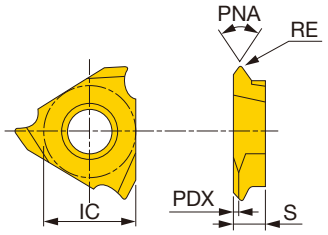
SPARE PARTS


Designation	Clamping screw	Wrench
JS**-TTL3	CSTB-4S	T-15F

Reference pages: JSTTR/L, JS-TTL3: Inserts, Standard cutting conditions → G110

INSERT

JTT (sharp edge)



Right hand (R) shown.

P	Steel	★	☆			★					
M	Stainless	★	☆								
K	Cast iron	★				☆			★		
N	Non-ferrous								★		
S	Superalloys	☆							★		
H	Hard materials	☆							★		

★ : First choice
☆ : Second choice

Designation	RE (in)	Coated			Cermet			Uncoated			PNA	IC (mm)	S (mm)	PDX (mm)
		SH725	J740		NS9530			TH10						
JTTR3005F-55	0.002	●	●								55°	9.525	3.18	0.6
JTTL3005F-55	0.002										55°	9.525	3.18	0.6
JTTR3005F	0.002	●	●		●			●			60°	9.525	3.18	0.9
JTTL3005F	0.002	●									60°	9.525	3.18	0.9
JTTR3010F	0.004	●	●		●			●			60°	9.525	3.18	0.9
JTTL3010F	0.004	●									60°	9.525	3.18	0.9

Machinable pitch range: 0.020" to 0.039" (0.5 to 1 mm)

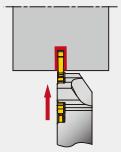
● : Line up

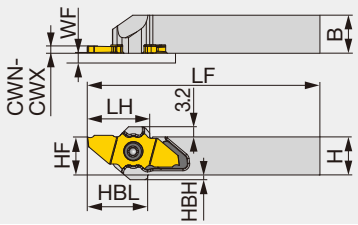
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Pitch (in)	TPI
P	Low carbon steel 1025, etc.	SH725	197 - 492	0.020 - 0.039	50 - 25
	Carbon steel, Alloy steel 1045, 4140, etc.	SH725	197 - 492	0.020 - 0.039	50 - 25
	Pre-hardened steel NAK80, PX5, etc.	SH725	197 - 492	0.020 - 0.039	50 - 25
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	SH725	164 - 262	0.020 - 0.039	50 - 25
K	Gray cast iron Class 25, Class 30, etc.	TH10	164 - 328	0.020 - 0.039	50 - 25
	Ductile cast iron 60-40-18, etc.	TH10	164 - 328	0.020 - 0.039	50 - 25
S	Titanium alloy Ti-6Al-4V, etc.	SH725	98 - 328	0.020 - 0.039	50 - 25
	Heat resistant alloy Inconel 718, etc.	SH725	98 - 328	0.020 - 0.039	50 - 25

JSXXR/L

Parting toolholder, for Swiss lathes





Right hand (R) shown.

Inch	CWN	CWX	H	B	LF**	LH**	HF	WF	HBL**	HBH	Insert	Torque
JSXXR/L063	0.039	0.079	0.375	0.375	4.750	0.774	0.375	0.008	0.748	0.12	JX*G06...,12...,16..., 20...	0.89
JSXXR/L083	0.039	0.079	0.500	0.500	4.750	0.774	0.500	0.008	0.748	0.06	JX*G06...,12...,16..., 20...	0.89
JSXXR/L103	0.039	0.079	0.625	0.625	4.750	0.774	0.625	0.008	-	-	JX*G06...,12...,16..., 20...	0.89

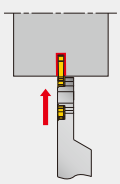
Torque: Recommended clamping torque: lbs·ft
**LF (Functional Length), LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JXPG16... insert. LF, LH, and HBL will all be 0.079" shorter than the above values with JX*G12... and JXPG20...inserts, and 0.157" shorter for JXPG06... insert.
Use the right-hand insert (JX*G**R...) for a right-hand holder (JSXXR...); the left-hand insert (JX*G**L...) for a left-hand holder (JSXXL...).

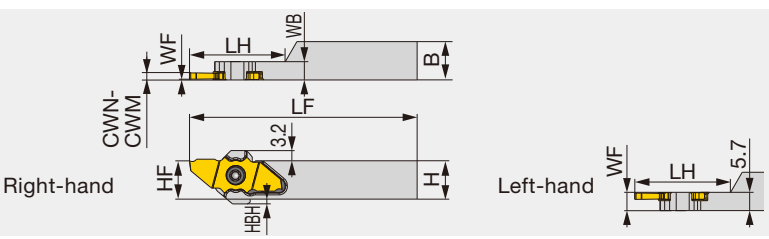
SPARE PARTS

Designation	Clamping screw	Wrench
JSXXR...	CSTC-4L100DL	T-1008/5
JSXXL...	CSTC-4L100DR	T-1008/5

JSXXR/L-S

Parting toolholder, for Swiss lathes (for sub spindle)





Inch	CWN	CWM	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque
JSXXR/L063-S	0.039	0.079	0.375	0.375	4.750	1.030	0.383	0.008/0.217	0.120	JX*G06...,12...,16..., 20...	0.89
JSXXR/L083-S	0.039	0.079	0.500	0.500	4.750	1.030	0.500	0.008/0.217	0.060	JX*G06...,12...,16..., 20...	0.89

Torque: Recommended clamping torque: lbs·ft
**LF (Functional Length) and LH (Head Length) values shown above are true with JXPG16... insert. LF and LH will be 0.079" shorter than the above values with JX*G12... insert, and 0.157" shorter for JXPG06... insert. LF, LH, and HBL will all be 0.079" shorter with JXPG20... insert.
JXPG20... insert will not fit.
Use the right-hand insert (JX*G**R...) for a right-hand holder (JSXXR...); the left-hand insert (JX*G**L...) for a left-hand holder (JSXXL...).

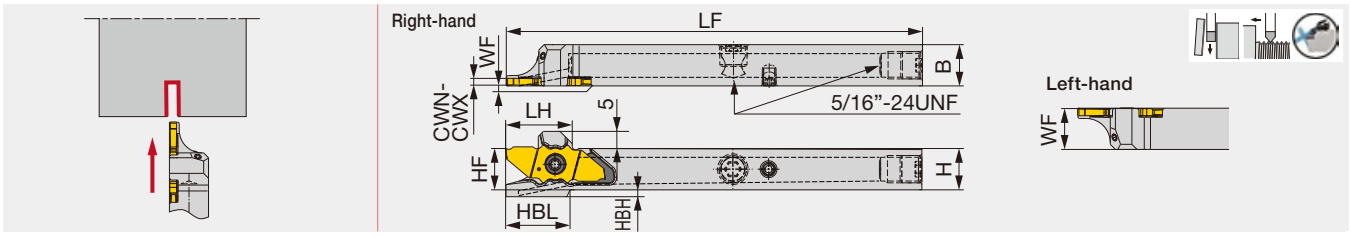
SPARE PARTS

Designation	Clamping screw	Wrench
JSXXR***-S	CSTC-4L055DL	T-1008/5
JSXXL***-S	CSTC-4L055DR	T-1008/5

Reference pages: JSXXR/L, JSXXR/L-S: Inserts → G116 - G117, Standard cutting conditions → G119

JSXXR/L-X-CHP

Parting-off tool for swiss lathes with high pressure coolant capability



Inch	CWN	CWX	H	B	WF	LF**	HF	HBH	LH**	HBL**	Insert	Torque
JSXXR/L083X-CHP	0.039	0.079	0.500	0.500	0.008/0.492	4.750	0.500	0.051	0.764	0.736	JX*G06...,12...,16..., 20...	0.89
JSXXR/L103X-CHP	0.039	0.079	0.625	0.625	0.008/0.617	4.750	0.625	0	0.764	0	JX*G06...,12...,16..., 20...	0.89

Torque: Recommended clamping torque: lbs·ft
**LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JXPG16... insert. LF, LH, and HBL will all be 0.079" shorter than the above values with JX*G12... and JXPG20... inserts, and 0.157" shorter for JXPG06... insert.
Use the right-hand insert (JX*G**R...) for a right-hand holder (JSXXR...); the left-hand insert (JX*G**L...) for a left-hand holder (JSXXL...).

SPARE PARTS

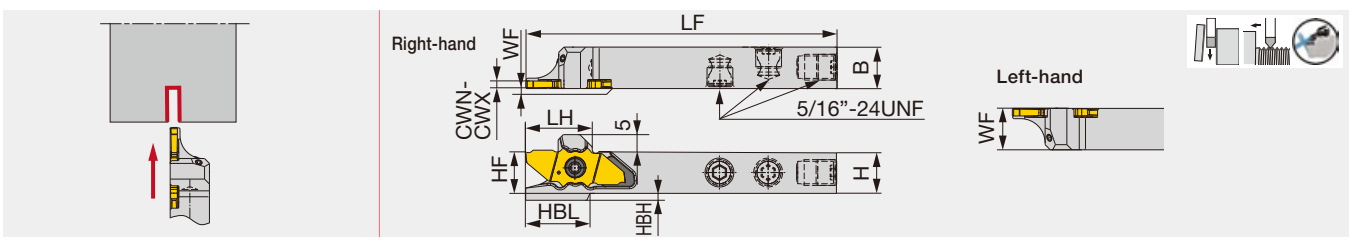
Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSXXR...	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSXXL...	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Parting-off widths : 0.039" and 0.059" (for a max parting diameter of ø0.236")
: 0.059" and 0.079" (for max parting diameters of ø0.472", ø0.630" and ø0.787")
Threading pitch range : 0.008" - 0.059"

DUOJCUT UST

JSXXR/L-F-CHP

Parting-off tool for swiss lathes



Inch	CWN	CWX	H	B	LF**	LH**	HF	WF	HBL**	HBH	Insert	Torque
JSXXR/L083F-CHP	0.039	0.079	0.500	0.500	3.344	≤ 0.764	0.5	0.008/0.492	0.736	0.051	JX*G06...,12...,16..., 20...	0.89

Torque: Recommended clamping torque: lb·ft
**LF (Functional Length) LH (Head Length), and HBL (Head-bottom Offset Length) values shown above are true with JXPG16... insert. LF, LH, and HBL will all be 0.079" shorter than the above values with JX*G12... and JXPG20... inserts, and 0.157" shorter for JXPG06... insert.
Use the right-hand insert (JX*G**R...) for a right-hand holder (JSXXR...); the left-hand insert (JX*G**L...) for a left-hand holder (JSXXL...).

SPARE PARTS

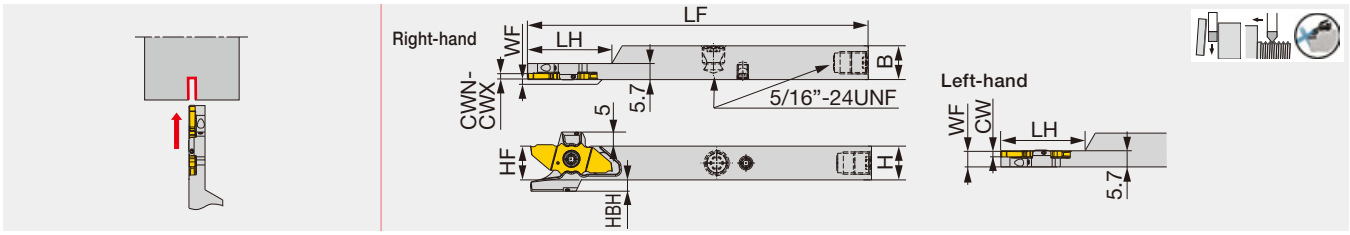
Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2
JSXXR...	CSTC-4L100DL	T-1008/5	SR5/16UNFTL360	P-4
JSXXL...	CSTC-4L100DR	T-1008/5	SR5/16UNFTL360	P-4

Parting-off widths : 0.039" and 0.059" (for a max parting diameter of ø0.236")
: 0.059" and 0.079" (for max parting diameters of ø0.472", ø0.630" and ø0.787")
Threading pitch range : 0.008" - 0.059"

Reference pages: JSXXR/L-CHP, JSXXR/L-F-CHP: Inserts → G116 - G117,
Standard cutting conditions → G119

JSXXR/L-X-S-CHP

Parting toolholder with high pressure coolant capability, for Swiss lathes (for sub spindle)



Inch	CWN	CWX	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque
JSXXR/L083X-S-CHP	0.039	0.079	0.500	0.500	4.750	1.181	0.500	0.008/0.217	0.051	JX*G06...,12...,16..., 20...	0.89
JSXXR/L103X-S-CHP	0.039	0.079	0.625	0.625	4.750	1.181	0.625	0.008/0.217	0	JX*G06...,12...,16..., 20...	0.89

Torque: Recommended clamping torque: lbs·ft
**LF (Overall Tool Length) and LH (Head Length) values shown above are true with JXPG16... insert. Both LF and LH will be 0.079" shorter than the above value with JX*G12... and JXPG20... inserts; 0.157" shorter with JXPG06... insert.
Use the right-hand insert (JX*G**R...) for a right-hand holder (JSXXR...); the left-hand insert (JX*G**L...) for a left-hand holder (JSXXL...).

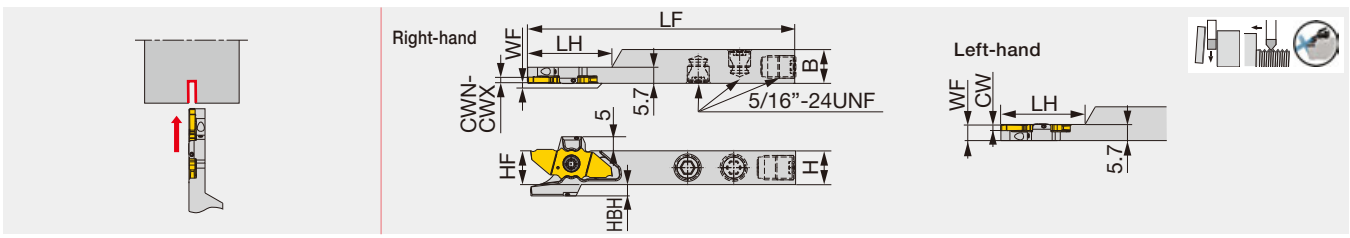
SPARE PARTS

Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JSXXR***-S-CHP	CSTC-4L055DL	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2
JSXXL***-S-CHP	CSTC-4L055DR	T-1008/5	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Parting-off widths : 0.039" and 0.059" (for a max parting diameter of ø0.236")
: 0.059" and 0.079" (for max parting diameters of ø0.472", ø0.630" and ø0.787")

JSXXR/L-F-S-CHP

Parting toolholder, with high pressure coolant capability, for Swiss lathes (for sub spindle)



Inch	CWN	CWX	H	B	LF**	LH**	HF	WF	HBH	Insert	Torque
JSXXR/L083F-S-CHP	0.039	0.079	0.500	0.500	3.344	1.024	0.500	0.008/0.217	0.051	JX*G06...,12...,16..., 20...	0.89

Torque: Recommended clamping torque: lbs·ft
**LF (Overall Tool Length) and LH (Head Length) values shown above are true with JXPG16... insert. Both LF and LH will be 0.079" shorter than the above value with JX*G12... and JXPG20... inserts; 0.157" shorter with JXPG06... insert.
Use the right-hand insert (JX*G**R...) for a right-hand holder (JSXXR...); the left-hand insert (JX*G**L...) for a left-hand holder (JSXXL...).

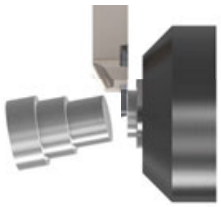
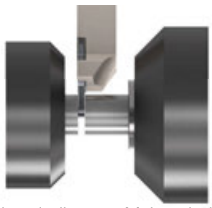
SPARE PARTS

Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2
JSXXR***-S-CHP	CSTC-4L055DL	T-1008/5	SR5/16UNFTL360	P-4
JSXXL***-S-CHP	CSTC-4L055DR	T-1008/5	SR5/16UNFTL360	P-4

Parting-off widths : 0.039" and 0.059" (for a max parting diameter of ø0.236")
: 0.059" and 0.079" (for max parting diameters of ø0.472", ø0.630" and ø0.787")

Reference pages: JSXXR/L-X-S-CHP, JSXXR/L-F-S-CHP: Inserts → G116 - G117,
Standard cutting conditions → G119

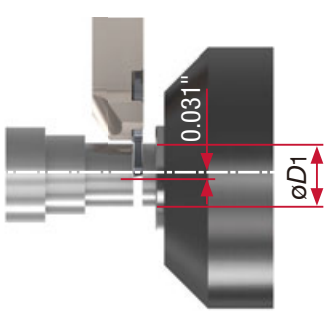
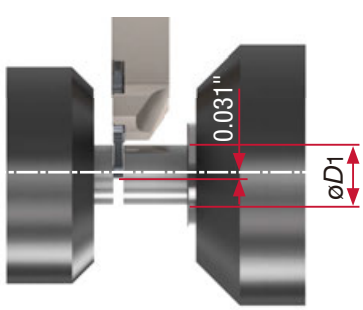
HOW TO SELECT TOOLS

Application	Large-diameter machining of workpiece with rigidity		Small-diameter machining of workpiece with short overhang	
	Main-spindle tooling	Sub-spindle tooling	Sub-spindle tooling	
			Workpiece with long overhang at the side of sub-spindle for the process after parting-off	Short workpiece with low rigidity
	 Main spindle	 Sub-spindle Main spindle	 Sub-spindle Main spindle	 Sub-spindle Main spindle
	Position of parting-off is at the side of the main spindle	Position of parting-off is at the side of the sub-spindle	Position of parting-off is at the side of the main spindle	Position of parting-off is at the side of the sub-spindle
Toolholder	R-hand (JSXXR type)	L-hand (JSXXL type)	R-hand (JSXXR-S type)	L-hand (JSXXL-S type)
Insert	Right-hand insert with lead angle to remove center core (JXPG**R***-15 type)	Left-hand insert (JXPG**L*** type)	Right-hand insert (JXPG**R*** type)	Left-hand insert (JXPG**L*** type)

HOW TO SELECT TOOLHOLDERS FOR SUB-SPINDLE

Sub-spindle dia.	Parting-off dia.	B	LF	Insert	Toolholder
ø1.575	- ø0.236	0.375	4.514	JXPG06*	JSXXR/L063-S
ø1.575	- ø0.236	0.500	4.514	JXPG06*	JSXXR/L083-S
ø1.575	- ø0.472	0.375	4.593	JXPG12*	JSXXR/L063-S
ø1.575	- ø0.472	0.500	4.593	JXPG12*	JSXXR/L083-S
ø1.575	- ø0.630	0.375	4.750	JXPG16*	JSXXR/L063-S
ø1.575	- ø0.630	0.500	4.750	JXPG16*	JSXXR/L083-S
ø1.575	- ø0.787	0.500	3.423	JXPG20*	JSXXR/L083F-S-CHP
ø1.969	- ø0.236	0.500	4.514	JXPG06*	JSXXR/L083-S
ø1.969	- ø0.236	0.625	4.514	JXPG06*	JSXXR/L103X-S-CHP
ø1.969	- ø0.472	0.500	4.593	JXPG12*	JSXXR/L083-S
ø1.969	- ø0.472	0.625	4.593	JXPG12*	JSXXR/L103X-S-CHP
ø1.969	- ø0.630	0.500	4.750	JXPG16*	JSXXR/L083-S
ø1.969	- ø0.630	0.500	4.750	JXPG16*	JSXXR/L083-S
ø1.969	- ø0.630	0.625	4.750	JXPG16*	JSXXR/L103X-S-CHP
ø1.969	- ø0.787	0.500	3.423	JXPG20*	JSXXR/L083F-S-CHP
ø1.969	- ø0.787	0.500	4.829	JXPG20*	JSXXR/L083X-S-CHP
ø1.969	- ø0.787	0.625	4.829	JXPG20*	JSXXR/L103X-S-CHP

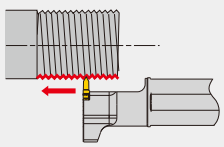
MAX. PARTING-OFF DIA. & DEPTH

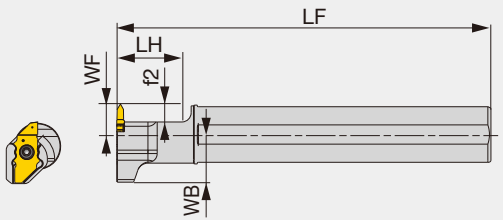
Main-spindle tooling	Sub-spindle tooling
 Main spindle	 Sub-spindle Main spindle

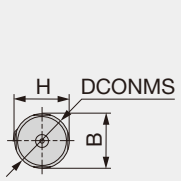
There will be no tool-workpiece interference when parting off the workpiece with the cutting edge position apart from the workpiece center by 0.031" or more.

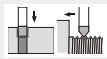
JS-SXXL09

Threading toolholder with round shank









Metric	DCONMS	H	B	LF	LH	WB	WF	f2	Insert	Torque
JS19G-SXXL09	19.05	18	18	90	21	15.43	10	6	JX*G06,12*R	1.2
JS19X-SXXL09	19.05	18	18	120	21	15.43	10	6	JX*G06,12*R	1.2
JS20G-SXXL09	20	19	19	90	21	15.4	10	6	JX*G06,12*R	1.2
JS20X-SXXL09	20	19	19	120	21	15.4	10	6	JX*G06,12*R	1.2
JS22X-SXXL09	22	21	21	120	21	15.4	10	6	JX*G06,12*R	1.2
JS25H-SXXL09	25	24	24	100	21	15.4	10	6	JX*G06,12*R	1.2
JS254X-SXXL09	25.4	24	24	120	21	15.4	10	6	JX*G06,12*R	1.2

Torque: Recommended clamping torque: N·m
Threading insert (JXTG12FR) and parting-off inserts (JXPG06R ,12R) fit this holder.

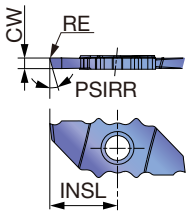
SPARE PARTS

Designation	Clamping screw	Wrench
JS***-SXXL09	CSTC-4L100DL	T-1008/5

Reference pages: JS-SXXL09: Inserts → G116 - G117, Standard cutting conditions → G119

INSERT

JXPG**R/L-F (sharp edge)



Right hand (R) shown.

P	Steel	★				
M	Stainless	★				
K	Cast iron	★				
N	Non-ferrous	★				
S	Superalloys	★				
H	Hard materials	★				

★ : First choice
☆ : Second choice

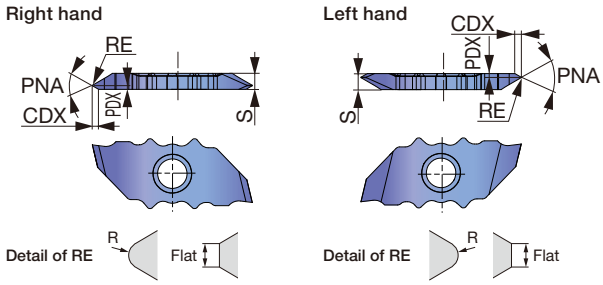
Designation	HAND	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	Coated						CUTDIA (mm)	INSL (mm)	PSIRR/L
					SH725								
JXPG06R10F	R	1	0.039	0.002	●						6	10.5	0°
JXPG06L10F	L	1	0.039	0.002	●						6	10.5	0°
JXPG06R15F	R	1.5	0.059	0.002	●						6	10.5	0°
JXPG06L15F	L	1.5	0.059	0.002	●						6	10.5	0°
JXPG06R10F-15	R	1	0.039	0.002	●						6	10.5	15°
JXPG06L10F-15	L	1	0.039	0.002	●						6	10.5	15°
JXPG06R15F-15	R	1.5	0.059	0.002	●						6	10.5	15°
JXPG06L15F-15	L	1.5	0.059	0.002	●						6	10.5	15°
JXPG12R15F	R	1.5	0.059	0.002	●						12	12.5	0°
JXPG12L15F	L	1.5	0.059	0.002	●						12	12.5	0°
JXPG12R20F	R	2	0.079	0.002	●						12	12.5	0°
JXPG12L20F	L	2	0.079	0.002	●						12	12.5	0°
JXPG12R15F-15	R	1.5	0.059	0.002	●						12	12.5	15°
JXPG12L15F-15	L	1.5	0.059	0.002	●						12	12.5	15°
JXPG12R20F-15	R	2	0.079	0.002	●						12	12.5	15°
JXPG12L20F-15	L	2	0.079	0.002	●						12	12.5	15°
JXPG16R15F	R	1.5	0.059	0.002	●						16	14.5	0°
JXPG16L15F	L	1.5	0.059	0.002	●						16	14.5	0°
JXPG16R20F	R	2	0.079	0.002	●						16	14.5	0°
JXPG16L20F	L	2	0.079	0.002	●						16	14.5	0°
JXPG16R15F-15	R	1.5	0.059	0.002	●						16	14.5	15°
JXPG16L15F-15	L	1.5	0.059	0.002	●						16	14.5	15°
JXPG16R20F-15	R	2	0.079	0.002	●						16	14.5	15°
JXPG16L20F-15	L	2	0.079	0.002	●						16	14.5	15°
JXPG20R15F	R	1.5	0.059	0.002	●						20	16.5	0°
JXPG20L15F	L	1.5	0.059	0.002	●						20	16.5	0°
JXPG20R20F	R	2	0.079	0.002	●						20	16.5	0°
JXPG20L20F	L	2	0.079	0.002	●						20	16.5	0°
JXPG20R15F-15	R	1.5	0.059	0.002	●						20	16.5	15°
JXPG20L15F-15	L	1.5	0.059	0.002	●						20	16.5	15°
JXPG20R20F-15	R	2	0.079	0.002	●						20	16.5	15°
JXPG20L20F-15	L	2	0.079	0.002	●						20	16.5	15°

● : Line up
CUTDIA: Max. parting-off dia.
Packing quantity = 5 pcs.

External
Internal
Grooving
Threading
Parting

Reference pages: Toolholders → G111 - G115, Standard cutting conditions → G119

JXTG12FR/L-60 (For Threading / Sharp edge)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	HAND	RE (mm)	Coated SH725	Pitches (mm)	PDX (mm)	CDX (mm)	S (mm)	PNA
JXTG12FR-60A-000	R	Flat 0.05 max	●	0.2 - 0.4	0.25	0.4	2.5	60°
JXTG12FL-60A-000	L	Flat 0.05 max	●	0.2 - 0.4	0.25	0.4	2.5	60°
JXTG12FR-60B-000	R	Flat 0.05 max	●	0.2 - 0.4	0.25	0.4	2.5	60°
JXTG12FL-60B-000	L	Flat 0.05 max	●	0.2 - 0.4	0.25	0.4	2.5	60°
JXTG12FR-60A-005	R	R 0.05	●	0.4 - 1	0.6	0.99	2.5	60°
JXTG12FL-60A-005	L	R 0.05	●	0.4 - 1	0.6	0.99	2.5	60°
JXTG12FR-60B-005	R	R 0.05	●	0.4 - 1	1.9	0.99	2.5	60°
JXTG12FL-60B-005	L	R 0.05	●	0.4 - 1	1.9	0.99	2.5	60°
JXTG12FR-60N-010	R	R 0.1	●	1 - 1.5	1.25	2.07	2.5	60°
JXTG12FL-60N-010	L	R 0.1	●	1 - 1.5	1.25	2.07	2.5	60°

● : Line up
Packing quantity = 5 pcs.

EDGE ORIENTATION AND DESCRIPTION OF THREADING INSERTS

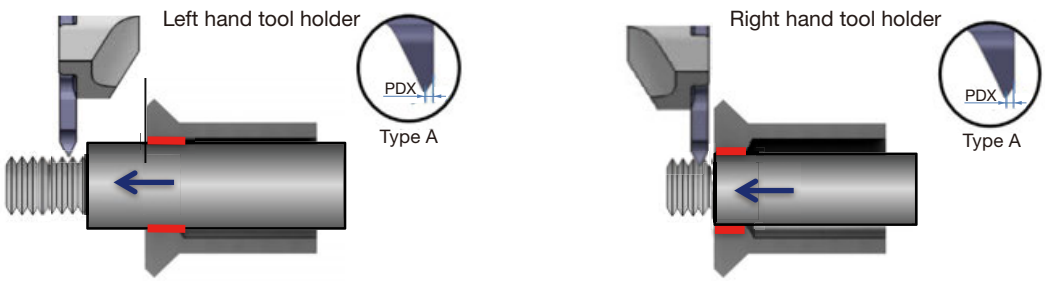
	Edge Orientation		
	Type A	Type B	Type N
Right hand	a > b	a < b	a = b
Left hand	a > b	a < b	a = b

JXTG 12 F R - 60 A - 005

- JXTG: Insert shape
- 12: Insert size
- F: sharp edge
- R: Hand
- 60: Thread angle
- A: Edge orientation
- 005: Corner radius

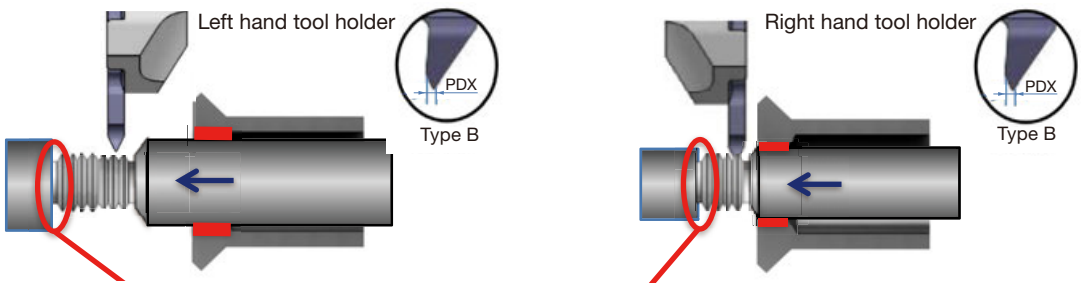
Reference pages: Toolholders → G111 - G115, Standard cutting conditions → G119

WHEN TO USE TYPE A AND TYPE B INSERT



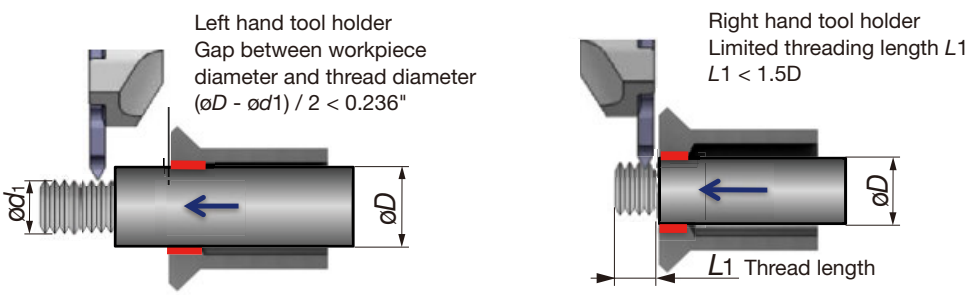
Threading close to the wall

Threading operation following back-turning

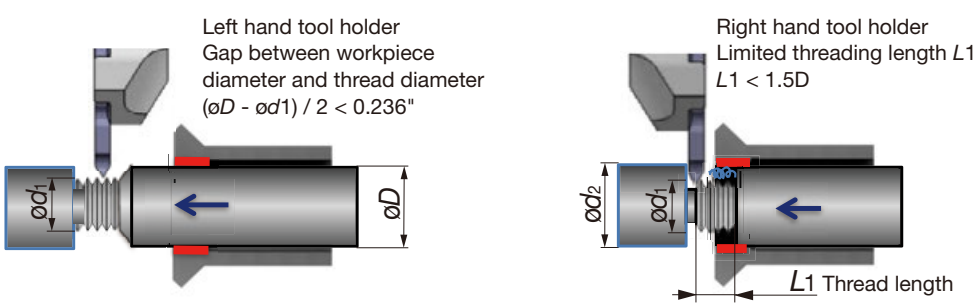


Undercutting needed in previous process

THREADING WORKPIECE IN MAIN SPINDLE



Threading operation following back-turning

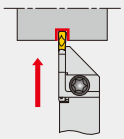


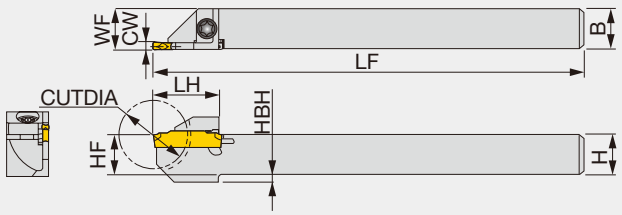
STANDARD CUTTING CONDITIONS (Parting-off)

ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steel 1015, etc.	SH725	164 - 656	0.0004 - 0.002
	Carbon steel, Alloy steel 1055, etc.	SH725	164 - 656	0.0004 - 0.002
	Free cutting steel SUH22, SUH23, etc.	SH725	164 - 656	0.0004 - 0.002
M	Stainless steel S30400, etc.	SH725	164 - 656	0.0004 - 0.002
N	Aluminium alloys 5056, 6061, etc.	SH725	492 - 656	0.0004 - 0.002
	Copper alloys C2600, C280C, etc.	SH725	328 - 656	0.0004 - 0.002
S	Titanium alloys Ti-6Al-4V, etc.	SH725	98 - 262	0.0004 - 0.002
	Superalloys Inconel718, etc.	SH725	98 - 262	0.0004 - 0.002

JCTER/L

External grooving and parting toolholder, for Swiss lathes





Insert
Seat size 1 = DGS1.4
Seat size 2, 3, = DGM, SGM, DGS, SGS, DGE, DTE, DGG, DGL

Right hand (R) shown.

Inch	CW (in)	CW (mm)	Seat size	CUTDIA	H	B	LF	LH	HF	WF (1)	HBH	Torque
JCTER/L08-2T12	0.079	2	2	0.945	0.500	0.500	4.750	0.748	0.500	0.504	0.079	2.21
JCTER/L08-3T12	0.118	3	3	0.945	0.500	0.500	4.750	0.748	0.500	0.512	0.079	2.21
JCTER/L10-2T16	0.079	2	2	1.260	0.625	0.625	4.750	0.945	0.625	0.629	-	2.21
JCTER/L10-3T16	0.118	3	3	1.260	0.625	0.625	4.750	0.945	0.625	0.637	-	2.21

Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF (1)	HBH	Torque*
JCTER/L1010X1.4T10	1.4	1	20	10	10	120	18	10	10.2	-	3
JCTER1010-1.4T10	1.4	1	20	10	10	125	18	10	10.2	-	3
JCTER/L1212F1.4T12	1.4	1	24	12	12	85	19.5	12	12.2	-	3
JCTER/L1212X1.4T12	1.4	1	24	12	12	120	19.5	12	12.2	-	3
JCTER1212-1.4T12	1.4	1	24	12	12	125	19.5	12	12.2	-	3
JCTER/L1414-1.4T12	1.4	1	24	14	14	125	19.5	14	14.2	-	3
JCTER/L1616X1.4T16	1.4	1	32	16	16	120	24	16	16.2	-	3
JCTER/L1010X2T10	2	2	20	10	10	120	19	10	10.1	2	3
JCTER/L1212F2T12	2	2	24	12	12	85	19	12	12.1	2	3
JCTER/L1212X2T12	2	2	24	12	12	120	19	12	12.1	2	3
JCTER/L1414-2T12	2	2	24	14	14	125	19	14	14.1	-	3
JCTER/L1616X2T16	2	2	32	16	16	120	24	16	16.1	-	3
JCTER/L1212F3T12	3	3	24	12	12	85	19	12	12.3	2	3
JCTER/L1212X3T12	3	3	24	12	12	120	19	12	12.3	2	3
JCTER/L1616X3T16	3	3	32	16	16	120	24	16	16.3	-	3
JCTER/L2020H3T16	3	3	32	20	20	100	24	20	20.3	-	3

(1) "WF" value is calculated with groove width "CW" shown in the table.
CUTDIA: Max. parting diameter
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS

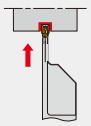
Designation	Clamping screw	Wrench
JCTER/L...	CSHB-4-A	T-15F

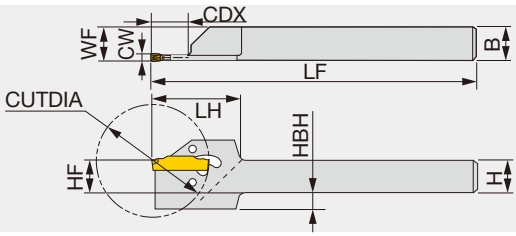
External
Internal
Grooving
Threading
Parting

Reference pages: JCTER/L: Inserts → G124 - G129, Standard cutting conditions → G130

TUNGCUT
CGER/L

External deep grooving and parting toolholder, for Swiss lathes





Insert
Seat size 1 = DGS1.4-016
Seat size 2, 3, 4, = DGM, SGM, DGS, SGS, SGN, DGG, DTM, DGL

Right hand (R) shown.

Metric	CW	Seat size	CUTDIA(1)	CDX	H	B	LF	LH	HF	WF (2)	HBH
CGER/L2020-1.4T14	1.4	1	29/29	9.7	20	20	125	31	20	20.2	-
CGER/L1212-2T17	2	2	35/35	11.8	12	12	150	31	12	12.1	6
CGER/L1616-2T17	2	2	35/35	11.8	16	16	150	31	16	16.1	2
CGER/L2020-2T17	2	2	35/35	9.8	20	20	125	31	20	20.1	-
CGER/L1212-3T19	3	3	38/40	12	12	12	150	31	12	12.3	6
CGER/L1616-3T19	3	3	38/45	14.9	16	16	150	31	16	16.3	2
CGER/L2020-3T19	3	3	38/45	13.2	20	20	125	31	20	20.3	-
CGER/L2020-4T19	4	4	38/55	20.3	20	20	125	33	20	20.4	-

Wrench (CRW**) is not included. Please order it separately. Insert is clamped by the elastic deformation of the upper jaw.
(1) DG*/SG* maximum parting diameter will depend on the insert.
(2) "WF" value is calculated with groove width "CW" shown in the table.

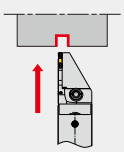
SPARE PARTS

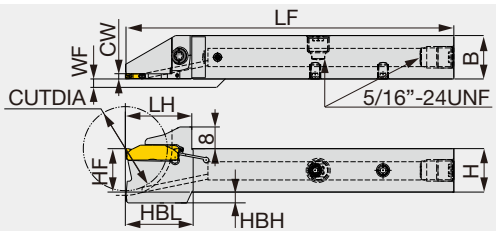
Designation	Wrench (Option)
CGER/L2020-1.4T14	CRW23
CGER/L****-2T17 - 4T19	CRW33

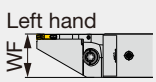
TUNGTJET URN
JCTER/L-CHP

TUNGCUT

External grooving and parting toolholder with high pressure coolant capability







Insert:
Seat size 2 = DGM, SGM, DGS, SGS, DGE, DGG, SGN

Right hand (R) shown.

Inch	CW (in)	CW (mm)	Seat size	CUTDIA	H	B	LF	LH	HBL	HF	WF (1)	HBH	Torque
JCTER/L08X2T12-CHP	0.079	2	2	0.984	0.500	0.500	4.750	0.972	0.965	0.500	0.000/0.500	0.169	2.21
JCTER/L10X2T12-CHP	0.079	2	2	0.984	0.625	0.625	4.750	0.972	0.965	0.625	0.000/0.625	0.039	2.21
JCTER/L10X2T16-CHP	0.079	2	2	1.260	0.625	0.625	4.750	0.972	0.965	0.625	0.000/0.625	0.157	2.21
JCTER/L12X2T16-CHP	0.079	2	2	1.260	0.750	0.750	4.750	0.972	0.965	0.750	0.000/0.750	0.037	2.21

Metric	CW	Seat size	CUTDIA	H	B	LF	LH	HF	WF (1)	HBH	HBL	Torque*
JCTER/L1212X2T12-CHP	2	2	25	12	12	120	24.7	12	0/12	5	24.7	3
JCTER/L1616X2T12-CHP	2	2	25	16	16	120	24.7	16	0/16	1	24.5	3
JCTER/L1616X2T16-CHP	2	2	32	16	16	120	24.7	16	0/16	4	24.7	3
JCTER/L2020X2T16-CHP	2	2	32	20	20	120	24.7	20	0/20	-	-	3

(1) "WF" value is calculated with groove width "CW" shown in the table. "WF" value depends on the tool hand. With 0/12, WF is 0 for the right hand and 12 for the left hand.
CUTDIA: Max. parting diameter
Torque: Recommended clamping torque: lbs·ft (*N·m)

SPARE PARTS






Designation	Clamping screw	Wrench 1	Coolant plug	Wrench 2	DirectJet plug	Wrench 3
JCTER/L...	CSHB-4-A	T-15F	SR5/16UNFTL360	P-4	SSHM4-6-TB	P-2

Groove width: 0.079" (2.0 mm)

Reference pages: CGER/L, JCTER/L-CHP: Inserts → G124 - G129, Standard cutting conditions → G130

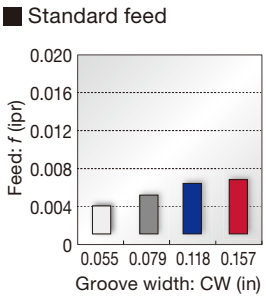
External grooving and parting

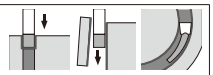
DGS type (2 corners) SGS type (1 corner)

G124, G127 page

For Swiss lathes

Unique-designed edge and chipbreaker
Handed insert available
CW = 0.055" - 0.157"



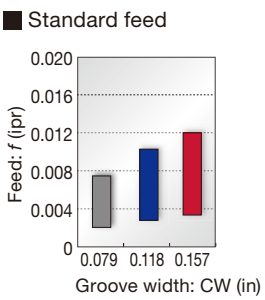


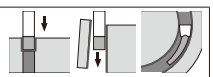
DGM type (2 corners) SGM type (1 corner)

G125, G126 page

High fracture resistance

Smooth chip evacuation
Well-designed edge with high strength
Handed insert available
CW = 0.079" - 0.157"



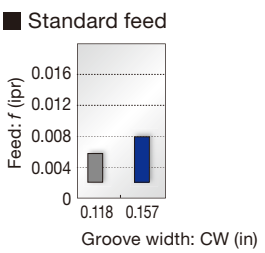


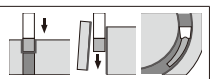
DGL type (2 corners)

G129 page

1st choice for mild steel

Chipbreaker with excellent chip control at low feed
Suitable for mild steel that often gives difficulties in chip control
CW = 0.118" - 0.157"



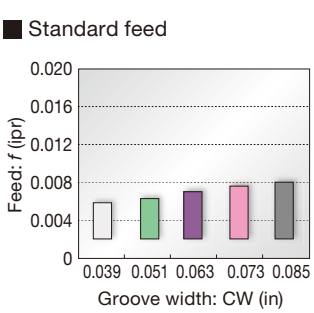


DGE type (2 corners)

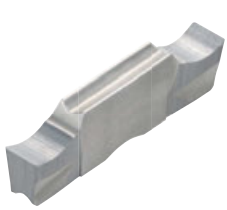
G128 page

For high accurate and shallow groove

Excellent chip control
CW = 0.039" - 0.085"



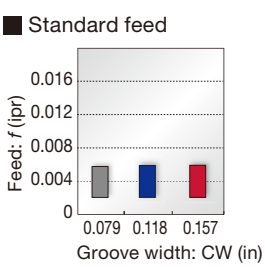
DGG type (2 corners)

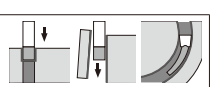


G128 page

For non-ferrous materials and titanium

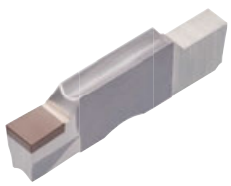
Chipbreaker with low cutting force
Sharp cutting edge that prevents vibration and delivers fine surface finish
CW = 0.079" - 0.157"





External grooving of hardened steel

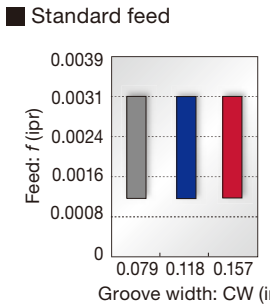
SGN-CBN type (1 corner)

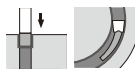


G129 page

For hardened steel cutting

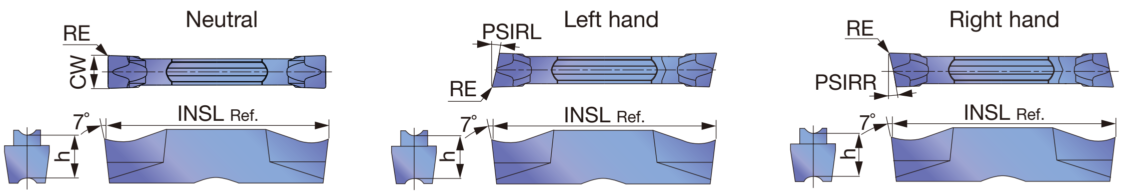
Optimum cutting edge shape for grooving of hardened steels
High tolerance width for finishing
CW = 0.079" - 0.157"
(CW = ±0.001")





DGS

External grooving and parting, 2 corners



		T9225	T9125	AH7025	AH725	GH130	NS9530
P	Steel	★	★	★	☆	☆	★
M	Stainless	★		★	☆	★	
K	Cast iron	☆		★		☆	☆
N	Non-ferrous						
S	Superalloys			★	☆		
H	Hard materials						

★ : First choice
☆ : Second choice

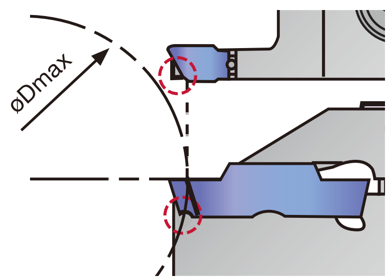
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated T9225	Coated T9125	Coated AH7025	Coated AH725	Coated GH130	Cermet NS9530	INSL (in)	h (in)	PSIRL	PSIRR
DGS1.4-016	1	N	1.4	0.055	0.006			●	●	●		0.630	0.169	0°	0°
DGS2-020	2	N	2	0.079	0.008	●	●	●	●	●	●	0.787	0.197	0°	0°
DGS2-020-6R	2	R	2	0.079	0.008			●	●	●		0.787	0.197	0°	6°
DGS2-020-6L	2	L	2	0.079	0.008			●	●	●		0.787	0.197	6°	0°
DGS2-002-6R	2	R	2	0.079	0.0008				●	●		0.768	0.197	0°	6°
DGS2-002-6L	2	L	2	0.079	0.0008				●	●		0.768	0.197	6°	0°
DGS2-020-15R	2	R	2	0.079	0.008			●	●	●		0.787	0.197	0°	15°
DGS2-020-15L	2	L	2	0.079	0.008			●	●	●		0.787	0.197	15°	0°
DGS2-002-15R	2	R	2	0.079	0.0008				●	●		0.768	0.197	0°	15°
DGS2-002-15L	2	L	2	0.079	0.0008				●	●		0.768	0.197	15°	0°
DGS3-020	3	N	3	0.118	0.008	●	●	●	●	●	●	0.787	0.197	0°	0°
DGS3-020-6R	3	R	3	0.118	0.008			●	●	●		0.787	0.197	0°	6°
DGS3-020-6L	3	L	3	0.118	0.008			●	●	●		0.787	0.197	6°	0°
DGS3-002-6R	3	R	3	0.118	0.0008				●	●		0.766	0.197	0°	6°
DGS3-002-6L	3	L	3	0.118	0.0008				●	●		0.766	0.197	6°	0°
DGS3-020-15R	3	R	3	0.118	0.008			●	●	●		0.787	0.197	0°	15°
DGS3-020-15L	3	L	3	0.118	0.008			●	●	●		0.787	0.197	15°	0°
DGS3-002-15R	3	R	3	0.118	0.0008				●	●		0.766	0.197	0°	15°
DGS3-002-15L	3	L	3	0.118	0.0008				●	●		0.766	0.197	15°	0°
DGS4-030	4	N	4	0.157	0.012	●	●	●	●	●	●	0.787	0.197	0°	0°
DGS4-030-4R	4	R	4	0.157	0.012			●	●	●		0.787	0.197	0°	4°
DGS4-030-4L	4	L	4	0.157	0.012			●	●	●		0.787	0.197	4°	0°
DGS5-030	5	N	5	0.197	0.012	●	●	●	●	●	●	0.984	0.217	0°	0°
DGS6-030	6	N	6	0.236	0.012	●	●	●	●	●		0.984	0.217	0°	0°

● : Line up

Caution

The tool will interfere with the workpiece when grooving larger diameter than øDmax.

Designation	øDmax (in)	Designation	øDmax (in)
DGM2-002-15R/L	1.102	DGS2-002-15R/L	1.102
DGM3-002-15R/L	1.141	DGS3-002-15R/L	1.141
DGM4-030-15R/L	1.181	SGS3-020-15R/L	4.055
SGM3-020-15R/L	4.055	SGS3-002-15R/L	1.338

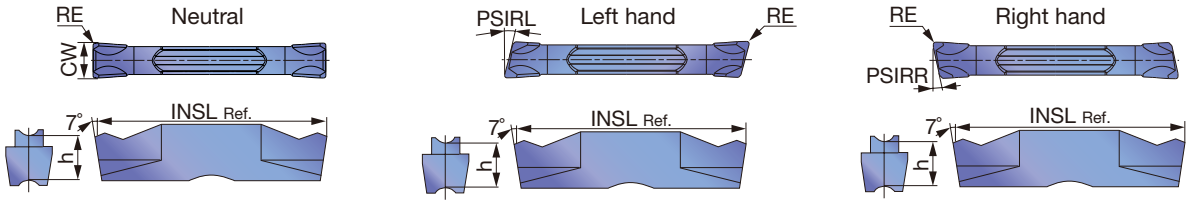


Reference pages: Toolholders → G121, Standard cutting conditions → G130

External
Internal
Grooving
Threading
Parting

DGM

External grooving and parting, 2 corners



P	Steel	★	★	★	☆		☆			★			
M	Stainless	★		★	☆		★						
K	Cast iron	☆		★		☆	☆			☆			
N	Non-ferrous												
S	Superalloys			★	☆	★							
H	Hard materials												

★ : First choice
☆ : Second choice

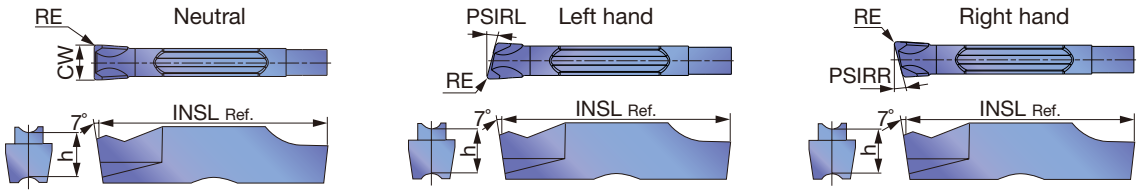
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							Cermet			INSL (in)	h (in)	PSIRL	PSIRR
						T9225	T9125	AH7025	AH725	AH905	GH130		NS9530						
DGM2-020	2	N	2	0.079	0.008	●	●	●	●		●		●			0.787	0.197	0°	0°
DGM2-020-6R	2	R	2	0.079	0.008			●	●		●					0.787	0.197	0°	6°
DGM2-020-6L	2	L	2	0.079	0.008			●	●		●					0.787	0.197	6°	0°
DGM2-020-8R	2	R	2	0.079	0.008			●	●		●					0.787	0.197	0°	8°
DGM2-020-8L	2	L	2	0.079	0.008			●	●		●					0.787	0.197	8°	0°
DGM2-020-15R	2	R	2	0.079	0.008			●	●		●					0.787	0.197	0°	15°
DGM2-020-15L	2	L	2	0.079	0.008			●	●		●					0.787	0.197	15°	0°
DGM2-002-15R	2	R	2	0.079	0.0008				●		●					0.762	0.197	0°	15°
DGM2-002-15L	2	L	2	0.079	0.0008				●		●					0.762	0.197	15°	0°
DGM3-020	3	N	3	0.118	0.008	●	●	●	●	●	●		●			0.787	0.197	0°	0°
DGM3-020-6R	3	R	3	0.118	0.008			●	●		●					0.787	0.197	0°	6°
DGM3-020-6L	3	L	3	0.118	0.008			●	●		●					0.787	0.197	6°	0°
DGM3-002-6R	3	R	3	0.118	0.0008				●		●					0.766	0.197	0°	6°
DGM3-002-6L	3	L	3	0.118	0.0008				●		●					0.766	0.197	6°	0°
DGM3-020-15R	3	R	3	0.118	0.008			●	●		●					0.787	0.197	0°	15°
DGM3-020-15L	3	L	3	0.118	0.008			●	●		●					0.787	0.197	15°	0°
DGM4-030	4	N	4	0.157	0.012	●	●	●	●	●	●		●			0.787	0.197	0°	0°
DGM4-030-4R	4	R	4	0.157	0.012			●	●		●					0.787	0.197	0°	4°
DGM4-030-4L	4	L	4	0.157	0.012			●	●		●					0.787	0.197	4°	0°
DGM4-030-15R	4	R	4	0.157	0.012			●	●		●					0.787	0.197	0°	15°
DGM4-030-15L	4	L	4	0.157	0.012			●	●		●					0.787	0.197	15°	0°
DGM5-030	5	N	5	0.197	0.012	●	●	●	●	●	●		●			0.984	0.217	0°	0°
DGM5-030-4R	5	R	5	0.197	0.012			●	●		●					0.984	0.217	0°	4°
DGM6-030	6	N	6	0.236	0.012	●	●	●	●	●	●					0.984	0.217	0°	0°
DGM8-040	8	N	8	0.315	0.016	●	●	●	●		●					1.181	0.264	0°	0°

● : Line up

Reference pages: Toolholders → G121, Standard cutting conditions → G130

SGM

External deep grooving and parting, 1corner



P	Steel	★	☆	☆			
M	Stainless	★	☆	★			
K	Cast iron	★		☆			
N	Non-ferrous						
S	Superalloys	★	☆				
H	Hard materials						

★ : First choice
☆ : Second choice

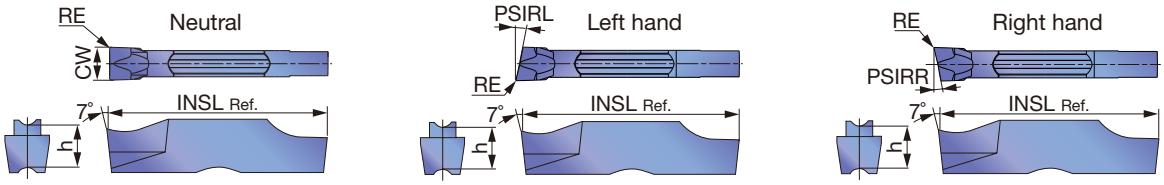
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated							INSL (in)	h (in)	PSIRL	PSIRR
						AH7025	AH725	GH130								
SGM2-020	2	N	2	0.079	0.008	●	●	●					0.787	0.197	0°	0°
SGM2-020-6R	2	R	2	0.079	0.008	●	●	●					0.787	0.197	0°	6°
SGM2-020-6L	2	L	2	0.079	0.008	●	●	●					0.787	0.197	6°	0°
SGM3-020	3	N	3	0.118	0.008	●	●	●					0.787	0.197	0°	0°
SGM3-020-6R	3	R	3	0.118	0.008	●	●	●					0.787	0.197	0°	6°
SGM3-020-6L	3	L	3	0.118	0.008	●	●	●					0.787	0.197	6°	0°
SGM3-020-15R	3	R	3	0.118	0.008	●	●	●					0.787	0.197	0°	15°
SGM3-020-15L	3	L	3	0.118	0.008	●	●	●					0.787	0.197	15°	0°
SGM4-030	4	N	4	0.157	0.012	●	●	●					0.787	0.197	0°	0°
SGM4-030-4R	4	R	4	0.157	0.012	●	●	●					0.787	0.197	0°	4°
SGM4-030-4L	4	L	4	0.157	0.012	●	●	●					0.787	0.197	4°	0°
SGM5-030	5	N	5	0.197	0.012	●	●	●					0.984	0.217	0°	0°
SGM6-030	6	N	6	0.236	0.012	●	●	●					0.984	0.217	0°	0°

● : Line up

Reference pages: Toolholders → G121, Standard cutting conditions → G130

SGS

External deep grooving and parting, 1corner



P	Steel	★	☆	☆
M	Stainless	★	☆	★
K	Cast iron	★		☆
N	Non-ferrous			
S	Superalloys	★	☆	
H	Hard materials			

★ : First choice
☆ : Second choice

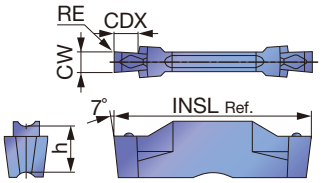
Designation	Seat size	HAND	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	Coated AH725	Coated GH130	INSL (in)	h (in)	PSIRL	PSIRR
SGS2-020	2	N	2	0.079	0.008	●	●	●	0.787	0.197	0°	0°
SGS2-020-6R	2	R	2	0.079	0.008	●	●	●	0.787	0.197	0°	6°
SGS2-020-6L	2	L	2	0.079	0.008	●	●	●	0.787	0.197	6°	0°
SGS2-020-15R	2	R	2	0.079	0.008	●	●	●	0.787	0.197	0°	15°
SGS2-020-15L	2	L	2	0.079	0.008	●	●	●	0.787	0.197	15°	0°
SGS3-020	3	N	3	0.118	0.008	●	●	●	0.787	0.197	0°	0°
SGS3-020-6R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	6°
SGS3-020-6L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	6°	0°
SGS3-002-6R	3	R	3	0.118	0.0008		●	●	0.780	0.197	0°	6°
SGS3-002-6L	3	L	3	0.118	0.0008		●	●	0.780	0.197	6°	0°
SGS3-020-15R	3	R	3	0.118	0.008	●	●	●	0.787	0.197	0°	15°
SGS3-020-15L	3	L	3	0.118	0.008	●	●	●	0.787	0.197	15°	0°
SGS3-002-15R	3	R	3	0.118	0.0008		●	●	0.780	0.197	0°	15°
SGS3-002-15L	3	L	3	0.118	0.0008		●	●	0.780	0.197	15°	0°
SGS4-030	4	N	4	0.157	0.012	●	●	●	0.787	0.197	0°	0°
SGS5-030	5	N	5	0.197	0.012	●	●	●	0.984	0.217	0°	0°
SGS6-030	6	N	6	0.236	0.012	●	●	●	0.984	0.217	0°	0°

● : Line up

Reference pages: Toolholders → G121, Standard cutting conditions → G130

DGE

External grooving (for high precision)



P	Steel	★	☆	☆			★		
M	Stainless	★	☆	★					
K	Cast iron	★		☆			☆		
N	Non-ferrous								
S	Superalloys	★	☆						
H	Hard materials								

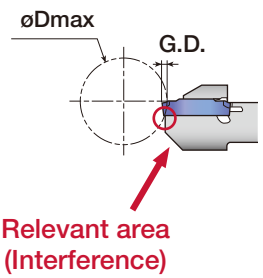
★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated			Cermet		CDX (in)	INSL (in)	h (in)
					AH7025	AH725	GH130	NS9530				
DGE100-000	2	1	0.039	0		●	●	●		0.098	0.787	0.197
DGE130-000	2	1.3	0.051	0		●	●	●		0.098	0.787	0.197
DGE160-010	2	1.6	0.063	0.004	●	●	●	●		0.098	0.787	0.197
DGE185-010	2	1.85	0.073	0.004	●	●	●	●		0.138	0.787	0.197
DGE215-015	2	2.15	0.085	0.006	●	●	●	●		0.138	0.787	0.197

● : Line up

Caution

øDmax is limited as shown in the picture to the right according to the groove depth, G.D. Please refer to the following table.

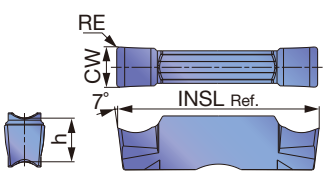


G.D = Groove depth

Designation	Max. groove depth (in)	øDmax (in)				
		G.D. = 0.039	G.D. = 0.059	G.D. = 0.079	G.D. = 0.098	G.D. = 0.118
DGE100-000	0.079	∞	0.73	0.45	-	-
DGE130-000						
DGE160-010						
DGE185-010	0.118				0.35	0.28
DGE215-015						

DGG

External grooving (for high precision)



P	Steel	★			★				
M	Stainless	★							
K	Cast iron	★			☆		☆		
N	Non-ferrous						★		
S	Superalloys	★					☆		
H	Hard materials								

★ : First choice
☆ : Second choice

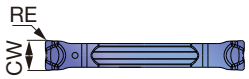
Designation	Seat size	CW±0.02 (mm)	CW±0.001 (in)	RE (in)	Coated	Cermet	Uncoated		INSL (in)	h (in)
					AH7025	NS9530	KS05F			
DGG200-020	2	2	0.079	0.008	●	●	●		0.787	0.197
DGG300-020	3	3	0.118	0.008	●	●	●		0.787	0.197
DGG400-040	4	4	0.157	0.016	●	●	●		0.787	0.197
DGG500-040	5	5	0.197	0.016	●	●	●		0.984	0.217
DGG600-040	6	6	0.236	0.016	●	●	●		0.984	0.217

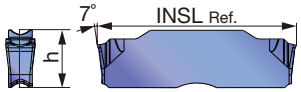
● : Line up

Reference pages: Toolholders → G121, Standard cutting conditions → G130

DGL

External grooving and parting





P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	★
H	Hard materials	

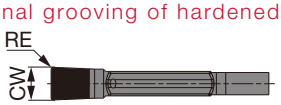
★ : First choice
☆ : Second choice

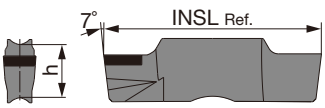
Designation	Seat size	CW±0.05 (mm)	CW±0.002 (in)	RE (in)	Coated AH7025	INSL (in)	h (in)
DGL3-025	3	3	0.118	0.010	●	0.787	0.197
DGL4-030	4	4	0.157	0.012	●	0.787	0.197
DGL5-030	5	5	0.197	0.012	●	0.984	0.217
DGL6-080	6	6	0.236	0.031	●	0.984	0.217

● : Line up

SGN

External grooving of hardened steel





P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	Seat size	CW±0.025 (mm)	CW±0.001 (in)	RE (in)	CBN BX360	INSL (in)	h (in)
SGN200-020	2	2	0.079	0.008	●	0.787	0.197
SGN300-020	3	3	0.118	0.008	●	0.787	0.197
SGN400-020	4	4	0.157	0.008	●	0.787	0.197

● : Line up

Reference pages: Toolholders → G121, Standard cutting conditions → G130

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Chipbreaker	Priority	Grade	Cutting speed *Vc* (sfm)
P	Steel 1045, 4135, etc.	< 300 HB	DGS	First choice	AH7025, AH725	164 - 591
		< 300 HB	DGM	Priority for wear resistance	T9225	262 - 984
		< 300 HB	DGM	Priority for wear resistance	T9125	262 - 656
		< 300 HB	DGS	Priority for fracture resistance	GH130	164 - 394
		< 300 HB	DGS	Priority for surface finish	NS9530	262 - 722
		< 300 HB	DGL	For mild steel Chip control	AH7025	164 - 591
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	< 200 HB	DGS	First choice	GH130	164 - 394
		< 200 HB	DGM	Priority for impact resistance	AH7025, AH725	164 - 394
K	Gray cast iron No.250B, No.300B, etc.	-	DGM	First choice	GH130	164 - 591
	Ductile cast iron 60-40-18, 60-55-06, etc.	-	DGM	First choice	GH130	164 - 394
N	Aluminum alloys Si < 12%	-	DGG	First choice	KS05F	328 - 1640
S	Titanium alloys Ti-6Al-4V, etc.	< HRC 40	DGM	First choice	AH905	66 - 262
		< HRC 40	DGS	Priority for fracture resistance	AH7025, AH725	66 - 262
H	Hardened steel 4137, etc.	> HRC 50	DGN	First choice	BX360	262 - 492

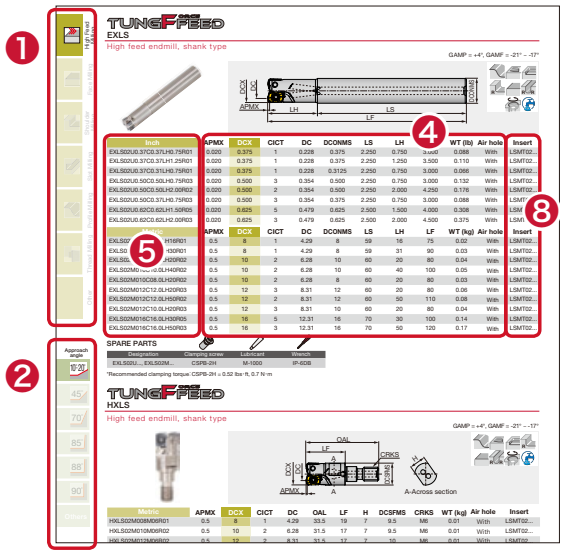
See page G122 - G123 for feed: *f* (ipr).

Reference pages: Toolholders → G121

Milling Cutter

Milling Cutter - Content structure

- Products are listed by application.
- Please refer the table of contents and the icons.



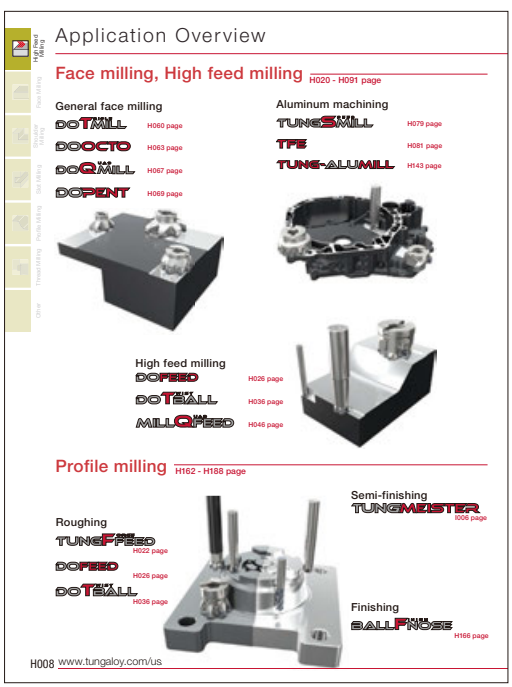
How to use the page

Method ①

Select the application (❶) and the approach angle (❷) at the left end of each page and choose a designation you need (❺) in the dimension table (❹). Applicable inserts are shown in (❽).

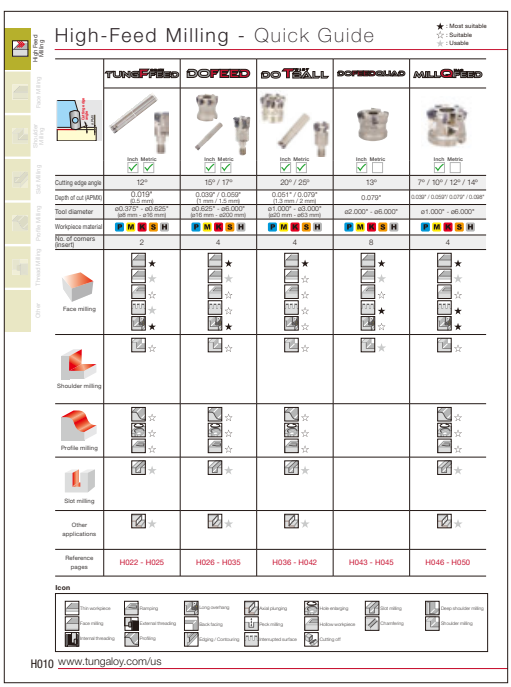
Method ②

Select the tool series name on **H008 – H009** and check the details on the product page.



Method ③

Select the tool series or the tool specification on **H010 - H019** and see the details on each page.



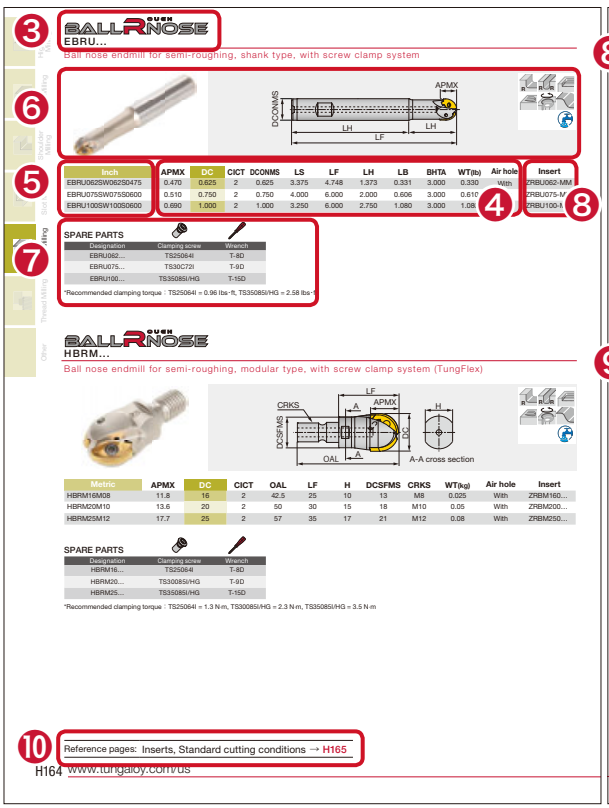
Icon

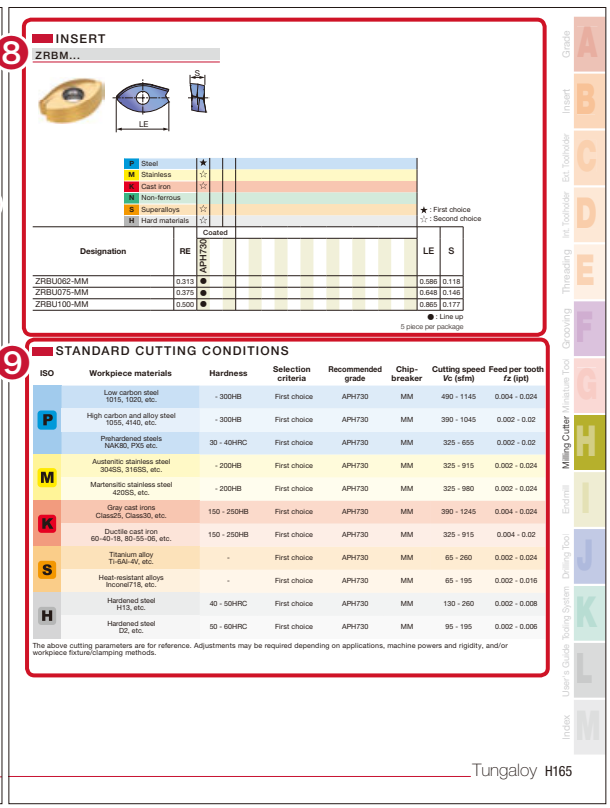
Approach angle

10°-20°	10° ~ 20°
45°	45°
70°	70°
85°	85°
88°	88°
90°	90°

Application

Thin workpiece	Deep shoulder milling	Chamfering
Ramping	Face milling	Shoulder milling
Long overhang	External threading	Internal threading
Axial plunging	Back facing	Profiling
Hole enlarging	Peck milling	Edging / Contouring
Slot milling	Hollow workpiece	Interrupted surface
		Cutting off





❶ : Application
❷ : Approach angle
❸ : Tool series name
❹ : Dimension table
❺ : Mill designation
❻ : Dimension drawing (conforming to ISO13399)
❼ : Spare parts
❽ : Insert
❾ : Standard cutting conditions
❿ : Reference page

Machining accuracy

F	Finishing
M	Medium cutting
R	Roughing
	Coolant hole

Workpiece material

P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloys
H	Hard material

When ordering
- Please specify the designation and quantity for mills.
  e.g. **TPW13R200U0075A03** ... 1 (one mill per package)
- Please specify the designation, grade, and quantity for inserts.
  e.g. **SWMT1304PDPR-MJ AH120** ... 10 (10 inserts per package)

*You will find a note if the number per package is not 10.

Designation system for Cutter

Symbol	Type
T	Bore type
E	Endmill type
L	Longedge type
H	Modular

❶ Type

Symbol	Type
TN	TN**
SN	SN**
LN	LN**
LS	LS**

❸ First alphabet of insert

Symbol	Type
B	Bore type
C	Cylindrical shank
M	Modular
W	Weldon shank
S	TungMeister

❼ Type of connection

Symbol	Size	Symbol	Size
B: Bore type Hole diameter		C: Cylindrical W: Weldon shank Shank diameter	
0.75	0.75 in	0.75	0.75 in
1.25	1.25 in	1.25	1.25 in
20.0	20 mm	10.0	10 mm
47.6	47.6 mm	25.0	25 mm
M: Modular Thread size		V: TungMeister Connection size	
06	M6	05	S05
10	M10	08	S08

❽ Attachment size

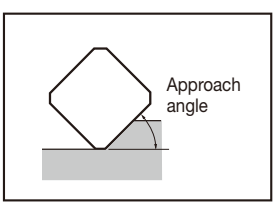
❿ No. of inserts

❶	❷	❸	❹	❺	❻	❼	❽	❾	❿
T	A	SN	13	U	3.00	B	1.00	R	08

❶	❷	❸	❹	❺	❻	❼	❽	❾	❿	⓫
E	P	TN	12	U	1.25	C	1.25	R	03	N

❷ Approach of cutter

Symbol	Type
A	40° ~ 45°
E	70°
H	88°
P	90°
X	High feed
F	Special
T	Thread mill



❹ Cutting edge length

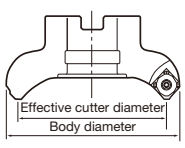
Symbol	Size (ℓ)
S	
T	
R	
H	
A	

❺ Unit

Symbol	Type
M	ISO
J	JIS
U	Inch

❻ Effective cutter diameter

Symbol	Size
M / J: Unit in mm	
080	80 mm
200	200 mm
U: Unit in inch	
2.00	2 in



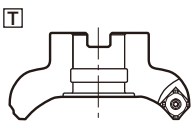
❾ Hand of cutter

Symbol	Hand
R	Right hand
L	Left hand
N	Neutral

⓫ Additional feature

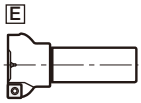
Symbol	Type
L	Long shank
N	No coolant hole

T



Bore type

E

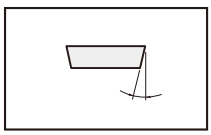


Shank type

Symbol	Type
T	Bore type
E	Shank type

① Type

H	Hybrid TAC Mill Series



Symbol	Relief angle
C	7°
P	11°
D	15°
E	20°
F	25°
N	0°
Others	Special

③ Relief angle

Symbol	Hand
R	Right
L	Left

⑤ Direction of cut

Symbol	Unit
M	mm
U	in

⑦ Unit

Symbol	Type
T~: General type	
–	JIS
E	ISO
A	ANSI
E~: Shank type	
–	Cylindrical
W	Weldon
C	Combination

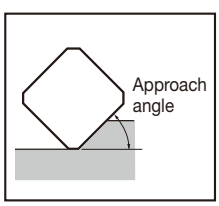
⑨ Attachment specification

⑩ Number of inserts

①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩
T	P	A	10	R	200	U	0075	A	04

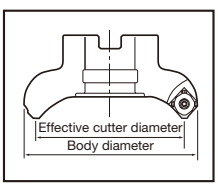
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪
E	P	A	15	R	150	U	0125	W	02	L

② Angle, Category	
Symbol	Cutting edge angle
P	90° ~ 80°
E	80° ~ 70°
D	60° ~ 50°
A	50° ~ 40°
L	With long cutting edge
Others	Special



④ Cutting edge length	
Symbol	Size (ℓ)
S	
T	
R	
H	
A	

⑥ Effective cutter diameter	
Symbol	Size
M: Unit in mm	
080	80 mm
200	200 mm
I: Unit in inch	
200	2 in



⑧ Attachment size	
Symbol	Size
M: Unit in mm Hole diameter	
20.0	20 mm
25.4	25.4 mm
31.7	31.75 mm
47.6	47.625 mm
I: Unit in inch Hole diameter	
0075	0.75 in
0125	1.25 in
0200	2 in
E~: Shank type Shank diameter	
10.0	10 mm
12.0	12 mm
16.0	16 mm
25.0	25 mm
32.0	32 mm

⑪ Additional feature	
Symbol	Type
W	Wedge clamp
L	Long shank
LE	Long edge
CS	Carbide shank
N	No coolant hole

Designation system for Insert

Symbol	Hole	Shape of hole	Chipbreaker	Shape
N	Without	–	Without	
R			Single-sided	
F			Double-sided	
W	With	Partly cylindrical hole, single-side 40° ~ 60° Counter sink	Without	
T			Single-sided	
Q		Partly cylindrical hole, double-side 40° ~ 60° Counter sink	Without	
U			Double-sided	
B		Partly cylindrical hole, single-side 70° ~ 90° Counter sink	Without	
H			Single-sided	
C		Partly cylindrical hole, double-side 70° ~ 90° Counter sink	Without	
J			Double-sided	
X	-	-	-	

④ Groove and hole

Shape	Cutting edge length (ℓ)
S	
T	
R	
H	
A	

⑤ Cutting edge length

Symbol	Thickness (mm)
02	2.38
03	3.18
T3	3.97
04	4.76
05	5.56
06	6.35
07	7.94
09	9.52

Thickness

⑥ Thickness

(Example)

Metric

①	②	③	④	⑤
P	N	C	U	09

(Example)

Inch

①	②	③	④	⑤
S	D	K	N	4

① Shape

Symbol	Shape	Nose angle (degree)	Figure
H	Hexagonal	120°	
S	Square	90°	
T	Triangular	60°	
C	Rhombic	80°	
E		75°	
G		70°	
L	Rectangular	90°	
A	Parallelogram	85°	
R	Round		
W	Wiper	80°	
W	Special	-	
O	Octagonal	135°	
P	Pentagonal	108°	
X	Special	Others	
Y	Special		
Z	Special		

② Relief angle

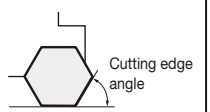
Symbol	Relief angle
C	7°
D	15°
E	20°
F	25°
G	30°
M	Others
N	0°
P	11°
Q	Other applications
O	Other applications
X	Other applications
S	Other applications
W	2-step relief

③ Accuracy (mm)

Symbol (class)	Corner height (m)	Thickness (s)	I. C. dia. (ød)
A	± 0.005	± 0.025	± 0.025
C	± 0.013	± 0.025	± 0.025
E	± 0.025	± 0.025	± 0.025
G	± 0.025	± 0.13	± 0.025
H	± 0.013	± 0.025	± 0.013
K	± 0.013	± 0.025	± 0.05 ~ ± 0.13
M	± 0.08 ~ ± 0.18	± 0.13	± 0.05 ~ ± 0.13
N	± 0.08 ~ ± 0.18	± 0.025	± 0.05 ~ ± 0.13

Standard I. C. dia.	I. C. dia. (ød) tolerance		Corner height (mm) tolerance	
	J, K, L, M, N	U	M, N	U
6.35	± 0.05	± 0.08	± 0.08	± 0.13
9.525				
12.7	± 0.08	± 0.13	± 0.13	± 0.2
15.875	± 0.1	± 0.18	± 0.15	± 0.27
19.05				
25.4	± 0.13	± 0.25	± 0.18	± 0.38

Symbol	Cutting edge angle
A	45°
D	60°
E	75°
F	85°
G	70°
H	87°
P	90°
U	Special, small entering angle
Z	Special, universal



⑦ Cutting edge angle

Symbol	Relief angle
A	3°
B	5°
C	7°
D	15°
E	20°
F	25°
G	30°
N	0°
P	11°
Z	Special

⑧ Wiper relief angle

Symbol	Cutting edge	Shape
F	Sharp	
E	Round	
T	Chamfer	
S	Combination	
P	Combination	

⑨ Major cutting edge

Symbol	Hand of insert
R	Right
L	Left
N	Without

⑩ Hand of insert

Symbol	Description
HM	General-purpose high feed milling chipbreaker
MM	General-purpose milling chipbreaker
MW	Milling insert with wiper edge
B	Milling insert for burr removal
D	Insert with diamond sintered body
W	Wiper insert (multiple corners)
WS	Wiper insert (single corner)
WD	Wiper insert (with diamond sintered body)
BD	Wiper for burr removal (diamond sintered body)
MJ	General-purpose milling chipbreaker
MH	Milling chipbreaker with reinforced cutting edge
ML	Milling chipbreaker for low cutting force
MS	Milling chipbreaker for stainless steel
HJ	High feed milling chipbreaker
AJ	Milling chipbreaker for non-ferrous metal
NMJ	General-purpose milling chipbreaker with serration
NAJ	Milling chipbreaker with serration for non-ferrous metal

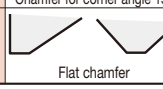
⑪ Supplementary symbol

⑥	⑦	⑧	⑨	⑩		⑪
05	G	N	E	R	-	MJ
2	Z		T	N		16
⑥	⑦		⑨	⑩		⑪

④ Groove and hole		
Symbol	Shape of hole	Hole
A	Without	With
F	Double side	Without
G	Double side	With
M	Single side	With
N	Without	With
U	Without	Without
W	Without	With

⑤ Inscribed circle (I. C.)		
Symbol		I. C. dia. (mm)
Inch	3	9.525
	4	12.7
	5	15.875
	6	19.05

⑥ Thickness		
Symbol		Thickness (mm)
Inch	2	3.18
	3	4.76
	4	6.35
	6	9.52

⑦ Corner radius	
Symbol	Corner radius (mm)
1	0.4 (0.397)
2	0.8 (0.794)
3	1.2 (1.191)
4	1.6 (1.588)
5	2.0 (1.984)
6	2.4 (2.381)
Symbol	Description
F	Special design (e.g. for MS cutter)
H	 Chamfer for corner angle 60°
S	 Chamfer for corner angle 15°
Z	 Flat chamfer

*For wiper inserts, the designation uses “W” as the shape symbol of inch items. For metric items, the shape symbol is the same as that of regular inserts, and a supplementary symbol, such as W, WS, and WD, is at the end of each designation.

Application Overview

Face milling, High feed milling

H020 - H091 page

General face milling

DOTRIPLEMILL H060 page

DOOCTO H063 page

DOQUADMILL H067 page

DOPENT H069 page

Aluminum machining

TUNGSPEEDMILL H079 page

TFE H081 page

TUNG-ALUMILL H143 page

High feed milling

DOFEED H026 page

DOTWISTBALL H036 page

MILLQUADFEED H046 page

Profile milling

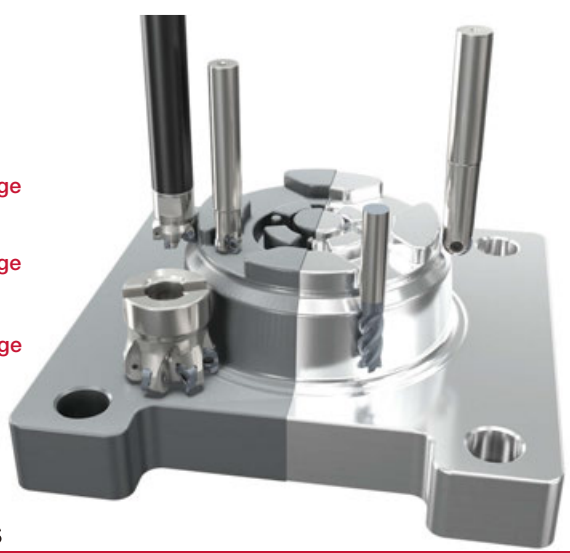
H162 - H188 page

Roughing

TUNGFORCEFEED H022 page

DOFEED H026 page

DOTWISTBALL H036 page



Semi-finishing

TUNGMEISTER I019 page

Finishing

BALLFINISHNOSE H166 page

Shoulder milling

H092 - H149 page

Shoulder milling (double side)

DOFTRI H094 page

DOREC H136 page

TECMILL H140 page

Shoulder milling (single side)

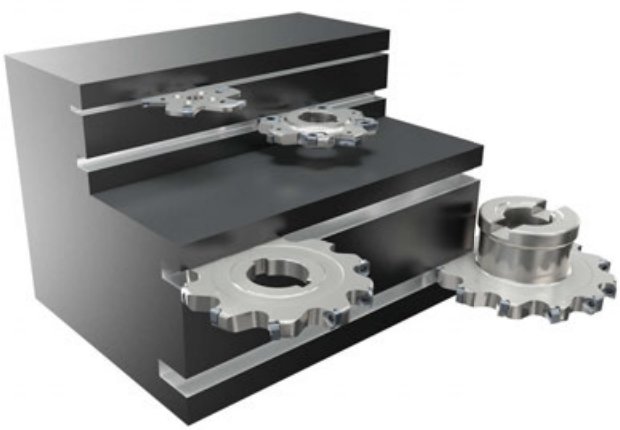
TUNG-TRI H097 page

TUNGTSHRED H108 page

TUNGFREC H111 page

Other applications

H150 - H161 page



Slot milling

TUNGMSLIT H151 page

TUNGTSLIT H155 page

TUNGUSLOT H157 page

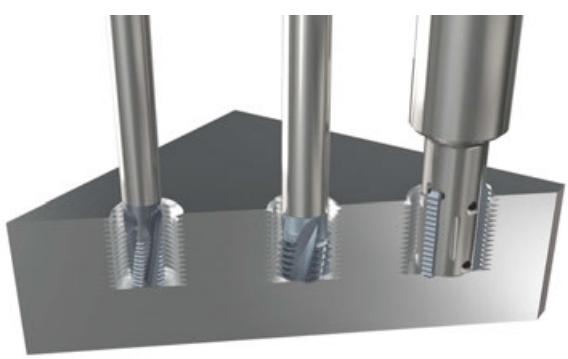
TECTSLOT H159 page

Thread milling

H190, H204, H210 page

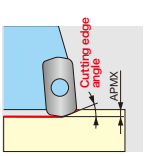
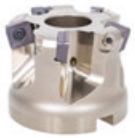
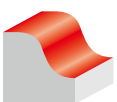
TUNGMEISTER

I006 page



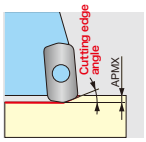
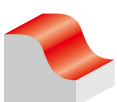
High-Feed Milling - Quick Guide

★ : Most suitable
☆ : Suitable
★ : Usable

	TUNGFORCEFEED	DOFEED	DOTWISTBALL	DOFEEDQUAD	MILLQUADFEED
	  Inch Metric ✓ ✓	 Inch Metric ✓ ✓	 Inch Metric ✓ ✓	 Inch Metric ✓ ☐	 Inch Metric ✓ ☐
Cutting edge angle	12°	15° / 17°	20° / 25°	13°	7° / 10° / 12° / 14°
Depth of cut (APMX)	0.019" (0.5 mm)	0.039" / 0.059" (1 mm / 1.5 mm)	0.051" / 0.079" (1.3 mm / 2 mm)	0.079"	0.039" / 0.059" / 0.079" / 0.098"
Tool diameter	ø0.375" - ø0.625" (ø8 mm - ø16 mm)	ø0.625" - ø6.000" (ø16 mm - ø200 mm)	ø1.000" - ø3.000" (ø20 mm - ø63 mm)	ø2.000" - ø6.000"	ø1.000" - ø6.000"
Workpiece material	P M K S H	P M K S H	P M K S H	P M K S H	P M K S H
No. of corners (insert)	2	4	4	8	4
 Face milling	★ ★ ☆ ★ ★	★ ★ ☆ ☆ ★	★ ★ ☆ ☆ ☆	★ ★ ☆ ★ ☆	★ ★ ☆ ★ ★
 Shoulder milling	☆	☆	☆	★	☆
 Profile milling	☆ ☆ ☆	☆ ☆ ☆	☆ ☆ ☆		☆ ☆ ☆
 Slot milling	★	★	★		★
Other applications	★	★	★		★
Reference pages	H022 - H025	H026 - H035	H036 - H042	H043 - H045	H046 - H050

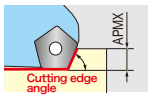
Icon

Thin workpiece	Ramping	Long overhang	Axial plunging	Hole enlarging	Slot milling	Deep shoulder milling
Face milling	External threading	Back facing	Peck milling	Hollow workpiece	Chamfering	Shoulder milling
Internal threading	Profiling	Edging / Contouring	Interrupted surface	Cutting off		

	MILLFEED TXP				
	 Inch ✓ Metric ☐				
Cutting edge angle	10° / 15° / 20°				
Depth of cut (APMX)	0.060" / 0.118"				
Tool diameter	ø0.750" - ø6.000"				
Workpiece material	P M K H				
No. of corners (insert)	3				
 Face milling	 ★ ★ ☆ ★ ★				
 Shoulder milling	 ☆				
 Profile milling	 ☆ ☆ ☆				
 Slot milling	 ★				
Other applications	 ★				
Reference pages	H051 - H056				

Face Milling - Quick Guide

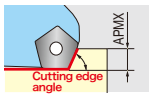
★ : Most suitable
☆ : Suitable
★ : Usable

	DO TRIPLE MILL	DOOCTO	DOPENT	DO QUAD MILL	TUNGMILL
					
	Inch ✓ Metric ☐	Inch ✓ Metric ☐	Inch ✓ Metric ☐	Inch ✓ Metric ☐	Inch ✓ Metric ✓
Cutting edge angle	45°	44° / 45° / 15°	70°	88°	30°~45°
Depth of cut (APMX)	0.236" / 0.134"	0.187" / 0.295" / 0.138" / 0.059"	0.252"	0.375"	0.157" / 0.197" / 0.079"
Tool diameter	ø2.000" - ø6.000"	ø2.500" - ø8.000"	ø1.250" - ø6.000"	ø2.000" - ø4.000"	ø2.000" - ø6.000"
Workpiece material	P M K S H	P M K S H	P M K N S	P M K S H	P M K S N
No. of corners (insert)	8 / 16	8 / 16	10	8	4
Face milling	★ ☆ ★ ★	★ ★ ★ ★	★ ★ ☆ ☆	★ ★ ☆ ☆	★ ★ ★ ★
Shoulder milling				★	
Profile milling	★				
Slot milling				★	
Other applications	☆	☆			☆
Reference pages	H060 - H062	H063 - H066	H069 - H071	H067 - H068	H074 - H078

Icon

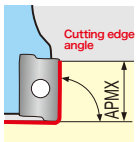
Thin workpiece · Ramping · Long overhang · Axial plunging · Hole enlarging · Slot milling · Deep shoulder milling
Face milling · External threading · Back facing · Peck milling · Hollow workpiece · Chamfering · Shoulder milling
Internal threading · Profiling · Edging / Contouring · Interrupted surface · Cutting off

★ : Most suitable
☆ : Suitable
★ : Usable

	TFE	TUNGSMILL	DPD EDPD
	 Inch ✓ Metric ✓	 Inch ✓ Metric ☐	 Inch ☐ Metric ✓
Cutting edge angle	85°	90°	90°
Depth of cut (APMX)	0.315" / 0.138" / 0.059"	0.177"	8 mm
Tool diameter	ø2.000" - ø4.000"	ø2.500" - ø6.000"	ø63 mm - ø160 mm
Workpiece material	P M K N	N	N
No. of corners (insert)	4 / 1 / 2	1	1
 Face milling	★ ★ ★ ☆	★ ★ ★ ☆	★ ☆ ★ ☆
 Shoulder milling		★	★
 Profile milling			
 Slot milling			
Other applications			
Reference pages	H081 - H084	H079 - H080	H085 - H086

Shoulder milling - Quick Guide

★ : Most suitable
☆ : Suitable
★ : Usable

	TUNGFREC	TUNGREC		TUNG-TRI	
	  Inch Metric ✓ ✓	 Inch Metric ✓ ✓	Roughing  Inch Metric ✓ ☐	 Inch Metric ✓ ✓	Roughing  Inch Metric ✓ ☐
Cutting edge angle	90°	90°	90°	90°	90°
Depth of cut (APMX)	0.236" (6 mm)	0.276" / 0.417" / 0.657" (7 mm / 10.6 mm / 16.7 mm)	1.197" - 1.921"	0.236" / 0.394" / 0.590" (6 mm / 10 mm / 15 mm)	1.102" - 3.268"
Tool diameter	ø0.315" - ø1.000" (ø8 mm - ø40 mm)	ø0.500" - ø6.000" (ø12 mm - ø160 mm)	ø1.000" - ø2.000"	ø0.500" - ø6.000" (ø12 mm - ø160 mm)	ø2.000" - ø4.000"
Workpiece material	P M K N S H	P M K N S	P M K N S	P M K N S	P M K N S
No. of corners (insert)	2	2	2	3	3
Face milling	★ ☆ ★ ☆ ☆	☆ ☆ ★ ★ ★	★ ★ ★ ★ ★	★ ☆ ★ ★ ☆	★ ★ ★ ★ ☆
Shoulder milling	★ ★ ★	★ ☆ ★	★ ☆ ★	★ ★ ☆	★ ★ ★
Profile milling	★ ☆ ☆	★ ☆ ★	★ ★ ★	★ ★ ☆	★ ★ ★
Slot milling	★	☆		★	
Other applications	★	★		★	
Reference pages	H111 - H115	H116 - H128		H097 - H107	

Icon

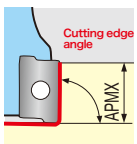
Thin workpiece · Ramping · Long overhang · Axial plunging · Hole enlarging · Slot milling · Deep shoulder milling
Face milling · External threading · Back facing · Peck milling · Hollow workpiece · Chamfering · Shoulder milling
Internal threading · Profiling · Edging / Contouring · Interrupted surface · Cutting off

★ : Most suitable
☆ : Suitable
★ : Usable

	TUNGTSHRED	TUNGTSHRED Roughing	TUNGQUAD	TUNGQUAD Roughing	TUNG-ALUMILL
					
	Inch ✓ Metric ☐	Inch ✓ Metric ☐	Inch ✓ Metric ✓	Inch ✓ Metric ☐	Inch ✓ Metric ☐
Cutting edge angle	90°	90°	90°	90°	90°
Depth of cut (APMX)	0.630"	2.402" - 2.992"	0.157" (4 mm)	0.799" - 0.953"	0.512" - 0.630"
Tool diameter	ø2.000" - ø4.000"	ø2.500" - ø3.000"	ø0.500" - ø2.000" (ø12 mm - ø40 mm)	ø0.750" - ø1.000"	ø1.000" - ø5.000"
Workpiece material	P M K S	P M K S	P M K N S	P M K N S	N
No. of corners (insert)	3	3	4	4	2
Face milling	☆ ★ ★ ☆ ★	★ ★ ★ ☆ ★	☆ ☆ ★ ★ ★	★ ★ ★ ★ ★	★ ★ ★ ★ ☆
Shoulder milling	★ ★ ☆	☆ ★ ☆	★ ★ ☆	★ ☆ ★	★ ★ ★
Profile milling					★ ★ ★
Slot milling	★	★	★		★
Other applications			★		☆
Reference pages	H108 - H110	H108	H129 - H131		H143 - H145

Shoulder milling - Quick Guide

★ : Most suitable
☆ : Suitable
★ : Usable

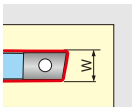
	TUNGMILL	DOFTRI	DOREC	TECMILL	
	  Inch ✓ Metric ✓	 Inch ✓ Metric ☐	 Inch ✓ Metric ☐	 Inch ✓ Metric ☐	Roughing  Inch ✓ Metric ☐
Cutting edge angle	90°	90°	90°	90°	90°
Depth of cut (APMX)	0.394" (10 mm)	0.433"	0.354" / 0.630"	0.381" / 0.594"	2.303" / 2.634"
Tool diameter	ø2.000" - ø6.000" (ø32 mm - ø200 mm)	ø0.750" - ø6.000"	ø1.000" - ø6.000"	ø1.250" - ø5.000"	ø2.000" - ø2.500"
Workpiece material	P M K N S H	P M K S H	P M K S H	P M K S H	P M K S H
No. of corners (insert)	4	6	4	4	4
Face milling	☆ ☆ ★ ★ ☆	★ ☆ ★ ★ ☆	★ ★ ★ ★ ★	☆ ★ ★ ★ ★	★ ★ ★ ★ ★
Shoulder milling	★ ★ ★	★ ★ ☆	★ ★ ☆	★ ★ ★	★ ☆ ☆
Profile milling			★ ★ ★		
Slot milling	★	☆	★		
Other applications	★	★	☆	☆	
Reference pages	H132- H135	H094 - H096	H136 - H139	H1140 - H142	

Icon

Thin workpiece · Ramping · Long overhang · Axial plunging · Hole enlarging · Slot milling · Deep shoulder milling
Face milling · External threading · Back facing · Peck milling · Hollow workpiece · Chamfering · Shoulder milling
Internal threading · Profiling · Edging / Contouring · Interrupted surface · Cutting off

Slot milling - Quick Guide

★ : Most suitable
☆ : Suitable
★ : Usable

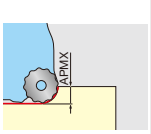
	TUNGMSLIT	TUNGTSLIT	TUNGUSLOT	TECTSLOT	TUNGMEISTER
					
	Inch ✓ Metric ✓	Inch ✓ Metric ✓	Inch ✓ Metric ✓	Inch ✓ Metric ☐	Inch ✓ Metric ✓
Depth of cut (W)	1.6 mm - 4.1 mm	0.250" - 0.313" (4 mm - 8 mm)	0.375" - 0.625"	0.630" - 0.984"	0.030" - 0.394"
Tool diameter	ø63 - ø125	ø3.000" - ø8.000" (ø80 mm - ø200 mm)	ø3.000" - ø6.000"	ø3.937" - ø9.843"	ø0.500" - ø1.000" (ø15.7 mm - ø27.7 mm)
Workpiece material	P M K	P M K S	P M K S	P M K S	P M K N S
No. of corners (insert)	1	6	6	4	1
Face milling	★ ★ ★ ★ ★	★ ★ ★ ★ ★	☆ ★ ★ ★ ☆	☆ ★ ★ ★ ☆	★ ★ ★ ★ ★
Shoulder milling	★ ★	★ ★	☆ ☆ ★	☆ ☆ ★	★ ★
Profile milling					
Slot milling	★	★	★	★	★
Other applications	★	★			
Reference pages	H151 - H154	H155 - H156	H157 - H158	H159 - H160	H204 - H205

Icon

Thin workpiece	Ramping	Long overhang	Axial plunging	Hole enlarging	Slot milling	Deep shoulder milling
Face milling	External threading	Back facing	Peck milling	Hollow workpiece	Chamfering	Shoulder milling
Internal threading	Profiling	Edging / Contouring	Interrupted surface	Cutting off		

Profile milling - Quick Guide

★ : Most suitable
☆ : Suitable
★ : Usable

	DO TWIST BALL	ROUNDSPLIT	BALL ROUGH NOSE	BALL FINISH NOSE	DO MINI MILL
	  Inch ✓ Metric ✓	 Inch ✓ Metric ☐	 Inch ✓ Metric ✓	 Inch ✓ Metric ✓	 Inch ☐ Metric ✓
Depth of cut (APMX)	0.157" / 0.236" (4 mm / 5 mm / 6 mm)	0.236" / 0.315"	0.470" / 0.510" / 0.690" (11.8 mm / 13.6 mm / 17.7 mm)	0.157" / 0.630" (4 mm - 16 mm)	1 mm
Tool diameter	ø1.000" - ø3.000" (ø20 mm - ø63 mm)	ø1.250" - ø5.000"	ø0.625" - ø1.000" (ø16 mm - ø25 mm)	ø0.375" - ø1.250" (ø8 mm - ø32 mm)	ø16 - ø25
Workpiece material	P M K S H	P M K N S	P M K S H	P M K N S H	P H
No. of corners (insert)	4	4 / 8	2	1	6
Face milling	☆ ☆ ☆	☆ ☆ ★	★ ☆ ☆	★ ★ ☆	★ ★ ☆
Shoulder milling	★	☆	☆	☆	☆
Profile milling	★ ★ ☆	★ ☆ ☆	★ ☆ ☆	★ ☆ ☆	★ ☆ ★
Slot milling	☆	☆	★	★	★
Other applications	★	★	★	★	☆
Reference pages	H036 - H042	H177 - H181	H164 - H165	H166 - H170	H171

Icon

Thin workpiece
Face milling
Internal threading
Ramping
External threading
Profiling
Long overhang
Back facing
Edging / Contouring
Axial plunging
Peck milling
Interrupted surface
Hole enlarging
Hollow workpiece
Cutting off
Slot milling
Chamfering
Deep shoulder milling
Shoulder milling

Thread milling - Quick Guide

★ : Most suitable
☆ : Suitable
★ : Usable

	SOLIDTHREAD	TUNGMEISTER	THREADMILLING	
			ETTL, ETLN	Thread milling cutter
	 Inch ☐ Metric ☑	 Inch ☐ Metric ☑	 Inch ☐ Metric ☑	 Inch ☐ Metric ☑
Pitch	0.25 - 3.5	0.5 - 4.5	1 - 3	1.5 - 6
Tool diameter	ø0.7 - ø20	ø10 - ø21.7	ø17 - ø30	ø23 - ø80
Workpiece material	P M K S	P M K S	P M K S	P M K
No. of corners (insert)	-	-	1 / 2	2
Thread milling	★ ★	★ ★	★ ★	★ ★
Reference pages	H191 - H209	H204 - H205	H210 - H213	H214 - H215

Icon

Thin workpiece
Face milling
Internal threading
Ramping
External threading
Profiling
Long overhang
Back facing
Edging / Contouring
Axial plunging
Peck milling
Interrupted surface
Hole enlarging
Hollow workpiece
Cutting off
Slot milling
Chamfering
Deep shoulder milling
Shoulder milling

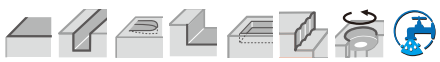
DOFEED

Innovative high-feed cutters!

DoFeed offers outstanding productivity thanks to its close-pitch insert orientation and light cutting geometry. The rich lineup is suitable for a wide variety of applications.

Outstanding productivity

Excellent chip evacuation prevents chip packing



Optimized coolant jet delivery effectively removes chips and prevents it from re-cutting

Large inclination forms ideal chips and controls the chips flow

DOFEED

Good
Curl consistently at ideal length

Competitor
Poor
Crushed or unstable

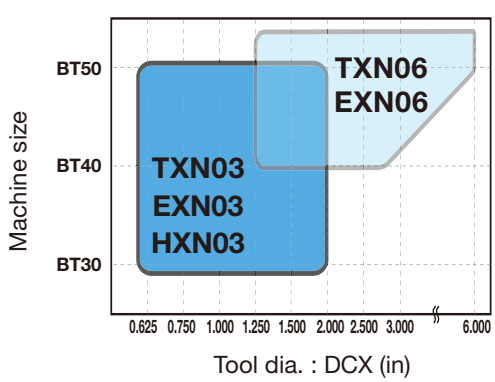
P
Steel

Cutter	: TXN06R200U0075A05
Insert	: LNMU06X5ZER-MJ
Grade	: AH725
Workpiece material	: Carbon steels (1055)
Cutting speed	: *Vc* = 590 sfm
Feed per tooth	: *fz* = 0.070 ipt
Depth of cut	: *ap* = 0.039"
Coolant	: Dry
Machine	: Vertical M/C, BT50

Rich lineup of cutter bodies from ø0.625" to ø6.000"

Insert	Bore type	Shank type	Modular type
LN*U03  Max. ap = 0.039"	**TXN03** (DCX = 1.500" - 2.000") 	**EXN03** (DCX = 0.630" - 1.250") 	**HXN03** (DCX = 0.630" - 1.260") 
LN*U06  Max. ap = 0.059"	**TXN06** (DCX = 2.000" - 6.000") 	**EXN06** (DCX = 1.250" - 1.500") 	

Applicable area



Reference pages: H026 - H035

TUNGFORCE FEED

Small-diameter high feed milling cutter with impressive machining efficiency and reliability

Built to perform at higher machining conditions

Thick insert corner
Max 10 % thicker
than competitors'

Strong insert corner for high feed operations

- Thick insert corner is designed to withstand fracturing force

Robust and easy-to-handle insert screws

- M2 screws reduce screw neck shears under high cutting forces. A larger screw enhances insert's fixation and easy handling.

TUNGFORCE FEED (M2)

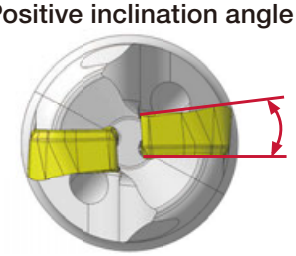
Competitor (M1.8)

Proper chip formation assures a reliable machining process

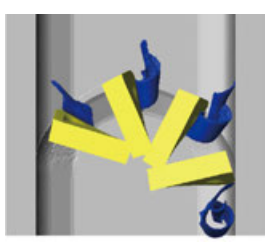
Positive inclination angle of the insert promotes smooth chip evacuation

- The positive cutting edge position contributes to a controlled chip formation and easy chip evacuation when machining next to shoulder and slotting operation.

Positive inclination angle



TUNGFORCE FEED



Competitor

Proper chip control eliminates recuts and premature insert failure

Chip formation

Ideal curled chips

Crushed chips

P Steel

Cutter	: EXLS02U0.50C0.50LH2.00R02
Insert	: LSMT0202ZER-HM AH3225
Workpiece material	: 1055
Cutting speed	: *Vc* = 656 sfm
Application	: Slotting
Depth of cut	: *ap* = 0.020" × 20 passes
Coolant	: Dry
Machine	: Vertical M/C, CAT40

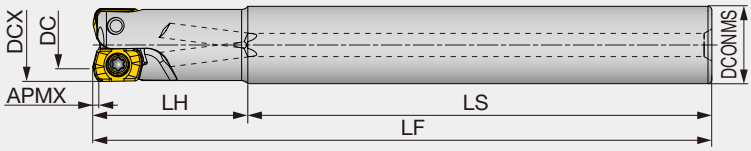
Reference pages: H022 - H025

TUNGFEED FORCE

EXLS

High feed endmill, shank type

GAMP = +4°, GAMF = -21° ~ -17°



Inch	APMX	DCX	CICT	DC	DCONMS	LS	LH	LF	WT (lb)	Air hole	Insert
EXLS02U0.37C0.37LH0.75R01	0.020	0.375	1	0.228	0.375	2.250	0.750	3.000	0.088	With	LSMT02...
EXLS02U0.37C0.37LH1.25R01	0.020	0.375	1	0.228	0.375	2.250	1.250	3.500	0.110	With	LSMT02...
EXLS02U0.37C0.31LH0.75R01	0.020	0.375	1	0.228	0.3125	2.250	0.750	3.000	0.066	With	LSMT02...
EXLS02U0.50C0.50LH0.75R03	0.020	0.500	3	0.354	0.500	2.250	0.750	3.000	0.132	With	LSMT02...
EXLS02U0.50C0.50LH2.00R02	0.020	0.500	2	0.354	0.500	2.250	2.000	4.250	0.176	With	LSMT02...
EXLS02U0.50C0.37LH0.75R03	0.020	0.500	3	0.354	0.375	2.250	0.750	3.000	0.088	With	LSMT02...
EXLS02U0.62C0.62LH1.50R05	0.020	0.625	5	0.479	0.625	2.500	1.500	4.000	0.308	With	LSMT02...
EXLS02U0.62C0.62LH2.00R03	0.020	0.625	3	0.479	0.625	2.500	2.000	4.500	0.375	With	LSMT02...

Metric	APMX	DCX	CICT	DC	DCONMS	LS	LH	LF	WT (kg)	Air hole	Insert
EXLS02M008C08.0LH16R01	0.5	8	1	4.29	8	59	16	75	0.02	With	LSMT02...
EXLS02M008C08.0LH30R01	0.5	8	1	4.29	8	59	31	90	0.03	With	LSMT02...
EXLS02M010C10.0LH20R02	0.5	10	2	6.28	10	60	20	80	0.04	With	LSMT02...
EXLS02M010C10.0LH40R02	0.5	10	2	6.28	10	60	40	100	0.05	With	LSMT02...
EXLS02M010C08.0LH20R02	0.5	10	2	6.28	8	60	20	80	0.03	With	LSMT02...
EXLS02M012C12.0LH20R03	0.5	12	3	8.31	12	60	20	80	0.06	With	LSMT02...
EXLS02M012C12.0LH50R02	0.5	12	2	8.31	12	60	50	110	0.08	With	LSMT02...
EXLS02M012C10.0LH20R03	0.5	12	3	8.31	10	60	20	80	0.04	With	LSMT02...
EXLS02M016C16.0LH30R05	0.5	16	5	12.31	16	70	30	100	0.14	With	LSMT02...
EXLS02M016C16.0LH50R03	0.5	16	3	12.31	16	70	50	120	0.17	With	LSMT02...

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
EXLS02U..., EXLS02M...	CSPB-2H	M-1000	IP-6DB

*Recommended clamping torque：CSPB-2H = 0.52 lbs·ft, 0.7 N·m

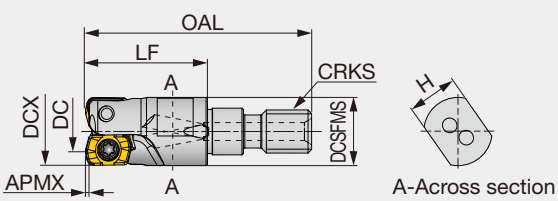
Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

TUNGFEED FORCE

HXLS

High feed endmill, shank type

GAMP = +4°, GAMF = -21° ~ -17°



Metric	APMX	DCX	CICT	DC	OAL	LF	H	DCSFMS	CRKS	WT (kg)	Air hole	Insert
HXLS02M008M06R01	0.5	8	1	4.29	33.5	19	7	9.5	M6	0.01	With	LSMT02...
HXLS02M010M06R02	0.5	10	2	6.28	31.5	17	7	9.5	M6	0.01	With	LSMT02...
HXLS02M012M06R02	0.5	12	2	8.31	31.5	17	7	10	M6	0.01	With	LSMT02...
HXLS02M012M06R03	0.5	12	3	8.31	31.5	17	7	10	M6	0.01	With	LSMT02...
HXLS02M016M08R03	0.5	16	3	12.31	40	23	10	13	M8	0.03	With	LSMT02...
HXLS02M016M08R05	0.5	16	5	12.31	40	23	10	13	M8	0.03	With	LSMT02...

SPARE PARTS

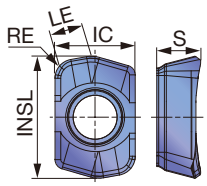
Designation	Clamping screw	Lubricant	Wrench
HXLS02M...	CSPB-2H	M-1000	IP-6DB

*Recommended clamping torque ：CSPB-2H = 0.7 N·m

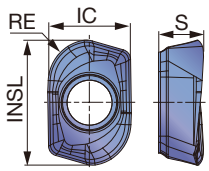
Reference pages: Inserts → H023, Standard cutting conditions → H024 - H025, TungFlex → H167

INSERT

LSMT-HM (High feed)



LSMT-MM (Radius)



P	Steel	★	☆
M	Stainless	★	
K	Cast iron	☆	★
N	Non-ferrous		
S	Superalloys	☆	★
H	Hard materials		★

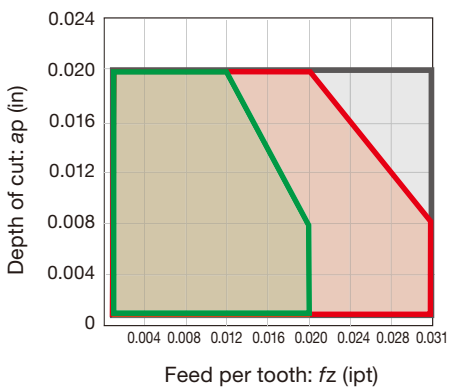
★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH3225	Coated AH8015	LE	INSL	IC	S
LSMT0202ZER-HM	0.039	0.020	●	●	0.067	0.252	0.165	0.091
LSMT0202R2-MM	0.079	0.079	●	●	-	0.252	0.169	0.091

● : Line up

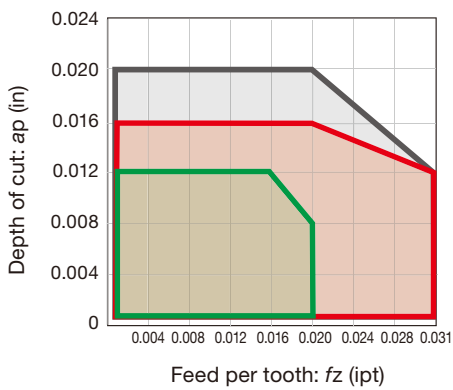
APPLICATION

LSMT02-HM



- For standard shanks in ≤ 3xD
- For long-neck shanks in ≥ 4xD
- For modular head shanks in ≥ 7xD

LSMT02-MM



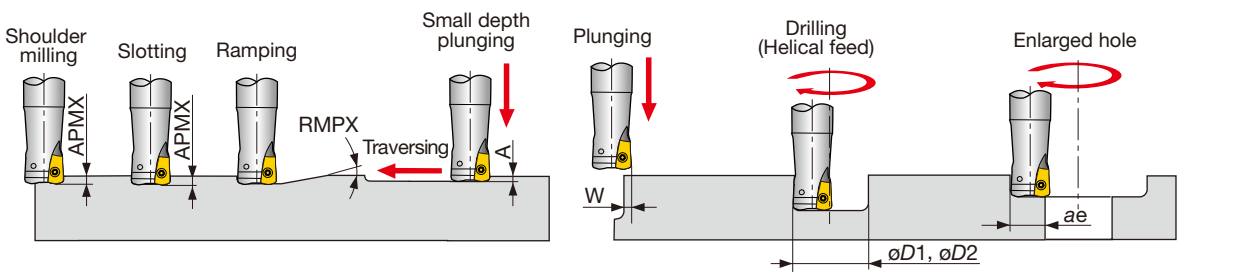
- For standard shanks in ≤ 3xD
- For long-neck shanks in ≥ 4xD
- For modular head shanks in ≥ 7xD

* When the DOC is 0.020" or more, the feed less than 0.006 ipt is recommended.

STANDARD CUTTING CONDITIONS

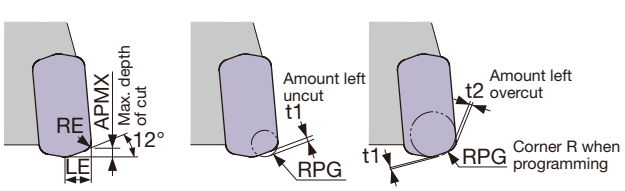
ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steels 1045, 1055, etc.		- 300HB	First choice	AH3225	330 - 990	0.008 - 0.031
			- 300HB	Wear resistance	AH8015	330 - 990	0.008 - 0.031
	Alloy steels 4140, SCr415, etc.		- 300HB	First choice	AH3225	330 - 990	0.008 - 0.031
			- 300HB	Wear resistance	AH8015	330 - 990	0.008 - 0.031
	Prehardened steels NAK80, PX5, etc.		30 - 40HRC	First choice	AH8015	330 - 660	0.008 - 0.020
			30 - 40HRC	Fracture resistance	AH3225	330 - 660	0.008 - 0.020
M	Stainless steels 304, 316, etc.		- 200HB	First choice	AH3225	330 - 660	0.008 - 0.020
K	Gray cast irons No.250B, etc.		150 - 250HB	First choice	AH8015	330 - 990	0.008 - 0.031
			150 - 250HB	Fracture resistance	AH3225	330 - 990	0.008 - 0.031
	Ductile cast irons 65-45-12, etc.		150 - 250HB	First choice	AH8015	260 - 660	0.008 - 0.031
			150 - 250HB	Fracture resistance	AH3225	260 - 660	0.008 - 0.031
S	Titanium alloy Ti-6Al-4V, etc.		- 40HRC	First choice	AH3225	100 - 200	0.004 - 0.012
			- 40HRC	Wear resistance	AH8015	100 - 200	0.004 - 0.012
	Heat resistant alloy Inconel, Hastelloy, etc.		- 40HRC	First choice	AH8015	70 - 170	0.004 - 0.012
			- 40HRC	Fracture resistance	AH3225	70 - 170	0.004 - 0.012
H	Hardened steel	H13, etc.	40 - 50HRC	First choice	AH8015	260 - 490	0.004 - 0.020
		D2, D3, etc.	50~60HRC	First choice	AH8015	160 - 230	0.004 - 0.012

APPLICATION RANGE



Inch	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Max. cutting width in plunging W	Min. machining øD1	Max. machining øD2	Max. cutting width in enlarged hole ae
EXLS02U0.37...	0.375	0.020	3.6°	0.007	0.078	0.513	0.730	0.292
EXLS02U0.50...	0.500	0.020	1.8°	0.007	0.078	0.763	0.980	0.417
EXLS02U0.62...	0.625	0.020	1.3°	0.007	0.078	1.013	1.230	0.542

Tool geometry on programming



LSMT02...-HM

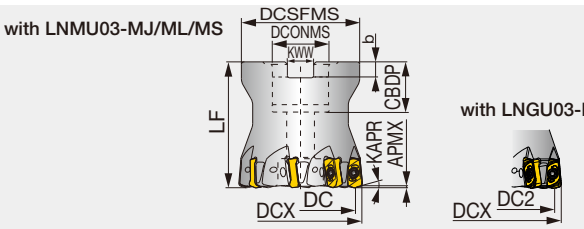
Corner R when programming: RPG	Amount left uncut t1 (in)	Amount left overcut t2 (in)
0.039 *Recommend	0.006	0
0.059	0.003	0.006
0.079	0	0.013

Tool dia.: DC (in), Number of revolutions: *n* (rpm), Feed speed: *Vf* (ipm), Max. depth of cut: *ap* = 0.020", Number of teeth: CICT									
ø0.315", CICT = 1		ø0.394", CICT = 2		ø0.472"			ø0.630"		
n	*Vf*	*n*	*Vf*	*n*	*Vf*		*n*	*Vf*	
					CICT = 2	CICT = 3		CICT = 3	CICT = 5
7960	160	6370	255	5310	215	320	3980	240	400
				Vc = 656 sfm, *fz* = 0.020 ipt					
7960	160	6370	255	5310	215	320	3980	240	400
				Vc = 656 sfm, *fz* = 0.020 ipt					
5970	95	4780	153	3980	125	190	2990	145	240
				Vc = 492 sfm, *fz* = 0.016 ipt					
4780	75	3820	122	3190	100	155	2390	115	190
				Vc = 394 sfm, *fz* = 0.016 ipt					
7960	160	6370	255	5310	210	320	3980	240	400
				Vc = 656 sfm, *fz* = 0.020 ipt					
5970	120	4780	190	3980	160	240	2990	180	300
				Vc = 492 sfm, *fz* = 0.020 ipt					
1590	13	1270	20	1060	17	25	800	19	32
				Vc = 131 sfm, *fz* = 0.008 ipt					
1190	10	1000	16	800	13	20	600	15	25
				Vc = 98 sfm, *fz* = 0.008 ipt					
4780	57	3820	92	3190	76	115	2390	86	190
				Vc = 394 sfm, *fz* = 0.012 ipt					
2390	19	1910	30	1590	25	35	1190	30	50
				Vc = 197 sfm, *fz* = 0.008 ipt					

TXN03

High feed mill, for 4-corner double sided inserts

GAMP = +6°,GAMF = +12° ~ 13°



Inch	APMX	DCX	CICT	DC	DC2	DCSFMS	DCONMS	CBDP	LF	b	KWW	KAPR	WT(lb)	Air hole	Insert
TXN03R150U0050A05	0.039	1.500	5	1.248	1.247	1.460	0.500	0.750	1.575	0.160	0.252	17°	0.530	With	LN*U03...
TXN03R150U0050A06	0.039	1.500	6	1.248	1.247	1.380	0.500	0.600	1.575	0.160	0.252	17°	0.510	With	LN*U03...
TXN03R200U0075A05	0.039	2.000	5	1.718	1.757	1.693	0.750	0.750	1.969	0.197	0.315	17°	1.100	With	LN*U03...
TXN03R200U0075A08	0.039	2.000	8	1.718	1.757	1.693	0.750	0.750	1.969	0.197	0.315	17°	1.100	With	LN*U03...
TXN03R200U0075A10	0.039	2.000	10	1.718	1.757	1.693	0.750	0.750	1.969	0.197	0.315	17°	1.100	With	LN*U03...

SPARE PARTS

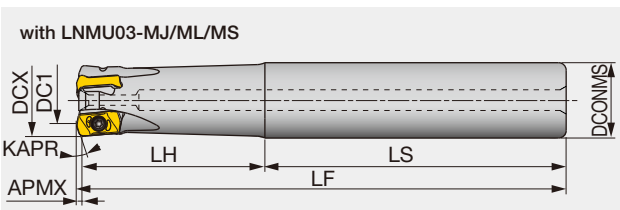
Designation	Clamping screw	Lubricant	Shell locking bolt (Optional parts)	Wrench
TXN03R150U...	CSPB-2.5	M-1000	(SR UNF 1/4X3/4 B18.3)	IP-8D
TXN03R200U...	CSPB-2.5	M-1000	(C0.375X1.125H)	IP-8D

*Recommended clamping torque : CSPB-2.5 = 0.96 lbs·ft

EXN03

High feed endmill, shank type, with center through coolant hole, for 4-corner double sided inserts

GAMP = +6°, GAMF = +5° ~ +11°



Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

Inch	APMX	DCX	CICT	DC	DC2	DCONMS	LF	LH	LS	KAPR	WT(lb)	Air hole	Insert
EXN03R062U0062-02	0.039	0.625	2	0.372	0.381	0.625	4.000	1.250	2.750	15°	0.310	With	LN*U03...
EXN03R062U0062-02L	0.039	0.625	2	0.372	0.381	0.625	6.000	2.000	4.000	15°	0.460	With	LN*U03...
EXN03R068U0062-02	0.039	0.688	2	0.434	0.436	0.625	4.000	1.250	2.750	17°	0.310	With	LN*U03...
EXN03R068U0062-02L	0.039	0.688	2	0.434	0.436	0.625	6.000	1.000	5.000	17°	0.490	With	LN*U03...
EXN03R075U0075-02	0.039	0.750	2	0.495	0.498	0.750	5.000	2.000	3.000	17°	0.550	With	LN*U03...
EXN03R075U0075-03	0.039	0.750	3	0.495	0.498	0.750	5.000	2.000	3.000	17°	0.550	With	LN*U03...
EXN03R075U0075-03L	0.039	0.750	3	0.495	0.498	0.750	6.500	3.500	3.000	17°	0.710	With	LN*U03...
EXN03R087U0075-02	0.039	0.875	2	0.621	0.623	0.750	5.000	2.000	3.000	17°	0.570	With	LN*U03...
EXN03R087U0075-03	0.039	0.875	3	0.621	0.623	0.750	5.000	2.000	3.000	17°	0.570	With	LN*U03...
EXN03R087U0075-03L	0.039	0.875	3	0.621	0.623	0.750	6.500	1.250	5.250	17°	0.750	With	LN*U03...
EXN03R100U0100-04	0.039	1.000	4	0.746	0.748	1.000	5.500	2.500	3.000	17°	1.080	With	LN*U03...
EXN03R100U0100-04L	0.039	1.000	4	0.746	0.748	1.000	7.000	4.000	3.000	17°	1.340	With	LN*U03...
EXN03R100U0100-05	0.039	1.000	5	0.746	0.748	1.000	5.500	2.500	3.000	17°	1.080	With	LN*U03...
EXN03R112U0100-04	0.039	1.125	4	0.871	0.872	1.000	5.500	2.500	3.000	17°	1.120	With	LN*U03...
EXN03R112U0100-04L	0.039	1.125	4	0.871	0.872	1.000	7.000	1.500	5.500	17°	1.460	With	LN*U03...
EXN03R112U0100-05	0.039	1.125	5	0.871	0.872	1.000	5.500	2.500	3.000	17°	1.120	With	LN*U03...
EXN03R125U0125-05	0.039	1.250	5	0.997	0.997	1.250	6.000	3.000	3.000	17°	1.870	With	LN*U03...
EXN03R125U0125-05L	0.039	1.250	5	0.997	0.997	1.250	8.000	5.000	3.000	17°	2.430	With	LN*U03...
EXN03R125U0125-06	0.039	1.250	6	0.997	0.997	1.250	6.000	3.000	3.000	17°	1.850	With	LN*U03...

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
EXN03...	CSPB-2.5	M-1000	IP-8D

*Recommended clamping torque : CSPB-2.5 = 0.96 lbs·ft

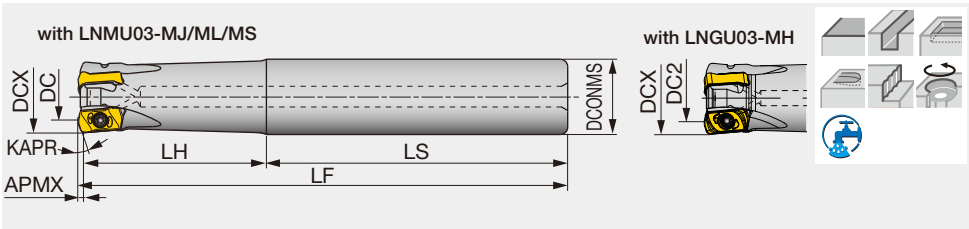
Reference pages: Inserts → H029, Standard cutting conditions → H030 - H031

DOFEED

EXN03-C

High feed endmill, shank type, with coolant directly to the tool tips, for 4-corner double sided inserts

GAMP = +6°,GAMF = +5° ~ +11°



Inch	APMX	DCX	CICT	DC	DC2	DCONMS	LF	LH	LS	KAPR	WT(lb)	Air hole	Insert
EXN03R075U0075-03-C	0.039	0.750	3	0.494	0.498	0.750	5.000	2.000	3.000	17°	0.660	With	LN*U03...
EXN03R087U0075-03-C	0.039	0.875	3	0.634	0.623	0.750	5.000	2.000	3.000	17°	0.660	With	LN*U03...
EXN03R100U0100-05-C	0.039	1.000	5	0.756	0.748	1.000	5.500	2.500	3.000	17°	1.100	With	LN*U03...
EXN03R125U0125-06-C	0.039	1.250	6	1.008	0.997	1.250	6.000	3.000	3.000	17°	1.760	With	LN*U03...

Metric	APMX	DCX	CICT	DC	DC2	DCONMS	LF	LH	LS	KAPR	WT(kg)	Air hole	Insert
EXN03R016M16.0-02-C	1	16	2	9.6	9.8	16	100	30	70	15°	0.2	With	LN*U03...
EXN03R016M16.0-02L-C	1	16	2	9.6	9.8	16	150	50	100	15°	0.2	With	LN*U03...
EXN03R020M20.0-03-C	1	20	3	13.5	13.6	20	130	50	80	17°	0.3	With	LN*U03...
EXN03R020M20.0-03L-C	1	20	3	13.5	13.6	20	160	80	80	17°	0.3	With	LN*U03...
EXN03R020M20.0-04-C	1	20	4	13.5	13.6	20	130	50	80	17°	0.3	With	LN*U03...
EXN03R025M25.0-04-C	1	25	4	18.5	18.6	25	140	60	80	17°	0.5	With	LN*U03...
EXN03R025M25.0-04L-C	1	25	4	18.5	18.6	25	180	100	80	17°	0.6	With	LN*U03...
EXN03R025M25.0-05-C	1	25	5	18.5	18.6	25	130	60	80	17°	0.5	With	LN*U03...
EXN03R032M32.0-05-C	1	32	5	25.5	25.6	32	150	70	80	17°	0.8	With	LN*U03...
EXN03R032M32.0-05L-C	1	32	5	25.5	25.6	32	200	120	80	17°	1.1	With	LN*U03...
EXN03R032M32.0-06-C	1	32	6	25.5	25.6	32	150	70	80	17°	0.8	With	LN*U03...
EXN03R040M32.0-06-C	1	40	6	33.6	33.7	32	150	45	105	17°	1	With	LN*U03...
EXN03R040M32.0-06L-C	1	40	6	33.6	33.7	32	220	45	175	17°	1.4	With	LN*U03...

SPARE PARTS



Designation	Clamping screw	Lubricant	Wrench
EXN03...	CSPB-2.5	M-1000	IP-8D

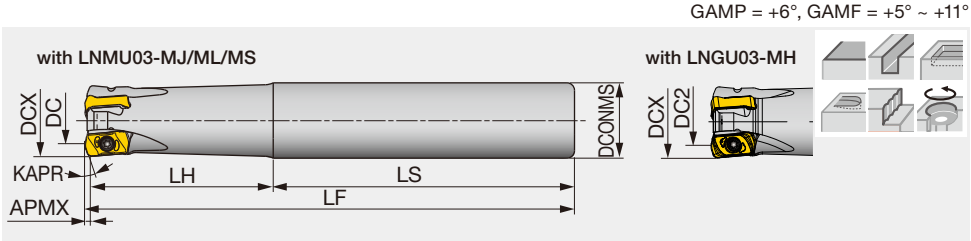
*Recommended clamping torque :CSPB-2.5 = 0.96 lbs·ft, 1.3 N·m

DOFEED

EXN03-N

High feed endmill (Eco), shank type, for double sided inserts

GAMP = +6°, GAMF = +5° ~ +11°



Metric	APMX	DCX	CICT	DC	DC2	DCONMS	LF	LH	LS	KAPR	WT(kg)	Air hole	Insert
EXN03R016M16.0-02N	1	16	2	9.6	9.8	16	100	30	70	15°	0.2	Without	LN*U03...
EXN03R020M20.0-03N	1	20	3	13.5	13.6	20	130	50	80	17°	0.3	Without	LN*U03...
EXN03R025M25.0-04N	1	25	4	18.5	18.6	25	140	60	80	17°	0.5	Without	LN*U03...
EXN03R032M32.0-05N	1	32	5	25.5	25.6	32	150	70	80	17°	0.8	Without	LN*U03...

SPARE PARTS



Designation	Clamping screw	Lubricant	Wrench
EXN03...	CSPB-2.5	M-1000	IP-8D

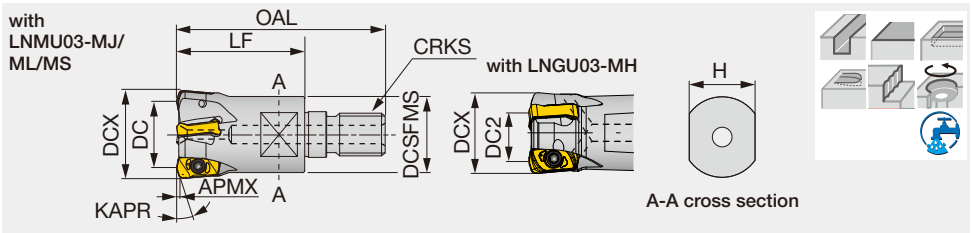
*Recommended clamping torque :CSPB-2.5 = 1.3 N·m

Reference pages: Inserts → H029, Standard cutting conditions → H030 - H031

DOFEED
HXN03

High feed endmill, modular type, with center through coolant hole (TungFlex)

GAMP= +6°,GAMF= +5° ~ +11°



Metric	APMX	DCX	CICT	DC	DC2	OAL	LF	H	DCSFMS	KAPR	CRKS	WT(kg)	Air hole	Insert
HXN03R016MM08-02	1	16	2	9.6	9.8	42	25	10	12.8	15°	M8	0.03	With	LN*U03...
HXN03R018MM08-02	1	18	2	11.5	11.7	42	25	10	14.5	17°	M8	0.04	With	LN*U03...
HXN03R020MM10-03	1	20	3	13.5	13.6	49	30	15	17.8	17°	M10	0.06	With	LN*U03...
HXN03R020MM10-04	1	20	4	13.5	13.6	49	30	15	17.8	17°	M10	0.06	With	LN*U03...
HXN03R022MM10-03	1	22	3	15.5	15.6	49	30	15	17.8	17°	M10	0.06	With	LN*U03...
HXN03R022MM10-04	1	22	4	15.5	15.6	49	30	15	17.8	17°	M10	0.07	With	LN*U03...
HXN03R025MM12-04	1	25	4	18.5	18.6	57	35	17	20.8	17°	M12	0.1	With	LN*U03...
HXN03R025MM12-05	1	25	5	18.5	18.6	57	35	17	20.8	17°	M12	0.11	With	LN*U03...
HXN03R028MM12-04	1	28	4	21.5	21.6	57	35	17	23	17°	M12	0.12	With	LN*U03...
HXN03R028MM12-05	1	28	5	21.5	21.6	57	35	17	23	17°	M12	0.12	With	LN*U03...
HXN03R030MM16-04	1	30	4	23.5	23.6	63	40	22	28.8	17°	M16	0.19	With	LN*U03...
HXN03R030MM16-05	1	30	5	23.5	23.6	63	40	22	28.8	17°	M16	0.2	With	LN*U03...
HXN03R032MM16-05	1	32	5	25.5	25.6	63	40	22	28.8	17°	M16	0.2	With	LN*U03...
HXN03R032MM16-06	1	32	6	25.5	25.6	63	40	22	28.8	17°	M16	0.21	With	LN*U03...

See page **H167** for TungFlex modular shank.

SPARE PARTS



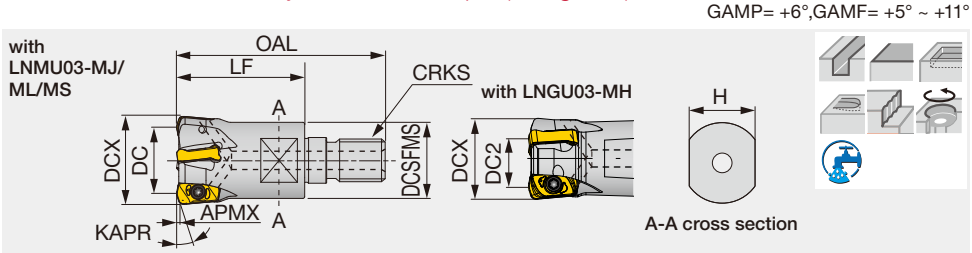
Designation	Clamping screw	Lubricant	Wrench
HXN03...	CSPB-2.5	M-1000	IP-8D

*Recommended clamping torque :CSPB-2.5 = 1.3 N·m

DOFEED
HXN03-C

High feed endmill, modular type, with coolant directly to the tool tips (TungFlex)

GAMP= +6°,GAMF= +5° ~ +11°



Metric	APMX	DCX	CICT	DC	DC2	OAL	LF	H	DCSFMS	KAPR	CRKS	WT(kg)	Air hole	Insert
HXN03R016MM08-02-C	1	16	2	9.6	9.8	42	25	10	12.8	15°	M8	0.03	With	LN*U03...
HXN03R020MM10-03-C	1	20	3	13.5	13.6	49	30	15	17.8	17°	M10	0.06	With	LN*U03...
HXN03R020MM10-04-C	1	20	4	13.5	13.6	49	30	15	17.8	17°	M10	0.06	With	LN*U03...
HXN03R025MM12-04-C	1	25	4	18.5	18.6	57	35	17	20.8	17°	M12	0.1	With	LN*U03...
HXN03R025MM12-05-C	1	25	5	18.5	18.6	57	35	17	20.8	17°	M12	0.1	With	LN*U03...
HXN03R032MM16-05-C	1	32	5	25.5	25.6	63	40	22	28.8	17°	M16	0.2	With	LN*U03...
HXN03R032MM16-06-C	1	32	6	25.5	25.6	63	40	22	28.8	17°	M16	0.2	With	LN*U03...
HXN03R040MM16-06-C	1	40	6	33.6	33.7	63	40	22	28.8	17°	M16	0.27	With	LN*U03...

See page **H167** for TungFlex modular shank.

SPARE PARTS

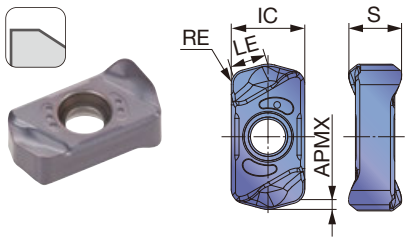


Designation	Clamping screw	Lubricant	Wrench
HXN03...	CSPB-2.5	M-1000	IP-8D

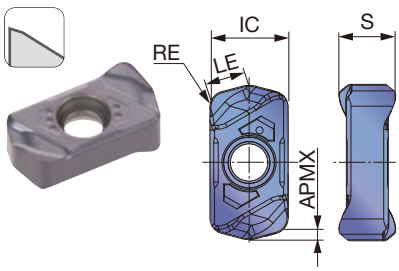
*Recommended clamping torque :CSPB-2.5 = 1.3 N·m

Reference pages: Inserts → **H029**, Standard cutting conditions → **H030 - H031**, TungFlex → **H167**

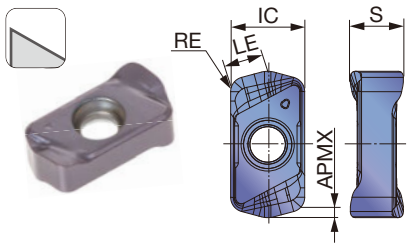
LNMU03-MJ (General purpose)



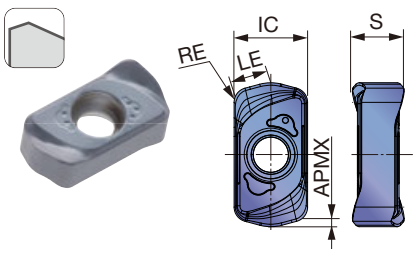
LNMU03-ML (Low cutting force)



LNMU03-MS (For stainless steel)



LNGU03-MH (Reinforced cutting edge)



P	Steel		★	☆				
M	Stainless	★	☆	☆				
K	Cast iron		☆	☆	★			
N	Non-ferrous							
S	Superalloys	★	☆		☆	★		
H	Hard materials				☆	★	☆	

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated						LE	IC	S
			AH130	AH3225	AH3035	AH725	AH8015	AH8005			
LNMU0303ZER-MJ	0.047	0.039	●	●	●	●	●		0.126	0.236	0.169
LNMU0303ZER-ML	0.047	0.039	●	●	●	●	●		0.126	0.236	0.169
LNMU0303ZER-MS	0.047	0.039	●	●					0.126	0.236	0.169
LNGU0303ZER-MH	0.047	0.039					●	●	0.126	0.236	0.169

● : Line up

STANDARD CUTTING CONDITIONS TXN03/EXN03/HXN03

ISO	Workpiece material	Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool dia.: DCX (in) ø0.625~ ø0.875	ø1.000~ ø2.000	Plunging	ø0.625", CICT = 2 *n*	*Vf*	ø0.688", CICT = 2 *n*	*Vf*	ø0.75 *n*	*Vf* CICT = 2	*Vf* CICT = 3
P	Carbon steels 1045, 1055, etc.	- 300HB	First choice	AH3225	MJ	330 - 980	0.020 - 0.047	0.020 - 0.059	0.004	4,030	250	3,660	227	3,360	208	312
										Vc = 660 sfm, *fz* = 0.031 ipt						
	Alloy steels 4140, etc.	- 300HB	First choice	AH3225	MJ	330 - 980	0.020 - 0.047	0.020 - 0.059	0.004	4,030	250	3,660	227	3,360	208	312
										Vc = 660 sfm, *fz* = 0.031 ipt						
	Prehardened steels NAK80, PX5, etc.	30 - 40HRC	First choice	AH3225	MJ	330 - 660	0.020 - 0.039	0.020 - 0.039	0.004	2,990	167	2,720	152	2,500	140	210
										Vc = 490 sfm, *fz* = 0.028 ipt						
		30 - 40HRC	Wear resistance	AH8015	MJ	330 - 660	0.020 - 0.039	0.020 - 0.039	0.004	2,990	167	2,720	152	2,500	140	210
										Vc = 490 sfm, *fz* = 0.028 ipt						
M	Stainless steels 304SS, 316SS, etc.	- 200HB	First choice	AH130	MS	260 - 490	0.012 - 0.031	0.012 - 0.031	0.004	2,380	95	2,170	87	1,990	80	119
										Vc = 390 sfm, *fz* = 0.02 ipt						
	Precipitation hardening stainless steels 17-4 PH, etc.	28HRC - (H1150)	First choice	AH130	MS	260 - 490	0.008 - 0.020	0.008 - 0.020	0.004	2,380	57	2,170	52	1,990	48	72
			Wear resistance	AH3225	MS					*Vc* = 390 sfm, *fz* = 0.012 ipt						
		40HRC - (H900)	First choice	AH3035	ML	260 - 390	0.004 - 0.012	0.004 - 0.012	0.004	**2,020**	**32**	**1,830**	**29**	**1,680**	**27**	**40**
			Fracture resistance	AH3035	MJ					*Vc* = 330 sfm, *fz* = 0.008 ipt						
K	Gray cast irons Class 25, etc.	150 - 250HB	First choice	AH725	MJ	330 - 980	0.020 - 0.047	0.020 - 0.059	0.004	4,030	250	3,660	227	3,360	208	312
										Vc = 660 sfm, *fz* = 0.031 ipt						
	Ductile cast irons 65-45-12, etc.	150 - 250HB	First choice	AH725	MJ	260 - 660	0.020 - 0.047	0.020 - 0.059	0.004	2,990	185	2,720	169	2,500	155	233
										Vc = 490 sfm, *fz* = 0.031 ipt						
S	Titanium alloy Ti-6Al-4V, etc.	- 40HRC	First choice	AH130	ML	100 - 200	0.012 - 0.028	0.012 - 0.028	0.003	790	25	720	23	660	21	32
			Fracture resistance	AH130	MJ					*Vc* = 130 sfm, *fz* = 0.016 ipt						
	Heat-resistant alloy Inconel, Hastelloy, etc.	- 40HRC	First choice	AH8015	ML	70 - 160	0.004 - 0.012	0.004 - 0.012	0.002	610	10	560	9	510	8	12
			Fracture resistance	AH725	ML					*Vc* = 100 sfm, *fz* = 0.008 ipt						
H	Hot mold steel HB, etc.	40 - 55HRC	First choice	AH8015	MH	260 - 490	0.004 - 0.020	0.004 - 0.020	0.002	2,390	57	2,170	52	1,990	48	72
			Low resistance	AH8015	MJ		0.004 - 0.012	0.004 - 0.012		*Vc* = 390 sfm, *fz* = 0.012 ipt						
	Hot mold steel of D.T.C materials DAC**, DH**, DIEVER, etc.	40 - 55HRC	First choice	AH8015	MJ	160 - 330	0.004 - 0.012	0.004 - 0.012	0.002	1,590	25	1,440	23	1,320	21	32
			Fracture resistance	AH8015	MH		0.004 - 0.020	0.004 - 0.020		*Vc* = 260 sfm, *fz* = 0.008 ipt						
	Cold mold steel D2, etc.	55 - 60HRC	First choice	AH8005	MH	160 - 230	0.002 - 0.008	0.001 - 0.004	0.001	1,220	12	1,110	11	1,020	10	15
										Vc = 200 sfm, *fz* = 0.005 ipt						
		55 - 60HRC	Fracture resistance	AH8015	MH	160 - 230	0.001 - 0.004	0.002 - 0.008	0.001	1,220	5	1,110	4	1,020	4	6
										Vc = 200 sfm, *fz* = 0.002 ipt						

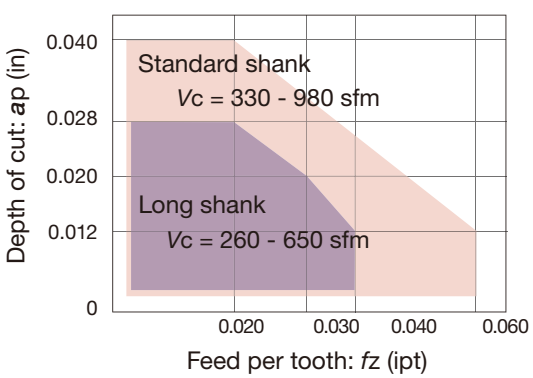
- When chips stay in the cutting zone during slotting or pocketing, use air blast to remove chips from the work area.
- Tool overhang length must be as short as possible to avoid chatter. When the tool overhang length is long, decrease the number of revolutions and feed.

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

Cautionary points in use

The use of a standard or long shank

When using a long shank, please lower the cutting conditions (Vc, fz, ap) to 70% of the maximum conditions for the standard shank.

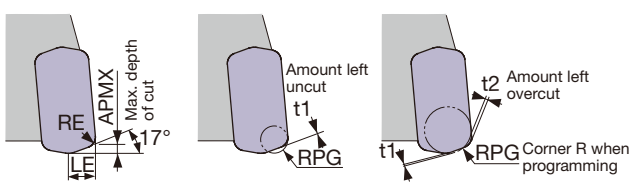


Tool dia.: DCX = ø0.625 - 1.250"
Workpiece: 1015 (200HB)

L/D ratio of overhang
Standard shank: L/D ≤ 3
Long shank: L/D = 4

Tool geometry on programming

When programming for CAM, the tool should be considered as a radius cutter. Usually, the corner radius should be set as R = 0.060". If a larger radius is used, overcutting will occur. The following table shows the amount left uncut (t1) and overcut (t2).



LNMU03-MJ/ML

Max. depth of cut APMX (in)	Corner radius RE	LE (in)	Corner R when programming: RPG	Amount left uncut t1 (in)	Amount left overcut t2 (in)
0.039	0.047	0.118	0.039	0.018	-
0.039	0.047	0.118	0.060	0.014	-
0.039	0.047	0.118	0.079	0.008	0.004
0.039	0.047	0.118	0.098	0.003	0.011

LNGU03-MH

Max. depth of cut APMX (in)	Corner radius RE (in)	LE (in)	Corner R when programming: RPG	Amount left uncut t1 in)	Amount left overcut t2 (in)
0.039	0.047	0.118	0.039	0.018	-
0.039	0.047	0.118	0.060	0.014	-
0.039	0.047	0.118	0.079	0.008	0.004
0.039	0.047	0.118	0.098	0.003	0.011

Each value in table is calculated theoretically at the maximum condition.

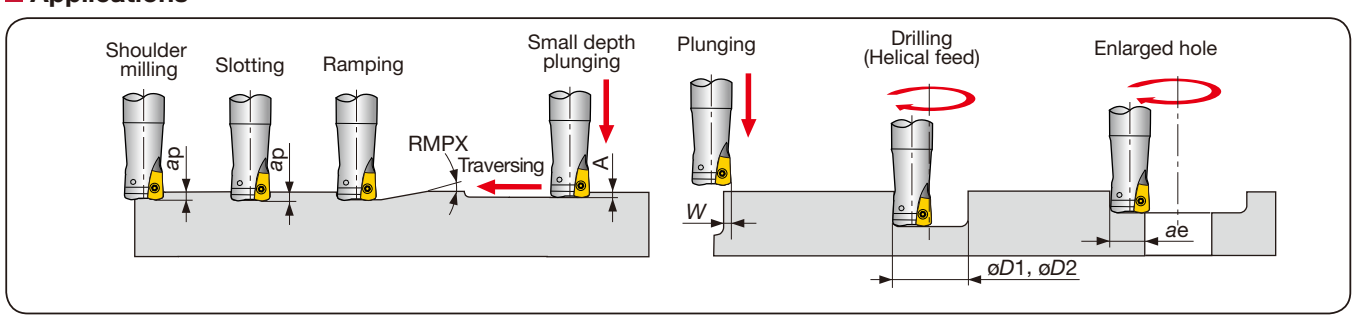
Tool dia.: DCX (in), Number of revolutions: *n* (rpm), Feed speed: *Vf* (ipm), Max. depth of cut: *ap* = 0.004"

ø0.875			ø1			ø1.125			ø1.25			ø1.5			ø2			
n	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		
	CICT = 2	CICT = 3		CICT = 4	CICT = 5		CICT = 4	CICT = 5		CICT = 5	CICT = 6		CICT = 5	CICT = 6		CICT = 5	CICT = 8	CICT = 10
2,880	230	346	2,520	403	504	2,240	358	448	2,020	404	485	1,680	336	403	1,260	252	403	504
Vc = 660 sfm, *fz* = 0.04 ipt																		
2,880	230	346	2,520	403	504	2,240	358	448	2,020	404	485	1,680	336	403	1,260	252	403	504
Vc = 660 sfm, *fz* = 0.04 ipt																		
2,140	120	180	1,870	209	262	1,660	186	232	1,500	210	252	1,250	175	210	940	132	211	263
Vc = 490 sfm, *fz* = 0.028 ipt																		
2,140	120	180	1,870	209	262	1,660	186	232	1,500	210	252	1,250	175	210	940	132	211	263
Vc = 490 sfm, *fz* = 0.028 ipt																		
1,700	68	102	1,490	119	149	1,320	106	132	1,190	119	143	990	99	119	740	74	118	148
Vc = 390 sfm, *fz* = 0.02 ipt																		
1,700	41	61	1,490	72	89	1,320	63	79	1,190	71	86	990	59	71	740	44	71	89
Vc = 390 sfm, *fz* = 0.012 ipt																		
1,440	23	35	1,260	40	50	1,120	36	45	1,010	40	48	840	34	40	630	25	40	50
Vc = 330 sfm, *fz* = 0.008 ipt																		
2,880	230	346	2,520	403	504	2,240	358	448	2,020	404	485	1,680	336	403	1,260	252	403	504
Vc = 660 sfm, *fz* = 0.04 ipt																		
2,140	171	257	1,870	299	374	1,660	266	332	1,500	300	360	1,250	250	300	940	188	301	376
Vc = 490 sfm, *fz* = 0.04 ipt																		
570	23	34	500	40	50	440	35	44	400	40	48	330	33	40	250	25	40	50
Vc = 130 sfm, *fz* = 0.02 ipt																		
440	7	11	380	12	15	340	11	14	310	12	15	250	10	12	190	8	12	15
Vc = 100 sfm, *fz* = 0.008 ipt																		
1,700	41	61	1,490	72	89	1,320	63	79	1,190	71	86	990	59	71	740	44	71	89
Vc = 390 sfm, *fz* = 0.012 ipt																		
1,140	18	27	990	32	40	880	28	35	790	32	38	660	26	32	500	20	32	40
Vc = 260 sfm, *fz* = 0.008 ipt																		
870	7	10	760	12	15	680	11	14	610	12	15	510	10	12	380	8	12	15
Vc = 200 sfm, *fz* = 0.004 ipt																		
870	3	5	760	6	8	680	5	7	610	6	7	510	5	6	380	4	6	8
Vc = 200 sfm, *fz* = 0.002 ipt																		

- The above table shows the conditions for standard shank type cutters. When using long shank type cutters, the number of teeth may be different. In this case, the cutting conditions should be changed by referring to: "The usage of standard and long shanks" shown in previous page.

- Cutting conditions are generally limited by the rigidity and power of the machine and the rigidity of the workpiece. When setting the conditions, start from half of the values of the standard cutting conditions and then increase the value gradually while making sure the machine is running normally.

Applications



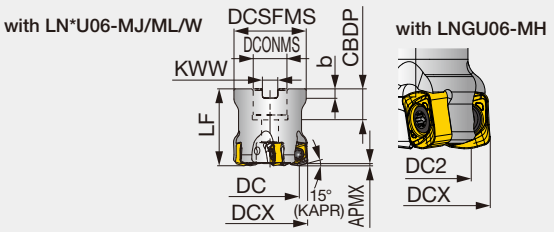
Inch	Tool dia. DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Max. cutting width in plunging *W*	Min.machinable hole dia. ø*D*1	Max.machinable hole dia. ø*D*2	Max. cutting width in enlarged hole *ae*
EXN03R062U0062...	ø0.625	0.039	1.7°	0.012	0.118	0.897	1.181	0.492
EXN03R068U0062...	ø0.688	0.039	1.7°	0.012	0.118	0.991	1.339	0.571
EXN03R075U0075...	ø0.750	0.039	1.2°	0.012	0.118	1.132	1.496	0.650
EXN03R087U0075...	ø0.875	0.039	1°	0.012	0.118	1.371	1.654	0.728
EXN03R100U0100...	ø1.000	0.039	0.9°	0.012	0.118	1.610	1.890	0.846
EXN03R112U0100...	ø1.125	0.039	0.8°	0.012	0.118	1.857	2.126	0.965
EXN03R125U0125...	ø1.250	0.039	0.7°	0.012	0.118	2.104	2.441	1.122
TXN03R150U0075...	ø1.500	0.039	0.5°	0.012	0.118	2.750	3.070	1.437
TXN03R200U0075...	ø2.000	0.039	0.4°	0.012	0.118	3.540	3.858	1.830

For DCX above ø1.300", slot milling, ramping or contouring is not recommended as chips may be re-cut.

DOFEED
TXN06

High feed mill, for 4-corner double sided inserts

GAMP = +10°, GAMF = +2° ~ +6°



Inch	APMX	DCX	CICT	DC	DC2	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert
TXN06R200U0075A04	0.059	2.000	4	1.513	1.485	1.850	1.969	0.750	0.750	0.315	0.197	0.970	With	LN*U06...
TXN06R200U0075A05	0.059	2.000	5	1.513	1.485	1.850	1.969	0.750	0.750	0.315	0.197	0.990	With	LN*U06...
TXN06R250U0075A04	0.059	2.500	4	2.012	1.983	2.323	1.969	0.750	0.750	0.315	0.197	1.740	With	LN*U06...
TXN06R250U0075A06	0.059	2.500	6	2.012	1.983	2.323	1.969	0.750	0.750	0.315	0.197	1.760	With	LN*U06...
TXN06R300U0100A05	0.059	3.000	5	2.512	2.481	2.835	2.480	1.000	1.049	0.374	0.236	3.130	With	LN*U06...
TXN06R300U0100A07	0.059	3.000	7	2.512	2.481	2.835	2.480	1.000	1.049	0.374	0.236	3.280	With	LN*U06...
TXN06R400U0150A06	0.059	4.000	6	3.512	3.481	3.819	2.480	1.500	1.610	0.626	0.394	4.850	With	LN*U06...
TXN06R400U0150A10	0.059	4.000	10	3.512	3.481	3.819	2.480	1.500	1.610	0.626	0.394	4.850	With	LN*U06...
TXN06R500U0150A08	0.059	5.000	8	4.512	4.481	3.819	2.480	1.500	1.610	0.626	0.394	7.050	With	LN*U06...
TXN06R500U0150A12	0.059	5.000	12	4.512	4.481	3.819	2.480	1.500	1.610	0.626	0.394	7.280	With	LN*U06...
TXN06R600U0200A10	0.059	6.000	10	5.512	5.480	4.331	2.480	2.000	1.496	0.748	0.433	9.480	With	LN*U06...
TXN06R600U0200A14	0.059	6.000	14	5.512	5.480	4.331	2.480	2.000	1.496	0.748	0.433	9.260	With	LN*U06...

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Torx bit	Shell locking bolt (Optional parts)
TXN06R200U..., 250U...	CSPB-5	H-TB2W	M-1000	BLDIP20/S7	(C0.375X1.125H)
TXN06R300U...	CSPB-5	H-TB2W	M-1000	BLDIP20/S7	(C0.500X1.375H)
TXN06R400U..., 500U...	CSPB-5	H-TB2W	M-1000	BLDIP20/S7	(TMBA-0.750H)
TXN06R600U...	CSPB-5	H-TB2W	M-1000	BLDIP20/M7	-

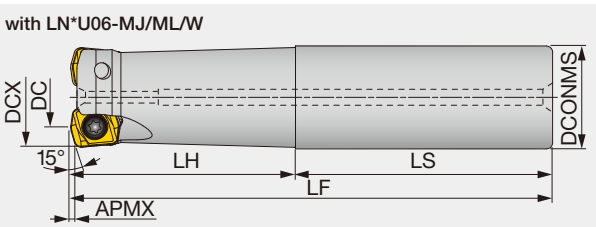
*Recommended clamping torque：CSPB-5 = 3.69 lbs·ft

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

DOFEED
EXN06

High feed endmill, shank type, for 4-corner double sided inserts

GAMP=+10°,GAMF= -2°~+6°



Inch	APMX	DCX	CICT	DC	DC2	DCONMS	LF	LH	LS	WT(lb)	Air hole	Insert
EXN06R125U0125W02	0.059	1.250	2	0.766	0.745	1.250	5.281	3.000	2.281	1.540	With	LN*U06...
EXN06R125U0125-02L	0.059	1.250	2	0.766	0.745	1.250	8.000	5.000	3.000	2.360	With	LN*U06...
EXN06R150U0125W03	0.059	1.500	3	1.014	0.989	1.250	5.781	3.500	2.281	1.830	With	LN*U06...
EXN06R150U0125-03L	0.059	1.500	3	1.014	0.989	1.250	10.000	2.000	8.000	3.310	With	LN*U06...

SPARE PARTS

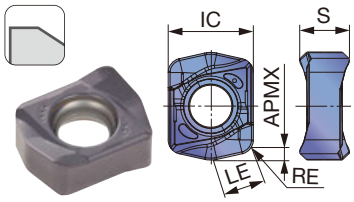
Designation	Clamping screw	Lubricant	Wrench
EXN06	CSPB-5	M-1000	IP-20D

*Recommended clamping torque：CSPB-5 = 3.69 lbs·ft

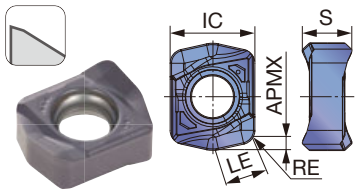
Reference pages: Inserts → H033, Standard cutting conditions → H034 - H035

INSERT

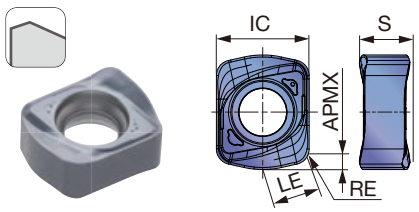
LNMU06-MJ



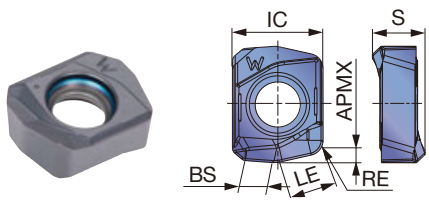
LNMU06-ML



LNGU06-MH



LNGU06-W (2 corners)



P	Steel		★	☆					
M	Stainless	★	☆	☆					
K	Cast iron		☆	☆	☆	★			
N	Non-ferrous								
S	Superalloys	★	☆		☆		★		
H	Hard materials				☆		★	☆	

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated							LE	IC	S	BS
			AH130	AH3225	AH3035	AH725	AH120	AH8015	AH8005				
LNMU06X5ZER-MJ	0.079	0.059	●	●	●	●	●	●		0.236	0.472	0.276	-
LNMU06X5ZER-ML	0.079	0.059	●	●	●	●	●	●		0.236	0.472	0.276	-
LNGU06X5ZER-MH	0.079	0.059						●	●	0.236	0.472	0.276	-
LNGU06X5ZER-W	0.079	0.059				●				0.236	0.472	0.276	0.142

● : Line up

Reference pages: Standard cutting conditions → H034 - H035

STANDARD CUTTING CONDITIONS TXN06 / EXN06

ISO	Workpiece material	Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool dia.: DCX (in) ø1.25" ~ ø6"	Plunging	ø1.25", CICT = 2 *n*	ø1.25", CICT = 2 *Vf*	ø1.5", CICT = 3 *n*	ø1.5", CICT = 3 *Vf*
P	Carbon steels 1045, 1055, etc.	- 300HB	First choice	AH3225	MJ	330 - 980	0.020 - 0.059	0.006	2,020	162	1,680	202
									Vc = 660 sfm, *fz* = 0.040 ipt			
	Alloy steels 4140, etc.	- 300HB	First choice	AH3225	MJ	330 - 660	0.020 - 0.059	0.006	2,020	162	1,680	202
									Vc = 660 sfm, *fz* = 0.040 ipt			
	Prehardened steels NAK80, PX5, etc.	30 - 40HRC	First choice	AH3225	MJ	330 - 660	0.020 - 0.047	0.006	1,500	93	1,250	116
									Vc = 490 sfm, *fz* = 0.031 ipt			
		30 - 40HRC	Wear resistance	AH8015	MJ	330 - 660	0.020 - 0.060	0.006	1,500	120	1,250	150
									Vc = 490 sfm, *fz* = 0.040 ipt			
M	Stainless steels 304SS, 316SS, etc.	- 200HB	First choice	AH130	ML	260 - 490	0.012 - 0.031	0.004	1,190	57	990	71
									Vc = 390 sfm, *fz* = 0.024 ipt			
	Precipitation hardening stainless steels 17-4 PH, etc.	28HRC - (H1150)	First choice	AH130	MS	260 - 490	0.008 - 0.020	0.004	1,190	29	990	36
			Wear resistance	AH3225	MS				*Vc* = 390 sfm, *fz* = 0.012 ipt			
		40HRC - (H900)	First choice	AH3035	ML	260 - 390	0.004 - 0.012	0.004	1,010	16	840	20
			Fracture resistance	AH3035	MJ				*Vc* = 330 sfm, *fz* = 0.008 ipt			
K	Gray cast irons Class 25, etc.	150 - 250HB	First choice	AH120	MJ	330 - 980	0.020 - 0.059	0.006	2,020	162	1,680	202
									Vc = 660 sfm, *fz* = 0.040 ipt			
		150 - 250HB	First choice	AH120	MJ	260 - 660	0.020 - 0.059	0.006	1,500	120	1,250	150
									Vc = 490 sfm, *fz* = 0.040 ipt			
S	Titanium alloy Ti-6Al-4V, etc.	- 40HRC	First choice	AH130	ML	100 - 200	0.012 - 0.028	0.003	400	16	330	20
			Fracture resistance	AH130	MJ				*Vc* = 130 sfm, *fz* = 0.020 ipt			
	Heat-resistant alloy Inconel, Hastelloy, etc.	- 40HRC	First choice	AH8015	ML	70 - 160	0.004 - 0.012	0.002	310	5	250	6
			Fracture resistance	AH725	ML				*Vc* = 100 sfm, *fz* = 0.008 ipt			
H	Hot mold steel HB, etc.	40 - 55HRC	First choice	AH8015	MH	260 - 490	0.004 - 0.020	0.002	1,190	29	990	36
			Low resistance	AH8015	MJ		0.004 - 0.012		*Vc* = 390 sfm, *fz* = 0.012 ipt			
	Hot mold steel of D.T.C materials DAC**, DH**, DIEVER, etc	40 - 55HRC	First choice	AH8015	MJ	160 - 330	0.004 - 0.012	0.002	790	13	660	16
			Fracture resistance	AH8015	MH		0.004 - 0.020		*Vc* = 260 sfm, *fz* = 0.008 ipt			
	Cold mold steel D2, etc.	55 - 60HRC	First choice	AH8005	MH	160 - 230	0.002 - 0.012	0.001	610	5	510	6
									Vc = 200 sfm, *fz* = 0.004 ipt			
		55 - 60HRC	Fracture resistance	AH8015	MH	160 - 230	0.002 - 0.012	0.001	610	2	510	3
									Vc = 200 sfm, *fz* = 0.002 ipt			

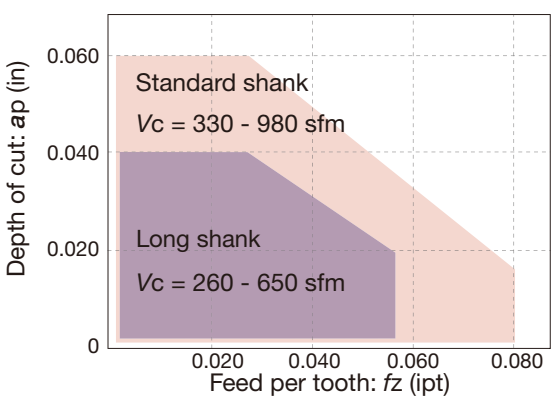
· The above table shows the conditions for standard shank type cutters. When using long shank type cutters, the number of teeth may be different. In this case, the cutting conditions should be changed by referring to: "The usage of standard and long shanks" shown in previous page.

· Cutting conditions are generally limited by the rigidity and power of the machine and the rigidity of the workpiece. When setting the conditions, start from half of the values of the standard cutting conditions and then increase the value gradually while making sure the machine is running normally.

Cautionary points in use

The use of a standard or long shank

When using a long shank, please lower the cutting conditions (Vc, fz, ap) to 70% of the maximum conditions for the standard shank.

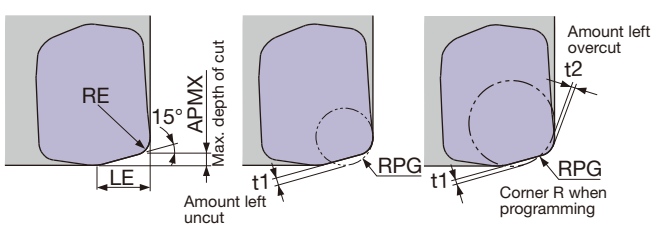


Tool dia.: DCX = ø1.250" - 1.500"
Workpiece: 1055 (200HB)

L/D ratio of overhang
Standard shank: L/D ≤ 3
Long shank: L/D = 4

Tool geometry on programming

When programming for CAM, the tool should be considered as a radius cutter. Usually, the corner radius should be set as R = 0.118". If a larger radius is used, overcutting will occur. The following table shows the amount left uncut (t_1) and overcut (t_2).



LNMU06-MJ/ML

Max. depth of cut APMX (in)	Corner radius RE	LE (in)	Corner R when programming: RPG	Amount left uncut t1 (in)	Amount left overcut t2 (in)
0.059	0.079	0.236	0.079	0.039	-
			0.118	0.030	-
			0.157	0.021	0.010

LNGU06-MH

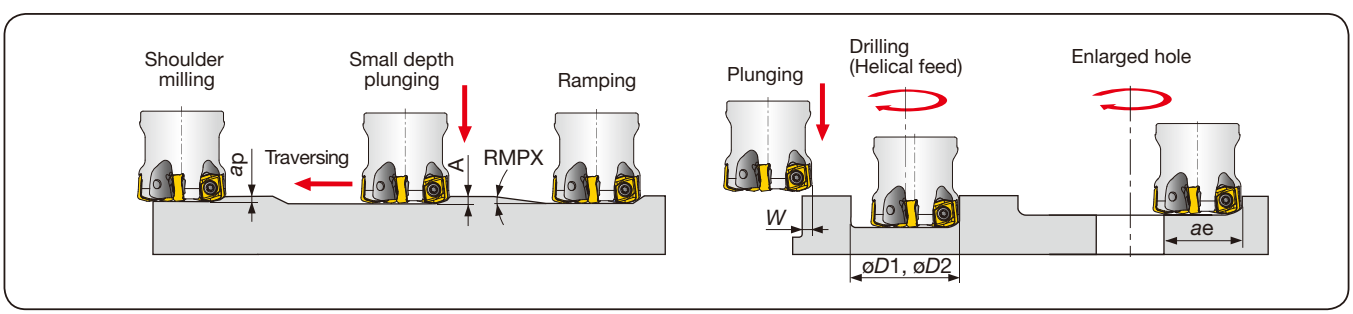
Max. depth of cut APMX (in)	Corner radius RE	LE (in)	Corner R when programming: RPG	Amount left uncut t1 (in)	Amount left overcut t2 (in)
0.059	0.079	0.236	0.079	0.035	-
			0.118	0.026	-
			0.157	0.016	0.010

Each value in table is calculated theoretically at the maximum condition.

Tool dia: DCX (in), Number of revolution: *n* (min-1), Feed speed: *Vf* (ipm), Max. depth of cut: *ap*=0.059", Number of teeth: CICT

ø2"			ø2.5"			ø3"			ø4"			ø5"			ø6"		
n	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*		*n*	*Vf*	
	CICT = 4	CICT = 5		CICT = 4	CICT = 6		CICT = 5	CICT = 7		CICT = 6	CICT = 10		CICT = 8	CICT = 12		CICT = 10	CICT = 14
1,260	202	252	1,010	162	242	840	168	235	630	151	252	500	160	240	420	168	235
							Vc = 660 sfm, *fz* = 0.040 ipt										
1,260	202	252	1,010	162	242	840	168	235	630	151	252	500	160	240	420	168	235
							Vc = 660 sfm, *fz* = 0.040 ipt										
940	117	146	750	93	140	620	96	135	470	87	146	370	92	138	310	96	135
							Vc = 490 sfm, *fz* = 0.031 ipt										
940	150	188	750	120	180	620	124	174	470	113	188	370	118	178	310	124	174
							Vc = 490 sfm, *fz* = 0.040 ipt										
740	71	89	600	58	86	500	60	84	370	53	89	300	58	86	250	60	84
							Vc = 390 sfm, *fz* = 0.024 ipt										
740	36	44	600	29	43	500	30	42	370	27	44	300	29	43	250	30	42
							Vc = 390 sfm, *fz* = 0.012 ipt										
630	20	25	500	16	24	420	17	24	320	15	26	250	16	24	210	17	24
							Vc = 330 sfm, *fz* = 0.008 ipt										
1,260	202	252	1,010	162	242	840	168	235	630	151	252	500	160	240	420	168	235
							Vc = 660 sfm, *fz* = 0.040 ipt										
940	150	188	750	120	180	620	124	174	470	113	188	370	118	178	310	124	174
							Vc = 490 sfm, *fz* = 0.040 ipt										
250	20	25	200	16	24	170	17	24	120	14	24	100	16	24	80	16	22
							Vc = 130 sfm, *fz* = 0.020 ipt										
190	6	8	150	5	7	130	5	7	100	5	8	80	5	8	60	5	7
							Vc = 100 sfm, *fz* = 0.008 ipt										
740	36	44	600	29	43	500	30	42	370	27	44	300	29	43	250	30	42
							Vc = 390 sfm, *fz* = 0.012 ipt										
500	16	20	400	13	19	330	13	18	250	12	20	200	13	19	170	14	19
							Vc = 260 sfm, *fz* = 0.008 ipt										
380	6	8	310	5	7	250	5	7	190	5	8	150	5	7	130	5	7
							Vc = 200 sfm, *fz* = 0.004 ipt										
380	3	4	310	2	4	250	3	4	190	2	4	150	2	4	130	3	4
							Vc = 200 sfm, *fz* = 0.002 ipt										

Applications



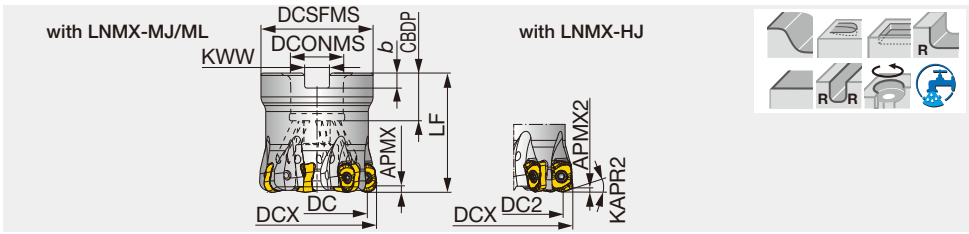
Inch	Tool dia. DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Max. cutting width in plunging *W*	Min.machinable hole dia. ø*D*1	Max.machinable hole dia. ø*D*2	Max. cutting width in enlarged hole *ae*
EXN06R125U…	ø1.250	0.059	1.4°	0.016	0.236	1.830	2.300	0.970
EXN06R150U…	ø1.500	0.059	0.9°	0.016	0.236	2.330	2.800	1.220
TXN06R200U…	ø2.000	0.059	0.7°	0.016	0.236	3.330	3.800	1.720
TXN06R250U…	ø2.500	0.059	0.5°	0.016	0.236	4.330	4.800	2.220
TXN06R300U…	ø3.000	0.059	0.3°	0.016	0.236	5.330	5.800	2.720

For DCX above 4.000", slot milling, ramping or contouring is not recommended as chips may be re-cut.

DOTWIST BALL
TXLN

Radius mill, for 4-corner double sided inserts

GAMP= +3°, GAMF= -13°



Inch	APMX	APMX2	DCX	CICT	DC	DC2	KAPR2	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert
TXLN04U1.50B0.50R06	0.157	0.051	1.500	6	1.193	1.169	20°	1.378	1.574	0.500	0.610	0.258	0.157	0.84	With	LNMX04...
TXLN04U2.00B0.75R07	0.157	0.051	2.000	7	1.693	1.669	20°	1.850	1.969	0.750	0.750	0.315	0.197	1.10	With	LNMX04...
TXLN06U2.00B0.75R05	0.236	0.079	2.000	5	1.511	1.499	25°	1.850	1.969	0.750	0.750	0.315	0.197	1.17	With	LNMX06...
TXLN06U2.50B0.75R06	0.236	0.079	2.500	6	2.009	1.997	25°	2.323	1.969	0.750	0.750	0.315	0.197	1.90	With	LNMX06...
TXLN06U3.00B1.00R07	0.236	0.079	3.000	7	2.510	2.498	25°	2.835	2.480	1.000	1.024	0.374	0.236	3.47	With	LNMX06...

Metric	APMX	APMX2	DCX	CICT	DC	DC2	KAPR2	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TXLN04M040B16.0R06	4	1.3	40	6	32.2	31.6	20°	35	40	16	18	8.4	5.6	0.21	With	LNMX04...
TXLN04M042B16.0R06	4	1.3	42	6	34.2	33.6	20°	35	40	16	18	8.4	5.6	0.21	With	LNMX04...
TXLN04M050B22.0R07	4	1.3	50	7	42.2	41.6	20°	47	50	22	20	10.4	6.3	0.45	With	LNMX04...
TXLN04M052B22.0R07	4	1.3	52	7	44.2	43.6	20°	47	50	22	20	10.4	6.3	0.47	With	LNMX04...
TXLN04M063B22.0R07	4	1.3	63	7	55.2	54.6	20°	59	50	22	20	10.4	6.3	0.76	With	LNMX04...
TXLN05M040B16.0R05	5	-	40	5	29.8	-	-	35	40	16	18	8.4	5.6	0.26	With	LNMX05...
TXLN05M050B22.0R06	5	-	50	6	39.8	-	-	47	50	22	20	10.4	6.3	0.50	With	LNMX05...
TXLN06M050B22.0R05	6	2	50	5	37.6	37.3	25°	47	50	22	20	10.4	6.3	0.50	With	LNMX06...
TXLN06M052B22.0R05	6	2	52	5	39.6	39.3	25°	49	50	22	20	10.4	6.3	0.55	With	LNMX06...
TXLN06M063B22.0R06	6	2	63	6	50.6	50.3	25°	59	50	22	20	10.4	6.3	0.82	With	LNMX06...

SPARE PARTS




Designation	Clamping screw	Torx bit	Grip	Shell locking bolt (Optional parts)
TXLN04U1.50B0.50R06	CSPD-3	BLD IP10/S7	SW6-SD	(SR UNF 1/4X3/4 B18.3)
TXLN04U2.00B0.75R07	CSPD-3	BLD IP10/S7	SW6-SD	(C0.375X1.125H)
TXLN06U2.00B..., TXLN06U2.50B...	CSPB-5	BLDIP20/S7	H-TB2W	(C0.375X1.125H)
TXLN06U3.00B1.00R07	CSPB-5	BLDIP20/S7	H-TB2W	(C0.500X1.375H)
TXLN04M04*B16.0R06	CSPD-3	BLD IP10/S7	SW6-SD	FSHM8-30H
TXLN04M05*B22.0R07	CSPD-3	BLD IP10/S7	SW6-SD	CM10X30H
TXLN04M063B22.0R07	CSPD-3	BLD IP10/S7	SW6-SD	CM10X30H
TXLN05M040B16.0R05	CSPB-4S	BLDIP15/S7	H-TB2W	FSHM8-30H
TXLN05M050B22.0R06	CSPB-4S	BLDIP15/S7	H-TB2W	CM10X30H
TXLN06M050B22.0R05	CSPB-5	BLDIP20/S7	H-TB2W	FSHM10-40H
TXLN06M052B22.0R05	CSPB-5	BLDIP20/S7	H-TB2W	CM10X30H
TXLN06M063B22.0R06	CSPB-5	BLDIP20/S7	H-TB2W	CM10X30H

*Recommended clamping torque: CSPD-3 = 1.84 lbs·ft, 2.5 N·m, CSPB-4S = 2.58 lbs·ft, 3.5 N·m, CSPB-5 = 3.69 lbs·ft, 5 N·m

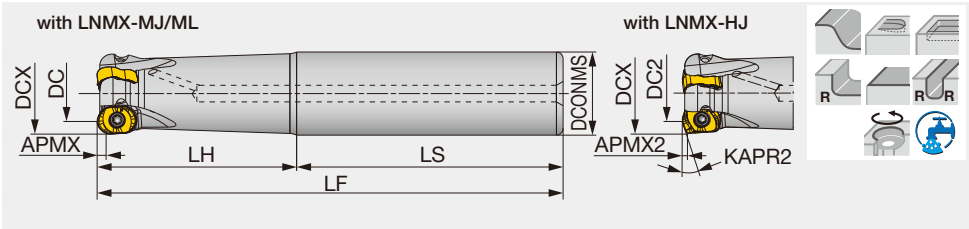
Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

Reference pages: Inserts → H038, Standard cutting conditions → H039 - H041

EXLN

Radius endmill, shank type, for 4-corner double sided inserts

GAMP= +3°, GAMF= -12° ~ -14°



Inch	APMX	APMX2	DCX	CICT	DC	DC2	KAPR2	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
EXLN04U1.00C1.00R03	0.157	0.051	1.000	3	0.693	0.669	20°	1.000	3.000	2.500	5.500	1.000	With	LNMX04...
EXLN04U1.25C1.25R04	0.157	0.051	1.250	4	0.941	0.917	20°	1.250	3.000	3.000	6.000	1.800	With	LNMX04...
EXLN04U1.25C1.25R05	0.157	0.051	1.250	5	0.941	0.917	20°	1.250	3.000	3.000	6.000	1.800	With	LNMX04...
EXLN06U1.25C1.25R02	0.236	0.079	1.250	2	0.758	0.746	25°	1.250	3.000	3.000	6.000	1.900	With	LNMX04...
EXLN06U1.50C1.25R03	0.236	0.079	1.500	3	1.012	1.000	25°	1.250	4.000	2.000	6.000	2.060	With	LNMX05..

Metric	APMX	APMX2	DCX	CICT	DC	DC2	KAPR2	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EXLN04M020C20.0R02	4	1.3	20	2	12.2	11.6	20°	20	80	50	130	0.28	With	LNMX04...
EXLN04M025C25.0R03	4	1.3	25	3	17.2	16.6	20°	25	80	60	140	0.46	With	LNMX04...
EXLN04M032C32.0R04	4	1.3	32	4	24.2	23.6	20°	32	80	70	150	0.83	With	LNMX04...
EXLN04M032C32.0R05	4	1.3	32	5	24.2	23.6	20°	32	80	70	150	0.83	With	LNMX04...
EXLN05M025C25.0R02	5	-	25	2	15	-	-	25	90	60	150	0.54	With	LNMX05..
EXLN05M032C32.0R04	5	-	32	4	21.9	-	-	32	80	70	150	0.87	With	LNMX05..
EXLN06M032C32.0R02	6	2	32	2	19.6	19.3	25°	32	80	70	150	0.90	With	LNMX06..
EXLN06M040C32.0R04	6	2	40	4	27.6	27.3	25°	32	100	50	150	0.95	With	LNMX06..

SPARE PARTS




Designation	Clamping screw	Mono block wrench	Torx bit	Grip
EXLN04...	CSPD-3	IP-10D	-	-
EXLN05...	CSPB-4S	-	BLDIP15/S7	H-TB2W
EXLN06...	CSPB-5	-	BLDIP20/S7	H-TB2W

*Recommended clamping torque : CSPD-3 = 1.84 lbs·ft, 2.5 N·m, CSPB-5 = 3.69 lbs·ft, 5 N·m

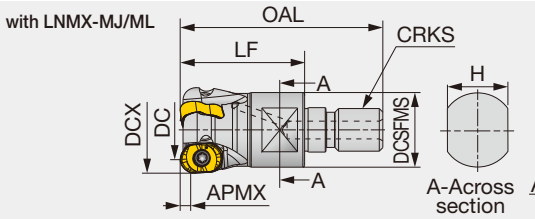
Reference pages: Inserts → H038, Standard cutting conditions → H039 - H041

DOTBALL TWIST

HXLN04-M

Radius endmill, modular type, for 4-corner double sided inserts (TungFlex)

GAMP= +3°, GAMF= -12° ~ -14°



Metric	APMX	APMX2	DCX	CICT	DC	DC2	KAPR2	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HXLN04M020M10R02	4	1.3	20	2	12.2	11.6	20°	49	30	15	18	M10	0.07	With	LNMX04...
HXLN04M025M12R03	4	1.3	25	3	17.2	16.6	20°	57	35	17	21	M12	0.16	With	LNMX04...
HXLN04M032M16R04	4	1.3	32	4	24.2	23.6	20°	63	40	22	29	M16	0.20	With	LNMX04...
HXLN05M025M12R02	5	-	25	2	15	-	-	57	35	17	21	M12	0.10	With	LNMX05...
HXLN05M032M16R04	5	-	32	4	21.9	-	-	63	40	22	28.8	M16	0.20	With	LNMX05...
HXLN06M032M16R02	6	2	32	2	19.6	19.3	25°	63	40	22	28.8	M16	0.24	With	LNMX06...

See page **H167** for TungFlex modular shank.

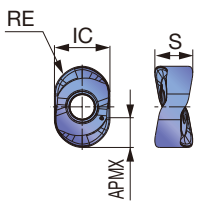
SPARE PARTS

Designation	Clamping screw	Mono block wrench	Torx bit	Grip
HXLN04...	CSPD-3	IP-10D	-	-
HXLN05...	CSPB-4S	-	BLDIP15/S7	H-TB2W
HXLN06...	CSPB-5	-	BLDIP20/S7	H-TB2W

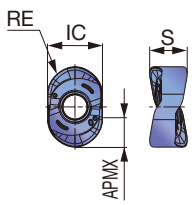
*Recommended clamping torque : CSPD-3 = 2.5 N·m, CSPB-4S = 3.5 N·m, CSPB-5 = 5 N·m

INSERT

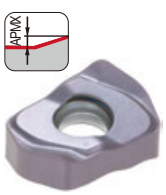
LNMX-MJ

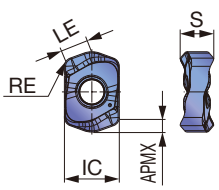


LNMX-ML



LNMX-HJ





Approach angle: 10°-20° | 45° | 70° | 85° | 88° | 90° | Others

P	Steel	☆	★
M	Stainless		★
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	☆
H	Hard materials	★	★

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH120	Coated AH3135	LE	IC	S
LNMX0405R4-MJ	0.157	0.157	●	●	-	0.323	0.220
LNMX0405R4-ML	0.157	0.157	●	●	-	0.323	0.220
LNMX0405ZER-HJ	0.051	0.051	●	●	0.169	0.323	0.197
LNMX0506R5-MJ	0.197	0.197	●	●	-	0.409	0.240
LNMX0607R6-MJ	0.236	0.236	●	●	-	0.496	0.291
LNMX0607ZER-HJ	0.079	0.079	●	●	0.264	0.500	0.283

● : Line up

STANDARD CUTTING CONDITIONS

For MJ,ML

ISO	Workpiece material		Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, 1020, etc.		- 200 HB	First choice	AH3135	MJ	325 - 980	0.008 - 0.024
			- 200 HB	Low cutting force	AH3135	ML	325 - 980	0.008 - 0.024
	Carbon steel, Alloy steel 1055, 4140, etc.		- 300 HB	First choice	AH3135	MJ	325 - 820	0.008 - 0.024
			- 300 HB	Low cutting force	AH3135	ML	325 - 820	0.008 - 0.024
	Prehardened steel NAK80, PX5, etc.		30 - 40 HRC	First choice	AH3135	MJ	325 - 655	0.006 - 0.016
			30 - 40 HRC	Low cutting force	AH3135	ML	325 - 655	0.006 - 0.016
M	Austenitic Stainless steel 304SS, 316SS, etc.		- 200 HB	First choice	AH3135	MJ	325 - 655	0.008 - 0.024
			- 200 HB	Low cutting force	AH3135	ML	325 - 655	0.008 - 0.024
	Martensitic Stainless steel 420SS etc.		- 200 HB	First choice	AH3135	ML	325 - 980	0.008 - 0.024
			- 200 HB	Fracture resistance	AH3135	MJ	325 - 980	0.008 - 0.024
K	Gray cast iron Class 25, Class 30, etc.		150 - 250 HB	First choice	AH120	MJ	325 - 980	0.008 - 0.024
			150 - 250 HB	Low cutting force	AH120	ML	325 - 980	0.008 - 0.024
	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250 HB	First choice	AH120	MJ	260 - 820	0.008 - 0.024
			150 - 250 HB	Low cutting force	AH120	ML	260 - 820	0.008 - 0.024
S	Titanium alloy Ti-6Al-4V, etc.		-	First choice	AH3135	ML	95 - 195	0.006 - 0.024
			-	Fracture resistance	AH3135	MJ	95 - 195	0.006 - 0.024
	Superalloys Inconel718, etc.		-	First choice	AH120	ML	65 - 160	0.002 - 0.012
			-	Fracture resistance	AH120	MJ	65 - 160	0.002 - 0.012
H	Hardened steel	H13, etc.	40 - 50 HRC	First choice	AH3135	MJ	160 - 490	0.004 - 0.012
			40 - 50 HRC	Wear resistance	AH120	MJ	160 - 490	0.004 - 0.012
		D2, etc.	50 - 60 HRC	First choice	AH120	MJ	160 - 225	0.002 - 0.006

Reference pages: TungFlex → H167

STANDARD CUTTING CONDITIONS

LNMX04-HJ

ISO	Workpiece material		Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, 1020, etc.		- 300HB	First choice	AH3135	HJ	325 - 980	0.020 - 0.051
				Wear resistance	AH120			
	Carbon steel, Alloy steel 1055, 4140, etc.		- 300HB	First choice	AH3135	HJ	325 - 820	0.020 - 0.051
				Wear resistance	AH120			
	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	First choice	AH3135	HJ	325 - 655	0.016 - 0.039
				Wear resistance	AH120			
M	Austenitic Stainless steel 304SS, 316SS, etc.		- 200HB	First choice	AH3135	HJ	325 - 655	0.012 - 0.035
	Martensitic Stainless steel 420SS, etc.		- 200HB	First choice	AH3135	HJ	325 - 980	0.012 - 0.035
K	Gray cast iron Class 25, Class 30, etc.		150 - 250HB	First choice	AH120	HJ	325 - 980	0.020 - 0.051
				Fracture resistance	AH3135			
	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250HB	First choice	AH120	HJ	260 - 820	0.020 - 0.051
				Fracture resistance	AH3135			
S	Titanium alloy Ti-6Al-4V, etc.		150 - 250HB	First choice	AH3135	HJ	95 - 195	0.012 - 0.028
	Superalloys Inconel718, etc.		150 - 250HB	First choice	AH120	HJ	65 - 160	0.004 - 0.012
H	Hardened steel	H13, etc.	40 - 50HRC	First choice	AH3135	HJ	160 - 490	0.004 - 0.020
				Wear resistance	AH120			
		D2, etc.	50 - 60HRC	First choice	AH120	HJ	160 - 225	0.002 - 0.008

LNMX06-HJ

ISO	Workpiece material		Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, 1020, etc.		- 300HB	First choice	AH3135	HJ	325- 980	0.012 - 0.044
				Wear resistance	AH120			
	Carbon steel, Alloy steel 1055, 4140, etc.		- 300HB	First choice	AH3135	HJ	325 - 820	0.012 - 0.044
				Wear resistance	AH120			
	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	First choice	AH3135	HJ	325 - 655	0.008 - 0.028
				Wear resistance	AH120			
M	Austenitic Stainless steel 304SS, 316SS, etc.		- 200HB	First choice	AH3135	HJ	325 - 655	0.008 - 0.028
	Martensitic Stainless steel 420SS, etc.		- 200HB	First choice	AH3135	HJ	325 - 980	0.008 - 0.028
K	Gray cast iron Class 25, Class 30, etc.		150 - 250HB	First choice	AH120	HJ	325 - 980	0.012 - 0.044
				Fracture resistance	AH3135			
	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250HB	First choice	AH120	HJ	260 - 820	0.012 - 0.044
				Fracture resistance	AH3135			
S	Titanium alloy Ti-6Al-4V, etc.		150 - 250HB	First choice	AH3135	HJ	95 - 195	0.006 - 0.024
	Superalloys Inconel718, etc.		150 - 250HB	First choice	AH120	HJ	65 - 160	0.002 - 0.012
H	Hardened steel	H13, etc.	40 - 50HRC	First choice	AH3135	HJ	160 - 490	0.004 - 0.012
				Wear resistance	AH120			
		D2, etc.	50 - 60HRC	First choice	AH120	HJ	160 - 225	0.002 - 0.006

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

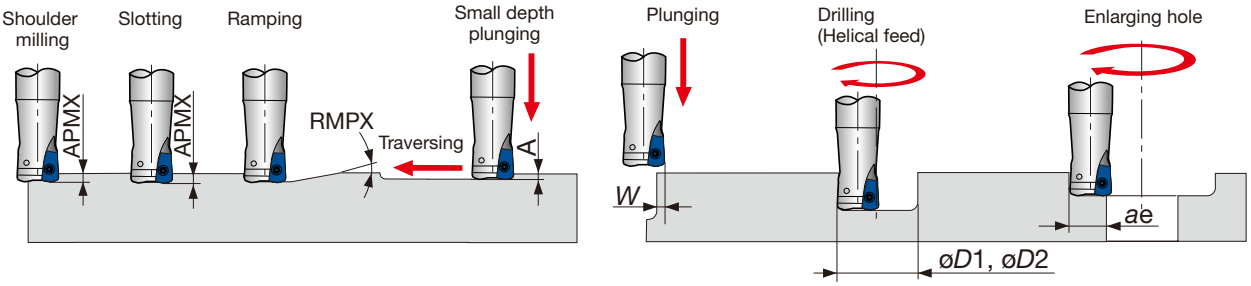
Tool dia: ø*Dc* (in), Number of revolution: *n* (rpm), Feed speed: *Vf* (ipm), Max. depth of cut: *ap* = 0.051", Number of teeth: z

ø0.787", CICT = 2		ø0.984", CICT = 3		ø1.260"			ø1.575", CICT = 6		ø1.654", CICT = 6		ø1.969", CICT = 7		ø2.047", CICT = 7		ø2.480", CICT = 7	
					Vf											
n	*Vf*	*n*	*Vf*	*n*	Coarse pitch (CICT = 4)	Close pitch (CICT = 5)	*n*	*Vf*	*n*	*Vf*	*n*	*Vf*	*n*	*Vf*	*n*	*Vf*
3,180	225	2,550	271	1,990	282	353	1,590	338	1,520	323	1,270	315	1,220	303	1,010	250
							Vc = 656 sfm, *fz* = 0.036 ipt									
2,860	203	2,290	243	1,790	254	317	1,430	304	1,360	289	1,150	285	1,100	273	910	226
							Vc = 590 sfm, *fz* = 0.036 ipt									
2,390	132	1,910	158	1,490	164	206	1,190	197	1,140	189	950	183	920	178	760	146
							Vc = 492 sfm, *fz* = 0.028 ipt									
2,390	113	1,910	135	1,490	141	176	1,190	169	1,140	161	950	157	920	152	760	126
							Vc = 492 sfm, *fz* = 0.024 ipt									
3,180	150	2,550	181	1,990	188	235	1,590	225	1,520	215	1,270	210	1,220	202	1,010	167
							Vc = 656 sfm, *fz* = 0.024 ipt									
3,180	225	2,550	271	1,990	282	353	1,590	338	1,520	323	1,270	315	1,220	303	1,010	250
							Vc = 656 sfm, *fz* = 0.036 ipt									
2,550	181	2,040	217	1,590	225	282	1,270	270	1,210	257	1,020	253	980	243	810	201
							Vc = 525 sfm, *fz* = 0.036 ipt									
720	28	570	34	450	35	44	360	43	340	40	290	40	280	39	230	32
							Vc = 148 sfm, *fz* = 0.02 ipt									
480	7	380	9	300	9	12	240	11	230	11	190	11	180	10	150	8
							Vc = 98 sfm, *fz* = 0.008 ipt									
1,590	37	1,270	45	990	47	59	800	57	760	54	640	53	610	50	510	42
							Vc = 328 sfm, *fz* = 0.012 ipt									
950	9	760	11	600	12	15	480	14	450	13	380	13	370	13	300	10
							Vc = 197 sfm, *fz* = 0.005 ipt									

Tool dia: DCX (in), Number of revolution: *n* (rpm), Feed speed: *Vf* (ipm), Max. depth of cut: *ap* = 0.079", Number of teeth: z

ø1.260, z = 2		ø1.575, z = 4		ø1.969, z = 5		ø2.047, z = 5		ø2.480, z = 6	
n	*Vf*	*n*	*Vf*	*n*	*Vf*	*n*	*Vf*	*n*	*Vf*
2,010	110	1,670	140	1,250	180	1,000	170	840	160
				Vc = 656 sfm, *fz* = 0.028 ipt					
1,800	100	1,500	130	1,130	160	900	150	750	150
				Vc = 590 sfm, *fz* = 0.028 ipt					
1,500	50	1,250	70	940	80	750	80	630	80
				Vc = 492 sfm, *fz* = 0.018 ipt					
1,500	50	1,250	70	940	80	750	80	630	80
				Vc = 492 sfm, *fz* = 0.018 ipt					
2,010	70	1,670	90	1,250	110	1,000	110	840	110
				Vc = 656 sfm, *fz* = 0.018 ipt					
2,010	110	1,670	140	1,250	180	1,000	170	840	160
				Vc = 656 sfm, *fz* = 0.028 ipt					
1,600	90	1,340	110	1,000	140	800	130	670	130
				Vc = 525 sfm, *fz* = 0.028 ipt					
450	14	380	17	280	21	230	21	190	20
				Vc = 148 sfm, *fz* = 0.015 ipt					
300	4	250	5	190	7	150	6	130	6
				Vc = 98 sfm, *fz* = 0.007 ipt					
1,000	16	840	20	630	25	500	24	420	24
				Vc = 328 sfm, *fz* = 0.008 ipt					
600	5	500	6	380	8	300	7	250	7
				Vc = 197 sfm, *fz* = 0.004 ipt					

MACHINING APPLICATIONS



MJ, ML

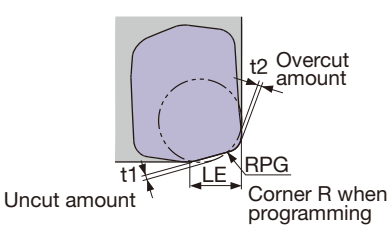
Inch	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging A	Max. cutting width in plunging W	Min. machining dia. øD1	Max. machining dia. øD2	Max. cutting width in enlarging ae
EXLN04U1.00C1.00R03	1.000	0.157	3°	0.031	0.157	1.535	1.929	0.803
EXLN04U1.25C1.25R04	1.250	0.157	1.9°	0.031	0.157	2.047	2.402	1.053
EXLN04U1.25C1.25R05	1.250	0.157	1.9°	0.031	0.157	2.047	2.402	1.053
TXLN04U1.50B0.50R06	1.500	0.157	1.2°	0.024	0.157	2.511	2.905	1.342
TXLN04U2.00B0.75R07	2.000	0.157	1°	0.027	0.157	3.496	3.889	1.842
HXLN04M020M10R02	0.787	0.157	4.7°	0.031	0.157	1.102	1.496	0.591
HXLN04M025M12R03	0.984	0.157	3°	0.031	0.157	1.496	1.890	0.787
HXLN04M032M16R04	1.260	0.157	2°	0.031	0.157	2.047	2.441	1.063
EXLN06U1.25C01.25R02	1.250	0.236	3.7°	0.039	0.394	1.732	2.421	0.827
EXLN06U1.50C01.25R03	1.500	0.236	4°	0.067	0.394	2.165	2.921	1.063
TXLN06U2.00B0.75R05	2.000	0.236	2.7°	0.067	0.394	3.150	3.921	1.575
TXLN06U2.50B0.75R06	2.500	0.236	2.3°	0.079	0.394	4.134	4.921	2.047
TXLN06U3.00B1.00R07	3.000	0.236	1.6°	0.071	0.394	5.157	5.921	2.559

HJ

Inch	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging A	Max. cutting width in plunging W	Min. machining øD1	Max. machining øD2	Max. cutting width in enlarging ae
EXLN04U1.00C1.00R03	1.000	0.051	3°	0.030	0.161	1.496	1.929	0.803
EXLN04U1.25C1.25R04	1.250	0.051	2°	0.030	0.161	2.008	2.441	1.053
EXLN04U1.25C1.25R05	1.250	0.051	2°	0.030	0.161	2.008	2.441	1.053
TXLN04U1.50B0.50R06	1.500	0.157	1.3°	0.024	0.161	2.456	2.905	1.342
TXLN04U2.00B0.75R07	2.000	0.157	1°	0.027	0.161	3.456	3.889	1.842
HXLN04M020M10R02	0.787	0.051	4.9°	0.030	0.161	1.063	1.496	0.610
HXLN04M025M12R03	0.984	0.051	3°	0.030	0.161	1.457	1.890	0.807
HXLN04M032M16R04	1.260	0.051	2°	0.030	0.161	2.008	2.441	1.083
EXLN06U1.25C01.25R02	1.250	0.079	5.7°	0.055	0.433	1.614	2.421	0.787
EXLN06U1.50C01.25R03	1.500	0.079	4.3°	0.059	0.433	2.087	2.921	1.024
TXLN06U2.00B0.75R05	2.000	0.079	2.7°	0.063	0.433	3.110	4.000	1.535
TXLN06U2.50B0.75R06	2.500	0.079	2°	0.067	0.433	4.094	4.921	2.008
TXLN06U3.00B1.00R07	3.000	0.079	1.4°	0.067	0.433	5.079	5.921	2.520

TOOL GEOMETRY ON PROGRAMMING FOR HIGH FEED

The following table shows the amount left uncut (t1) and overcut (t2).



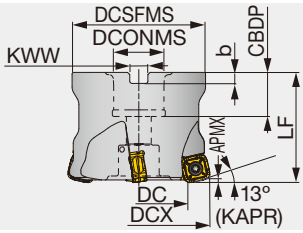
	Max. depth of cut APMX (in)	LE (in)	Programmed corner R (in)	Amount left uncut t1 (in)	Amount left overcut t2 (in)
LNMX04-HJ	0.051	0.161	R0.059	0.031	-
	0.051	0.161	R0.079	0.026	-
	0.051	0.161	R0.098	0.020	0.002
	0.051	0.161	R0.118	0.014	0.008
LNMX06-HJ	0.079	0.236	R0.079	0.055	-
	0.079	0.236	R0.118	0.043	-
	0.079	0.236	R0.138	0.036	-
	0.079	0.236	R0.157	0.029	0.002
	0.079	0.236	R0.197	0.016	0.014

DOFEEDQUAD

TXQ

High feed face mill

GAMP = +7°, GAMF = -8° ~ -4.5°



Inch	APMX	DCX	CICT	DC	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert
TXQ12R200U0075A03	0.079	2.000	3	1.362	1.850	1.969	0.750	0.750	0.315	0.197	1.120	With	SQMU1206ZSR-MJ
TXQ12R200U0075A04	0.079	2.000	4	1.362	1.850	1.969	0.750	0.750	0.315	0.197	1.120	With	SQMU1206ZSR-MJ
TXQ12R250U0075A04	0.079	2.500	4	1.862	2.323	1.969	0.750	0.750	0.315	0.197	1.760	With	SQMU1206ZSR-MJ
TXQ12R300U0100A05	0.079	3.000	5	2.362	2.835	2.480	1.000	1.024	0.374	0.236	3.770	With	SQMU1206ZSR-MJ
TXQ12R400U0150A06	0.079	4.000	6	3.362	3.780	2.480	1.500	1.457	0.626	0.394	5.710	With	SQMU1206ZSR-MJ
TXQ12R500U0150A07	0.079	5.000	7	4.362	3.780	2.480	1.500	1.457	0.626	0.394	7.010	With	SQMU1206ZSR-MJ
TXQ12R600U0200AZ08	0.079	6.000	8	5.37	3.937	2.480	2.000	1.496	0.748	0.433	9.700	With	SQMU1206ZSR-MJ

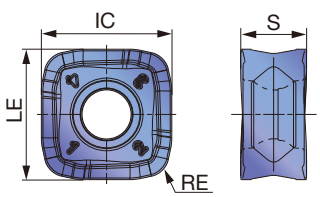
SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Torx bit	Shell locking bolt (Optional parts)
TXQ12R**U0075A...	CSPB-4	H-TBS	M-1000	BLDIP15/S7	(C0.375X1.125H)
TXQ12R300U0100A05	CSPB-4	H-TBS	M-1000	BLDIP15/S7	(C0.500X1.375H)
TXQ12R**U0150A...	CSPB-4	H-TBS	M-1000	BLDIP15/S7	(TMBA-0.750H)
TXQ12R600U0200AZ08	CSPB-4	H-TBS	M-1000	BLDIP15/S7	-

*Recommended clamping torque : CSPB-4 = 2.58 lbs·ft

INSERT

SQMU-MJ



		AH120	AH130	AH725	T3130
P	Steel	☆		★	☆
M	Stainless		★	☆	
K	Cast iron	★		☆	
N	Non-ferrous				
S	Superalloys	★	☆	★	
H	Hard materials			★	

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH120	AH130	AH725	T3130	LE	S	IC
SQMU1206ZSR-MJ	0.079	0.079	●	●	●	●	0.461	0.236	0.461

● : Line up

Reference pages: Standard cutting conditions → H044 - H045

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steels 1045, 1055, etc.	~ 300HB	First choice	AH725	330 - 980	0.020 - 0.080
			Wear resistance	T3130	330 - 980	0.020 - 0.080
			Fracture resistance	AH130	330 - 980	0.020 - 0.080
	Alloy steels 4140, etc.	~ 300HB	First choice	AH725	330 - 660	0.020 - 0.060
			Wear resistance	T3130	330 - 660	0.020 - 0.060
			Fracture resistance	AH130	330 - 660	0.020 - 0.060
	Prehardened steels NAK80, PX5, etc.	30 ~ 40HRC	-	AH725	330 - 660	0.020 - 0.040
M	Stainless steels 304, 316, etc.	~ 200HB	-	AH130	330 - 500	0.012 - 0.030
K	Gray cast irons No.25, No.30, etc.	-	-	AH120	100 - 300	0.020 - 0.080
	Ductile cast irons 60-40-18, 65-45-12, etc.	-	-	AH120	260 - 660	0.020 - 0.080
S	Titanium alloy Ti-6Al-4V, etc.	~ 40HRC	-	AH725	100 - 200	0.012 - 0.028
H	Hardened steels H13, D2, etc.	40 ~ 50HRC	-	AH725	260 - 43	0.004 - 0.012
		50 ~ 60HRC	-	AH725	160 - 230	0.001 - 0.003

· Slot or pocket milling is not recommended, since chip re-cutting easily occurs.
· Tool overhang length must be as short as possible to avoid chatter. When the tool overhang length is long, decrease the number of revolutions and feed.

· Cutting conditions are generally limited by the rigidity and power of the machine and the rigidity of the workpiece. When setting the conditions, start from half of the values of the standard cutting conditions and then increase the value gradually while making sure the machine is running normally.

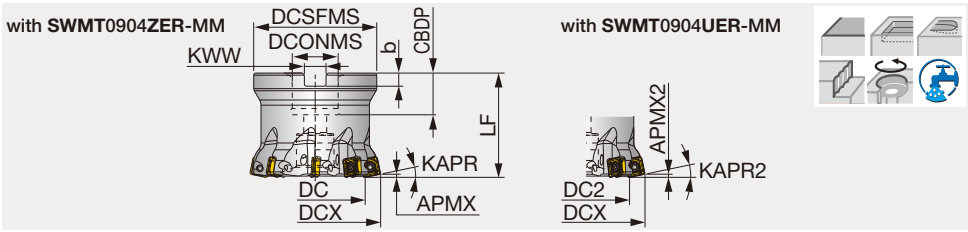
Tool dia: DCX (in), Number of revolution: *n* (rpm), Feed speed: *Vf* (ipm), Max. depth of cut: APMX = 0.079"

ø2.000"		ø2.500"		ø3.000"		ø4.000"		ø5.000"	
n	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***
1,260	227	1,010	242	790	237	630	227	500	210
				Vc = 660 sfm, *fz* = 0.060 ipt					
950	114	750	120	590	118	470	113	380	106
				Vc = 500 sfm, *fz* = 0.040 ipt					
950	86	750	90	590	89	470	85	380	80
				Vc = 490 sfm, *fz* = 0.030 ipt					
760	46	600	48	470	47	380	46	300	42
				Vc = 400 sfm, *fz* = 0.020 ipt					
1,260	227	1,010	242	790	237	630	227	500	210
				Vc = 660 sfm, *fz* = 0.060 ipt					
950	171	750	180	590	177	470	170	380	160
				Vc = 500 sfm, *fz* = 0.060 ipt					
250	15	200	16	150	15	120	14	100	14
				Vc = 130 sfm, *fz* = 0.020 ipt					
630	15	500	16	390	16	310	15	250	14
				Vc = 330 sfm, *fz* = 0.008 ipt					
380	2	300	2	240	2	190	2	150	2
				Vc = 200 sfm, *fz* = 0.002 ipt					

MILLQFEED UAP
TXSW09

High feed mill, for 4-corner single sided inserts

GAMP = +3.8°, GAMF = -3.5°



Inch	APMX	APMX2	DCX	CICT	DC	DC2	DCSFMS	DCONMS	CBDP	LF	KWW	b	KAPR	KAPR2	WT(lb)	Air hole	Insert
TXSW09U1.50B0.50R05	0.059	0.039	1.500	5	0.909	0.870	1.378	0.500	0.630	1.575	0.258	0.157	12°	7°	0.180	With	SWMT09...
TXSW09U2.00B0.75R07	0.059	0.039	2.000	7	1.405	1.366	1.772	0.750	0.750	1.969	0.315	0.197	12°	7°	0.380	With	SWMT09...

SPARE PARTS

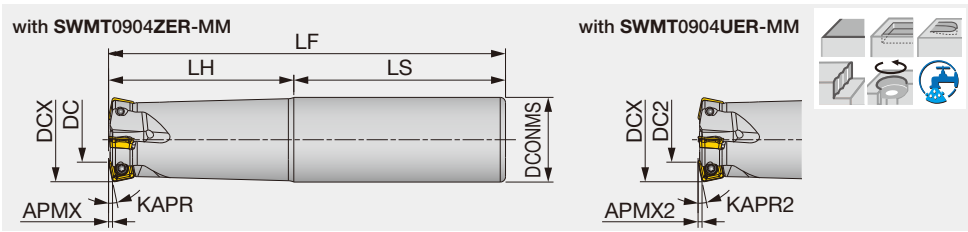
Designation	Clamping screw	Torx bit	Grip	Shell locking bolt (optional parts)	Lubricant
TXSW09U1.50B0.50R05	CSPD-3	BLDIP10/S7	H-TB2W	(SR UNF 1/4X3/4 B18.3)	M-1000
TXSW09U2.00B0.75R07	CSPD-3	BLDIP10/S7	H-TB2W	(C0.375X1.125H)	M-1000

*Recommended clamping torque：CSPD-3 = 1.84 lbs·ft

MILLQFEED UAP
EXSW09

High feed mill, for 4-corner single sided inserts

GAMP = +3.9°, GAMF = -3.5°



Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

Inch	APMX	APMX2	DCX	CICT	DC	DC2	DCONMS	LF	LH	LS	KAPR	KAPR2	WT(lb)	Air hole	Insert
EXSW09U1.00C1.00R03	0.059	0.039	1.000	3	0.409	0.370	1.000	5.500	2.500	3.000	12°	7°	0.460	With	SWMT09...
EXSW09U1.00C1.00R03L	0.059	0.039	1.000	3	0.409	0.370	1.000	7.000	4.000	3.000	12°	7°	0.580	With	SWMT09...
EXSW09U1.25C1.25R04	0.059	0.039	1.250	4	0.657	0.618	1.250	6.000	3.000	3.000	12°	7°	0.810	With	SWMT09...
EXSW09U1.25C1.25R04L	0.059	0.039	1.250	4	0.657	0.618	1.250	8.000	5.000	3.000	12°	7°	1.070	With	SWMT09...

SPARE PARTS

Designation	Clamping screw	Wrench	Lubricant
EXSW09...	CSPD-3	IP-10D	M-1000

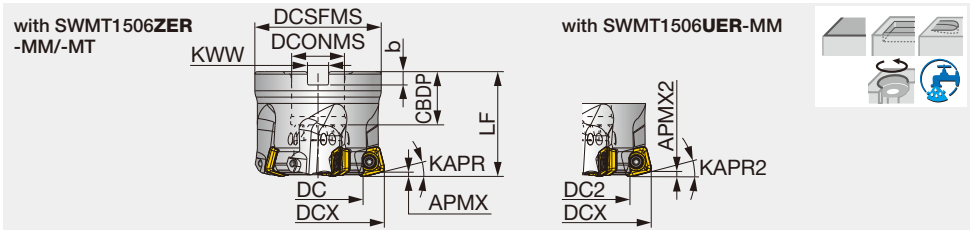
*Recommended clamping torque：CSPD-3 = 1.84 lbs·ft

Reference pages: Inserts → H047, Standard cutting conditions → H048 - H049

TXSW15

High feed mill, for 4-corner single sided inserts

GAMP = +5°, GAMF = 0°



Inch	APMX	APMX2	DCX	CICT	DC	DC2	DCSFMS	LF	DCONMS	CBDP	KWW	b	KAPR	KAPR2	WT(lb)	Air hole	Insert
TXSW15U2.00B0.75R03	0.098	0.079	2.000	3	0.929	0.905	1.850	1.969	0.750	0.750	0.315	0.197	14°	10°	0.950	With	SWMT15...
TXSW15U2.50B0.75R04	0.098	0.079	2.500	4	1.480	1.405	2.323	1.969	0.750	0.750	0.315	0.197	14°	10°	1.520	With	SWMT15...
TXSW15U3.00B1.00R05	0.098	0.079	3.000	5	1.980	1.905	2.835	2.480	1.000	1.024	0.374	0.236	14°	10°	2.710	With	SWMT15...
TXSW15U4.00B1.50R06	0.098	0.079	4.000	6	2.980	2.905	3.819	2.480	1.500	1.063	0.626	0.394	14°	10°	4.870	With	SWMT15...
TXSW15U5.00B1.50R07	0.098	0.079	5.000	7	3.980	3.905	3.819	2.480	1.500	1.614	0.626	0.394	14°	10°	6.370	With	SWMT15...
TXSW15U6.00B2.00R08	0.098	0.079	6.000	8	4.980	4.905	4.331	2.480	2.000	1.496	0.748	0.433	14°	10°	8.290	With	SWMT15...

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Shell locking bolt 1 (Optional parts)	Shell locking bolt 2	Torx bit
TXSW15U2.00B0.75R03	TS50115I	H-TB2W	M-1000	-	SR 5/16-32UNEF_3/8-2	BT20S
TXSW15U2.50B0.75R04	TS50115I	H-TB2W	M-1000	(C0.375X1.125H)	-	BT20S
TXSW15U3.00B1.00R05	TS50115I	H-TB2W	M-1000	(C0.500x1.375H)	-	BT20S
TXSW15U4.00B1.50R06	TS50115I	H-TB2W	M-1000	(TMBA-0.750H)	-	BT20S
TXSW15U5.00B1.50R07	TS50115I	H-TB2W	M-1000	(TMBA-0.750H)	-	BT20M
TXSW15U6.00B2.00R08	TS50115I	H-TB2W	M-1000	-	-	BT20M

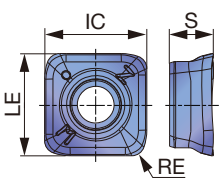
*Recommended clamping torque：TS50115I = 3.69 lbs･ft

When installing TXSW15U2.00B0.75R03 on the arbor

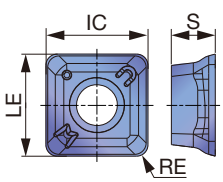
- Always use the dedicated shell locking bolt (part code: SRPS118-0273) included in the package.
- Thoroughly read the installation manual included in the package before installation.

INSERT

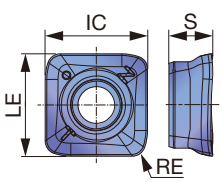
SWMT09/15ZER-MM



SWMT09/15UER-MM



SWMT15ZER-MT



P	Steel	☆	★
M	Stainless		★
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	☆
H	Hard materials	★	★

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH120	Coated AH3135	LE	IC	S
SWMT0904ZER-MM	0.039	0.059		●	0.339	0.339	0.157
SWMT0904UER-MM	0.039	0.039		●	0.356	0.356	0.157
SWMT1506ZER-MM	0.079	0.098	●	●	0.630	0.630	0.268
SWMT1506UER-MM	0.079	0.079		●	0.641	0.641	0.268
SWMT1506ZER-MT	0.079	0.098	●	●	0.627	0.627	0.268

● : Line up

Reference pages: Standard cutting conditions → H048 - H049

STANDARD CUTTING CONDITIONS

09 type

ISO	Workpiece material		Hardness	Priority	Insert type	Chip-breaker	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steel 1045, 1055, etc.		- 300HB	First choice	ZER	MM	AH3135	330 - 990	0.020 - 0.060
				for wear resistance	UER	MM	AH3135	330 - 990	0.020 - 0.060
	Alloy steel 4140, etc.		- 300HB	First choice	ZER	MM	AH3135	330 - 660	0.020 - 0.060
				for wear resistance	UER	MM	AH3135	330 - 660	0.020 - 0.060
	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	First choice	ZER	MM	AH3135	330 - 660	0.020 - 0.047
				for wear resistance	UER	MM	AH3135	330 - 660	0.020 - 0.047
M	Austenitic stainless steel 304, etc.		- 200HB	First choice	UER	MM	AH3135	330 - 490	0.020 - 0.047
				Low cutting load	ZER	MM	AH3135	330 - 490	0.020 - 0.047
	Precipitation hardening stainless steel 174, etc.		28HRC - (H1150)	First choice	UER	MM	AH3135	260 - 490	0.012 - 0.047
				Low cutting load	ZER	MM	AH3135	260 - 490	0.012 - 0.047
			40HRC - (H900)	First choice	UER	MM	AH3135	260 - 400	0.012 - 0.031
				Low cutting load	ZER	MM	AH3135	260 - 400	0.012 - 0.031
K	Gray cast iron No.250B, No.300B, etc.		150 - 250HB	First choice	ZER	MM	AH3135	330 - 990	0.020 - 0.080
	Ductile cast iron 80-55-06, etc.		150 - 250HB	First choice	ZER	MM	AH3135	260 - 660	0.020 - 0.080
S	Titanium alloys Ti-6Al-4V, etc.		- 40HRC	First choice	UER	MM	AH3135	100 - 200	0.012 - 0.028
				Low cutting load	ZER	MM	AH3135	100 - 200	0.012 - 0.028
	Heat-resistant alloys Inconel, Hastelloy, etc.		- 40HRC	First choice	UER	MM	AH3135	70 - 170	0.004 - 0.012
				for wear resistance	ZER	MM	AH3135	70 - 170	0.004 - 0.012
H	Hardened steel	H13, etc.	40 - 50HRC	First choice	ZER	MM	AH3135	260 - 430	0.004 - 0.012

15 type

ISO	Workpiece material		Hardness	Priority	Insert type	Chip-breaker	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steel 1045, 1055, etc.		- 300HB	First choice	ZER	MM	AH3135	330 - 990	0.020 - 0.060
				for wear resistance	ZER	MM	AH120	330 - 990	0.020 - 0.060
				for impact resistance	ZER	MT	AH3135	330 - 990	0.020 - 0.080
	Alloy steel 4140, etc.		- 300HB	First choice	ZER	MM	AH3135	330 - 660	0.020 - 0.060
				for wear resistance	ZER	MM	AH120	330 - 660	0.020 - 0.060
				for impact resistance	ZER	MT	AH3135	330 - 660	0.020 - 0.080
	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	First choice	ZER	MM	AH3135	330 - 660	0.020 - 0.047
				for wear resistance	ZER	MM	AH120	330 - 660	0.020 - 0.047
				for impact resistance	ZER	MT	AH3135	330 - 660	0.020 - 0.060
M	Austenitic stainless steel 304, etc.		- 200HB	First choice	UER	MM	AH3135	330 - 490	0.020 - 0.047
				Low cutting load	ZER	MM	AH3135	330 - 490	0.020 - 0.047
	Precipitation hardening stainless steel 174, etc.		28HRC - (H1150)	First choice	UER	MM	AH3135	260 - 490	0.012 - 0.047
				Low cutting load	ZER	MM	AH3135	260 - 490	0.012 - 0.047
			40HRC - (H900)	First choice	UER	MM	AH3135	260 - 400	0.012 - 0.031
				Low cutting load	ZER	MM	AH3135	260 - 400	0.012 - 0.031
K	Gray cast iron No.250B, No.300B, etc.		150 - 250HB	First choice	ZER	MT	AH120	330 - 990	0.020 - 0.080
				for impact resistance	ZER	MT	AH3135	330 - 990	0.020 - 0.080
				Low cutting load	ZER	MM	AH120	330 - 990	0.020 - 0.060
	Ductile cast iron 80-55-06, etc.		150 - 250HB	First choice	ZER	MT	AH120	260 - 660	0.020 - 0.080
				for impact resistance	ZER	MT	AH3135	260 - 660	0.020 - 0.080
				Low cutting load	ZER	MM	AH120	260 - 660	0.020 - 0.060
S	Titanium alloys Ti-6Al-4V, etc.		- 40HRC	First choice	UER	MM	AH3135	100 - 200	0.012 - 0.028
				Low cutting load	ZER	MM	AH3135	100 - 200	0.012 - 0.028
				for impact resistance	ZER	MT	AH3135	100 - 200	0.012 - 0.028
	Heat-resistant alloys Inconel, Hastelloy, etc.		- 40HRC	First choice	UER	MM	AH3135	70 - 170	0.004 - 0.012
				for wear resistance	ZER	MM	AH120	70 - 170	0.004 - 0.012
H	Hardened steel	H13, etc.	40 - 50HRC	First choice	ZER	MT	AH3135	260 - 430	0.004 - 0.012
				for wear resistance	ZER	MT	AH120	260 - 430	0.004 - 0.012
		D2, etc.	50 - 60HRC	First choice	ZER	MT	AH120	160 - 230	0.002 - 0.008

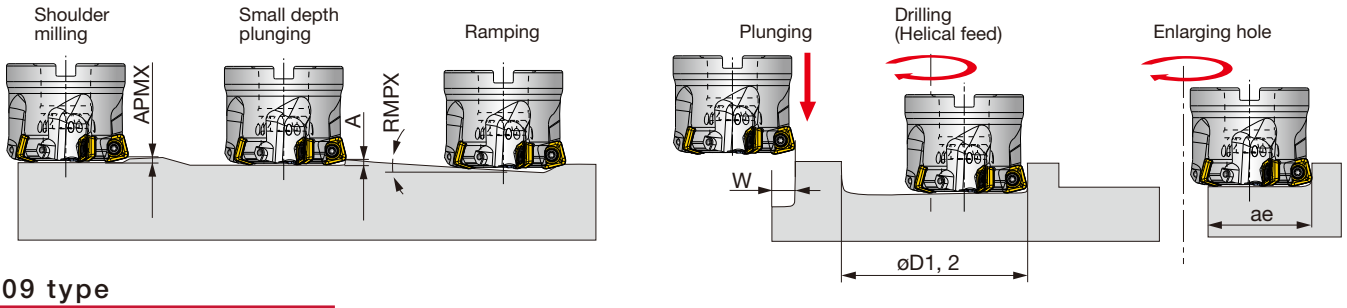
Tool dia.: DC (in), Number of revolutions: *n* (rpm), Feed speed: *Vf* (ipm), Number of inserts: CICT

ø1.000", CICT = 3		ø1.250", CICT = 4		ø1.500", CICT = 5		ø2.000", CICT = 7	
n	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***
2,550	301	1,990	313	1,590	313	1,270	350
			Vc = 660 sfm, *fz* = 0.040 ipt				
1,910	226	1,490	235	1,190	234	960	265
			Vc = 490 sfm, *fz* = 0.040 iptt				
1,910	180	1,490	188	1,190	187	960	212
			Vc = 490 sfm, *fz* = 0.031 ipt				
1,530	144	1,190	150	960	151	760	168
			Vc = 400 sfm, *fz* = 0.031 ipt				
1,530	144	1,190	150	960	151	760	168
			Vc = 400 sfm, *fz* = 0.031 ipt				
1,270	90	1,000	94	800	94	640	106
			Vc = 330 sfm, *fz* = 0.024 ipt				
2,550	361	1,990	376	1,590	376	1,270	420
			Vc = 660 sfm, *fz* = 0.047 ipt				
1,910	271	1,490	281	1,190	281	1,270	420
			Vc = 490 sfm, *fz* = 0.047 ipt				
510	30	400	31	320	31	250	35
			Vc = 150 sfm, *fz* = 0.020 ipt				
380	9	300	9	240	9	190	11
			Vc = 120 sfm, *fz* = 0.008 ipt				
1,270	30	1,000	31	800	31	640	35
			Vc = 100 sfm, *fz* = 0.200 ipt				

Tool dia.: DC (in), Number of revolutions: *n* (rpm), Feed speed: *Vf* (ipm), Number of inserts: CICT

ø2.000", CICT = 3		ø2.500", CICT = 4		ø3.000", CICT = 5		ø4.000", CICT = 6		ø5.000", CICT = 7		ø6.000", CICT = 8	
n	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***	***n***	***Vf***
1,270	150	1,010	159	800	157	640	151	510	141	400	126
					Vc = 660 sfm, *fz* = 0.040 ipt						
1,270	180	1,010	191	800	189	640	181	510	169	400	151
					Vc = 660 sfm, *fz* = 0.047 ipt						
960	113	760	120	600	118	480	113	380	105	300	94
					Vc = 490 sfm, *fz* = 0.040 ipt						
960	136	760	144	600	142	480	136	380	126	300	113
					Vc = 490 sfm, *fz* = 0.047 ipt						
960	91	760	96	600	94	480	91	380	84	300	76
					Vc = 490 sfm, *fz* = 0.031 ipt						
960	113	760	120	600	118	480	113	380	105	300	94
					Vc = 490 sfm, *fz* = 0.040 ipt						
760	72	610	77	480	76	380	72	310	69	240	61
					Vc = 400 sfm, *fz* = 0.031 ipt						
760	72	610	77	480	76	380	72	310	69	240	61
					Vc = 400 sfm, *fz* = 0.031 ipt						
640	45	510	48	400	47	320	45	250	41	200	38
					Vc = 330 sfm, *fz* = 0.024 ipt						
1,270	180	1,010	191	800	189	640	181	510	169	400	151
					Vc = 660 sfm, *fz* = 0.047 ipt						
1,270	150	1,010	159	800	157	640	151	510	141	400	126
					Vc = 660 sfm, *fz* = 0.040 ipt						
960	136	760	144	600	142	480	136	380	126	300	113
					Vc = 490 sfm, *fz* = 0.047 ipt						
960	113	760	120	600	118	480	113	380	105	300	94
					Vc = 490 sfm, *fz* = 0.040 ipt						
250	15	200	16	160	16	130	15	100	14	80	13
					Vc = 150 sfmn, *fz* = 0.020 ipt						
200	5	150	5	120	5	100	5	80	4	60	4
					Vc = 120 sfm, *fz* = 0.008 ipt						
640	15	510	16	400	16	320	15	250	14	200	13
					Vc = 100 sfm, *fz* = 0.200 ipt						
380	6	300	6	240	6	190	6	150	5	120	5
					Vc = 60 sfm, *fz* = 0.120 ipt						

APPLICATION RANGE



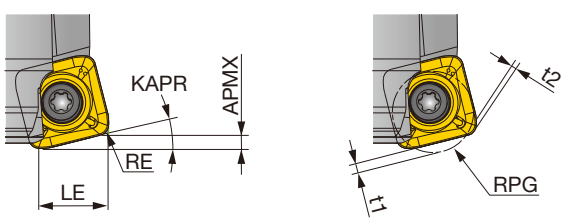
09 type

Inch	Tool dia. DCX	Max. depth of cut APMX		Max. plunging depth A	Max. ramping angle RMPX		Max. cutting width in plunging W		Min. machining dia. øD1		Max. machining dia. øD2		Max. cutting width in enlarging ae	
		SWMT 09**ZER	SWMT 09**UER		SWMT 09**ZER	SWMT 09**UER	SWMT 09**ZER	SWMT 09**UER	SWMT 09**ZER	SWMT 09**UER	SWMT 09**ZER	SWMT 09**UER	SWMT 09**ZER	SWMT 09**UER
EXSW09U1.00...	1.000	0.059	0.039	0.012	4.6°	5.8°	0.275	0.295	1.370	1.331	1.881	1.881	0.665	0.645
EXSW09U1.25...	1.250	0.059	0.039	0.012	2.7°	3.2°	0.275	0.295	1.870	1.831	2.381	2.381	0.914	0.894
TXSW09U1.50...	1.500	0.059	0.039	0.012	1.9°	2.2°	0.275	0.295	2.370	2.331	2.881	2.881	1.165	1.145
TXSW09U2.00...	2.000	0.059	0.039	0.012	1.2°	1.4°	0.275	0.295	3.370	3.331	3.881	3.881	1.663	1.643

15 type

Inch	Tool dia. DCX	Max. depth of cut APMX		Max. plunging depth A	Max. ramping angle RMPX	Max. cutting width in plunging W		Min. machining dia. øD1	Max. machining dia. øD2	Max. cutting width in enlarging ae	
		SWMT 15**ZER	SWMT 15**UER			SWMT 15**ZER	SWMT 15**UER			SWMT 15**ZER	SWMT 15**UER
TXSW15M050B...	2.000	0.098	0.079	0.028	4.6°	0.591	0.630	2.787	3.772	1.433	1.393
TXSW15M063B...	2.500	0.098	0.079	0.028	2.9°	0.591	0.630	3.819	4.803	1.949	1.909
TXSW15J, M080B...	3.000	0.098	0.079	0.028	2.1°	0.591	0.630	4.819	5.803	2.449	2.409
TXSW15J, M100B...	4.000	0.098	0.079	0.028	1.4°	0.591	0.630	6.819	7.803	3.449	3.409
TXSW15J, M125B...	5.000	0.098	0.079	0.028	1°	0.591	0.630	8.819	9.803	4.449	4.409
TXSW15J, M160B...	6.000	0.098	0.079	0.028	0.8°	0.591	0.630	10.819	11.803	5.449	5.409

TOOL GEOMETRY FOR PROGRAMMING



09 type

APMX (in) SWMT 09**ZER	APMX (in) SWMT 09**UER	Actual corner radius RE (in)	LE (in) SWMT 09**ZER	LE (in) SWMT 09**UER	KAPR SWMT 09**ZER	KAPR SWMT 09**UER	Programmed corner radius RPG	Uncut amount: t1 (in) SWMT 09**ZER	Uncut amount: t1 (in) SWMT 09**UER	Overcut amount: t2 (in) SWMT 09**ZER	Overcut amount: t2 (in) SWMT 09**UER
0.059	0.039	0.039	0.291	0.311	12°	7°	0.025	0.054	0.033	-	-
0.059	0.039	0.039	0.291	0.311	12°	7°	0.050	0.049	0.031	-	-
0.059	0.039	0.039	0.291	0.311	12°	7°	0.075	0.045	0.028	-	0.0002
0.059	0.039	0.039	0.291	0.311	12°	7°	0.100	0.040	0.025	0.001	0.006
0.059	0.039	0.039	0.291	0.311	12°	7°	0.125	0.036	0.022	0.006	0.015

15 type

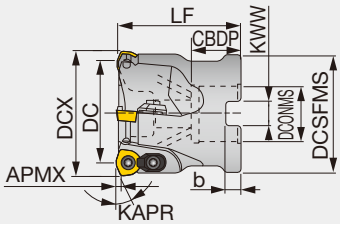
APMX (in) SWMT 15**ZER	APMX (in) SWMT 15**UER	Actual corner radius RE (in)	LE (in) SWMT 15**ZER	LE (in) SWMT 15**UER	KAPR SWMT 15**ZER	KAPR SWMT 15**UER	Programmed corner radius RPG	Uncut amount: t1 (in) SWMT 15**ZER	Uncut amount: t1 (in) SWMT 15**UER	Overcut amount: t2 (in) SWMT 15**ZER	Overcut amount: t2 (in) SWMT 15**UER
0.098	0.079	0.079	0.500	0.543	14°	10°	0.138	0.083	0.073	-	-
0.098	0.079	0.079	0.500	0.543	14°	10°	0.157	0.078	0.070	-	-
0.098	0.079	0.079	0.500	0.543	14°	10°	0.178	0.074	0.067	-	0.001
0.098	0.079	0.079	0.500	0.543	14°	10°	0.197	0.070	0.063	0.0003	0.005

When programming for CAM, the tool should be considered as a radius cutter. Usually, the corner radius should be set in SWMT**ZER insert: RPG = 0.177", SWMT**UER insert: RPG = 0.157". If a larger radius is used, overcutting may occur. The above table shows the uncut (t1) and overcut (t2) amounts for the programmed corner radius.

TXP05/06/08/09

High feed mill

GAMP = +5°, GAMF = -4° ~ -6°



Inch	APMX	DCX	CICT	DC	DCSFMS	LF	DCONMS	CBDP	KWW	b	KAPR	WT(lb)	Air hole	Insert
TXP05250RBU	0.060	2.500	6	2.190	2.323	1.969	0.750	0.750	0.315	0.197	15°	1.76	With	WPM*05...
TXP05300RBU	0.060	3.000	7	2.690	2.835	2.480	1.000	1.024	0.374	0.236	20°	3.31	With	WPM*05...
TXP06200RBU	0.060	2.000	4	1.650	1.850	1.969	0.750	0.750	0.315	0.197	20°	1.10	With	WPM*06...
TXP06250RBU	0.060	2.500	5	2.150	2.323	1.969	0.750	0.750	0.315	0.197	20°	1.76	With	WPM*06...
TXP06300RBU	0.060	3.000	6	2.650	2.835	2.480	1.000	1.024	0.374	0.236	20°	3.09	With	WPM*06...
TXP08050RU	0.060	2.000	3	1.547	1.850	1.969	0.750	0.750	0.315	0.197	10°	0.87	Without	WPMT08...
TXP08200RU-A	0.060	2.000	3	1.547	1.850	1.969	0.750	0.750	0.315	0.197	10°	0.87	With	WPMT08...
TXP08300RU-A	0.060	3.000	5	2.547	2.835	2.480	1.000	1.024	0.375	0.236	10°	3.20	With	WPMT08...
TXP08400RU-A	0.060	4.000	6	3.547	3.819	2.480	1.500	1.260	0.625	0.394	10°	5.80	With	WPMT08...
TXP09250RU	0.118	2.500	3	1.971	2.323	1.969	0.750	0.750	0.315	0.197	20°	1.54	With	WPMT09...
TXP09300RU	0.118	3.000	4	2.470	2.835	2.480	1.000	1.024	0.374	0.236	20°	2.65	With	WPMT09...
TXP09400RU	0.118	4.000	5	3.471	3.780	2.480	1.500	1.457	0.626	0.394	20°	4.41	With	WPMT09...
TXP09500RU	0.118	5.000	6	4.471	3.780	2.480	1.500	1.457	0.626	0.394	20°	6.83	With	WPMT09...
TXP09600RU	0.118	6.000	7	5.471	4.331	2.480	2.000	1.496	0.748	0.433	20°	9.48	Without	WPMT09...

SPARE PARTS






Designation	Clamp set	Clamping screw	Lubricant	Wrench	Wrench 1	Shell locking bolt (Optional parts)
TXP05250RBU	-	CSPB-3.5S	M-1000	IP-15D	-	(C0.375X1.125H)
TXP05300RBU	-	CSPB-3.5S	M-1000	IP-15D	-	(C0.500X1.375H)
TXP06200RBU, TXP06250RBU	CSY-15	CSPB-4S	M-1000	IP-15D	-	(C0.375X1.125H)
TXP06300RBU	CSY-15	CSPB-4S	M-1000	IP-15D	-	(C0.500X1.375H)
TXP08050RU, TXP08200RU-A	CSX20	CSTB-5	M-1000	-	T-20T	(C0.375X1.125H)
TXP08300RU-A	CSX20	CSTB-5	M-1000	-	T-20T	(C0.500X1.375H)
TXP08400RU-A	CSX20	CSTB-5	M-1000	-	T-20T	(TMBA-0.750H)
TXP09250RU	CSY-20	CSPB-5	M-1000	-	IP-20T	(C0.375X1.125H)
TXP09300RU	CSY-20	CSPB-5	M-1000	-	IP-20T	(C0.500X1.375H)
TXP09400RU, TXP09500RU	CSY-20	CSPB-5	M-1000	-	IP-20T	(TMBA-0.750H)
TXP09600RU	CSY-20	CSPB-5	M-1000	-	IP-20T	-

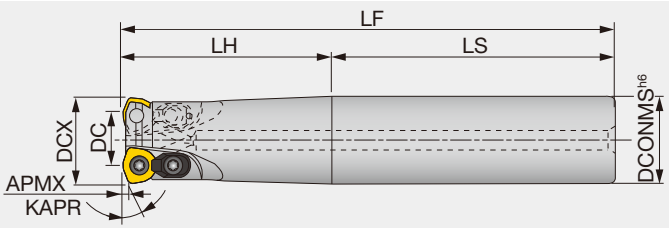
*Recommended clamping torque：CSPB-3.5S/CSPB-4S = 2.58 lbs･ft, CSTB-5 = 3.69 lbs･ft

Reference pages: Inserts → H053, Standard cutting conditions → H054 - H055

MILLFEED
EXP05/06/08/09

High feed endmill, shank type

GAMP = +5°, GAMF = -6°



Inch	APMX	DCX	CICT	DC	DCONMS	LF	LH	LS	KAPR	Air hole	Insert	Shank
EXP05075RSU	0.060	0.750	2	0.480	0.750	4.031	2.000	2.031	15°	With	WPM*05...	Cylindrical
EXP05075RLU	0.060	0.750	2	0.480	0.750	7.000	2.000	2.031	15°	With	WPM*05...	Cylindrical
EXP05075RLLU	0.060	0.750	2	0.480	0.750	10.000	4.000	3.000	15°	With	WPM*05...	Cylindrical
EXP06100RSU	0.060	1.000	2	0.697	1.000	4.781	5.000	3.000	15°	With	WPM*06...	Cylindrical
EXP06100RLU	0.060	1.000	2	0.697	1.000	8.000	5.000	3.000	15°	With	WPM*06...	Cylindrical
EXP06100RLLU	0.060	1.000	2	0.697	1.000	12000	7.000	5.000	15°	With	WPM*06...	Cylindrical
EXP06125RSBU	0.060	1.250	3	0.929	1.250	5.281	3.000	2.281	20°	With	WPM*06...	Cylindrical
EXP06125RLBU	0.060	1.250	3	0.929	1.250	8.000	5.000	3.000	20°	With	WPM*06...	Cylindrical
EXP06125RLLBU	0.060	1.250	3	0.929	1.250	12.000	7.000	5.000	20°	With	WPM*06...	Cylindrical
EXP06150RSU	0.060	1.500	3	1.169	1.250	5.781	3.500	2.281	20°	With	WPM*06...	Cylindrical
EXP06150RLU	0.060	1.500	3	1.169	1.250	10.000	2.000	8.000	20°	With	WPM*06...	Cylindrical
EXP06150RLLU	0.060	1.500	3	1.169	1.250	12.000	2.000	10.000	20°	With	WPM*06...	Cylindrical
EXP09200RU	0.118	2.000	2	1.477	1.250	4.781	2.500	2.281	20°	With	WPMT09...	Cylindrical
EXP09200RLU	0.118	2.000	2	1.477	1.250	9.750	2.000	7.750	20°	With	WPMT09...	Cylindrical

SPARE PARTS





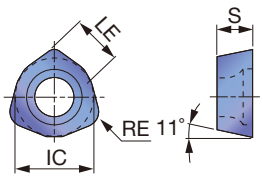
Designation	Clamp set	Clamping screw	Lubricant	Wrench 1	Wrench 2
EXP05...	-	CSPB-3.5S	M-1000	IP-15D	-
EXP06...	CSY-15	CSPB-4S	M-1000	IP-15D	-
EXP09...	CSY-20	CSPB-5	M-1000	-	IP-20T

*Recommended clamping torque：CSPB-3.5S/CSPB-4S = 2.58 lbs･ft, CSTB-5 = 3.69 lbs･ft

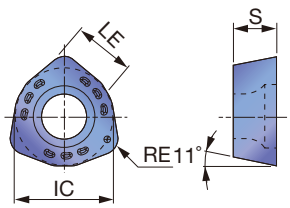
Reference pages: Inserts → H053, Standard cutting conditions → H054 - H055

INSERT

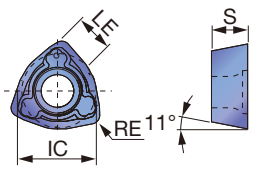
WPMW05/06



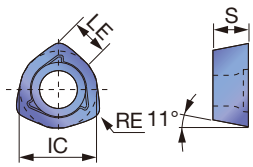
WPMT08/09



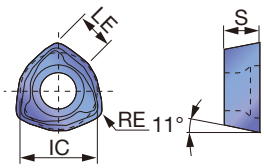
WPMT05/06/08/09-ML



WPMT05/06/08/09-MH



WPMT05/06/08/09-DML



		AH120	AH130	AH140	AH730	T3130	AH3135
P	Steel	☆				☆	★
M	Stainless		★	☆			★
K	Cast iron	★					
N	Non-ferrous						
S	Superalloys	★	☆				
H	Hard materials				★		

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated						LE	IC	S
			AH120	AH130	AH140	AH730	T3130	AH3135			
WPMW05H315ZPR	0.059	0.060	●		●		●	●	0.197	0.3130	0.138
WPMT05H315ZPR-ML	0.059	0.060	●		●		●	●	0.197	0.3130	0.138
WPMT05H315ZPR-MH	0.059	0.060	●		●			●	0.197	0.3134	0.138
WPMT05H315ZPR-DML	0.059	0.060				●			0.197	0.3130	0.138
WPMW06X415ZPR	0.059	0.060	●		●		●	●	0.236	0.3750	0.165
WPMT06X415ZPR-ML	0.059	0.060	●	●	●		●	●	0.236	0.3750	0.165
WPMT06X415ZPR-MH	0.059	0.060	●		●			●	0.236	0.3755	0.165
WPMT06X415ZPR-DML	0.059	0.060				●			0.236	0.3750	0.165
WPMT080615ZSR	0.059	0.060	●	●	●		●	●	0.315	0.507	0.250
WPMT080615ZPR-ML	0.059	0.060	●	●	●		●	●	0.315	0.507	0.250
WPMT080615ZSR-MH	0.059	0.060	●		●			●	0.315	0.507	0.250
WPMT080615ZPR-DML	0.059	0.060				●			0.315	0.507	0.250
WPMT090725ZSR	0.098	0.118	●		●		●	●	0.354	0.591	0.276
WPMT090725ZPR-ML	0.098	0.118	●	●	●		●	●	0.354	0.591	0.276
WPMT090725ZSR-MH	0.098	0.118	●	●	●			●	0.354	0.591	0.276
WPMT090725ZPR-DML	0.098	0.118				●			0.354	0.591	0.276

● : Line up

Reference pages: Standard cutting conditions → H054 - H055

STANDARD CUTTING CONDITIONS

05·06 type

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	ø0.787", 0.827" (CICT = 2)	ø0.984", 1.024" (CICT = 2)	ø1.260", 1.299" (CICT = 2, 3)	ø1.575" (CICT = 3)	ø1.969" (CICT = 4)	ø2.480" (CICT = 5, 6)
P	Carbon Steels 1055, etc. < 300HB	AH3135	330 ~ 820	0.020 ~ 0.078	*Vc* = 500 sfm, *fz* = 0.031 ipt *ap* = 0.039", *ae* = 0.039DCX"	*Vc* = 500 sfm, *fz* = 0.039 ipt *ap* = 0.039", *ae* = 0.039DCX"				
					When plunging in small depth: *fz* = 0.008"					
	Alloy steels 4140, etc. < 300 HB	AH3135	330 ~ 650	0.020 ~ 0.078	*Vc* = 425 sfm, *fz* = 0.031 ipt *ap* = 0.039", *ae* = 0.039 DCX"	*Vc* = 425 sfm, *fz* = 0.039 ipt *ap* = 0.039", *ae* = 0.039 DCX"				
					When plunging in small depth: *fz* = 0.008"					
	Prehardened steels P20, H13, etc. 30 ~ 40HRC	AH3135	260 ~ 500	0.020 ~ 0.039	*Vc* = 330 sfm, *fz* = 0.020 ipt *ap* = 0.039", *ae* = 0.039 DCX"	*Vc* = 330 sfm, *fz* = 0.020 ipt *ap* = 0.039", *ae* = 0.039 DCX"				
					When plunging in small depth: *fz* = 0.004 ipt					
M	Stainless steels S30400, etc.	AH130 (AH3135)	330 ~ 650	0.020 ~ 0.078	*Vc* = 425 sfm, *fz* = 0.031 ipt *ap* = 0.039", *ae* = 0.039 DCX"	*Vc* = 425 sfm, *fz* = 0.039 ipt *ap* = 0.039", *ae* = 0.039 DCX"				
					When plunging in small depth: *fz* = 0.008 ipt					
K	Cast irons 250, etc.	AH120	330 ~ 820	0.032 ~ 0.098	*Vc* = 500 sfm, *fz* = 0.039 ipt *ap* = 0.039", *ae* = 0.039 DCX"	*Vc* = 590 sfm, *fz* = 0.059 ipt *ap* = 0.039", *ae* = 0.039 DCX"				
					When plunging in small depth: *fz* = 0.008 ipt					
S	Titanium alloys Ti-6Al-4V, etc.	AH130	98 ~ 197	0.012 ~ 0.028	*Vc* = 164 sfm, *fz* = 0.020 ipt, *ap* = 0.028", *ae* = 0.020 DCX"					
					When plunging in small depth: *fz* = 0.004 ipt					
	Heat-resistant alloys Inconel 718, etc.	AH120	33 ~ 131	0.004 ~ 0.012	*Vc* = 98 sfm, *fz* = 0.008 ipt, *ap* = 0.028", *ae* = 0.020 DCX"					
					When plunging in small depth: *fz* = 0.004 ipt					
H	Hard materials D2, etc. 40 ~ 50HRC	AH730	200 ~ 330	0.020 ~ 0.078	*Vc* = 230 sfm, *fz* = 0.028 ipt, *ap* = 0.028", *ae* = 0.039 DCX"					
					When plunging in small depth: *fz* = 0.004 ipt					

08 type

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	ø1.575" (CICT = 2)	ø1.969" (CICT = 3)	ø2.480" (CICT = 4)	ø3.150" (CICT = 5)	ø3.937" (CICT = 6)	ø4.921" (CICT = 7)	ø6.299" (CICT = 8)
P	Carbon Steels 1055, etc. < 300HB	AH3135	330 ~ 820	0.020 ~ 0.078	*Vc* = 591 sfm, *fz* = 0.039 ipt *ap* = 0.039", *ae* = 1.575"	*Vc* = 656 sfm, *fz* = 0.059 ipt *ap* = 0.039", *ae* = 0.039 DCX"					
					When plunging in small depth: *fz* = 0.008 ipt						
	Alloy steels 4140, etc. < 300 HB	AH3135	330 ~ 650	0.020 ~ 0.078	*Vc* = 427 sfm, *fz* = 0.039 ipt *ap* = 0.039", *ae* = 1.575"	*Vc* = 492 sfm, *fz* = 0.059 ipt *ap* = 0.039", *ae* = 0.039 DCX"					
					When plunging in small depth: *fz* = 0.008 ipt						
	Prehardened steels P20, H13, etc. 30 ~ 40HRC	AH3135	260 ~ 500	0.020 ~ 0.039	*Vc* = 328 sfm, *fz* = 0.020 ipt *ap* = 0.039", *ae* = 1.575"	*Vc* = 394 sfm, *fz* = 0.031 ipt *ap* = 0.039", *ae* = 0.039 DCX"					
					When plunging in small depth: *fz* = 0.004 ipt						
M	Stainless steels S30400, etc.	AH130 (AH3135)	330 ~ 650	0.020 ~ 0.078	*Vc* = 427 sfm, *fz* = 0.039 ipt *ap* = 0.039", *ae* = 1.575"	*Vc* = 492 sfm, *fz* = 0.059 ipt *ap* = 0.039", *ae* = 0.039 DCX"					
					When plunging in small depth: *fz* = 0.008 ipt						
K	Cast irons 250, etc.	AH120	500 ~ 820	0.032 ~ 0.098	*Vc* = 591 sfm, *fz* = 0.059 ipt *ap* = 0.039", *ae* = 1.575"	*Vc* = 656 sfm, *fz* = 0.079 ipt *ap* = 0.039", *ae* = 0.039 DCX"					
					When plunging in small depth: *fz* = 0.008 ipt						
S	Titanium alloys Ti-6Al-4V, etc.	AH130	98 ~ 197	0.012 ~ 0.028	*Vc* = 164 sfm, *fz* = 0.020 ipt, *ap* = 0.028", *ae* = 0.020 DCX"						
					When plunging in small depth: *fz* = 0.004 ipt						
	Heat-resistant alloys Inconel 718, etc.	AH120	33 ~ 131	0.004 ~ 0.012	*Vc* = 98 sfm, *fz* = 0.008 ipt, *ap* = 0.028", *ae* = 0.020 DCX"						
					When plunging in small depth: *fz* = 0.004 ipt						
H	Hard materials D2, etc. 40 ~ 50HRC	AH730	170 ~ 260	0.020 ~ 0.039	*Vc* = 230 sfm, *fz* = 0.028 ipt, *ap* = 0.028", *ae* = 0.039 DCX"						
					When plunging in small depth: *fz* = 0.004 ipt						

The above values of cutting speed show the standard speed when overhang length of tool is below 3D.
The cutting speed and the feed rate should be set at the lower limit values when overhang length of tool exceeds 3D.
Thick and heavy chips are discharged by these TAC mills. Use internal air supply or air-blowing in order to prevent tool failure.

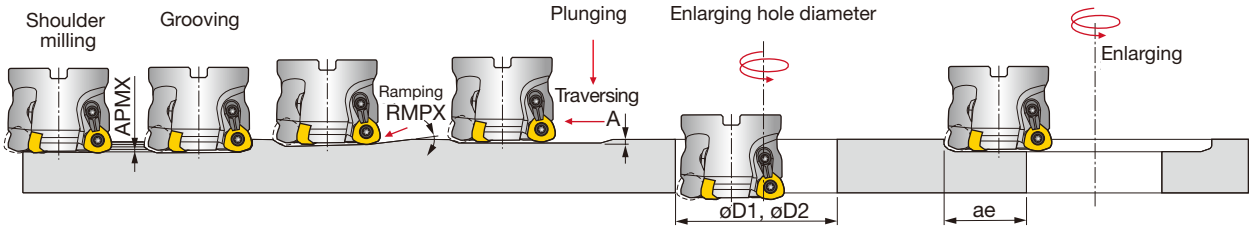
STANDARD CUTTING CONDITIONS

09 type

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	ø2.000" (CICT = 2)	ø2.500" (CICT = 3)	ø3.000" (CICT = 4)	ø4.000" (CICT = 5)	ø5.000" (CICT = 6)	ø6.000" (CICT = 7)
P	Carbon Steels 1055, etc. < 300HB	AH3135	330 ~ 820	0.020 ~ 0.078	*Vc* = 650 sfm, *fz* = 0.059 ipt, *ap* = 0.079", *ae* = 0.039 DCX"					
					When plunging in small depth: *fz* = 0.008 ipt					
	Alloy steels 4140, etc. < 300 HB	AH3135	330 ~ 650	0.020 ~ 0.078	*Vc* = 500 sfm, *fz* = 0.059 ipt, *ap* = 0.079", *ae* = 0.039 DCX"					
					When plunging in small depth: *fz* = 0.008 ipt					
	Prehardened steels P20, H13, etc. 30 ~ 40HRC	AH3135	260 ~ 500	0.020 ~ 0.039	*Vc* = 3.94, *fz* = 0.031 ipt, *ap* = 0.079", *ae* = 0.039 DCX"					
					When plunging in small depth: *fz* = 0.004 ipt					
M	Stainless steels S30400, etc.	AH130 (AH3135)	330 ~ 650	0.020 ~ 0.078	*Vc* = 500 sfm, *fz* = 0.059 ipt, *ap* = 0.079", *ae* = 0.039 DCX"					
					When plunging in small depth: *fz* = 0.008 ipt					
K	Cast irons 250, etc.	AH120	500 ~ 820	0.032 ~ 0.098	*Vc* = 650 sfm, *fz* = 0.078 ipt, *ap* = 0.079", *ae* = 0.039 DCX"					
					When plunging in small depth: *fz* = 0.008 ipt					
S	Titanium alloys Ti-6Al-4V, etc.	AH130	98 ~ 197	0.012 ~ 0.028	*Vc* = 164 sfm, *fz* = 0.020 ipt, *ap* = 0.059", *ae* = 0.020 DCX"					
					When plunging in small depth: *fz* = 0.039 ipt					
	Heat-resistant alloys Inconel 718, etc.	AH120	33 ~ 131	0.004 ~ 0.012	*Vc* = 98 sfm, *fz* = 0.008 ipt, *ap* = 0.039", *ae* = 0.020 DCX"					
					When plunging in small depth: *fz* = 0.039 ipt					
H	Hard materials D2, etc. 40 ~ 50HRC	AH730	200 ~ 330	0.020 ~ 0.039	*Vc* = 230 sfm, *fz* = 0.028 ipt, *ap* = 0.027", *ae* = 0.039 DCX"					
					When plunging in small depth: *fz* = 0.004 ipt					

The cutting speed and feed should be set to 70 to 80 % of the value shown in the above table when overhang length of tool exceeds 3D.

APPLICATION RANGE

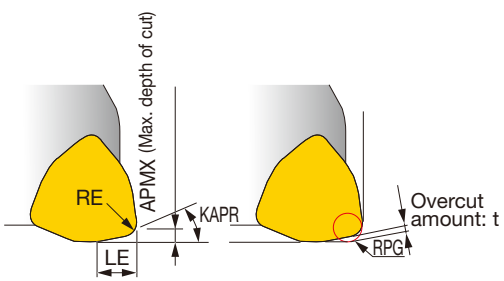


Inch	DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Min. machining hole dia. øD1	Max. machining hole dia. øD2	Max. cutting width in enlarging hole ae
TXP05250RBU	2.500	0.060	2° 30'	0.020	3.860	4.840	2.240
TXP05300RBU	3.000	0.060	1° 30'	0.020	5.200	6.180	2.910
TXP06250RBU	2.500	0.060	2°	0.040	3.860	4.840	2.240
TXP06200RBU	2.000	0.060	1° 30'	0.040	3.270	3.820	1.770
TXP06300RBU	3.000	0.060	1° 30'	0.040	5.200	6.180	2.910
TXP08050RU	2.000	0.060	4°	0.040	2.830	3.820	1.730
TXP08300RU-A	3.000	0.060	1° 30'	0.040	5.200	6.180	2.910
TXP08400RU-A	4.000	0.060	1°	0.040	6.770	7.760	3.700
TXP09250RU	2.500	0.118	2°	0.060	3.860	4.840	2.200
TXP09300RU	3.000	0.118	1° 30'	0.060	5.200	6.180	2.870
TXP09400RU	4.000	0.118	1°	0.060	6.770	7.760	3.660
TXP09500RU	5.000	0.118	0° 45'	0.060	8.740	9.720	4.650
TXP09600RU	6.000	0.118	0° 30'	0.060	11.500	12.480	6.020
EXP05075...	0.750	0.060	3°	0.020	1.181	1.457	0.630
EXP06100...	1.000	0.060	5°	0.039	1.299	1.850	0.787
EXP06125...	1.250	0.060	3° 30'	0.039	1.850	2.402	1.063
EXP06150...	1.500	0.060	2°	0.039	2.480	2.874	1.299

TOOL GEOMETRY FOR PROGRAMMING

When programming for CAD/CAM, the tool should be assumed to be a radius cutter shown in the table below.
In this case, the amount left as uncut (t) is shown below.

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others



TXP	Max. depth of cut APMX	Corner of insert RE	Cutting edge angle KAPR	LE	t	Corner R when programming RPG
05	0.060	0.059	20°	0.150	0.020	R.078
06	0.060	0.059	20°	0.169	0.028	R.078
08	0.060	0.059	20°	0.224	0.028	R.078
09	0.118	0.098	20°	0.268	0.055	R.118
09	0.118	0.098	20°	0.268	0.047	R.157

MEMO

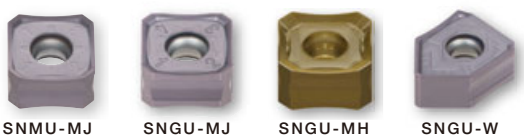
TRIPLE DOT MILL

Brings a top performance in every operation: from high feed milling, scale removing, finish milling … to stainless steel milling

Versatility

3 types of double sided inserts fit in the same pocket

SNMU / SNGU Square insert



SNMU-MJ SNGU-MJ SNGU-MH SNGU-W

ONMU / ONGU Octagonal insert

ONMU-MJ ONGU-MJ ONGU-W

RNMU Round insert

RNMU-MJ

Approach angle

10°-20° 45° 70° 85° 88° 90° Others

High efficiency with close pitch cutter
Extra-close pitch type available in addition to regular close pitch type

Tool line-up includes extra close pitch cutter maximizing efficiency in cast iron machining.

Standard pitch

Close pitch

Extra-close pitch

Reference pages: H060 - H062

Super high density PCD cutter for efficient finishing of aluminum

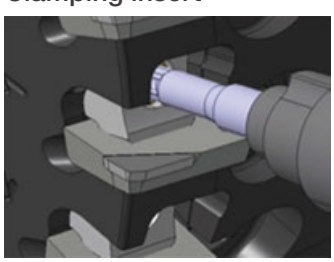
Super high density cutter

Cutter diameter (in)	Max num. of teeth	Max. rotation number (rpm)	Cutter weight (lb)
2	8	20,000	1.92
2.5	10	19,000	1.34
3	16	17,000	2.56
4	22	15,000	4.30
5	26	14,000	8.03
6	34	12,000	10.76

Super high density design
High speed cutting more than Vc = 9843 sfm is possible.

CamAdjust - super simple adjusting mechanism

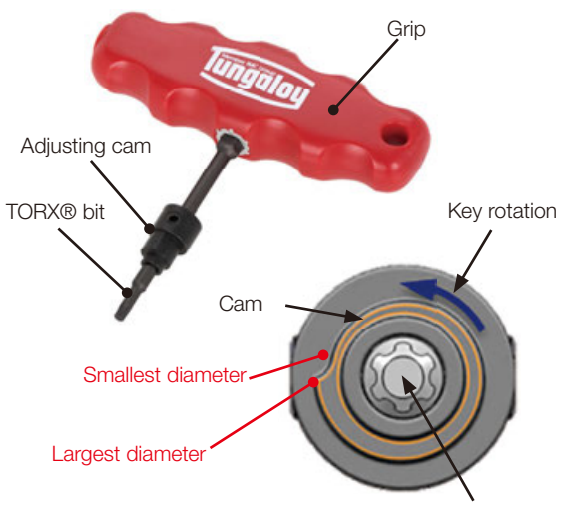
Clamping insert



Adjusting axial runout

The same key is used for mounting and adjusting the inserts.
The key wrench is operated in a single direction making insert adjustment easy on the pre-setter.

Special key wrench with adjusting cam



Insert's axial runout is adjusted with the eccentric cam profile.

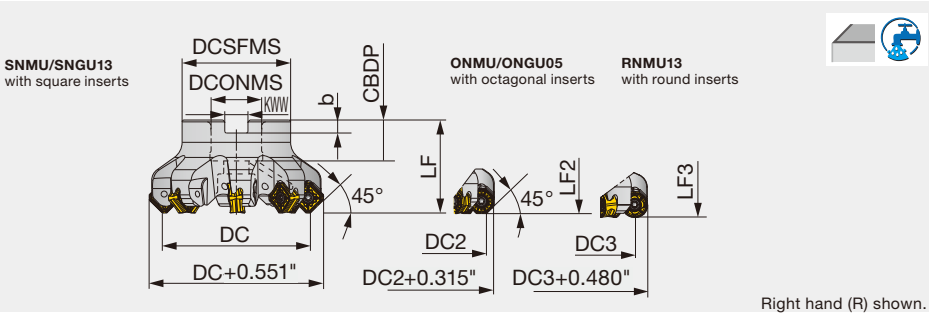
Reference pages: H079 - H080

TRIPLE DOTMILL

TASN13

45° face mill, with screw clamp system, for double sided square, octagonal and round inserts

GAMP=+6.0°,GAMF=-6.8°~-6.3°



Right hand (R) shown.

Inch	DC	DC2	DC3	CICT	DCSFMS	LF	LF2	LF3	DCONMS	CBDP	KWW	b	WT (lb)	Air hole	Arbor type
TASN13U2.00B0.75R05	2.000	2.118	1.982	5	1.850	1.575	1.516	1.517	0.750	0.750	0.315	0.197	0.900	With	A
TASN13U2.50B0.75R06	2.500	2.618	2.482	6	1.850	1.575	1.516	1.517	0.750	0.750	0.315	0.197	1.320	With	A
TASN13U2.50B0.75R08	2.500	2.618	2.482	8	1.850	1.575	1.516	1.517	0.750	0.750	0.315	0.197	1.540	With	A
TASN13U3.00B1.00R08	3.000	3.118	2.982	8	1.969	1.969	1.909	1.911	1.000	1.024	0.374	0.236	1.980	With	A
TASN13U3.00B1.00R10	3.000	3.118	2.982	10	1.969	1.969	1.909	1.911	1.000	1.024	0.374	0.236	2.200	With	A
TASN13U4.00B1.50R08	4.000	4.118	3.982	8	3.150	1.969	1.909	1.911	1.500	1.276	0.626	0.394	3.750	Without	B
TASN13U4.00B1.50R12	4.000	4.118	3.982	12	3.150	1.969	1.909	1.911	1.500	1.276	0.626	0.394	3.750	Without	B
TASN13U5.00B1.50R10	5.000	5.118	4.982	10	3.150	2.480	2.421	2.422	1.500	1.378	0.626	0.394	5.950	Without	B
TASN13U5.00B1.50R14	5.000	5.118	4.982	14	3.150	2.480	2.421	2.422	1.500	1.378	0.626	0.394	6.720	Without	B
TASN13U6.00B2.00R12	6.000	6.118	5.982	12	3.937	2.480	2.421	2.422	2.000	1.496	0.748	0.433	8.600	Without	B

SPARE PARTS

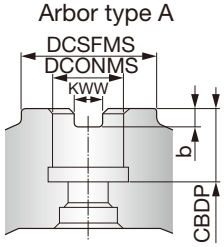
Designation	Clamping screw	Grip	Lubricant	Shell locking bolt (Optional parts)	Torx bit
TASN13... (DC ≤ 3.000")	CSPB-4	H-TB2W	M-1000	(C0.375X1.125H)	BLDIP15/S7
TASN13... (DC = 3.000")	CSPB-4	H-TB2W	M-1000	(C0.500X1.375H)	BLDIP15/S7
TASN13... (DC = 4.000")	CSPB-4	H-TB2W	M-1000	(TMBA-0.750H)	BLDIP15/S7
TASN13... (DC = 5.000")	CSPB-4	H-TB2W	M-1000	(TMBA-0.750H)	BLDIP15/M7
TASN13... (DC = 6.000")	CSPB-4	H-TB2W	M-1000	-	BLDIP15/M7

*Recommended clamping torque：CSPB-4 = 2.58 lbs·ft

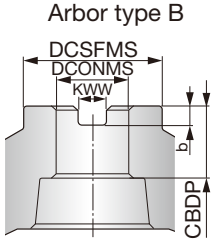
Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

Arbor type

Arbor type A

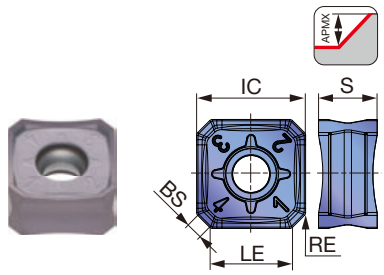


Arbor type B

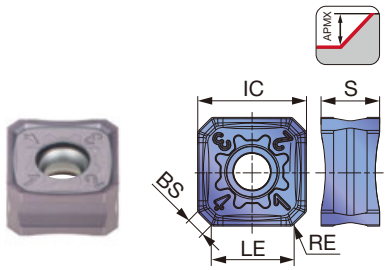


Reference pages: Inserts → H061, Standard cutting conditions → H062

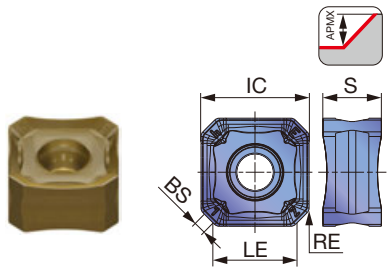
SNMU-MJ



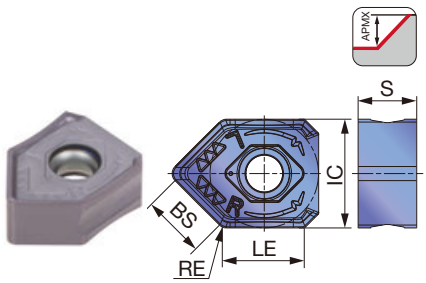
SNGU-MJ



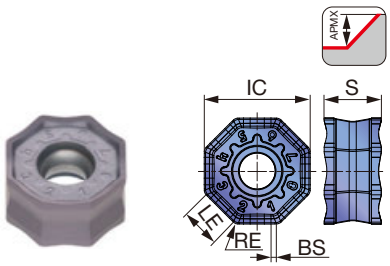
SNGU-MH



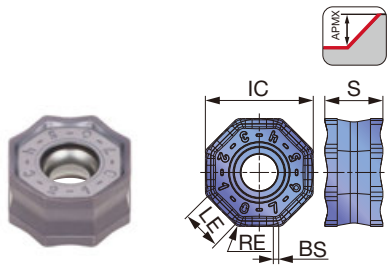
SNGU-W



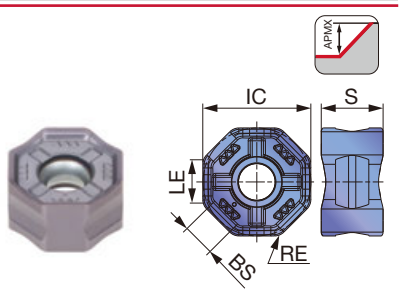
ONMU-MJ



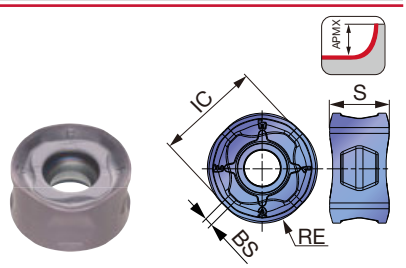
ONGU-MJ



ONGU-W



RNMU-MJ



P	Steel	☆	★	★	
M	Stainless		★	★	
K	Cast iron	★			★
N	Non-ferrous				
S	Superalloys	★	☆		
H	Hard materials	☆	☆		

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated				LE	IC	S	BS
			AH120	AH3135	T3225	T1215				
SNMU1307ANEN-MJ	0.020	0.236	●	●	●	●	0.370	0.512	0.276	0.079
SNGU1307ANEN-MJ	0.020	0.236	●	●	●	●	0.370	0.512	0.276	0.079
SNGU1307ANEN-MH	0.031	0.236			●		0.354	0.512	0.276	0.079
SNGU1307ANEN-W	0.047	0.236	●	●			0.378	0.512	0.276	0.295
ONMU0507ANEN-MJ	0.031	0.134	●	●	●	●	0.193	0.512	0.276	0.028
ONGU0507ANEN-MJ	0.031	0.134	●	●	●	●	0.193	0.512	0.276	0.028
ONGU0507ANEN-W	0.063	0.134	●	●			0.197	0.512	0.293	0.154
RNMU1307ZNER-MJ	0.236	0.236	●	●	●	●	-	0.512	0.280	0.039

●: Line up

STANDARD CUTTING CONDITIONS

SNMU / SNGU / ONMU / ONGU

ISO	Workpiece materials		Hardness	Priority	Grades	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, 1020, etc.		200 - 300HB	First choice	AH3135	MJ	330 - 820	0.004 - 0.020
				Wear resistance	T3225	MJ	660 - 1150	0.004 - 0.016
	High carbon and alloy steel 1055, 4140, etc.		150 - 300HB	First choice	AH3135	MJ	330 - 820	0.004 - 0.016
				Wear resistance	T3225	MJ	590 - 980	0.004 - 0.016
	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	First choice	AH3135	MJ	330 - 660	0.004 - 0.016
				Wear resistance	T3225	MJ	490 - 820	0.004 - 0.016
M	Stainless steel 304SS, 316SS, etc.		- 200HB	First choice	AH3135	MJ	330 - 660	0.004 - 0.014
				Wear resistance	T3225	MJ	330 - 820	0.004 - 0.012
	Stainless cast steel 1.4849, etc.		-	First choice	T3225	MH	200 - 390	0.004 - 0.012
				Low cutting force	AH3135	MJ	200 - 390	0.004 - 0.012
K	Gray cast iron Class 25, Class 30, etc.		150 - 250 HB	First choice	T1215	MJ	330 - 980	0.004 - 0.016
					AH120	MJ	330 - 820	0.004 - 0.020
	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250 HB	First choice	T1215	MJ	330 - 980	0.004 - 0.016
					AH120	MJ	260 - 660	0.004 - 0.020
S	Titanium alloys Ti-6Al-4V, etc.		- 40HRC	First choice	AH3135	MJ	100 - 200	0.004 - 0.012
	Heat-resistant alloys Inconel718, etc.		- 40HRC	First choice	AH120	MJ	30 - 130	0.002 - 0.006
H	Hardened steel	H13, etc.	40 - 50 HRC	First choice	AH3135	MJ	260 - 430	0.004 - 0.008
		D2, etc.	50 - 60 HRC	First choice	AH120	MJ	160 - 230	0.001 - 0.004

RNMU

Approach angle: 10°-20°, 45°, 70°, 85°, 88°, 90°, Others

ISO	Workpiece materials		Hardness	Priority	Grades	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, 1020, etc.		200 - 300 HB	First choice	AH3135	MJ	330 - 820	
				Wear resistance	T3225	MJ	660 - 1150	
	High carbon and alloy steel 1055, 4140, etc.		150 - 300 HB	First choice	AH3135	MJ	330 - 820	*ap = 0.236": 0.004 - 0.012 *ap = 0.078": 0.016 - 0.031 *ap = 0.039": 0.031 - 0.059
				Wear resistance	T3225	MJ	590 - 980	
	Prehardened steel NAK80, PX5, etc.		30 - 40 HRC	First choice	AH3135	MJ	330 - 660	
				Wear resistance	T3225	MJ	490 - 820	
M	Stainless steel 304SS, 316SS, etc.		- 200 HB	First choice	AH3135	MJ	330 - 660	*ap = 0.236": 0.004 - 0.010 *ap = 0.078": 0.012 - 0.027 *ap = 0.039": 0.024 - 0.051
				Wear resistance	T3225	MJ	330 - 820	
	Stainless cast steel 1.4849, etc.		-	First choice	T3225	MJ	200 - 390	*ap = 0.078": 0.008 - 0.016 *ap = 0.039": 0.012 - 0.031
				Fracture resistance	AH3135	MJ	200 - 390	
K	Gray cast iron Class 25, Class 30, etc.		150 - 250 HB	First choice	AH120	MJ	330 - 980	
					T1215	MJ	330 - 820	*ap = 0.236": 0.004 - 0.012 *ap = 0.078": 0.016 - 0.031 *ap = 0.039": 0.031 - 0.059
	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250 HB	First choice	AH120	MJ	330 - 980	
					T1215	MJ	260 - 660	
S	Titanium alloys Ti-6Al-4V, etc.		- 40 HRC	First choice	AH3135	MJ	100 - 200	*ap = 0.039": 0.006 - 0.031
	Heat-resistant alloys Inconel718, etc.		- 40 HRC	First choice	AH120	MJ	30 - 130	*ap = 0.039": 0.002 - 0.012
H	Hardened steel	H13, etc.	40 - 50 HRC	First choice	AH3135	MJ	260 - 430	*ap = 0.039": 0.004 - 0.010
		D2, etc.	50 - 60 HRC	First choice	AH120	MJ	160 - 230	*ap = 0.020": 0.001 - 0.004

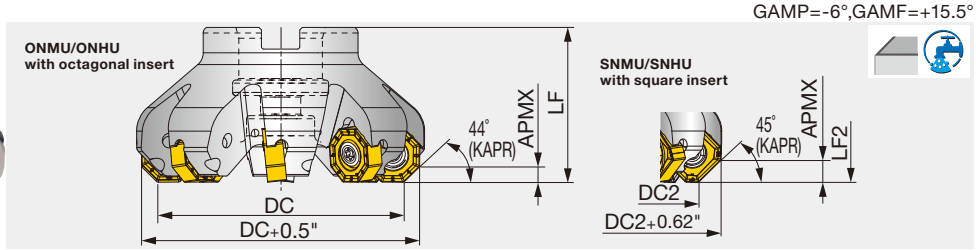
*When using T3225 or T1215, decrease the feed per tooth (*fz*) to 80% of the abovementioned value.

DOOCTO

TAN07

45° face mill, with screw clamp system, for double sided square and octagonal inserts, or single sided octagonal inserts

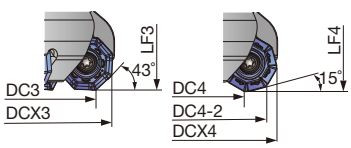
GAMP=-6°,GAMF=+15.5°



Inch	DC	DC2	CICT	DCSFMS	LF	LF2	DCONMS	CBDP	KWW	b	WT (lb)	Air hole	Insert	Arbor type
TAN07R250U0075A05	2.500	2.394	5	1.750	1.750	1.805	0.750	0.750	0.313	0.188	1.000	With	SN*U/ON*U/OWMT...	A
TAN07R250U0075A06	2.500	2.394	6	1.750	1.750	1.805	0.750	0.750	0.313	0.188	1.000	With	SN*U/ON*U/OWMT...	A
TAN07R300U0100A06	3.000	2.894	6	2.000	2.000	2.055	1.000	0.750	0.375	0.219	2.000	With	SN*U/ON*U/OWMT...	A
TAN07R300U0100A08	3.000	2.894	8	2.000	2.000	2.055	1.000	0.750	0.375	0.219	2.000	With	SN*U/ON*U/OWMT...	A
TAN07R400U0150A07	4.000	3.894	7	2.400	2.000	2.055	1.500	1.000	0.625	0.375	3.000	With	SN*U/ON*U/OWMT...	B
TAN07R400U0150A10	4.000	3.894	10	2.400	2.000	2.055	1.500	1.000	0.625	0.375	3.000	With	SN*U/ON*U/OWMT...	B
TAN07R500U0150A08	5.000	4.894	8	2.400	2.500	2.555	1.500	1.000	0.625	0.375	5.000	With	SN*U/ON*U/OWMT...	B
TAN07R500U0150A12	5.000	4.894	12	2.400	2.500	2.555	1.500	1.000	0.625	0.375	5.000	With	SN*U/ON*U/OWMT...	B
TAN07R600U0200A10	6.000	5.894	10	4.000	2.500	2.555	2.000	1.000	0.750	0.438	7.000	Without	SN*U/ON*U/OWMT...	B
TAN07R600U0200A15	6.000	5.894	15	4.000	2.500	2.555	2.000	1.000	0.750	0.438	7.000	Without	SN*U/ON*U/OWMT...	B
TAN07R800U0250A12	8.000	7.894	12	5.300	2.500	2.555	2.500	1.400	1.000	0.531	13.000	Without	SN*U/ON*U/OWMT...	C
TAN07R800U0250A18	8.000	7.894	18	5.300	2.500	2.555	2.500	1.400	1.000	0.531	13.000	Without	SN*U/ON*U/OWMT...	C

Dimension when using positive type inserts (OWMT)

OWMT-ML **OWMT-HJ**

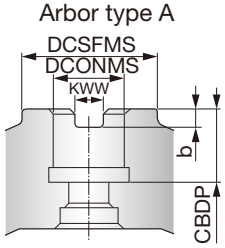


Inch	OWMT-ML			OWMT-HJ			
	DC3	DCX3	LF3	DC4	DC4-2	DCX4	LF4
TAN07R250U0075A...	2.520	2.213	1.789	3.000	2.665	3.028	1.805
TAN07R300U0100A...	3.020	2.713	2.039	3.500	3.165	3.528	2.055
TAN07R400U0150A...	4.020	3.713	2.039	4.500	4.165	4.528	2.055
TAN07R500U0150A...	5.020	4.713	2.539	5.500	5.165	5.528	2.555
TAN07R600U0200A...	6.020	5.713	2.539	6.500	6.165	6.528	2.555
TAN07R800U0250A...	8.020	7.713	2.539	8.500	8.165	8.528	2.555

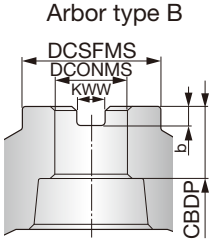
OWMT08 inserts can be only used with screw on type cutters.

Arbor type

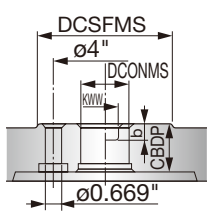
Arbor type A



Arbor type B



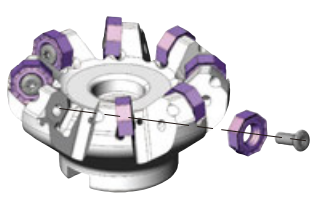
Arbor type C



SPARE PARTS

Designation	Clamping screw	Grip	Torx bit	Shell locking bolt (Optional parts)
TAN07R250...	SRM5X0.8IP20X+ACROLYTE	H-TB	BLDIP20/S7	(C0.375X1.125H)
TAN07R300...	SRM5X0.8IP20X+ACROLYTE	H-TB	BLDIP20/S7	(C0.500X1.375H)
TAN07R400, 500...	SRM5X0.8IP20X+ACROLYTE	H-TB	BLDIP20/S7	(TMBA-0.750H)
TAN07R600, 800...	SRM5X0.8IP20X+ACROLYTE	H-TB	BLDIP20/S7	-

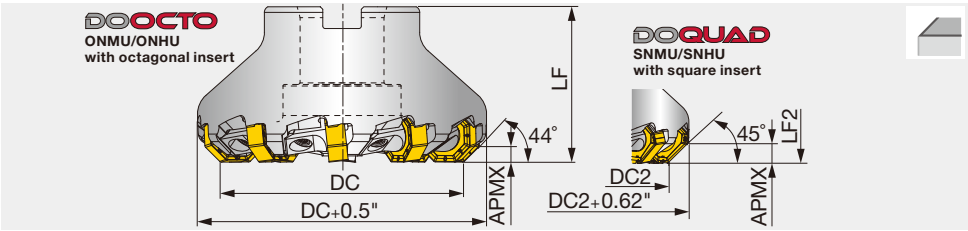
*Recommended clamping torque：SRM5X0.8IP20X+ACROLYTE = 5.53 lbs·ft



Reference pages: Inserts → H065, Standard cutting conditions → H066

DOOCTO
TAN07-W

High density 45° face mill, with wedge clamp system, for double sided square and octagonal inserts

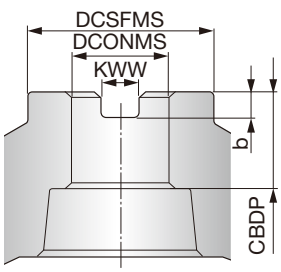


Inch	DC	DC2	CICT	DCSFMS	LF	LF2	DCONMS	CBDP	KWW	b	WT (lb)	Air hole	Insert	Arbor type
TAN07R250U0075A08W	2.500	2.394	8	1.750	1.750	1.805	0.750	0.750	0.313	0.188	1.60	Without	SN*U/ON*U/OWMT...	B
TAN07R300U0100A10W	3.000	2.894	10	2.000	2.000	2.055	1.000	0.750	0.375	0.219	2.00	Without	SN*U/ON*U/OWMT...	B
TAN07R400U0150A14W	4.000	3.894	14	2.400	2.000	2.055	1.500	1.000	0.625	0.375	2.80	Without	SN*U/ON*U/OWMT...	B
TAN07R500U0150A18W	5.000	4.894	18	2.400	2.500	2.555	1.500	1.000	0.625	0.375	4.30	Without	SN*U/ON*U/OWMT...	B
TAN07R600U0200A22W	6.000	5.894	22	4.000	2.500	2.555	2.000	1.000	0.750	0.438	6.80	Without	SN*U/ON*U/OWMT...	B
TAN07R800U0250A28W	8.000	7.894	28	5.300	2.500	2.555	2.500	1.400	1.000	0.531	13.50	Without	SN*U/ON*U/OWMT...	C

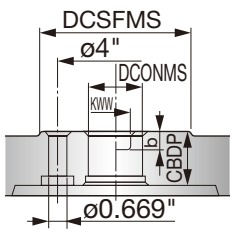
Note: OWMT insert cannot be used with a wedge clamp type cutter.

Arbor type

Arbor type B



Arbor type C



Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

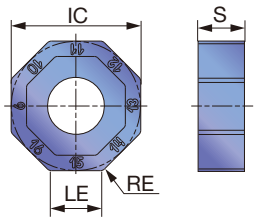
SPARE PARTS

Designation	Grip	Torx bit	Wedge	Clamping screw	Shell locking bolt (Optional parts)
TAN07R250U**W	H-TBS	BLDIP15/S7	CL ARM-10-TUNG1	DS-6P	(C0.375X1.125H)
TAN07R300U**W	H-TBS	BLDIP15/S7	CL ARM-10-TUNG1	DS-6P	(C0.500X1.375H)
TAN07R400U**W, TAN07R500U**W	H-TBS	BLDIP15/S7	CL ARM-10-TUNG1	DS-6P	(TMBA-0.750H)
TAN07R600U**W, TAN07R800U**W	H-TBS	BLDIP15/S7	CL ARM-10-TUNG1	DS-6P	-

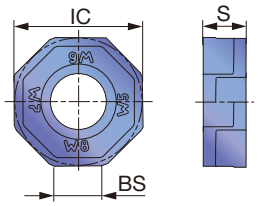
Reference pages: Inserts → H065, Standard cutting conditions → H066

INSERT

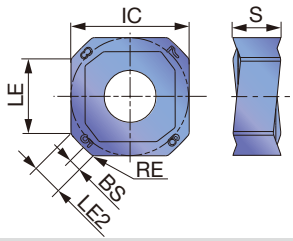
ONMU/ONHU0705-MJ / -ML



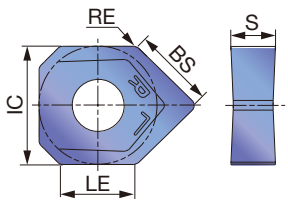
ONHU0705-W



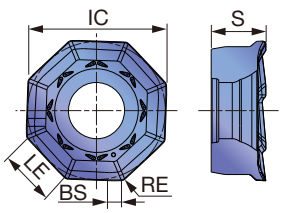
SNMU/SNHU1706 -MJ / -ML



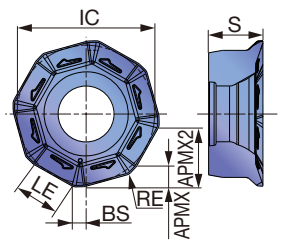
SNHU1706-W



OWMT0807-ML



OWMT0807-HJ



P	Steel			☆	★	★			★
M	Stainless		☆			★			★
K	Cast iron	★			☆		★		
N	Non-ferrous								
S	Superalloys		☆			☆			
H	Hard materials					☆			

★ : First choice
☆ : Second choice

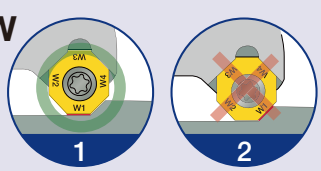
Designation	RE	APMX	Coated								LE	S	LE2	IC	BS	APMX2
			AH120	AH130	AH140	AH725	AH3135	T1115	T1215	T3225						
ONMU0705ANPN-MJ	0.031	0.187			●	●	●	●	●	●	0.283	0.244	-	0.681	-	-
ONHU0705ANPN-MJ	0.031	0.187			●	●					0.283	0.244	-	0.681	-	-
ONMU0705ANPN-ML	0.031	0.187	●				●				0.283	0.244	-	0.681	-	-
ONHU0705ANTN-ML	0.031	0.187	●		●	●					0.283	0.244	-	0.681	-	-
ONHU0705ANPR-W *	-	0.187	●								0.283	0.228	-	0.689	0.252	-
OWMT0807ZNER-HJ	0.031	0.059					●				-	0.291	-	0.748	0.039	0.295
OWMT0807AAER-ML	0.047	0.138		●			●				0.205	0.291	-	-	0.047	-
SNMU1706ANPR-MJ	0.031	0.295			●	●	●		●	●	0.433	0.275	0.173	0.681	0.709	-
SNHU1706ANPR-MJ	0.031	0.295			●	●					0.433	0.275	0.173	0.681	0.709	-
SNMU1706ANTR-ML	0.031	0.295	●				●				0.433	0.275	0.173	0.681	0.709	-
SNHU1706ANTR-ML	0.031	0.295	●								0.433	0.275	0.173	0.681	0.709	-
SNHU1706ANFN-W *	0.016	0.295	●								0.681	0.256	-	0.681	0.433	-

* Pay attention to the wiper insert installation procedure below.

● : Line up

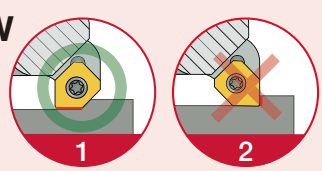
Attention for wiper inserts

ONHU0705ANPR-W



Attach only one wiper insert on the cutter and make sure the wiper edge faces the machining surface.
Feed rate: f < 0.217 ipr

SNHU1706ANFN-W



Attach only one wiper insert on the cutter and make sure the wiper edge faces the machining surface.
Feed rate: f < 0.374 ipr

STANDARD CUTTING CONDITIONS

Negative type

ISO	Workpiece material	Hardness	Priority	Recommendation		Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
				Grade	Chipbreaker		
P	Low carbon steel 1015, etc.	- 200 HB	First choice	AH3135	MJ	330 - 820	0.008 - 0.020
		- 200 HB	Wear resistance	T3225	MJ	660 - 1150	0.008 - 0.016
		- 200 HB	Low cutting force	AH3135	ML	330 - 820	0.008 - 0.016
	High carbon steel 1045, 1055, etc.	200 - 300 HB	First choice	AH3135	MJ	330 - 750	0.008 - 0.016
		200 - 300 HB	Wear resistance	T3225	MJ	590 - 660	0.008 - 0.016
		200 - 300 HB	Low cutting force	AH3135	ML	330 - 750	0.008 - 0.016
	Alloy steel 4140, etc.	150 - 330 HB	First choice	AH3135	MJ	330 - 660	0.008 - 0.016
		150 - 330 HB	Wear resistance	T3225	MJ	490 - 820	0.008 - 0.016
		150 - 330 HB	Low cutting force	AH3135	ML	330 - 660	0.008 - 0.016
M	Stainless steel S30400, etc.	- 200 HB	First choice	AH3135	MJ	330 - 660	0.004 - 0.012
		- 200 HB	Wear resistance	T3225	MJ	330 - 820	0.004 - 0.012
K	Gray cast iron No.35B, No.45B, etc.	150 - 250 HB	First choice	T1215	MJ	490 - 660	0.008 - 0.020
		150 - 250 HB	Fracture resistance	AH725	MJ	330 - 820	0.008 - 0.020
		150 - 250 HB	Low cutting force	AH120	ML	330 - 820	0.008 - 0.020
	Ductile cast iron 60-40-18, etc.	150 - 300 HB	First choice	T1215	MJ	330 - 660	0.008 - 0.020
		150 - 300 HB	Fracture resistance	AH725	MJ	260 - 660	0.008 - 0.020
		150 - 300 HB	Low cutting force	AH120	ML	260 - 660	0.008 - 0.020
H	Hardened steel	40 - 50 HRC	First choice	AH725	MJ	260 - 430	0.004 - 0.008
		50 - 60 HRC	First choice	AH725	MJ	160 - 230	0.002 - 0.004

Positive type

Approach angle: 10°-20°, 45°, 70°, 85°, 88°, 90°, Others

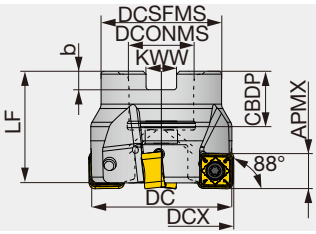
ISO	Workpiece material	Hardness	Priority	Grade	Cutting speed *Vc* (sfm)	Feed per tooth : *fz* (ipt)	
						ML	HJ*
P	Low carbon steel 1015, etc.	- 200 HB	First choice	AH3135	330 - 980	0.004 - 0.016	0.02 - 0.059
		- 200 HB	Fracture resistance	AH130	330 - 980	0.004 - 0.016	-
	High carbon steel 1045, 1055, etc.	200 - 300 HB	First choice	AH3135	330 - 750	0.004 - 0.010	0.02 - 0.059
		200 - 300 HB	Fracture resistance	AH130	330 - 750	0.004 - 0.010	-
	Alloy steel 4140, etc.	150 - 330 HB	First choice	AH3135	330 - 660	0.004 - 0.010	0.02 - 0.059
		150 - 330 HB	Fracture resistance	AH130	330 - 660	0.004 - 0.010	-
M	Stainless steel S30400, etc.	- 200 HB	First choice	AH3135	330 - 500	0.004 - 0.010	0.012 - 0.02
		- 200 HB	Fracture resistance	AH130	330 - 500	0.004 - 0.010	-
K	Gray cast iron No.35B, No.45B, etc.	150 - 250 HB	First choice	AH3135	330 - 830	0.004 - 0.016	0.02 - 0.059
		150 - 250 HB	Fracture resistance	AH130	330 - 830	0.004 - 0.016	-
	Ductile cast iron 60-40-18, etc.	150 - 250 HB	First choice	AH3135	260 - 660	0.004 - 0.010	0.02 - 0.059
		150 - 250 HB	Fracture resistance	AH130	260 - 660	0.004 - 0.010	-
S	Titanium alloy Ti-6Al-4V, etc.	- HRC 40	First choice	AH3135	100 - 200	0.004 - 0.010	0.012 - 0.02
		- HRC 40	Fracture resistance	AH130	100 - 200	0.004 - 0.010	-
	Heat resistant alloy Inconel718, etc.	- HRC 40	First choice	AH3135	30 - 130	0.002 - 0.006	0.004 - 0.012
		- HRC 40	Fracture resistance	AH130	30 - 130	0.002 - 0.006	-
H	Hardened steel	40 - 50 HRC	First choice	AH3135	260 - 420	-	0.004 - 0.012
		50 - 60 HRC	First choice	AH3135	160 - 230	-	0.001 - 0.003

* Apply 20% of recommended feed when using HJ insert with *ap* over 0.059".

THSN12

88° face mill, with screw clamp system, for double sided square inserts

GAMP = +3°, GAMF = -11°



Inch	APMX	DC	DCX	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT (lb)	Air hole	Insert	Arbor type
THSN12U2.00B0.75R04	0.374	2.000	2.024	4	1.850	1.575	0.750	0.750	0.315	0.197	0.920	With	SNMU1206...	A
THSN12U2.00B0.75R05	0.374	2.000	2.024	5	1.850	1.575	0.750	0.750	0.315	0.197	0.910	With	SNMU1206...	A
THSN12U2.50B0.75R04	0.374	2.500	2.524	4	1.850	1.575	0.750	0.750	0.315	0.197	1.220	With	SNMU1206...	A
THSN12U2.50B0.75R06	0.374	2.500	2.524	6	1.850	1.575	0.750	0.750	0.315	0.197	1.220	With	SNMU1206...	A
THSN12U3.00B1.00R05	0.374	3.000	3.024	5	1.969	1.969	1.000	1.024	0.374	0.236	2.120	With	SNMU1206...	A
THSN12U3.00B1.00R08	0.374	3.000	3.024	8	1.969	1.969	1.000	1.024	0.374	0.236	2.090	With	SNMU1206...	A
THSN12U4.00B1.50R06	0.374	4.000	4.024	6	3.150	1.969	1.500	1.299	0.626	0.394	3.640	Without	SNMU1206...	B
THSN12U4.00B1.50R08	0.374	4.000	4.024	8	3.150	1.969	1.500	1.299	0.626	0.394	3.550	Without	SNMU1206...	B

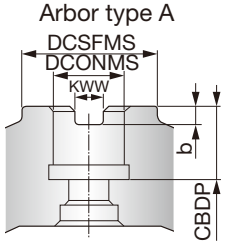
SPARE PARTS

Designation	Clamping screw	Torx bit	Grip	Shell locking bolt (Optional parts)
THSN12U2.00..., THSN12U2.50...	CSPB-4	BLDIP15/S7	H-TB2W	(C0.375X1.125H)
THSN12U3.00...	CSPB-4	BLDIP15/S7	H-TB2W	(C0.500X1.375H)
THSN12U4.00...	CSPB-4	BLDIP15/S7	H-TB2W	(TMBA-0.750H)

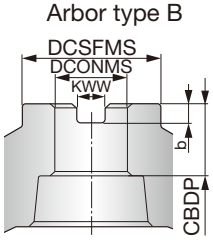
*Recommended clamping torque : CSPB-4 = 2.58 lbs·ft

Arbor type

Arbor type A

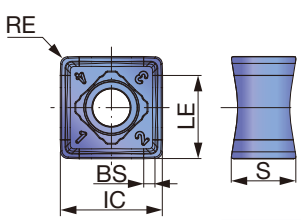


Arbor type B

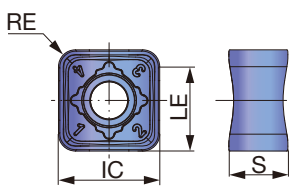


INSERT

SNMU120608HNEN-MM



SNMU120612/20EN-MM



P	Steel	☆	★		★
M	Stainless		★		★
K	Cast iron	★		★	
N	Non-ferrous				
S	Superalloys	★	☆		
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH120	Coated AH3135	Coated T1215	Coated T3225	LE	S	IC	BS
SNMU120608HNEN-MM	0.031	0.374	●	●	●	●	0.386	0.295	0.472	0.055
SNMU120612EN-MM	0.047	0.374		●	●		0.425	0.285	0.472	-
SNMU120620EN-MM	0.079	0.374		●	●		0.394	0.276	0.472	-

●: Line up

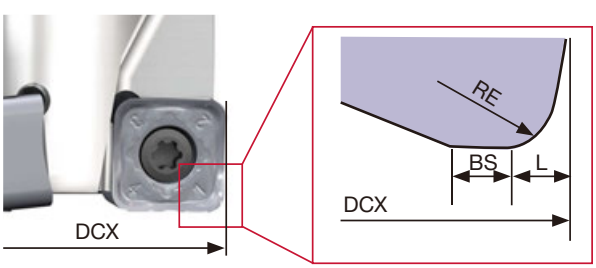
Reference pages: Standard cutting conditions → H068

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Hardness HB	Selection criteria	Recommended grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steels 1015, etc.	- 200 HB	First choice	AH3135	MM	328 - 820	0.002 - 0.012
		- 200 HB	Wear resistance	T3225	MM	656 - 1148	0.002 - 0.010
	High carbon steels, alloyed steels 1055, 4140(H), etc.	- 300 HB	First choice	AH3135	MM	328 - 820	0.002 - 0.012
		- 300 HB	Wear resistance	T3225	MM	591 - 984	0.002 - 0.010
	Prehardened steel NAK80, PX5, etc.	30 - 40 HRC	First choice	AH3135	MM	328 - 656	0.002 - 0.010
		30 - 40 HRC	Wear resistance	T3225	MM	492 - 820	0.002 - 0.008
M	Austenitic stainless steel 304,316, etc.	- 200 HB	First choice	AH3135	MM	328 - 656	0.002 - 0.010
		- 200 HB	Wear resistance	T3225	MM	328 - 820	0.002 - 0.008
	Stainless cast steel Hu etc.	-	First choice	T3225	MM	197 - 394	0.002 - 0.008
		-	Fracture resistance	AH3135	MM	197 - 394	0.002 - 0.008
K	Grey cast iron No.250, etc.	150 - 250 HB	First choice	T1215	MM	328 - 1148	0.002 - 0.012
		150 - 250 HB	Fracture resistance	AH120	MM	328 - 820	0.002 - 0.012
	Ductile cast iron 65-45-12, etc.	150 - 250 HB	First choice	T1215	MM	328 - 1148	0.002 - 0.010
		150 - 250 HB	Fracture resistance	AH120	MM	262 - 656	0.002 - 0.012
S	Titanium alloy Ti-6Al-4V, etc.	- 40 HRC	First choice	AH3135	MM	98 - 197	0.002 - 0.008
	Heat resistant alloy Inconel718, etc.	- 40 HRC	First choice	AH120	MM	33 - 131	0.002 - 0.006
H	Hardened steel H13, etc.	40 - 50 HRC	First choice	AH3135	MM	262 - 427	0.002 - 0.006
	Hardened steel D2, etc.	50 - 60 HRC	First choice	AH120	MM	164 - 230	0.001 - 0.003

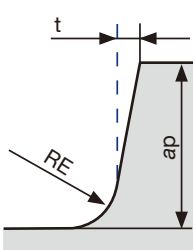
Tool offset

To eliminate uncut amount in face milling operation, adjust the programming according to the offset (L) listed below.



Inch	RE	BS	L
SNMU120608HNEN-MM	0.031	0.055	0.051
SNMU120612EN-MM	0.047	-	0.067
SNMU120620EN-MM	0.079	-	0.098

The following table shows the amount left over cut (t) when the cutter is considered as a shoulder milling cutter.

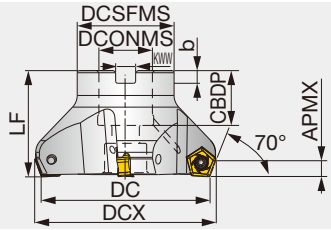


Inch	*ap* (in)									
	0.039	0.079	0.118	0.157	0.197	0.236	0.276	0.315	0.354	0.374
SNMU120608HNEN-MM	0.0004	0.0016	0.0020	0.0020	0.0028	0.0035	0.0055	0.0079	0.0106	0.0106
SNMU120612EN-MM	-	0	0	0.0004	0.0008	0.0020	0.0035	0.0059	0.0087	0.0098
SNMU120620EN-MM	-	0	0	0	0.0008	0.0020	0.0035	0.0059	0.0087	0.0098

TEN09R

70° face mill, with screw clamp system, for double sided pentagonal inserts

GAMP=-6°,GAMF=-10°~-2°



Right hand (R) shown.

Inch	APMX	DC	DCX	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT (lb)	Air hole	Insert	Arbor type
TEN09R200U0075A03	0.252	2.000	2.240	3	1.693	1.575	0.750	0.750	0.315	0.197	0.300	With	PN*U0905...	A
TEN09R200U0075A04	0.252	2.000	2.240	4	1.693	1.575	0.750	0.750	0.315	0.197	0.300	With	PN*U0905...	A
TEN09R200U0075A06	0.252	2.000	2.240	6	1.693	1.575	0.750	0.750	0.315	0.197	0.300	With	PN*U0905...	A
TEN09R250U0075A04	0.252	2.500	2.740	4	1.693	1.575	0.750	0.750	0.315	0.197	0.500	With	PN*U0905...	A
TEN09R250U0075A06	0.252	2.500	2.740	6	1.693	1.575	0.750	0.750	0.315	0.197	0.500	With	PN*U0905...	A
TEN09R250U0075A08	0.252	2.500	2.740	8	1.693	1.575	0.750	0.750	0.315	0.197	0.500	With	PN*U0905...	A
TEN09R300U0100A04	0.252	3.000	3.240	4	1.969	1.969	1.000	1.024	0.374	0.236	0.900	With	PN*U0905...	A
TEN09R300U0100A07	0.252	3.000	3.240	7	1.969	1.969	1.000	1.024	0.374	0.236	0.900	With	PN*U0905...	A
TEN09R300U0100A10	0.252	3.000	3.240	10	1.969	1.969	1.000	1.024	0.374	0.236	0.900	With	PN*U0905...	A
TEN09R400U0150A05	0.252	4.000	4.240	5	3.150	1.969	1.500	1.378	0.626	0.394	1.300	With	PN*U0905...	B
TEN09R400U0150A08	0.252	4.000	4.240	8	3.150	1.969	1.500	1.378	0.626	0.394	1.300	With	PN*U0905...	B
TEN09R400U0150A12	0.252	4.000	4.240	12	3.150	1.969	1.500	1.378	0.626	0.394	1.400	With	PN*U0905...	B
TEN09R500U0150A06	0.252	5.000	5.240	6	3.150	2.480	1.500	1.457	0.626	0.394	2.600	With	PN*U0905...	B
TEN09R500U0150A10	0.252	5.000	5.240	10	3.150	2.480	1.500	1.457	0.626	0.394	2.700	With	PN*U0905...	B
TEN09R500U0150A16	0.252	5.000	5.240	16	3.150	2.480	1.500	1.457	0.626	0.394	2.900	With	PN*U0905...	B
TEN09R600U0200A07	0.252	6.000	6.240	7	3.937	2.480	2.000	1.496	0.748	0.433	4.400	Without	PN*U0905...	B
TEN09R600U0200A12	0.252	6.000	6.240	12	3.937	2.480	2.000	1.496	0.748	0.433	4.600	Without	PN*U0905...	B
TEN09R600U0200A20	0.252	6.000	6.240	20	3.937	2.480	2.000	1.496	0.748	0.433	4.900	Without	PN*U0905...	B

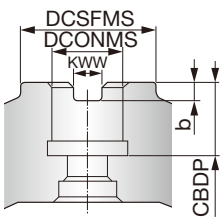
SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Shell locking bolt (Optional parts)	Torx bit
TEN09R200..., 250...	CSTR-4L100	H-TBS	M-1000	(C0.375X1.125H)	BT15S
TEN09R300...	CSTR-4L100	H-TBS	M-1000	(C0.500X1.375H)	BT15S
TEN09R400..., 500...	CSTR-4L100	H-TBS	M-1000	(TMBA-0.750H)	BT15S
TEN09R600...	CSTR-4L100	H-TBS	M-1000	-	BT15M

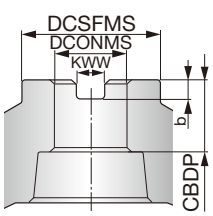
*Recommended clamping torque：CSTR-4L100 = 2.58 lbs·ft

Arbor type

Arbor type A



Arbor type B



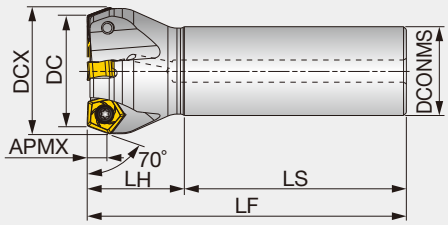
Reference pages: Inserts → H070, Standard cutting conditions → H071

DOPENT

EEN09

70° face endmill, shank type, with screw clamp system, for double sided pentagonal inserts

GAMP=-6°,GAMF=-2°~-10°

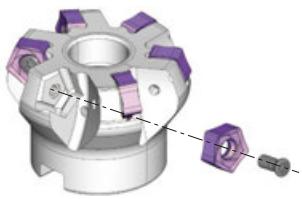


Inch	APMX	DC	DCX	CICT	DCONMS	LS	LH	LF	WT (lb)	Air hole	Insert
EEN09R125U0125W03	0.252	1.250	3	1.250	1.250	2.280	1.500	3.780	0.700	With	PN*U0905...
EEN09R150U0125W04	0.252	1.500	4	1.500	1.250	2.280	2.000	4.280	0.700	With	PN*U0905...

SPARE PARTS

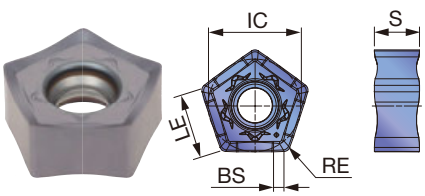
Designation	Clamping screw	Lubricant	Wrench
EEN09	CSTR-4L100	M-1000	T-15D

*Recommended clamping torque：CSTR-4L100 = 2.58 lbs･ft

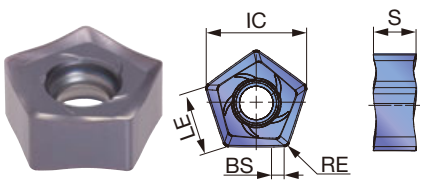


INSERT

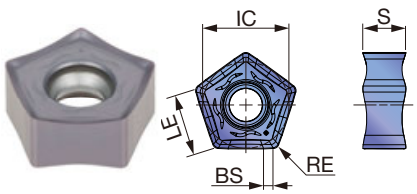
PN*U0905GNEN-MJ (Neutral)



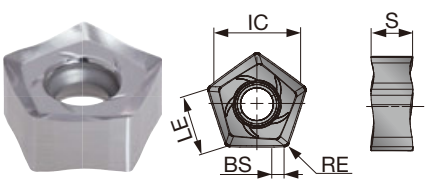
PNCU0905GNER-MJ (Right hand)



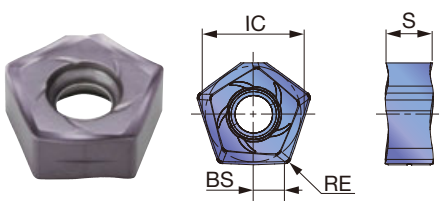
PNCU0905-ML (Neutral)



PNCU0905-AJ (Right hand)



PNCU0905-W (Right hand)



Approach angle: 10°-20° | 45° | 70° | 85° | 88° | 90° | Others

P	Steel	☆		★	★			☆	☆	★		
M	Stainless		☆	☆	★				☆			
K	Cast iron	★		☆		★	★					
N	Non-ferrous										★	
S	Superalloys	☆		★	☆							
H	Hard materials											

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated								Cermet	Uncoated	LE	S	IC	BS
			AH120	AH140	AH725	AH3135	T1115	T1215	T3130	T3225	NS740	TH10				
PNMU0905GNEN-MJ	0.031	0.252	●			●		●		●			0.350	0.236	0.480	0.055
PNCU0905GNEN-MJ	0.031	0.252	●			●		●		●			0.350	0.236	0.480	0.055
PNCU0905GNER-MJ	0.031	0.252	●	●	●		●		●		●		0.350	0.233	0.480	0.055
PNCU0905GNEN-ML	0.031	0.252				●							0.350	0.235	0.480	0.055
PNCU0905GNFR-AJ	0.031	0.252										●	0.350	0.246	0.480	0.055
PNCU0905GNER-W	0.031	0.079			●								-	0.233	0.480	0.150

● : Line up

Reference pages: Standard cutting conditions → H071

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Hardness HB	Selection criteria	Recommended grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steels 1015, etc.	200 - 300 HB	First choice	AH3135	MJ	330 - 820	0.004 - 0.024
		200 - 300 HB	Low cutting force	AH3135	ML	330 - 820	0.004 - 0.012
		200 - 300 HB	Wear resistance	T3225	MJ	660 - 1150	0.004 - 0.012
		200 - 300 HB	Surface quality	NS740	MJ	330 - 820	0.004 - 0.012
	High carbon steels, alloyed steels 1045, etc.	150 - 300 HB	First choice	AH3135	MJ	330 - 820	0.004 - 0.014
		150 - 300 HB	Low cutting force	AH3135	ML	330 - 820	0.004 - 0.012
		150 - 300 HB	Wear resistance	T3225	MJ	590 - 990	0.004 - 0.012
		150 - 300 HB	Surface quality	NS740	MJ	330 - 820	0.004 - 0.012
	Prehardened steel NAK80, PX5, etc.	30 - 40 HRC	First choice	AH3135	MJ	330 - 660	0.004 - 0.012
		30 - 40 HRC	Low cutting force	AH3135	ML	330 - 660	0.004 - 0.010
		30 - 40 HRC	Wear resistance	T3225	MJ	490 - 820	0.004 - 0.010
M	Stainless steel S30400, etc.	- 200 HB	First choice	AH3135	ML	330 - 660	0.004 - 0.012
		- 200 HB	Fracture resistance	AH3135	MJ	330 - 660	0.004 - 0.014
		- 200 HB	Wear resistance	T3225	MJ	330 - 820	0.004 - 0.012
K	Gray cast irons No.250B, No.300B, etc.	150 - 250 HB	First choice	T1215	MJ	460 - 820	0.004 - 0.024
		150 - 250 HB	Fracture resistance	AH120	MJ	490 - 280	0.004 - 0.024
	Ductile cast iron 60-40-18, etc.	150 - 250 HB	First choice	T1215	MJ	330 - 660	0.004 - 0.024
		150 - 250 HB	Fracture resistance	AH120	MJ	390 - 720	0.004 - 0.024
N	Aluminum alloys Si < 13%	-	First choice	TH10	AJ	1640 - 4921	0.004 - 0.020
	Aluminum alloys Si ≥ 13%	-	First choice	TH10	AJ	490 - 1640	0.004 - 0.020
S	Titanium alloys Ti-6Al-4V, etc.	- 40 HRC	First choice	AH3135	ML	98 - 197	0.004 - 0.016
		- 40 HRC	Fracture resistance	AH3135	MJ	98 - 197	0.004 - 0.016
	Heat-resistant alloys Inconel 718, etc.	- 40 HRC	First choice	AH725	MJ	66 - 164	0.002 - 0.004

· Remove excessive chip with an air blast to prevent chip jamming.
· Use water-soluble coolant to avoid built-up edge in case extreme welding occurs on cutting edges. (ex. aluminum machining).
· For the operation with depth of cut which varies (ex. casting skin) and machining of workpiece materials with interrupted surface, the feed (*fz*) should be set to the lower recommended value shown in the above table.
· Cutting conditions may be limited depending on machine power, workpiece rigidity, and spindle output. When the cutting width, depth or overhang length is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

Installation of inserts on an extra close-pitch cutter

- On an extra close-pitch cutter, the screw hole of an insert pocket is placed at an angle.
- Leave a gap between the insert and pocket when starting to fasten the screw on the cutter body as shown in Fig. A.
- After fastening the screw, please ensure that there is no gap between the cutter body and insert. (Fig. B)

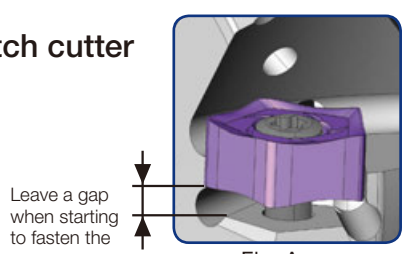


Fig. A

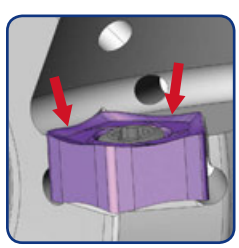


Fig. B

Notes for using wiper inserts

- When fine surface finish is required, wiper insert PNCU0905GNER-W is recommended.
- Attach the insert with its notch on the top, as shown in Fig. C.
- Also, make sure that the mark of the insert is located at the bottom of the cutter body, as shown in Fig. D.
- The wiper insert has two corners available (Fig. D). Do not use the other corners as the cutter body may be broken.

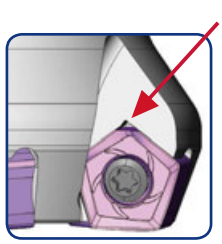


Fig. C

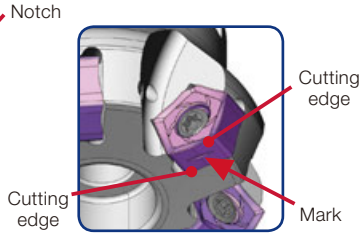


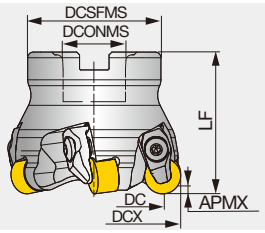
Fig. D

CERAMIC SMILL FEED

TFMRN

Face milling cutter for high temperature alloy applications, Tool dia. ø2.000" - ø3.000"

GAMP = -7°, GAMF = +15°



Inch	APMX	DC	DCX	CICT	DCONMS	LF	DCSFMS	WT(lb)	Insert	Arbor type
TFMRND2.00-12-4Z-FL	0.080	1.528	2.000	4	0.750	2.000	1.770	0.88	RNGN120700...	A
TFMRND2.50-12-5Z-FL	0.080	2.000	2.500	5	1.570	1.969	0.750	0.99	RNGN120700...	A
TFMRND3.00-12-5Z-FL	0.080	2.500	3.000	5	1.750	1.969	1.000	2.07	RNGN120700...	A

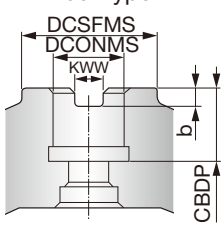
Metric	APMX	DC	DCX	CICT	DCONMS	LF	DCSFMS	WT(kg)	Insert	Arbor type
TFMRN563-22R-12FL	2	50.35	63	5	22	50	47	0.6	RNGN120700...	A
TFMRN580-27R-12FL	2	67.37	80	5	27	50	58	0.9	RNGN120700...	A

SPARE PARTS

Designation	Clamp	Screw	Snap ring
TFMRND..., TFMRN...	CCL-5S-F	CLS3C	CSR2

Arbor type

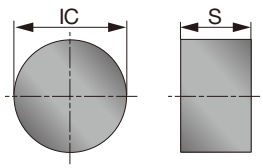
Arbor type A



Reference pages: Inserts, Standard cutting conditions → H073

INSERT

RNGN-E/T1



P	Steel		
M	Stainless		
K	Cast iron		
N	Non-ferrous		
S	Superalloys	★	★
H	Hard materials		

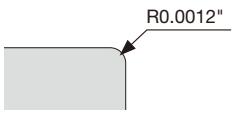
★ : First choice

Designation	APMX (in)	Edge prep.*	Ceramic TS200	Ceramic TS300	IC (in)	S (in)
RNGN120700-E	0.080	E	●		0.500	0.3125
RNGN120700-T1	0.080	T1	●		0.500	0.3125
RNGN120700-E	0.080	E		●	0.500	0.3125
RNGN120700-T1	0.080	T1		●	0.500	0.3125

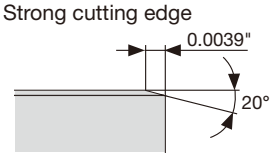
* Types of cutting edge preparations

●: Line up

E: Low cutting force



T1: Strong cutting edge



STANDARD CUTTING CONDITIONS

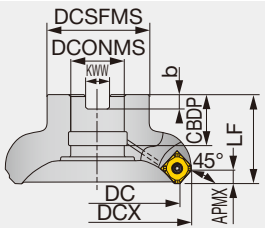
ISO	Workpiece materials	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	Depth of cut *ap* (in)
S	Ni-based super alloys	TS200	1804 - 4265	0.002 - 0.008	0.004 - 0.079
		TS300	886 - 1804	0.002 - 0.008	0.004 - 0.079
	Co-based super alloys	TS200	1804 - 4921	0.002 - 0.008	0.004 - 0.079
		TS300	886 - 1804	0.002 - 0.008	0.004 - 0.079

TUNGMILL

TAW13

30° - 45° face mill, with screw clamp system, for SWMT/SWGT13 inserts

GAMP=+17°~+20°,GAMF=-16°~-11°



Right hand (R) shown.

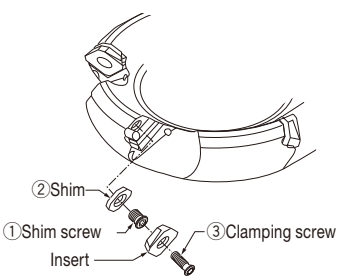
Inch	DC	DCX	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT (lb)	Air hole	Insert	Arbor type
TAW13R200U0075A03	2.000	3	2.510	1.693	1.575	0.750	0.750	0.315	0.197	0.880	With	SW*T13...	A
TAW13R200U0075A04	2.000	4	2.510	1.693	1.575	0.750	0.750	0.315	0.197	0.880	With	SW*T13...	A
TAW13R200U0075A05	2.000	5	2.510	1.693	1.575	0.750	0.750	0.315	0.197	0.880	With	SW*T13...	A
TAW13R300U0100A04	3.000	4	3.510	1.969	1.969	1.000	1.020	0.374	0.236	1.980	With	SW*T13...	A
TAW13R300U0100A06	3.000	6	3.510	1.969	1.969	1.000	1.020	0.374	0.236	1.980	With	SW*T13...	A
TAW13R300U0100A08	3.000	8	3.510	1.969	1.969	1.000	1.020	0.374	0.236	1.980	With	SW*T13...	A
TAW13R400U0150A05	4.000	5	4.520	3.150	1.969	1.500	1.378	0.626	0.394	3.750	With	SW*T13...	B
TAW13R400U0150A07	4.000	7	4.520	3.150	1.969	1.500	1.378	0.626	0.394	3.530	With	SW*T13...	B
TAW13R400U0150A10	4.000	10	4.520	3.150	1.969	1.500	1.378	0.626	0.394	3.750	With	SW*T13...	B
TAW13R500U0150A06	5.000	6	5.510	3.150	2.480	1.500	1.457	0.626	0.394	6.170	With	SW*T13...	B
TAW13R500U0150A08	5.000	8	5.510	3.150	2.480	1.500	1.457	0.626	0.394	5.950	With	SW*T13...	B
TAW13R500U0150A12	5.000	12	5.510	3.150	2.480	1.500	1.457	0.626	0.394	6.170	With	SW*T13...	B
TAW13R600U0200A07	6.000	7	6.510	3.937	2.480	2.000	1.500	0.748	0.433	9.040	Without	SW*T13...	B
TAW13R600U0200A10	6.000	10	6.510	3.937	2.480	2.000	1.500	0.748	0.433	8.600	Without	SW*T13...	B
TAW13R600U0200A16	6.000	16	6.510	3.937	2.480	2.000	1.500	0.748	0.433	9.040	Without	SW*T13...	B

*Recommended clamping torque：CSPB-3.5 = 2.58 lbs·ft

SPARE PARTS

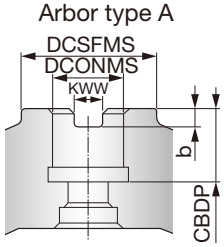
Designation	③Clamping screw	Lubricant	①Shim screw	Shell locking bolt	②Shim	Wrench	Wrench 1
TAW13R200...	CSPB-3.5	M-1000	DTS5-3.5SS	0.375X1.125H	FSSA1102	IP-15D	P-3.5
TAW13R300...	CSPB-3.5	M-1000	DTS5-3.5SS	C0.500X1.375H	FSSA1102	IP-15D	P-3.5
TAW13R400..., 500...	CSPB-3.5	M-1000	DTS5-3.5SS	TMBA-0.750H	FSSA1102	IP-15D	P-3.5
TAW13R600...	CSPB-3.5	M-1000	DTS5-3.5SS	-	FSSA1102	IP-15D	P-3.5

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

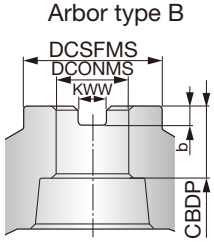


Arbor type

Arbor type A



Arbor type B

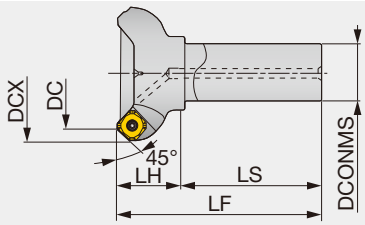


Reference pages: Inserts → H076, Standard cutting conditions → H077 - H078

EAW13

30° - 45° face endmill, shank type, with screw clamp system, for SWMT/SWGT13 inserts

GAMP=+17°~+20°,GAMF=-16°~-11°



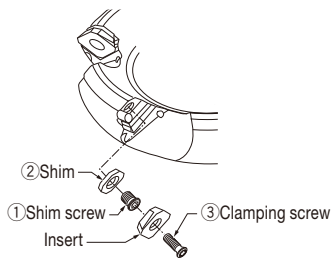
Right hand (R) shown.

Metric	DC	DCX	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EAW13R025M25.0-02	25	39	2	25	80	35	115	0.4	With	SW*T13...
EAW13R032M32.0-02	32	46	2	32	80	35	115	0.7	With	SW*T13...
EAW13R040M32.0-03	40	54	3	32	80	35	115	0.8	With	SW*T13...
EAW13R050M32.0-03	50	63	3	32	80	40	120	1	With	SW*T13...
EAW13R050M32.0-04	50	63	4	32	80	40	120	0.9	With	SW*T13...
EAW13R063M32.0-04	63	76	4	32	80	40	120	1.1	With	SW*T13...
EAW13R063M32.0-05	63	76	5	32	80	40	120	1.1	With	SW*T13...
EAW13R080M32.0-04	80	94	4	32	80	40	120	1.5	With	SW*T13...
EAW13R080M32.0-06	80	94	6	32	80	40	120	1.4	With	SW*T13...

SPARE PARTS

Designation	③Clamping screw	Lubricant	①Shim screw	②Shim	Wrench	Wrench 1
EAW13R025**~040**	CSPB-3.5	M-1000	-	-	IP-15D	-
EAW13R050**~080**	CSPB-3.5	M-1000	DTS5-3.5SS	FSSA1102	IP-15D	P-3.5

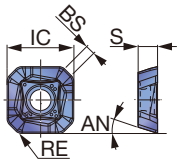
*Recommended clamping torque：CSPB-3.5 = 3.5 N·m



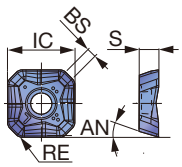
Reference pages: Inserts → H076, Standard cutting conditions → H077 - H078

INSERT

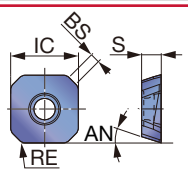
SWMT13T3-MJ



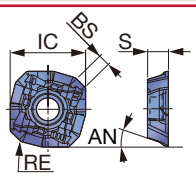
SWMT13T3-ML



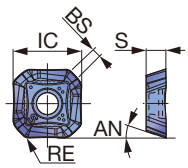
SWMW13T3 (Flat)



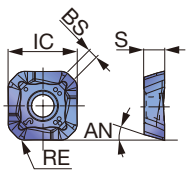
SWMT13T3-HJ



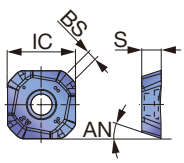
SWMT13T3-MS



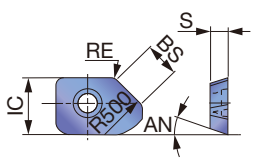
SWGT13T3-MJ



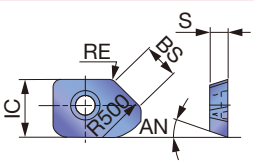
SWGT13T3-AJ



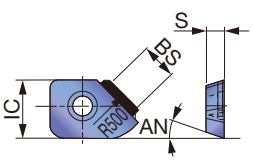
WWCW13T3AFER-WS



WWCW13T3AFFR-WS



WWCW13T3AFFR-WD



Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

P	Steel	☆			★				★	☆			★				
M	Stainless		★	☆	★					☆							
K	Cast iron	★				★	★	★									
N	Non-ferrous										★				★		★
S	Superalloys	★	☆		☆												
H	Hard materials																

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated										Cermet	Uncoated	PCD		IC	S	AN	BS
			AH120	AH130	AH140	AH3135	GH110	T1115	T1215	T3130	T3225	DS1100	NS740	KS05F	DX140					
SWMT13T3AFPR-MJ	0.059	0.157	●	●	●	●		●	●	●	●		●				0.547	0.157	18.5	0.079
SWMT13T3AFER-ML	0.059	0.098	●			●											0.547	0.157	18.5	0.079
SWMW13T3AFTR	0.059	0.197	●			●		●	●	●	●		●				0.547	0.157	18.5	0.079
SWMT13T3AFPR-HJ	0.059	0.079	●	●	●	●		●	●	●	●						0.579	0.157	18.5	0.091
SWMT13T3AFPR-MS	0.039	0.157		●	●	●											0.555	0.157	18.5	0.079
SWGT13T3AFPR-MJ	0.059	0.157	●			●							●				0.547	0.157	18.5	0.079
SWGT13T3AFFR-AJ	-	0.157										●		●			0.555	0.157	18.5	0.079
WWCW13T3AFER-WS	0.059	-					●						●				0.504	0.157	18.5	0.307
WWCW13T3AFFR-WS	0.059	-										●		●			0.504	0.157	18.5	0.307
WWCW13T3AFFR-WD	-	-													●		0.504	0.157	18.5	0.307

● : Line up

DX140 : 1 piece per package

STANDARD CUTTING CONDITIONS

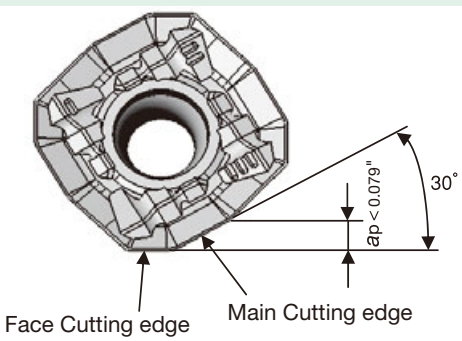
ISO	Workpiece materials	Priority	Grade	Cutting speed *vc* (sfm)	Roughing (Depth of cut: > 0.039") Feed per tooth: *fz* (ipt) MJ	ML	HJ	MS	Flat	AJ
P	Mild and low carbon steels 1010, 1015, etc. < 180 HB	First choice	AH3135	330 - 890	0.002 - 0.012	0.002 - 0.010	0.008 - 0.024	0.004 - 0.010	0.002 - 0.012	-
		Wear resistance	T3225	490 - 300	0.002 - 0.012	-	0.008 - 0.024	-	0.002 - 0.012	-
		Surface quality	NS740	330 - 980	0.002 - 0.009	-	-	-	0.002 - 0.009	-
	Carbon and alloy steels 1045, 4140, etc. < 300 HB	First choice	AH3135	330 - 760	0.002 - 0.010	0.002 - 0.008	0.008 - 0.020	-	0.002 - 0.010	-
		Wear resistance	T3225	490 - 910	0.002 - 0.010	-	0.008 - 0.020	-	0.002 - 0.010	-
		Surface quality	NS740	330 - 760	0.002 - 0.008	-	-	-	0.002 - 0.008	-
	Die steels H13, D2, etc. < 30 HRC	First choice	AH3135	330 - 590	0.002 - 0.008	0.002 - 0.008	0.008 - 0.016	-	0.002 - 0.008	-
		Wear resistance	T3225	330 - 590	0.002 - 0.008	-	0.008 - 0.016	-	0.002 - 0.008	-
M	Stainless steels S30400, S31600, etc. < 250 HB	First choice	AH3135	260 - 660	0.004 - 0.010	-	0.008 - 0.020	0.004 - 0.008	-	-
		Wear resistance	T3225	490 - 820	0.004 - 0.010	0.004 - 0.008	0.008 - 0.020	-	0.004 - 0.010	-
K	Gray cast irons No.250B, No.300B, etc.	First choice	T1215	590 - 980	0.002 - 0.010	-	0.008 - 0.024	-	0.002 - 0.010	-
		Fracture resistance	AH120	490 - 820	0.002 - 0.010	0.002 - 0.008	0.008 - 0.024	-	0.002 - 0.010	-
	Ductile cast irons 60-40-18, 80-55-06, etc.	First choice	T1215	390 - 660	0.002 - 0.010	-	0.008 - 0.024	-	0.002 - 0.010	-
		Fracture resistance	AH120	330 - 590	0.002 - 0.010	0.002 - 0.008	0.008 - 0.024	-	0.002 - 0.010	-
S	Titanium alloys Ti-6Al-4V, etc.	First choice	AH130	98 - 197	-	-	-	0.004 - 0.008	-	-
	Heat-resistant alloys Inconel 718, etc.	First choice	AH120	33 - 131	0.002 - 0.006	-	-	-	-	-
N	Aluminum alloys Si < 13 %	-	DS1100 KS05F	300 - 3281	-	-	-	-	-	0.002 - 0.008
	Aluminum alloys Si ≥ 13%	-	DS1100 KS05F	260 - 980	-	-	-	-	-	0.002 - 0.008
	Copper alloys	-	DS1100 KS05F	660 - 1640	-	-	-	-	-	0.002 - 0.008

Notes for use of HJ-type inserts

HJ-type inserts can be used for high feed machining.

When using the insert, care should be taken with the following:

- The maximum depth of cut is *ap* = 0.079". Select feeds within the above value.
- Do not use the HJ-type inserts with other types (such as MJ- and MS-types) in the same body.
- The outer shape of the HJ-type insert is different from those of other types (such as MJ- and MS-types), but the insert can be held in the same insert pocket.



Notes on use of wiper insert

- When requiring good surface finishes, use of a wiper insert (WWCW13T3AF_ R-W_) is recommended. In general, installing one wiper insert delivers superior surface finishes.
- When using the wiper insert, install the insert as shown in Fig. A. If the insert is installed as shown in Fig. B, breakage of the insert is inevitable and normal surface finish can not be obtained.
- The wiper insert must not be used together with HJ-type inserts
- The wiper insert has one wiping corner.
- The peripheral cutting edge of the wiper insert is retracted from the edge of the normal inserts. Therefore, the feed per tooth (ipt) of the normal insert following the wiper insert is double that of other inserts.
- When using the wiper insert, depth of cut (*ap*) less than 0.039" is recommended.

Fig. A

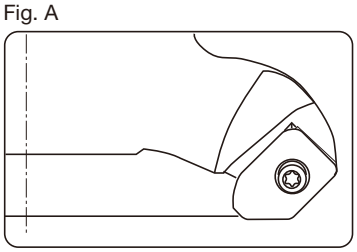
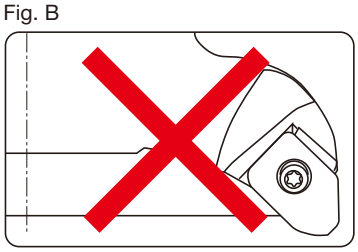


Fig. B



ISO	Workpiece materials	Priority	Grade	Cutting speed *vc* (sfm)	Light cutting to finishing (Depth of cut: ≤ 0.039") Feed per tooth: *fz* (ipt) MJ	ML	HJ	MS	Flat	AJ
P	Mild and low carbon steels 1010, 1015, etc. < 180 HB	First choice	AH3135	330 - 890	0.002 - 0.010	0.002 - 0.008	0.008 - 0.024	0.004 - 0.008	0.002 - 0.010	-
		Wear resistance	T3225	490 - 980	0.002 - 0.010	-	0.008 - 0.024	-	0.002 - 0.010	-
		Surface quality	NS740	330 - 980	0.002 - 0.008	-	-	-	0.002 - 0.008	-
	Carbon and alloy steels 1045, 4140, etc. < 300 HB	First choice	AH3135	330 - 760	0.002 - 0.008	0.002 - 0.006	0.008 - 0.020	-	0.002 - 0.008	-
		Wear resistance	T3225	490 - 920	0.002 - 0.008	-	0.008 - 0.020	-	0.002 - 0.008	-
		Surface quality	NS740	330 - 760	0.002 - 0.007	-	-	-	0.002 - 0.007	-
	Die steels H13, D2, etc. < 30 HRC	First choice	AH3135	330 - 1590	0.002 - 0.007	0.002 - 0.005	0.008 - 0.016	-	0.002 - 0.007	-
		Wear resistance	T3225	330 - 590	0.002 - 0.007	-	0.008 - 0.016	-	0.002 - 0.007	-
M	Stainless steels S30400, S31600, etc. < 250 HB	First choice	AH3135	260 - 660	0.004 - 0.008	-	0.008 - 0.020	0.004 - 0.007	-	-
		Wear resistance	T3225	590 - 820	0.004 - 0.008	0.004 - 0.007	0.008 - 0.020	-	0.004 - 0.008	-
K	Gray cast irons No.250B, No.300B, etc.	First choice	T1215	590 - 980	0.004 - 0.008	-	0.008 - 0.024	-	0.004 - 0.008	-
		Fracture resistance	AH120	490 - 820	0.004 - 0.008	0.002 - 0.007	0.008 - 0.024	-	0.004 - 0.008	-
	Ductile cast irons 60-40-18, 80-55-06, etc.	First choice	T1215	390- 660	0.004 - 0.008	-	0.008 - 0.024	-	0.004 - 0.008	-
		Fracture resistance	AH120	330 - 590	0.004 - 0.008	0.002 - 0.007	0.008 - 0.024	-	0.004 - 0.008	-
S	Titanium alloys Ti-6Al-4V, etc.	-	AH130	98 - 197	-	-	-	0.004 - 0.008	-	-
	Heat-resistant alloys Inconel 718, etc.	-	AH120	33 - 131	0.002 - 0.006	-	-	-	-	-
N	Aluminum alloys Si < 13 %	-	DS1100 KS05F	990 - 3281	-	-	-	-	-	0.002 - 0.008
	Aluminum alloys Si ≥ 13%	-	DS1100 KS05F	260 - 980	-	-	-	-	-	0.002 - 0.008
	Copper alloys	-	DS1100 KS05F	660 - 1640	-	-	-	-	-	0.002 - 0.008

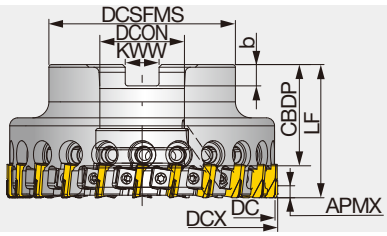
Notes:
- When cutting at a large depth of cut or a large cutting width, the cutting speed (*vc*) and feed (*fz*) should be set to the lower side of the values shown in the above table.
- Dry cutting (or air-blowing) is generally recommended. However, when chips tend to excessively adhere to the cutting edges when machining stainless steel, use a water soluble cutting fluid. In this case, use the AH130 grade at speeds lower than *vc* = 330 sfm.
- When wet machining mild steels, carbon steels and alloy steels, use T3130 at lower cutting conditions.
- TAW13 type TAC mills cannot be used for axial-feed cutting such as ramping, plunging and drilling.

TUNGSPEED MILL

TPYD06

Face mill for aluminum machining, for PCD inserts

GAMP = +9°, GAMP = +4°



Inch	APMX	DC	DCX	CICT	DCSFMS	LF	DCON	CBDP	KWW	b	WT (lb)	Air hole	RPMX	Insert
TPYD06U2.50B0.75R10	0.177	2.500	2.579	10	1.772	1.575	0.750	0.750	0.315	0.197	1.340	With	19,000	YDEN0603...
TPYD06U3.00B1.00R16	0.177	3.000	3.079	16	2.362	1.969	1.000	1.024	0.374	0.236	2.560	With	17,000	YDEN0603...
TPYD06U4.00B1.25R22	0.177	4.000	4.079	22	2.756	1.969	1.250	0.827	0.500	0.315	4.300	With	15,000	YDEN0603...
TPYD06U5.00B1.50R26	0.177	5.000	5.079	26	3.543	2.362	1.500	1.299	0.626	0.394	8.030	With	14,000	YDEN0603...
TPYD06U6.00B1.50R34	0.177	6.000	6.079	34	3.543	2.362	1.500	1.299	0.626	0.394	10.760	With	12,000	YDEN0603...

Metric	APMX	DC	DCX	CICT	DCSFMS	LF	DCON	CBDP	KWW	b	WT(kg)	Air hole	RPMX	Insert
TPYD06M063B22.0R10	4.5	63	65	10	45	40	22	20	10.4	6.3	0.57	With	19,000	YDEN0603...
TPYD06M080B27.0R16	4.5	80	82	16	60	50	27	22	12.4	7	1.24	With	17,000	YDEN0603...
TPYD06J080B25.4R16	4.5	80	82	16	60	50	25.4	26	9.5	6	1.26	With	15,000	YDEN0603...
TPYD06M100B32.0R22	4.5	100	102	22	70	50	32	25	14.4	8	1.78	With	14,000	YDEN0603...
TPYD06J100B31.7R22	4.5	100	102	22	70	50	31.75	32	12.7	8	1.76	With	12,000	YDEN0603...
TPYD06M125B40.0R26	4.5	125	127	26	90	60	40	32	16.4	9	3.48	With	17,000	YDEN0603...
TPYD06J125B38.1R26	4.5	125	127	26	90	60	38.1	38	15.9	10	3.56	With	15,000	YDEN0603...
TPYD06M160B40.0R34	4.5	160	162	34	90	60	40	32	16.4	9	5.2	With	14,000	YDEN0603...
TPYD06J160B38.1R34	4.5	160	162	34	90	60	38.1	38	15.9	10	5.29	With	12,000	YDEN0603...

SPARE PARTS

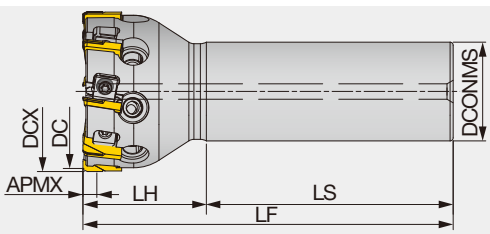
Designation	Insert locking wedge	Wedge fixing screw	Adjusting cam	Torx bit	Cam tightening screw	Wrench	Grip	Shell locking bolt	Shell locking bolt (Optional parts)
TPYD06U2.50B0.75R10	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	-	(C0.375X1.125H)
TPYD06U3.00B1.00R16	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	-	(C0.500X1.375H)
TPYD06U4.00B1.25R22	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	-	-
TPYD06U5.00..., 6.00...	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	-	(TMBA-0.750H)
TPYD06M063B22.0R10	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	CM10X30H	-
TPYD06*080B2*.*R16	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	CM12X30H	-
TPYD06*100B32.0R22	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	CM16X40H	-
TPYD06*100B31.7R22	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	TMBA-M16H	-
TPYD06*125B**.*R26	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	TMBA-M20H	-
TPYD06*160B**.*R34	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W	TMBA-M20H	-

TUNGSPEED MILL

EPYD06

Face endmill for aluminum machining, shank type, for PCD inserts

GAMP = +9°, GAMP = +4°



Inch	APMX	DC	DCX	CICT	DCONMS	LF	LH	LS	WT (lb)	Air hole	RPMX	Insert
EPYD06U2.00C1.25R08	0.177	2.000	2.079	8	1.250	4.500	1.575	2.925	1.920	With	22,000	YDEN0603...

Metric	APMX	DC	DCX	CICT	DCONMS	LF	LH	LS	WT(kg)	Air hole	RPMX	Insert
EPYD06M050C32.0R08	4.5	50	52	8	32	120	40	80	0.57	With	22,000	YDEN0603...

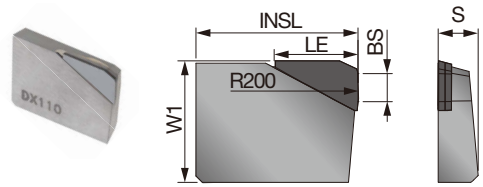
SPARE PARTS

Designation	Clamping screw	Wedge fixing screw	Adjusting cam	Torx bit	Cam tightening screw	Wrench	Grip
EPYD06...	WF875N	DS-5T	AJC08	BLDT10/S7-A	SSHM4-4	P-2	H-TB2W

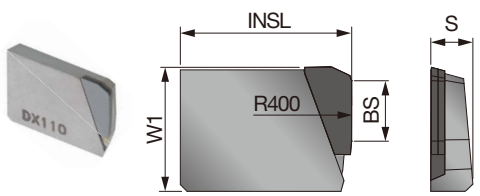
Reference pages: Inserts, Standard cutting conditions → H080

INSERT

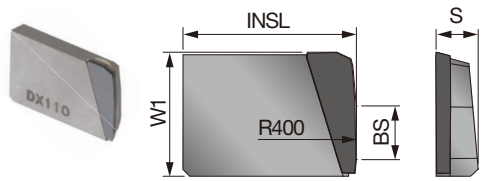
YDEN0603PD(F/S)R-D



YDEN0603PDFR-WD



YDEN0603PDFR-BD



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	APMX	Edge prep.	PCD DX110	W1	INSL	S	BS	LE
YDEN0603PDFR-D	0.177	Without	●	0.375	0.500	0.122	0.087	0.256
YDEN0603PDSR-D	0.177	With	●	0.375	0.500	0.122	0.087	0.256
YDEN0603PDFR-WD	-	Without	●	0.364	0.504	0.122	0.177	-
YDEN0603PDFR-BD	-	With	●	0.364	0.508	0.122	0.157	-

Tungaloy provides refurbishing service for these inserts upon request.

● : Line up

1 piece per package

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Designation	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
N	Cast aluminum alloy / Die-cast Si < 13%	DX110	YDEN0603PDFR-D	1640 - 13123	0.002 - 0.008
	Cast aluminum alloy / Die-cast Si > 13%	DX110	YDEN0603PDFR-D	656 - 2625	0.002 - 0.008
	Aluminum alloy	DX110	YDEN0603PDFR-D	1640 - 13123	0.002 - 0.008
	Copper alloy	DX110	YDEN0603PDFR-D	656 - 1640	0.002 - 0.008

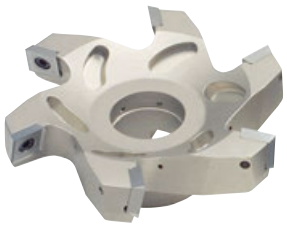
- The values in the above list are of standard recommendations and may require adjustments in consideration with cutting depths and/or workpiece/machine rigidity.
- Use wiper inserts (-WD) for better surface requirements and deburring inserts (-BD) to remove burrs.
- Always use wet cutting (emulsion coolant) for machining aluminum or copper alloys.

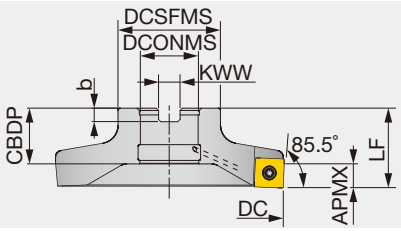
TFE

TFE12R

86° face mill for aluminum machining, with screw clamp system, for positive square inserts

GAMP = +13°, GAMF = +7°





Air through type

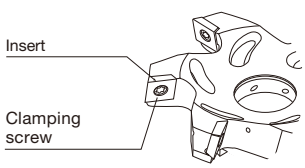
Inch	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT (lb)	Air hole	Insert
TFE12300RU	0.315	3.000	4	1.970	1.380	1.000	0.964	0.375	0.236	0.880	With	SEG*12X4...
TFE12400RU	0.315	4.000	6	1.970	1.380	1.000	0.964	0.375	0.236	1.340	With	SEG*12X4...

Metric	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TFE12063R	8	63	3	45	35	22	19	10	6	0.34	With	SEG*12X4...
TFE12080R	8	80	4	50	35	25.4	24.5	9.5	6	0.45	With	SEG*12X4...
TFE12100R	8	100	6	50	35	25.4	24.5	9.5	6	0.59	With	SEG*12X4...
TFE12125R	8	125	6	50	35	25.4	24.5	9.5	6	0.9	With	SEG*12X4...

SPARE PARTS

Designation	Clamping screw	Lubricant	Shell locking bolt	Wrench
TFE12300RU, TFE12400RU	CSPB-4S	M-1000	TMBA-0.500H	IP-15D
TFE12063R	CSPB-4S	M-1000	CM10X30H	IP-15D
TFE12080R, TFE12100R, TFE12125R	CSPB-4S	M-1000	TMBA-M12H TMBA-0.500H	IP-15D

*Recommended clamping torque：CSPB-4S = 2.58 lbs·ft, 3.5 N·m

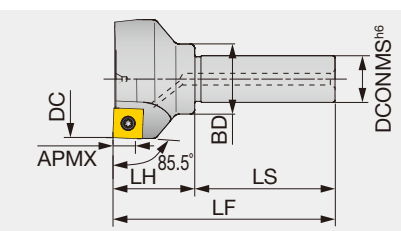


EFE

EFE12RU

86° face endmill for aluminum machining, shank type, with screw clamp system, for positive square inserts

GAMP = +13°, GAMF = +7°



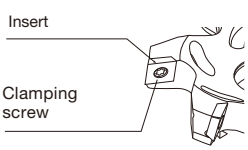
Air through type

Inch	APMX	DC	CICT	DCONMS	BD	LS	LH	LF	WT (lb)	Air hole	Insert
EFE12200RU	0.315	2.000	3	0.750	1.180	2.362	1.375	3.406	0.77	With	SEG*12X4...

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
EFE12000RU	CSPB-4S	M-1000	IP-15D

*Recommended clamping torque：CSPB-4S = 2.58 lbs·ft



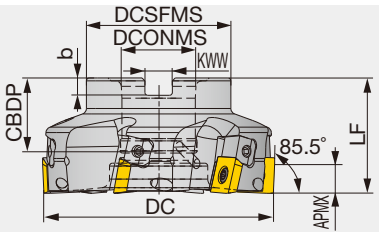
Reference pages: Inserts → H083, Standard cutting conditions → H084

TFE

TFE12R...-...A

86° face mill for aluminum machining, with screw clamp system, for positive square inserts

GAMP = +13°, GAMF = +7°



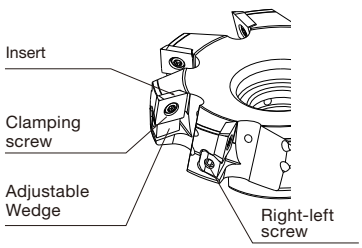
Air through type

Metric	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TFE12R080M25.4-06A	8	80	6	50	40	25.4	26	9.5	6	0.70	With	SEG*12X4...
TFE12R080M27.0E06A	8	80	6	55	40	27	22	12.4	7	0.69	With	SEG*12X4...
TFE12R100M25.4-08A	8	100	8	50	40	25.4	26	9.5	6	1.15	With	SEG*12X4...
TFE12R100M27.0E08A	8	100	8	55	40	27	22	12.4	7	1.11	With	SEG*12X4...
TFE12R125M31.7-10A	8	125	10	70	50	31.7	32	12.7	8	2.24	With	SEG*12X4...
TFE12R125M32.0E10A	8	125	10	70	50	32	28.5	14.4	8	2.14	With	SEG*12X4...

SPARE PARTS

Designation	Clamping screw	Adjustable Wedge	Lubricant	Shell locking bolt	Right-left screw	Wrench	Wrench 1
TFE12R**A	CSTB-4	FW-701R	M-1000	TMBA-M12H TMBA-0.500H	MCS520-2.5	P-2.5T	T-15LB

*Recommended clamping torque：CSTB-4 = 3.5 N·m



Insert setting procedure – adjustable-type TFE face milling cutter

1 Cleaning insert pockets

Remove all the inserts. Use air pressure to thoroughly clean the pockets of dust and chips.

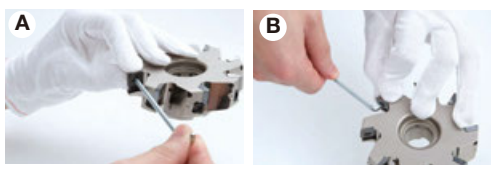
2 Loosening wedges

CCW rotation
- Insert screw loosens
- Wedge slides out
- Insert lowers

CW rotation
- Insert screw tightens
- Wedge slides in
- Insert lifts up

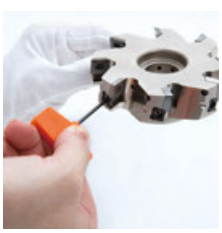
Use the included key for wedge adjustment to loosen all the wedges so that they do not exceed the cutter's outer diameter.

3 Clamping inserts for adjustments



Place the insert in the pocket and lightly tighten the clamping screw with the included key. Suggested method: Tighten the screw first with the straight end of the key (Fig A) until finger tight, then use the angled end to further tighten the screw for insert steadiness (Fig B). Do NOT fully tighten the screw at this moment as this procedure is prior to insert adjustment. Repeat the procedure for all inserts.

4 Axial height adjustment of inserts



Mount the cutter in Step ③ on the setting fixture of the pre-setter. Determine the highest insert, and, while carefully monitoring each insert's axial position, rotate the wedge screw in the CW direction to raise the insert in the axial direction, as close as possible to that of the highest insert. Repeat this procedure for all inserts.

Note:
Since the insert is clamped, loosening the wedge screw will not bring down the insert. To lower insert height, both the insert and wedge screws need to be loosened. Start the adjusting procedure for this insert again from Step 1.

5 Tighten insert screws

Tighten the insert clamping screw at 3.5 Nm, using the key as shown to the left. Repeat the procedure for all inserts.

6 Final adjustments

After final tightening of all insert screws, measure to ensure all inserts are at the desired axial heights. If necessary, further tighten any wedge screws in the CW direction for the final few microns. For inserts exceeding the required runout, re-start the adjustment procedure from Step ① .

Note:
Do not re-tighten the insert screw after insert adjustment is completed. Additional tightening may weaken wedge clamping torque.

Cautions:

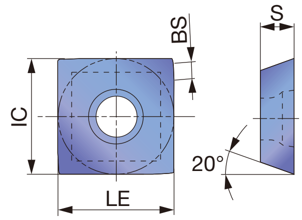
① Always clean all the insert pockets thoroughly of dust and chips. Any objects present in the pocket may shift the insert's position during machining and cause poor surface finishing quality.
② Always loosen the wedge screw before installing the insert as described in Step ② . If the wedge is left tightened in the cutter, the adjustment range of the wedge will be limited, and insert height may not be as freely adjustable as possible.
③ With a finger, firmly press and hold the insert into the wedge while tightening the insert screw. If the insert is not in contact, the wedge has to be driven until the gap in between is closed, with no actual insert movement.
④ Loosening the wedge will not lower the insert. When the insert height exceeds the desired setting during adjustment, loosen both the insert and wedge screws and re-start the adjustment procedure from Step ① . If the insert slides downward when the wedge screw is loosened, the clamping torque of the insert screw is too low. Tighten the insert screw with a slightly higher torque. Suggested clamping method: First use the straight end of the key to tighten the screw until finger tight, then switch the key to the angled side and turn an additional 45°.
⑤ Do not exceed the recommended clamping torque when fixing the insert. This may damage or fracture the insert screw.

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

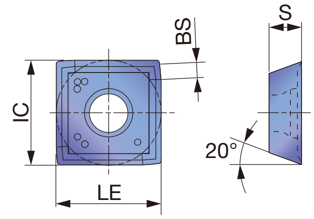
Reference pages: Inserts → H083, Standard cutting conditions → H084

INSERT

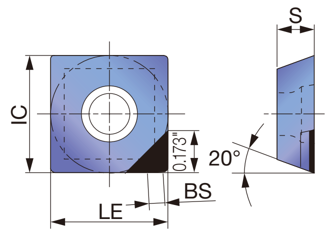
SEGW12X4ZEPR / ZEFR



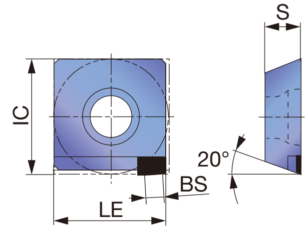
SEGT12X4-AJ



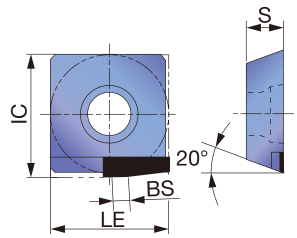
SEGW12X4ZEFR-D



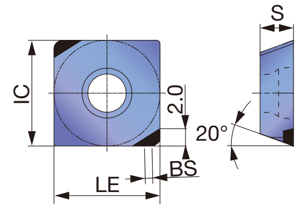
SEGW12X4ZEFR-WD



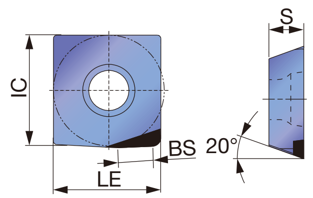
SEGW12X4ZEFR-BD



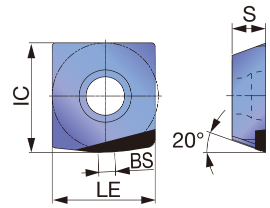
2QP-SECW12X412ZETR



1QP-SECW12X4ZETR-W



1QP-SECW12X4ZETR-B



		AH120	AH140	DS1100	NS740	KS05F	DX140	BX480
P	Steel	★			★			
M	Stainless		★					
K	Cast iron	★						★
N	Non-ferrous			★		★	★	
S	Superalloys							
H	Hard materials							

★ : First choice

Designation	APMX	Coated			Cermet	Uncoated	PCD	CBN	IC	LE	S	BS
		AH120	AH140	DS1100	NS740	KS05F	DX140	BX480				
SEGW12X4ZEFR	0.315					●			0.500	0.500	0.157	0.071
SEGW12X4ZEPR	0.315	●	●		●				0.500	0.500	0.157	0.055
SEGT12X4ZEFR-AJ	0.315			●		●			0.500	0.500	0.157	0.071
SEGW12X4ZEFR-D	0.138						●		0.500	0.500	0.157	0.071
SEGW12X4ZEFR-WD	-						●		0.504	0.488	0.157	0.079
SEGW12X4ZEFR-BD	-						●		0.516	0.488	0.157	0.071
2QP-SECW12X412ZETR	0.059							●	0.500	0.500	0.157	0.035
1QP-SECW12X4ZETR-W	-							●	0.508	0.484	0.157	0.157
1QP-SECW12X4ZETR-B	-							●	0.516	0.484	0.157	0.079

● : Line up

DX140: 2 pieces per package

BX480: 1 piece per package

How to put each insert together

			For general	Accuracy of machining surface priority	Burr reduction priority
Applicable insert	General insert	SEGW12X4ZEFR-D DX140 2QP-SECW12X412ZETR BX480	◎	◎	◎
	Wiper insert	SEGW12X4ZEFR-WD DX140 1QP-SECW12X4ZETR-W BX480	–	◎	–
	Wiper insert for burr reduction	SEGW12X4ZEFR-BD DX140 1QP-SECW12X4ZETR-B BX480	–	–	◎
	Number of Inserts by type		All general	1 or 2 wiper inserts in cutter body	General insert : Burr wiper insert = 1 : 1
Accuracy of machining surface (roughness and undulation)			△	◎	○
Burr of machining surface			△	○	◎

STANDARD CUTTING CONDITIONS

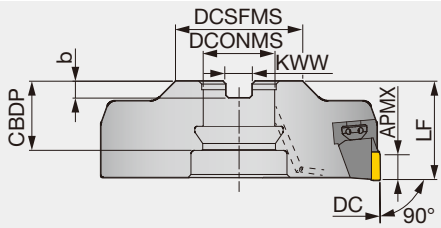
ISO	Workpiece material	Grade	Designation	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steels and alloy steels < 300HB	AH120	SEGW12X4ZEPR	330 - 590	0.001 - 0.006
		NS740	SEGW12X4ZEPR	330 - 590	0.001 - 0.006
M	Stainless steels < 250HB	AH140	SEGW12X4ZEPR	260 - 590	0.001 - 0.006
K	Grey and ductile cast irons	AH120	SEGW12X4ZEPR	330 - 650	0.001 - 0.006
	Grey cast iron	BX480	2QP-SECW12X412ZETR	2625 - 4921	0.002 - 0.012
	Ductile cast irons	BX480	2QP-SECW12X412ZETR	1640 - 2625	0.002 - 0.008
N	Cast aluminum alloy / Die-cast Si < 13%	KS05F	SEGT12X4ZEFR-AJ	650 - 4900	0.001 - 0.008
		DX140	SEGW12X4ZEFR-D	650 - 4900	0.001 - 0.008
	Cast aluminum alloy / Die-cast Si ≥ 13%	KS05F	SEGT12X4ZEFR-AJ	260 - 650	0.001 - 0.008
		DX140	SEGW12X4ZEFR-D	650 - 1650	0.001 - 0.008
	Aluminum alloy (JIS 1000, 3000, 5000 and 6000 types) Tensile strength < 350 N/mm^2	KS05F	SEGT12X4ZEFR-AJ	650 - 4900	0.001 - 0.008
		DX140	SEGW12X4ZEFR-D	650 - 4900	0.001 - 0.008
	Aluminum alloy (JIS 2000, 4000, and 7000 types) Tensile strength > 350 N/mm^2	KS05F	SEGW12X4ZEFR	650 - 4900	0.001 - 0.008
		DX140	SEGW12X4ZEFR-D	650 - 4900	0.001 - 0.008
	Copper alloy	KS05F	SEGT12X4ZEFR-AJ	650 - 1640	0.001 - 0.008
		DX140	SEGW12X4ZEFR-D	650 - 1640	0.001 - 0.008

Notes:
- In milling aluminum and copper alloys:
  (1) For improved surface finish, use together with wiper insert SEGW12X4ZEFR-WD
  (2) For reducing burr occurrence, use together with deburring inserts SEGW12X4ZEFR-BD
- When milling aluminum and copper alloys, use of a water soluble cutting fluid is recommended. When milling steels, cast irons, and stainless steels, dry cutting is recommended.
- When the length-to-diameter overhang ratio of the tool (L/D) exceeds 3, reduce cutting speed and feed to 70 to 80% of the values given in the table.

DPD09

Light weight mill for aluminum machining, for PCD inserts

GAMP = +8.5°, GAMF = +3° ~ +5°

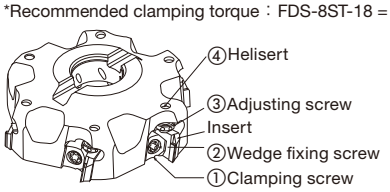


Metric	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
DPD09080R	7	80	4	50	41	25.4	23	9.5	6	0.8	With	YDEN0905...
DPD09080RB	7	80	6	50	41	25.4	28.5	9.5	6	0.82	With	YDEN0905...
DPD09100R	7	100	6	50	35	25.4	24.5	9.5	6	1.13	With	YDEN0905...
DPD09100RB	7	100	8	50	35	25.4	24.5	9.5	6	1.17	With	YDEN0905...
DPD09125R	7	125	6	50	35	25.4	24.5	9.5	6	1.7	With	YDEN0905...
DPD09125RB	7	125	10	50	35	25.4	24.5	9.5	6	1.77	With	YDEN0905...
DPD09160R	7	160	8	60	52	31.75	40	12.7	8	3.28	With	YDEN0905...
DPD09160RB	7	160	12	60	52	31.75	40	12.7	8	3.25	With	YDEN0905...

SPARE PARTS

Designation	① Clamping screw	② Wedge fixing screw	③ Adjusting screw	④ Helisert	Shell locking bolt 1	Shell locking bolt 2	Wrench1	Wrench 2
DPD09080R*	FW-304R-T	FDS-8ST-18	AJM5	LM5-0.8X1DNS	-	CM12X30H	T-27T	T-7F
DPD09100R*	FW-304R-T	FDS-8ST-18	AJM5	LM5-0.8X1DNS	TMBA-0.500H	-	T-27T	T-7F
DPD09125R*	FW-304R-T	FDS-8ST-18	AJM5	LM5-0.8X1DNS	TMBA-0.500H	-	T-27T	T-7F
DPD09160R*	FW-304R-T	FDS-8ST-18	AJM5	LM5-0.8X1DNS	TMBA-M16H	-	T-27T	T-7F

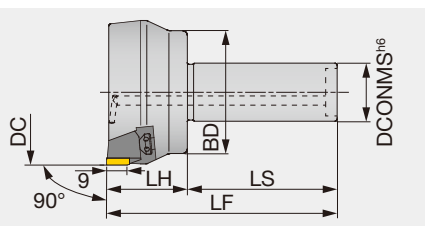
*Recommended clamping torque：FDS-8ST-18 = 10 N·m



EDPD09

Light weight endmill for aluminum machining, shank type, for PCD inserts

GAMP = +8.5°, GAMF = +3°

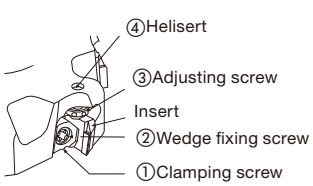


Metric	APMX	DC	CICT	DCONMS	BD	LS	LH	LF	WT(kg)	Air hole	Insert
EDPD09063R	7	63	3	25	37	60	40	100	0.75	With	YDEN0905...

SPARE PARTS

Designation	① Clamping screw	② Wedge fixing screw	③ Adjusting screw	④ Helisert	Wrench1	Wrench 2
EDPD09063R	FW-304R-T	FDS-8SST	AJM5	LM5-0.8X1DNS	T-27T	T-7F

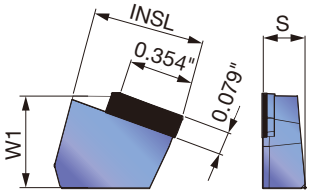
*Recommended clamping torque：FDS-8SST = 10 N·m



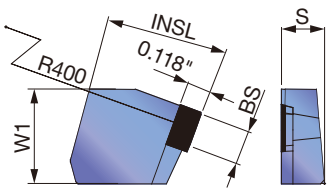
Reference pages: Inserts, Standard cutting conditions → H086

INSERT

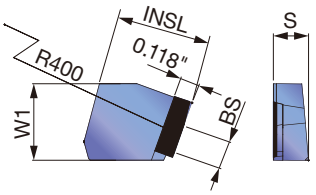
YDEN0905PDFR-D



YDEN0905PDFR-WD



YDEN0905PDFR-BD



P	Steel	
M	Stainless	
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	APMX	PCD DX140	W1	INSL	S	BS
YDEN0905PDFR-D	0.276	●	0.488	0.594	0.224	-
YDEN0905PDFR-WD	-	●	0.488	0.598	0.224	0.177
YDEN0905PDFR-BD	-	●	0.488	0.598	0.224	0.177

Tungaloy provides refurbishing service for these inserts upon request.

●: Line up
1 piece per package

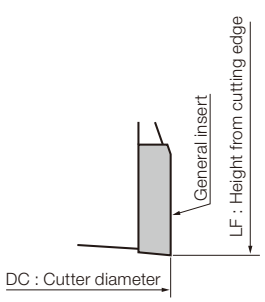
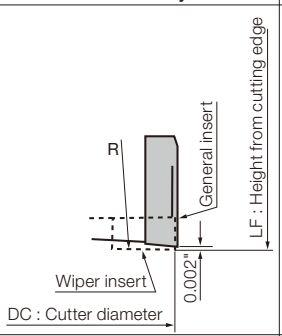
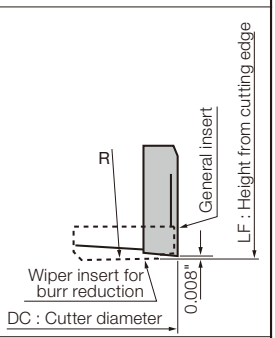
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Designation	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
N	Aluminum alloy castings & die castings Si < 13%	DX140	YDEN0905PDFR-D	500 ~ 4000	0.001 ~ 0.008
	Aluminum alloy castings & die castings Si ≥ 13%	DX140	YDEN0905PDFR-D	650 ~ 1650	0.001 ~ 0.008
	Rolled aluminum alloys	DX140	YDEN0905PDFR-D	1650 ~ 13000	0.001 ~ 0.008
	Copper alloys	DX140	YDEN0905PDFR-D	300 ~ 1650	0.001 ~ 0.008

Notes:
(1) When requiring improved surface finish, use the wiper insert together with regular inserts YDEN0905PDFR-WD.
(2) When requiring reduced burr occurrence, use the deburring inserts together with regular inserts YDEN0905PDFR-BD.
(3) When using the cutter at speeds over 1500m/min, use an arbor or tool-holder balanced to within G16.
(4) Wet cutting, using a water soluble cutting fluid, is recommended.
(5) When the length-to-diameter overhang ratio of the tool (L/D) exceeds 3, reduce cutting speed and feed to 70 to 80% of the values given in the table.

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

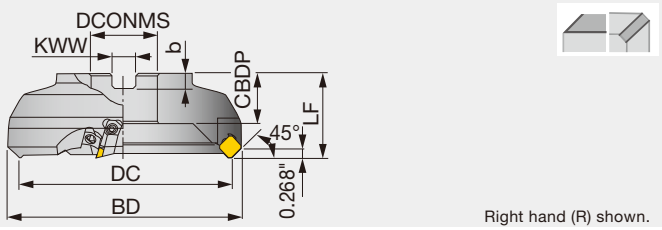
How to put each insert together

			For general	Accuracy of machining surface priority	Burr reduction priority
Applicable insert	General insert	YDEN0905PDFR-D	◎	◎	◎
	Wiper insert	YDEN0905PDFR-WD	–	◎	–
	Wiper insert for burr reduction	YDEN0905PDFR-BD	–	–	◎
	Number of Inserts by type		All general	1 or 2 wiper inserts in cutter body	General insert : Burr wiper insert = 1 : 1
Specification of insert setting					
Accuracy of machining surface (roughness and undulation)			△	◎	○
Burr of machining surface			△	○	◎

TMD4400RI-U

45° face mill, with wedge clamp system, for positive square inserts

GAMP = +15˚, GAMF = -3˚

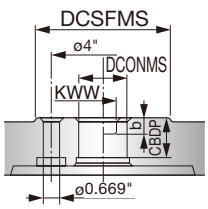


Right hand (R) shown.

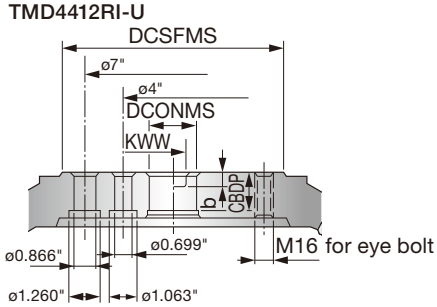
Inch	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT (lb)	Insert
TMD4403RI-U	0.157	3.150	4	3.780	1.970	1.000	1.020	0.375	0.236	3.100	SD*N42.../SD*R1203...
TMD4404RI-U	0.157	3.940	5	4.530	2.480	1.500	1.260	0.500	0.315	5.500	SD*N42.../SD*R1203...
TMD4405RI-U	0.157	4.920	6	5.470	2.480	1.500	1.500	0.625	0.394	7.900	SD*N42.../SD*R1203...
TMD4406RI-U	0.157	6.300	8	6.510	2.480	2.000	1.500	0.750	0.433	12.300	SD*N42.../SD*R1203...
TMD4408RI-U	0.157	7.870	10	8.390	2.480	2.500	1.500	1.000	0.551	19.100	SD*N42.../SD*R1203...
TMD4410RI-U	0.157	9.840	12	10.350	2.480	2.500	1.500	1.000	0.551	35.900	SD*N42.../SD*R1203...
TMD4412RI-U	0.157	12.400	14	12.870	2.480	2.500	1.500	1.000	0.551	55.400	SD*N42.../SD*R1203...

Arbor type

TMD4408/10RI-U



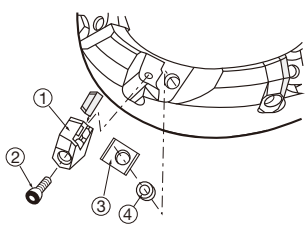
TMD4412RI-U



SPARE PARTS

Designation	① Locator	④ Wedge fixing screw	② Locator fixing screw	③ Wedge	Wrench	Shell locking bolt (Optional parts)
TMD4403RI-U	LD440R	FDS-8S	CM4X0.7X14	WP440R	TP-4	(TMBA-0.500H)
TMD4404...,TMD4405...	LD440R	FDS-8S	CM4X0.7X14	WP440R	TP-4	(TMBA-0.750H)
TMD4406..., TMD4408... TMD4410..., TMD4412...	LD440R	FDS-8S	CM4X0.7X14	WP440R	TP-4	-

*Recommended clamping torque：FDS-8S = 5.9 lbs·ft

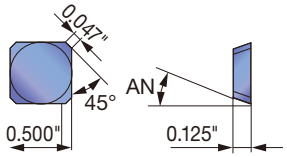


Reference pages: Inserts → H088, Standard cutting conditions → H089

INSERT

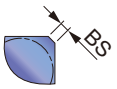
SDCN/SDEN/SDKN 42Z

Regular edge
SD*N42Z*N

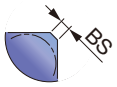


Details of edge

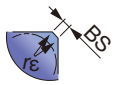
SDKN42ZTN16



SD*N42ZTN20

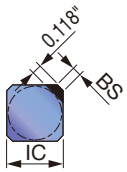


SDKN42ZTNCR
SDEN42ZTNCR



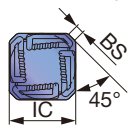
SDCN42ZFN-DIA

SDCN42ZFN-DIA

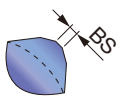


SDKR42Z-MJ

SDKR42ZSR-MJ
with 3-dimensional chipbreaker

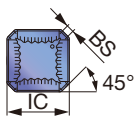


Details of edge



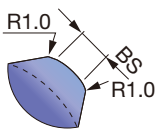
SDMR/SDKR 1203-MJ

SD*R1203AETN-MJ
with 3-dimensional chipbreaker

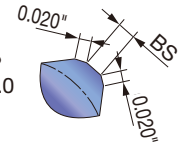


Details of edge

SDMR1203AETN-MJ

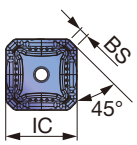


SDKR1203AETN-MJ

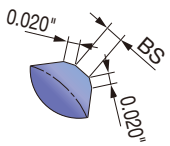


SDKR42Z-MS

SDKR42ZPN-MS

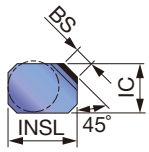


Details of edge



WDCN42ZFR-DIA

Wiper edge
WDCN42ZFR-DIA



Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

P	Steel	★	★			☆	☆			☆	☆	★	☆		☆			
M	Stainless	★		★	☆						☆							
K	Cast iron		★					☆	★									
N	Non-ferrous															★		★
S	Superalloys		★	☆														
H	Hard materials																	

★ : First choice
☆ : Second choice

Designation	APMX	Coated										Cermet		Uncoated		PCD	IC	INSL	S	AN	BS
		AH3135	AH120	AH130	AH140	AH330	GH330	T1115	T1215	T3130	T3225	NS740	N308	UX30	TH10	DX140					
SDCN42ZFN	0.157														●		0.500	-	0.125	15°	0.047
SDCN42ZTN	0.157											●	●	●			0.500	-	0.125	15°	0.047
SDCN42ZTN20	0.157											●					0.500	-	0.125	15°	0.079
SDEN42ZFN	0.157														●		0.500	-	0.125	15°	0.047
SDEN42ZTN	0.157	●	●		●		●	●	●			●	●	●			0.500	-	0.125	15°	0.047
SDEN42ZTNCR	0.157	●	●		●	●						●					0.500	-	0.125	15°	0.063
SDEN42ZTN20	0.157									●	●						0.500	-	0.125	15°	0.079
SDKN42ZFN	0.157														●		0.500	-	0.125	15°	0.047
SDKN42ZTN	0.157	●	●	●	●	●	●	●	●			●	●	●			0.500	-	0.125	15°	0.047
SDKN42ZTNCR	0.157											●					0.500	-	0.125	15°	0.063
SDKN42ZTN16	0.157									●	●						0.500	-	0.125	15°	0.063
SDCN42ZFN-DIA	0.079															●	0.500	-	0.125	15°	0.047
SDKR42ZSR-MJ	0.157	●	●			●	●			●	●						0.500	-	0.125	15°	0.063
SDMR1203AETN-MJ	0.157											●					0.500	-	0.125	15°	0.063
SDKR1203AETN-MJ	0.157											●					0.500	-	0.125	15°	0.063
SDKR42ZPN-MS	0.157	●		●	●												0.500	-	0.125	15°	0.063
WDCN42ZFR-DIA	0.020															●	0.480	0.616	0.125	15°	0.193

● : Line up

DX140: 1 piece per package

STANDARD CUTTING CONDITIONS

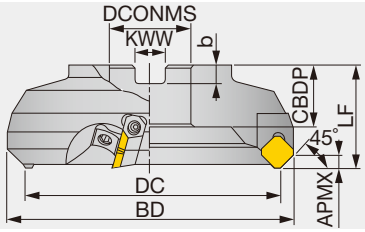
ISO	Workpiece material	Grade	Roughing (Depth of cut: APMX 0.059" ~ 0.157")		Finishing (Depth of cut: APMX 0.012 ~ 0.028")	
			Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Mild steels Unhardened steels < 180 HB	NS740	492 ~ 820	0.004 ~ 0.008	492 ~ 820	0.004 ~ 0.010
		T3225	492 ~ 1148	0.004 ~ 0.010	492 ~ 1148	0.004 ~ 0.011
		AH3135	492 ~ 984	0.004 ~ 0.007	591 ~ 984	0.004 ~ 0.012
	Carbon steels Alloy steels < 300 HB	NS740	328 ~ 591	0.004 ~ 0.007	492 ~ 656	0.004 ~ 0.009
		T3225	328 ~ 1050	0.004 ~ 0.009	492 ~ 1050	0.004 ~ 0.010
		AH3135	328 ~ 656	0.004 ~ 0.010	492 ~ 656	0.004 ~ 0.012
	Die steels < 30 HRC	AH3135	328 ~ 492	0.004 ~ 0.006	328 ~ 492	0.004 ~ 0.008
		T3225	328 ~ 820	0.004 ~ 0.006	328 ~ 820	0.004 ~ 0.008
M	Stainless steels < 250 HB	AH3135	262 ~ 591	0.006 ~ 0.010	328 ~ 656	0.006 ~ 0.011
		T3225	492 ~ 230	0.006 ~ 0.009	656 ~ 820	0.006 ~ 0.010
K	Cast irons Ductile cast irons	T1215	328 ~ 820	0.004 ~ 0.008	328 ~ 820	0.004 ~ 0.010
		AH120	328 ~ 656	0.004 ~ 0.010	328 ~ 656	0.004 ~ 0.012
S	Titanium alloys Ti-6Al-4V, etc.	AH130	98 ~ 197	0.004 ~ 0.008	98 ~ 197	0.004 ~ 0.008
	Superalloys Inconel718, etc.	AH120	33 ~ 131	0.002 ~ 0.006	33 ~ 131	0.002 ~ 0.004
N	Aluminum alloys Si < 13%	TH10	656 ~ 3280	0.002 ~ 0.008	1148 ~ 3280	0.004 ~ 0.012
		DX140	656 ~ 3280	0.002 ~ 0.007	1148 ~ 3280	0.004 ~ 0.008
	Copper alloy	TH10	656 ~ 1640	0.004 ~ 0.008	656 ~ 1640	0.004 ~ 0.010

The above are the values for dry cutting of all materials except aluminum alloy.
Maximum depth of cut for DX140 SDCN42ZFN-DIA is 0.079".

TMD5400RI

45° face mill, with wedge clamp system, for positive square inserts

GAMP = +15°, GAMF = -3°

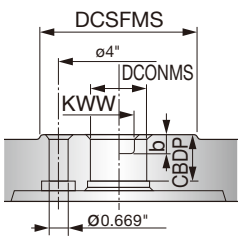


Right hand (R) shown.

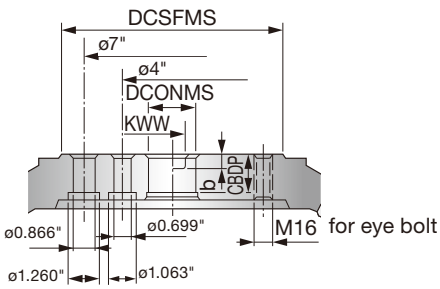
Inch	APMX	DC	CICT	BD	LF	DCONMS	CBDP	KWW	b	WT(lb)	Insert
TMD5404RI-U	0.236	3.940	4	4.650	2.480	1.500	1.260	0.625	0.394	5.510	SD*N53Z...
TMD5405RI-U	0.236	4.920	5	5.590	2.480	1.500	1.500	0.625	0.394	8.160	SD*N53Z...
TMD5406RI-U	0.236	6.300	5	6.930	2.480	2.000	1.500	0.750	0.433	12.790	SD*N53Z...
TMD5408RI-U	0.236	7.870	8	8.500	2.480	2.500	1.500	1.000	0.551	19.840	SD*N53Z...
TMD5410RI-U	0.236	9.840	10	10.430	2.480	2.500	1.500	1.000	0.551	35.930	SD*N53Z...
TMD5412RI-U	0.236	12.400	12	12.990	2.480	2.500	1.500	1.000	0.551	55.560	SD*N53Z...

Arbor type

TMD5408RI-U..., TMD5410RI-U...



TMD5412RI-U



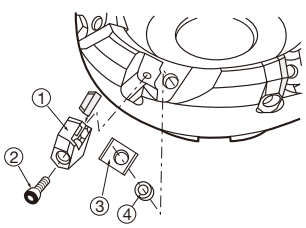
Approach angle

10°-20° | 45° | 70° | 85° | 88° | 90° | Others

SPARE PARTS

Designation	① Locator	④ Wedge fixing screw	② Locator fixing screw	③ Wedge	Wrench	Shell locking bolt (Optional parts)
TMD5404..., TMD5405...	LD540R	FDS-8S	CM4X0.7X20	WF500R	TP-4	(TMBA-0.750H)
TMD5406..., TMD5408..., TMD5410..., TMD5412...	LD540R	FDS-8S	CM4X0.7X20	WF500R	TP-4	-

*Recommended clamping torque：FDS-8S = 5.9 lbs·ft

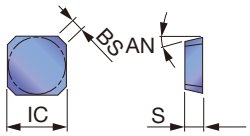


Reference pages: Inserts, Standard cutting conditions → H091

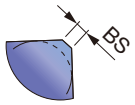
INSERT

SDCN/SDEN 53Z

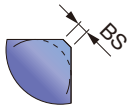
SD*N53Z*N



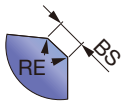
SDEN53ZTN20
Details of edge



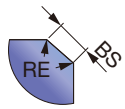
SDKN53ZTN16
Details of edge



SDEN53ZTNCR
Details of edge

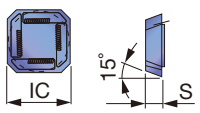


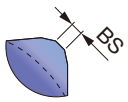
SDKN53ZTNCR
Details of edge



SDKR53-MJ

SDKR53ZSR-MJ
with 3-dimensional chipbreaker





		Coated					Cermet		Uncoated					
		AH120	AH130	AH140	GH330	T3130	NS740	N308	UX30	TH10				
P	Steel	☆				★	★	☆	☆					
M	Stainless		★	☆	☆									
K	Cast iron	★												
N	Non-ferrous									★				
S	Superalloys													
H	Hard materials													

★ : First choice
☆ : Second choice

Designation	APMX	AH120	AH130	AH140	GH330	T3130	NS740	N308	UX30	TH10	IC	S	AN	BS
SDCN53ZTN	0.236						●	●			0.625	0.187	15°	0.047
SDEN53ZFN	0.236									●	0.625	0.187	15°	0.047
SDEN53ZTN	0.236				●		●		●		0.625	0.187	15°	0.047
SDEN53ZTNCR	0.236						●				0.625	0.187	15°	0.055
SDEN53ZTN20	0.236					●					0.625	0.187	15°	0.079
SDKN53ZFN	0.236									●	0.625	0.187	15°	0.047
SDKN53ZTN	0.236	●	●	●	●		●	●	●		0.625	0.187	15°	0.047
SDKN53ZTNCR	0.236						●				0.625	0.187	15°	0.063
SDKN53ZTN16	0.236					●					0.625	0.187	15°	0.063
SDKR53ZSR-MJ	0.236				●	●					0.625	0.187	15°	0.079

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Roughing (Depth of cut: APMX 0.059" ~ 0.236") Cutting speed *Vc* (sfm)	Roughing (Depth of cut: APMX 0.059" ~ 0.236") Feed per tooth *fz* (ipt)	Finishing (Depth of cut: APMX 0.012" ~ 0.028") Cutting speed *Vc* (sfm)	Finishing (Depth of cut: APMX 0.012" ~ 0.028") Feed per tooth *fz* (ipt)
P	Mild steels Unhardened steels < 180 HB	NS740	492 ~ 820	0.004 ~ 0.010	492 ~ 820	0.004 ~ 0.012
		AH120	492 ~ 820	0.004 ~ 0.014	492 ~ 820	0.004 ~ 0.014
		T3130	492 ~ 984	0.004 ~ 0.014	591 ~ 984	0.004 ~ 0.014
		AH130	328 ~ 591	0.004 ~ 0.014	427 ~ 656	0.004 ~ 0.014
	Carbon steels Alloy steels < 300 HB	T3130	492 ~ 919	0.004 ~ 0.014	591 ~ 919	0.004 ~ 0.014
		NS740	328 ~ 591	0.004 ~ 0.010	492 ~ 656	0.004 ~ 0.012
		AH120	328 ~ 656	0.004 ~ 0.012	492 ~ 656	0.004 ~ 0.014
	Die steels < 30 HRC	T3130 · AH120	328 ~ 492	0.004 ~ 0.008	328 ~ 492	0.004 ~ 0.008
M	Stainless steels < 250 HB	AH130 · AH140	262 ~ 591	0.006 ~ 0.012	328 ~ 656	0.006 ~ 0.013
		GH330	492 ~ 755	0.006 ~ 0.012	656 ~ 820	0.006 ~ 0.012
K	Cast irons Ductile cast irons	AH120	328 ~ 656	0.004 ~ 0.012	328 ~ 656	0.004 ~ 0.012
N	Aluminum alloys Si < 13%	TH10	656 ~ 3281	0.002 ~ 0.012	1148 ~ 3281	0.004 ~ 0.012
	Copper alloy	TH10	656 ~ 1640	0.004 ~ 0.008	656 ~ 1640	0.004 ~ 0.010

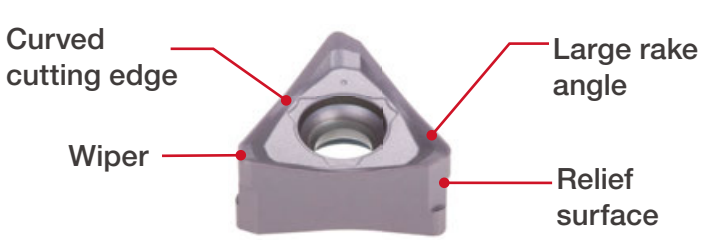
The above are the values for dry cutting of all materials except aluminum alloy.

DOFORCE TRI

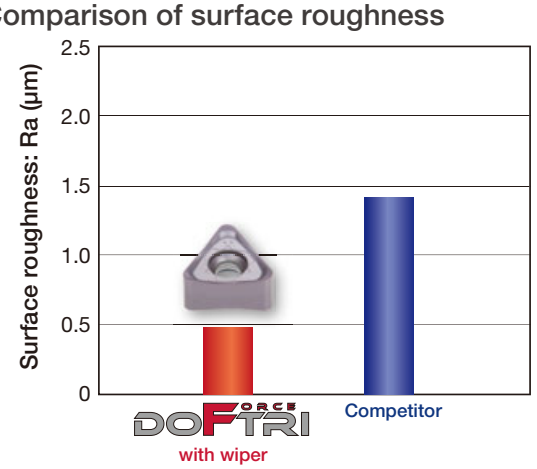
High precision shoulder mill series with economical double-sided triangular inserts

Innovative insert

- Highly economical 6-corner double sided inserts.
- Long effective cutting edge allows shoulder milling with large depth of cut.
- Low cutting force at low depth of cut, and high machining stability at large depth of cut.
  - Concave cutting edge and large rake angle produce barrel-shape chips, resulting in excellent chip evacuation.
  - The design with wiper edge (front cutting edge) is also suitable for face milling.



Comparison of surface roughness

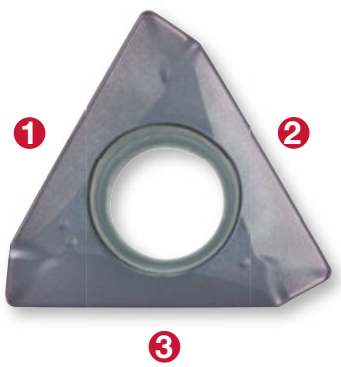


Reference pages: H094 - H096

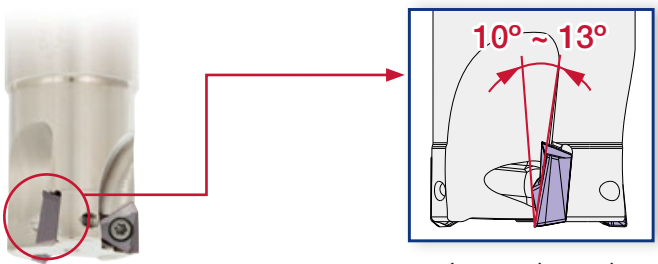
TUNG-TRI

Excellent cutting performance with improved profitability

Economical 3 cutting-edge inserts



Drastically reduced cutting force



Large rake angle

Low cutting force for all depths of cut due to helical cutting edge with large rake angle.

Good surface finish due to positive inclination on wiper edge

Uniquely designed flank face with built-in "margin" that prevents chattering and chipping.

Applicable for a wide range of cutting conditions

Insert positioning in irregular pitch, combined with uniquely designed flank face of inserts, prevents chattering during machining.

Cutting performance

○ OK　△ Chatter　× Strong chatter

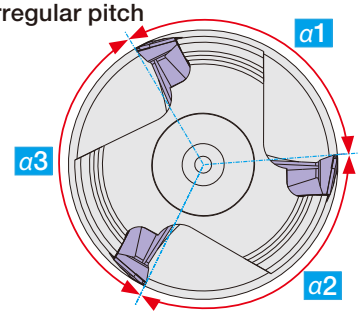
ap (in)	0.002	0.004	0.006	0.008	0.010
0.400	OK	OK	OK	OK	OK
0.360	OK	OK	OK	OK	OK
0.320	OK	OK	OK	OK	OK
0.280	OK	OK	OK	OK	OK
0.240	OK	OK	OK	OK	OK
0.200	OK	OK	OK	OK	OK
0.160	OK	OK	OK	OK	OK
0.120	OK	OK	OK	OK	OK
0.080	OK	OK	OK	OK	OK
0.040	OK	OK	OK	OK	OK
Applicable area	fz (ipt)				

TUNG-TRI

ap (in)	0.002	0.004	0.006	0.008	0.010
0.400	△	×	×	×	×
0.360	×	×	×	×	×
0.320	×	×	×	×	×
0.280	×	△	○	○	○
0.240	○	○	○	○	○
0.200	○	○	○	○	○
0.160	○	○	○	○	○
0.120	○	○	○	○	○
0.080	○	○	○	○	○
0.040	○	○	○	○	○
Applicable area	fz (ipt)				

Competitor

Irregular pitch



$\alpha 1 \neq \alpha 2 \neq \alpha 3$

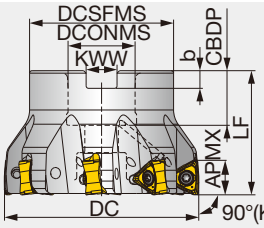
Cutter : EPA10R125U0125W03N (DC = 1.250", CICT = 3)
Insert : TOMT100404PDER-MJ
Grade : AH3135
Workpiece : 1055 (200 HB)
Cutting speed : *Vc* = 500 sfm
Width of cut : *ae* = 1.250"
Machine : Vertical M/C, BT50

Reference pages: H097 - H107

TPTN07

Square shoulder milling cutter with double-sided triangular inserts

GAMP = +4.2°~ +4.7°, GAMF = -15.4°~ -11.2°



Inch	APMX	DC	CICT	DCSFMS	LF(1)	DCONMS	CBDP	KWW	b	WT(kg)	Air hole	Insert
TPTN07U2.00B0.75R08	0.256	2.000	8	1.850	1.575	0.750	0.750	0.315	0.197	0.930	With	TNMU0703...

(1) The value is true with R0.8 insert. For R0.4, please refer to page H094

SPARE PARTS

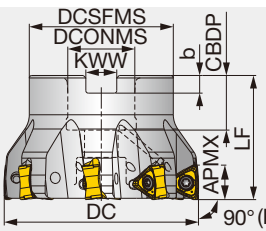
Designation	Clamping screw	Wrench	Lubricant	Shell locking bolt (Optional parts)
TPTN07U2.00B0.75R0	CSPB-2.5SH	IP-7D	M-1000	(C0.375X1.125H)

* Torque (lb·ft): CSPB-2.5SH = 0.81 lb·ft

TPTN12

Square shoulder mill, with screw clamp system, for double sided triangular inserts

GAMP = +4.2°~ +4.7°, GAMF = -15.4°~ -11.2°



Approach angle: 10°-20° | 45° | 70° | 85° | 88° | 90° | Others

Inch	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Shell locking bolt	Insert	Arbor type
TPTN12U2.00B0.75R05	0.433	2.000	5	1.850	1.575	0.750	0.750	0.315	0.197	0.89	With	C0.375X1.125H	TN*U12...	A
TPTN12U2.50B0.75R06	0.433	2.500	6	1.850	1.575	0.750	0.750	0.315	0.197	1.33	With	C0.375X1.125H	TN*U12...	A
TPTN12U3.00B1.00R08	0.433	3.000	8	2.835	1.969	1.000	1.024	0.374	0.236	2.44	With	C0.500X1.375H	TN*U12...	A
TPTN12U4.00B1.50R10	0.433	4.000	10	3.150	1.969	1.500	1.181	0.626	0.394	3.11	With	TMBA-0.750H	TN*U12...	B
TPTN12U5.00B1.50R12	0.433	5.000	12	3.150	2.480	1.500	1.181	0.626	0.394	5.33	With	TMBA-0.750H	TN*U12...	B
TPTN12U6.00B2.00R12N	0.433	6.000	12	3.858	2.48	2.000	1.496	0.748	0.433	8.82	Without	-	TN*U12...	B

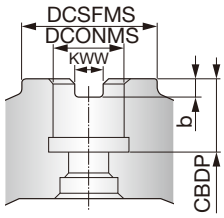
SPARE PARTS

Designation	Clamping screw	Grip	Torx bit	Lubricant	Shell locking bolt (Optional parts)
TPTN12U2.00R..., TPTN12U2.50R...	CSPB-3.5	H-TB2W	BLDIP15/S7	M-1000	(C0.375X1.125H)
TPTN12U3.00R...	CSPB-3.5	H-TB2W	BLDIP15/S7	M-1000	(C0.500X1.375H)
TPTN12U4.00R..., TPTN12U5.00R...	CSPB-3.5	H-TB2W	BLDIP15/S7	M-1000	(TMBA-0.750H)
TPTN12U6.00R...	CSPB-3.5	H-TB2W	BLDIP15/S7	M-1000	-

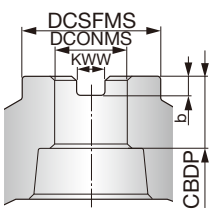
*Recommended clamping torque : CSPB-3.5 = 2.58 lbs·ft

Arbor type

Arbor type A



Arbor type B



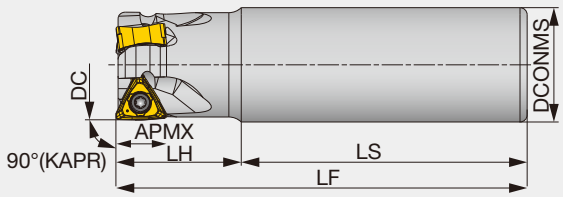
Reference pages: Inserts, Standard cutting conditions → H096

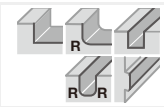
DOFORCE TRI

EPTN07

Square shoulder end mill with double-sided triangular inserts

GAMP = +4.2°~ +4.7°, GAMF = -15.4°~ -11.2°





Inch	APMX	DC	CICT	DCONMS	LS	LH	LF(1)	WT(kg)	Air hole	Insert
EPTN07U0.75C0.75R02	0.256	0.750	2	0.750	2.500	1.000	3.500	0.370	With	TNMU0703..
EPTN07U0.75C0.75R02L	0.256	0.750	2	0.750	4.750	1.670	6.420	0.710	With	TNMU0703..
EPTN07U1.00C1.00R03	0.256	1.000	3	1.000	3.000	1.500	4.500	0.880	With	TNMU0703..
EPTN07U1.00C1.00R03L	0.256	1.000	3	1.000	5.700	3.000	8.700	1.720	With	TNMU0703..
EPTN07U1.00C1.00R04	0.256	1.000	4	1.000	3.000	1.500	4.500	0.880	With	TNMU0703..
EPTN07U1.25C1.25R04	0.256	1.250	4	1.250	3.000	1.500	4.500	1.390	With	TNMU0703..
EPTN07U1.25C1.25R05	0.256	1.250	5	1.250	3.000	1.500	4.500	1.390	With	TNMU0703..

(1) The value is true with R0.8 insert. For R0.4, please refer to page H094

SPARE PARTS


Designation	Clamping screw	Wrench
EPTN07...	CSPB-2.5SH	IP-7D

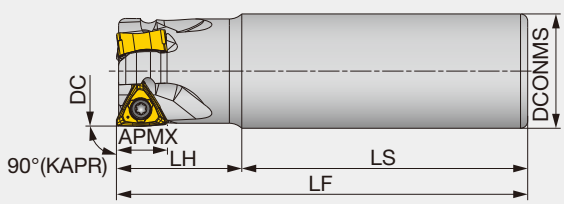
*Recommended clamping torque : CSPB-2.5SH = 0.81 lbs·ft

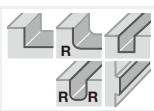
DOFORCE TRI

EPTN12

Square shoulder endmill, shank type, with screw clamp system, for double sided triangular inserts

GAMP = +4.2°~ +4.7°, GAMF = -15.4°~ -11.2°





Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
EPTN12U1.25C1.25R03N	0.433	1.250	3	1.250	3.000	1.500	4.500	1.560	Without	TN*U12...
EPTN12U1.50C1.25R04N	0.433	1.500	4	1.250	3.000	1.500	4.500	1.780	Without	TN*U12...

SPARE PARTS



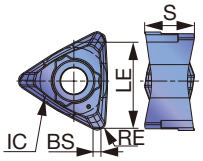

Designation	Clamping screw	Grip	Torx bit	Lubricant
EPTN12...	CSPB-3.5	H-TB2W	BLDIP15/S7	M-1000

*Recommended clamping torque : CSPB-3.5 = 2.58 lbs·ft

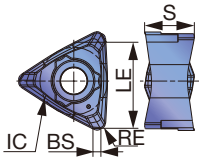
Reference pages: Inserts, Standard cutting conditions → H096

INSERT

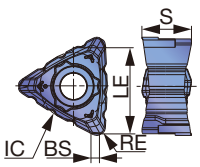
TNMU07-MJ



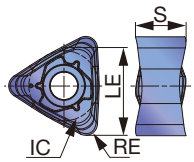
TNGU12-MJ/TNMU12-MJ



TNMU12-NMJ



TNMU12**R-MJ



		Coated			
		AH120	AH3135	T1215	T3225
P	Steel	☆	★		☆
M	Stainless		★		☆
K	Cast iron	★		☆	
N	Non-ferrous				
S	Superalloys	★	☆		
H	Hard materials				

★:First choice
☆:Second choice

Designation	RE	APMX	Coated AH120	Coated AH3135	Coated T1215	Coated T3225	LE	IC	S	BS
TNMU070304PER-MJ	0.016	0.256	●	●			0.256	0.224	0.161	0.024
TNMU070308PER-MJ	0.032	0.256	●	●			0.256	0.224	0.161	0.024
TNGU120708PER-MJ	0.032	0.433	●	●	●		0.472	0.375	0.277	0.046
TNMU120708PER-MJ	0.032	0.433	●	●	●	●	0.472	0.375	0.280	0.046
TNMU120708PER-NMJ	0.032	0.433	●	●			0.472	0.375	0.280	0.046
TNMU1207R16PER-MJ	0.063	0.433	●	●			0.472	0.375	0.271	-

● : Line up

STANDARD CUTTING CONDITIONS

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

ISO	Workpiece materials	Hardness	Priority	Grades	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1018, 1026, etc.	- 300 HB	First choice	AH3135	MJ	328 - 820	0.003 - 0.012
		- 300 HB	Wear resistance	T3225	MJ	328 - 984	0.003 - 0.012
		- 300 HB	Low cutting force	AH3135	NMJ	328 - 820	0.003 - 0.006
	Carbon steel and alloy steel 1055, 4140, etc.	- 300 HB	First choice	AH3135	MJ	328 - 755	0.003 - 0.012
		- 300 HB	Wear resistance	T3225	MJ	328 - 919	0.003 - 0.012
		- 300 HB	Low cutting force	AH3135	NMJ	328 - 919	0.003 - 0.006
	Prehardened steel H-13, P-20, etc.	30 - 40 HRC	First choice	AH3135	MJ	328 - 591	0.003 - 0.010
		30 - 40 HRC	Wear resistance	T3225	MJ	328 - 656	0.003 - 0.010
		30 - 40 HRC	Low cutting force	AH3135	NMJ	328 - 591	0.003 - 0.006
M	Stainless steel 304, 316, etc.	-	First choice	AH3135	MJ	295 - 656	0.003 - 0.010
		-	Wear resistance	T3225	MJ	295 - 820	0.003 - 0.010
		-	Low cutting force	AH3135	NMJ	295 - 656	0.003 - 0.006
K	Gray cast iron Class 25, Class 30, etc.	150 - 250 HB	First choice	AH120	MJ	459 - 820	0.003 - 0.012
		150 - 250 HB	Wear resistance	T1215	MJ	459 - 984	0.003 - 0.012
		150 - 250 HB	Low cutting force	AH120	NMJ	459 - 820	0.003 - 0.006
	Ductile cast iron 60-40-18, 80-55-06, etc.	150 - 250 HB	First choice	AH120	MJ	361 - 656	0.003 - 0.010
		150 - 250 HB	Wear resistance	T1215	MJ	361 - 820	0.003 - 0.010
		150 - 250 HB	Low cutting force	AH120	NMJ	361 - 656	0.003 - 0.006
S	Titanium alloys Ti-6Al-4V, etc.	-	First choice	AH120	MJ	70 - 200	0.003 - 0.008
		-	Low cutting force	AH120	NMJ	70 - 200	0.003 - 0.006
	Heat-resistant alloys Inconel718, etc.	-	First choice	AH120	MJ	70 - 130	0.003 - 0.007
		-	Low cutting force	AH120	NMJ	70 - 130	0.003 - 0.006

When using NMJ chipbreaker, please set up the feed not to exceed the value below.

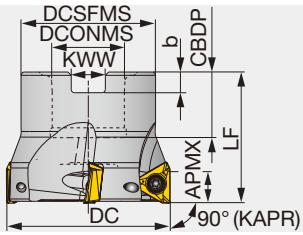
Designation	Chip thickness (in)
TNMU120708PER-NMJ	< 0.008

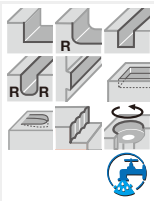
TUNG-TRI

TPA06

High precision square shoulder mill, with screw clamp system, for triangular inserts

GAMP = +8.5°~ +11.5°, GAMF = -5.5°~ -12.5°





Inch	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(lb)	Air hole	Insert
TPA06R200U0075A08	0.236	2.000	8	1.693	0.750	0.750	1.575	0.197	0.315	0.310	With	TOMT06...

SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench	Shell locking bolt (Optional parts)
TPA06R200U0075A08	CSTB-2.5	M-1000	T-8D	(C0.375X1.125H)

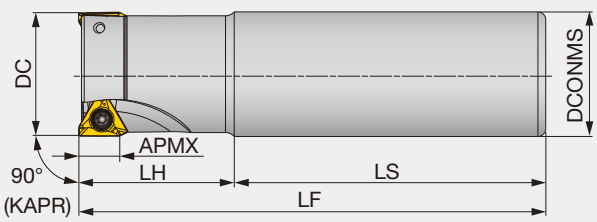
*Recommended clamping torque : CSTB-2.5 = 0.96 lb·ft

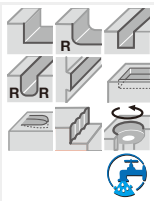
TUNG-TRI

EPA06

High precision square shoulder endmill, shank type, with screw clamp system, for triangular inserts

GAMP = +8.5°~ +11.5°, GAMF = -5.5°~ -12.5°





Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
EPA06R050U0050-01N	0.236	0.500	1	0.500	2.250	0.750	3.000	0.15	Without	TOMT06...
EPA06R063U0063-02N	0.236	0.625	2	0.625	2.563	0.937	3.500	0.29	Without	TOMT06...
EPA06R075U0075-03N	0.236	0.750	3	0.750	2.858	1.142	4.000	0.46	With	TOMT06...
EPA06R100U0100W04N	0.236	1.000	4	1.000	2.280	1.500	3.780	0.76	Without	TOMT06...

SPARE PARTS

Designation		Clamping screw	Lubricant	Wrench
EPA06...	øDc ≤ 0.625"	CSTB-2.5S	M-1000	T-8D
	øDc ≥ 0.750"	CSTB-2.5	M-1000	T-8D

*Recommended clamping torque : CSTB-2.5S/CSTB-2.5 = 0.96 lbs·ft

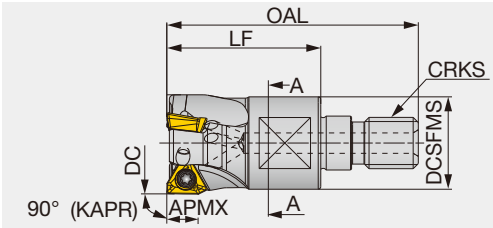
Reference pages: Inserts → H104, Standard cutting conditions → H106

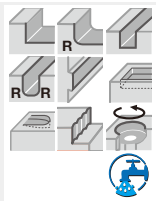
TUNG-TRI

HPA06-M

High precision square shoulder endmill, modular type, for triangular inserts (TungFlex)

GAMP = +8.5°~ +11.5°, GAMF = -12.5°~ -5.5°





Metric	APMX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HPA06R016MM08-02	6	16	2	42	25	10	13	M8	0.03	With	TOMT06...
HPA06R020MM10-03	6	20	3	49	30	15	18	M10	0.06	With	TOMT06...
HPA06R025MM12-04	6	25	4	57	35	17	21	M12	0.1	With	TOMT06...
HPA06R032MM16-05	6	32	5	63	40	22	29	M16	0.2	With	TOMT06...

See page **H167** for TungFlex modular shank.

SPARE PARTS



Designation	Clamping screw	Lubricant	Wrench
HPA06R016MM08-02	CSTB-2.5S	M-1000	T-8D
HPA06R020 - 032MM...	CSTB-2.5	M-1000	T-8D

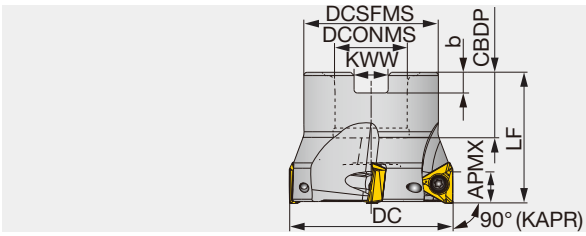
*Recommended clamping torque：CSTB-2.5S/CSTB-2.5 = 1.3 N·m

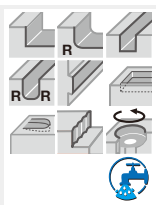
TUNG-TRI

TPA10

High precision square shoulder mill, with screw clamp system, for triangular inserts

GAMP = +9.5°~ +11°, GAMF = -4.5°~ -0.5°





Inch	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Air hole	Insert	Arbor type
TPA10R200U0075A04	0.394	2.000	4	1.693	0.750	0.750	1.575	0.197	0.315	0.440	With	TO*T10...	A
TPA10R250U0075A06	0.394	2.500	6	1.693	0.750	0.750	1.575	0.197	0.315	0.680	With	TO*T10...	A
TPA10R300U0100A07	0.394	3.000	7	2.283	1.000	1.024	1.969	0.236	0.374	1.120	With	TO*T10...	A
TPA10R400U0150A08	0.394	4.000	8	3.150	1.500	1.413	2.480	0.394	0.626	2.290	With	TO*T10...	B

SPARE PARTS



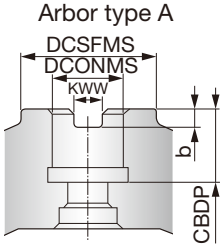


Designation	Clamping screw	Grip	Torx bit	Lubricant	Shell locking bolt (Optional parts)
TPA10R200U... - 250U...	SR14-562/S	SW6-SD	BLDT10/S7	M-1000	(C0.375X1.125H)
TPA10R300U0100A07	SR14-562/S	SW6-SD	BLDT10/S7	M-1000	(C0.500X1.375H)
TPA10R400U0150A08	SR14-562/S	SW6-SD	BLDT10/S7	M-1000	(TMBA-0.750H)

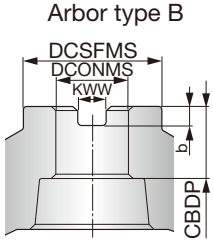
*Recommended clamping torque : SR14-562/S = 2.58 lbs·ft

Arbor type

Arbor type A



Arbor type B



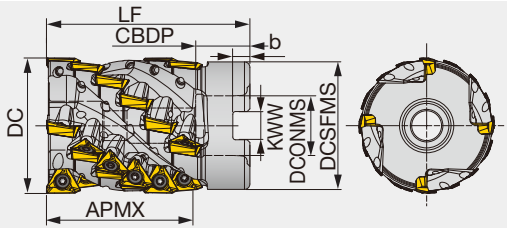
Reference pages: Inserts → **H104**, Standard cutting conditions → **H106**, TungFlex → **H167**

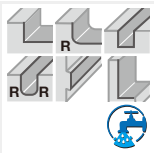
TUNG-TRI

TLA10

Square shoulder mill for roughing, with screw clamp system, for triangular inserts

GAMP = +9.5°~ +11°, GAMF = -4.5°~ -0.5°





Inch	APMX	DC	ZEFP	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(lb)	Air hole	Insert
TLA10R200L213U0075A04	2.126	2.000	4	24	1.875	0.750	0.750	3.250	0.197	0.315	1.760	With	TO*T10...
TLA10R250L213U0100A04	2.126	2.500	4	24	2.375	1.000	1.024	3.250	0.236	0.374	2.960	With	TO*T10...

Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

SPARE PARTS




Designation	Clamping screw	Lubricant	Wrench	Shell locking bolt
TLA10R200L213U0075A04	SR14-562	M-1000	T-10D	SD06-102
TLA10R250L213U0100A04	SR14-562	M-1000	T-10D	SD-08-C8

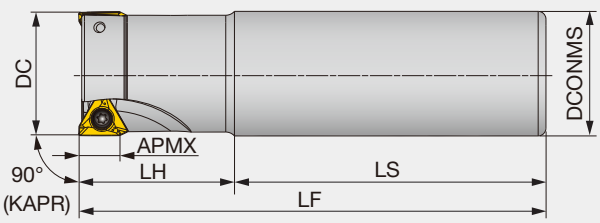
*Recommended clamping torque : SR14-562 = 1.84 lbs·ft

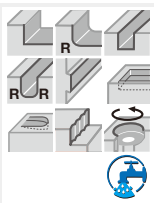
TUNG-TRI

EPA10

High precision square shoulder endmill, shank type, with screw clamp system, for triangular inserts

GAMP = +9.5°~ +11°, GAMF = -4.5°~ -0.5°





Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
EPA10R100U0075W02N	0.394	1.000	2	0.750	2.362	1.378	3.740	0.440	Without	TO*T10...
EPA10R100U0100W02N	0.394	1.000	2	1.000	2.362	1.378	3.740	0.710	Without	TO*T10...
EPA10R100U0100W02L	0.394	1.000	2	1.000	5.748	2.752	8.500	1.680	With	TO*T10...
EPA10R125U0125W02L	0.394	1.250	2	1.250	7.000	3.000	10.000	3.150	With	TO*T10...
EPA10R125U0125W03N	0.394	1.250	3	1.250	2.362	1.378	3.740	1.120	Without	TO*T10...
EPA10R125U0125W03ML	0.394	1.250	3	1.250	4.250	2.250	6.500	2.070	With	TO*T10...
EPA10R150U0125W02L	0.394	1.500	2	1.250	8.000	2.000	10.000	3.330	With	TO*T10...
EPA10R150U0125W03ML	0.394	1.500	3	1.250	4.250	2.250	6.500	2.430	With	TO*T10...
EPA10R150U0125W04N	0.394	1.500	4	1.250	3.157	1.969	5.126	1.680	Without	TO*T10...

SPARE PARTS




Designation	Clamping screw	Grip	Lubricant	Torx bit
EPA10...	SR14-562/S	SW6-SD	M-1000	BLDT10/S7

*Recommended clamping torque : SR14-562 = 1.84 lbs·ft

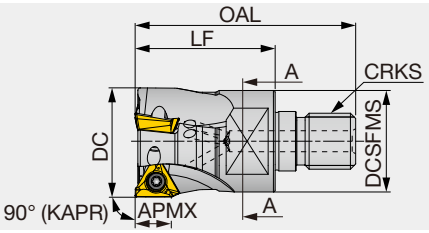
Reference pages: Inserts → H104, Standard cutting conditions → H106

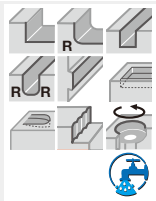
TUNG-TRI

HPA10-M

High precision square shoulder endmill, modular type, for triangular inserts (TungFlex)

GAMP = +9.5°~ +11°, GAMF = -4.5°~ -0.5°





Metric	APMX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HPA10R025MM12-02	10	25	2	57	35	17	21	M12	0.08	With	TO*T10...
HPA10R032MM16-03	10	32	3	63	40	22	29	M16	0.18	With	TO*T10...

See page **H167** for TungFlex modular shank.

SPARE PARTS




Designation	Clamping screw	Grip	Lubricant	Torx bit
HPA10...	SR14-562/S	SW6-SD	M-1000	BLDT10/S7

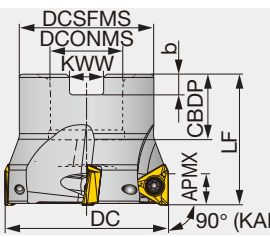
*Recommended clamping torque：SR14-562/S = 2.5 N·m

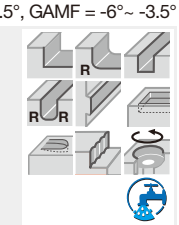
TUNG-TRI

TPA15

High precision square shoulder mill, with screw clamp system, for triangular inserts

GAMP = +12°~ +13.5°, GAMF = -6°~ -3.5°





Inch	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(lb)	Air hole	Insert	Arbor type
TPA15R200U0075A04	0.590	2.000	4	1.625	0.750	0.750	1.570	0.197	0.315	0.600	With	TO*T15...	A
TPA15R250U0075A05	0.590	2.500	5	2.125	0.750	0.750	1.570	0.197	0.315	0.900	With	TO*T15...	A
TPA15R300U0100A06	0.590	3.000	6	2.250	1.000	1.024	1.750	0.236	0.374	1.900	With	TO*T15...	A
TPA15R400U0150A07N	0.590	4.000	7	3.000	1.500	1.181	2.000	0.394	0.626	1.270	Without	TO*T15...	B
TPA15R500U0150A08N	0.590	5.000	8	4.000	1.500	1.175	2.000	0.394	0.626	2.800	Without	TO*T15...	B
TPA15R600U0200A10N	0.590	6.000	10	4.750	2.000	1.220	2.000	0.433	0.748	10.520	Without	TO*T15...	B

SPARE PARTS



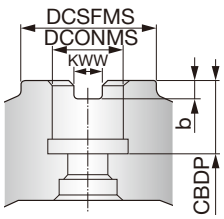


Designation	Clamping screw	Grip	Lubricant	Torx bit	Shell locking bolt (Optional parts)
TPA15R200U..., TPA15R250U...	TS45120I	H-TB2W	M-1000	BT20S	(C0.375X1.125H)
TPA15R300U0100A06	TS45120I	H-TB2W	M-1000	BT20S	(C0.500X1.375H)
TPA15R400U0150A07N	TS45120I	H-TB2W	M-1000	BT20S	(TMBA-0.750H)
TPA15R500U0150A08N	TS45120I	H-TB2W	M-1000	BT20M	(TMBA-0.750H)
TPA15R600U0200A10N	TS45120I	H-TB2W	M-1000	BT20M	-

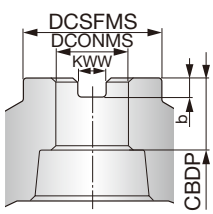
*Recommended clamping torque : TS45120I = 3.69 lbs·ft

Arbor type

Arbor type A



Arbor type B



Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

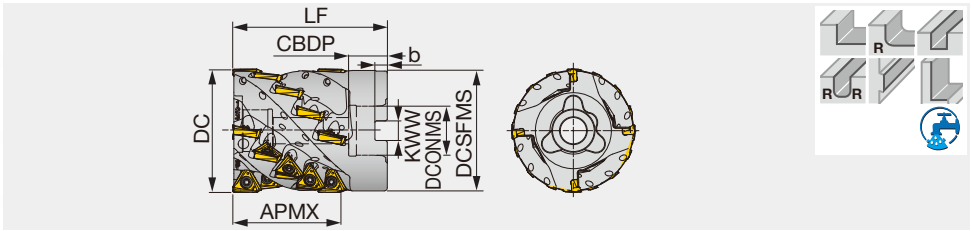
Reference pages: Inserts → **H104**, Standard cutting conditions → **H106**, TungFlex → **H167**

TUNG-TRI

TLA15-M

Square shoulder mill for roughing, with screw clamp system, for triangular inserts

GAMP = +12°~ +13.5°, GAMF = -6°~ -3.5°



Inch	APMX	DC	ZEFP	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(lb)	Air hole	Insert
TLA15R300L275U0125A04M	2.756	3.000	4	20	2.937	1.250	1.260	3.940	0.315	0.500	4.560	With	TO*T15...
TLA15R400L326U0150A05M	3.268	4.000	5	20	3.875	1.500	1.260	4.375	0.394	0.626	10.00	With	TO*T15...

Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

SPARE PARTS

Designation	Clamping screw	Grip	Torx bit	Lubricant	Shell locking bolt
TLA15R300L275U0125A04M	TS45120I	H-TB2W	BT20S	M-1000	SD-10-54
TLA15R400L326U0150A05M	TS45120I	H-TB2W	BT20S	M-1000	SD12-B9

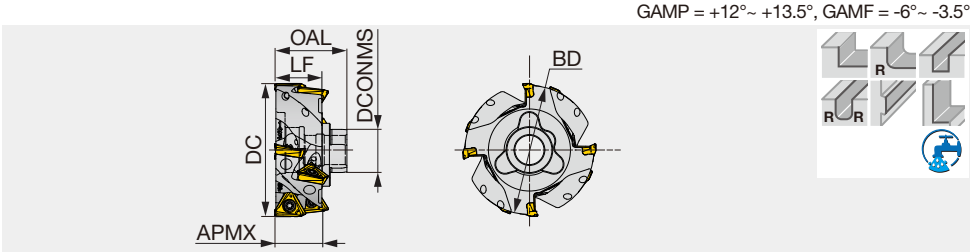
*Recommended clamping torque : TS45120I = 3.69 lbs·ft

TUNG-TRI

TLA15-S

Subunit for TLA15-M, square shoulder mill for roughing, with screw clamp system, for triangular inserts

GAMP = +12°~ +13.5°, GAMF = -6°~ -3.5°



Inch	APMX	DC	ZEFP	CICT	BD	DCONMS	OAL	LF	WT(lb)	Air hole	Insert
TLA15R300L110A04S	1.102	3.000	4	8	2.898	1.024	1.703	1.102	1.240	With	TO*T15...
TLA15R400L110A05S	1.102	4.000	5	10	3.882	1.299	1.814	1.102	2.440	With	TO*T15...

Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Torx bit
TLA15...	TS45120I	H-TB2W	M-1000	BT20S

*Recommended clamping torque : TS45120I = 3.69 lbs·ft

CENTER BOLT
(Optional parts)

No. of subunits	1 pc	2 pcs
TLA15R300..	SD10-04	SD10-B3
TLA15R400..	SD12-C1	SD12-B8

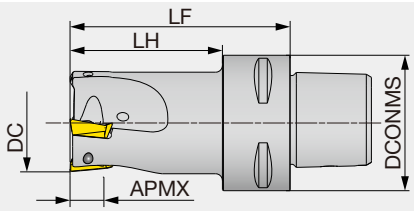
Reference pages: Inserts → H104, Standard cutting conditions → H106

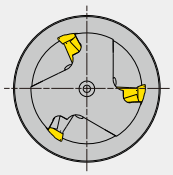
TUNG-TRI

C-EPA

TUNGCAP

Square shoulder milling





Metric	DC	APMX	DCONMS	CICT	LF	LH	Air hole	Insert
C4EPA10M032R03L065	32	10	40	3	65	45	With	TOMT1004...
C4EPA10M035R03L065	35	10	40	3	65	45	With	TOMT1004...
C6EPA15M040R03L080	40	15	63	3	80	58	With	TOMT1506...
C6EPA15M050R04L080	50	15	63	4	80	58	With	TOMT1506...

Applicable for 14 MPa coolant

SPARE PARTS



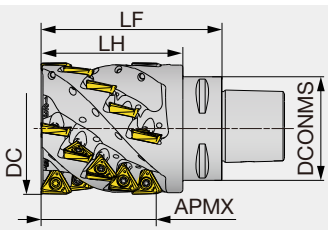
Designation	Clamping screw	Torx bit	Grip
C4EPA10M0**R03L065	SR14-562/S	BLDT10/S7	SW6-SD
C6EPA15M0**R0*L080	TS45120I	BT20S	H-TB2W

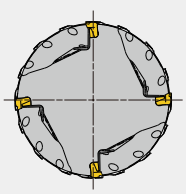
TUNG-TRI

C-TLA

TUNGCAP

Square shoulder milling (for large depth of cut)





Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

Metric	DC	APMX	DCONMS	CICT	ZEFP	LF	LH	Air hole	Insert
C6TLA15M063R03L100	63	55	63	12	3	100	78	With	TOMT1506...
C6TLA15M080R04L110	80	70	63	20	4	110	86.2	With	TOMT1506...

Applicable for 14 MPa coolant

SPARE PARTS



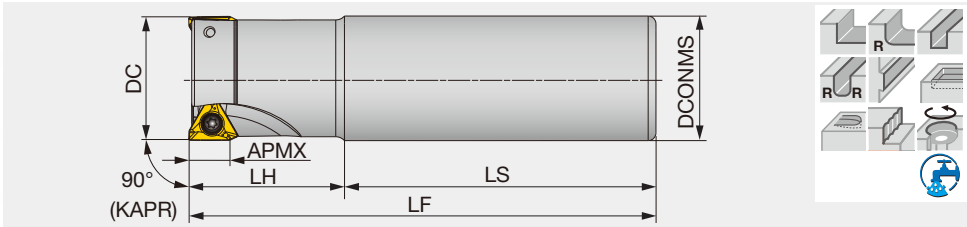
Designation	Clamping screw	Torx bit	Grip
C6TLA15M0**R0*L1**	TS45120I	BT20S	H-TB2W

Reference pages: C-EPA, C-TLA: Inserts → H104

EPA15

High precision square shoulder endmill, shank type, with screw clamp system, for triangular inserts

GAMP = +12°~ +13.5°, GAMF = -6°~ -3.5°



Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
EPA15R150U0125W03N	0.590	1.500	3	1.250	2.250	2.250	4.500	1.480	With	TO*T15…
EPA15R150U0125W02L	0.590	1.500	2	1.250	2.250	4.250	6.500	2.070	With	TO*T15…
EPA15R200U0125W04N	0.590	2.000	4	1.250	2.250	2.250	4.500	1.740	Without	TO*T15…

SPARE PARTS



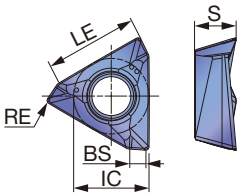

Designation	Clamping screw	Grip	Lubricant	Torx bit
EPA15...	TS45120I	H-TB2W	M-1000	BT20S

*Recommended clamping torque : TS45120I = 3.69 lbs·ft

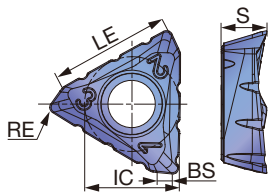
Reference pages: Inserts → H104, Standard cutting conditions → H106

INSERT

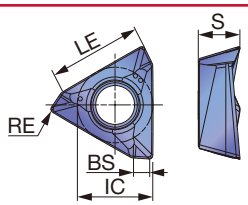
TOMT-MJ



TOMT-NMJ



TOGT-AJ



P	Steel	☆	★		☆		
M	Stainless		★		☆		
K	Cast iron	★		★			
N	Non-ferrous					★	
S	Superalloys	★	☆				
H	Hard materials						

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated				Uncoated	LE	IC	S	BS
			AH120	AH3135	T1215	T3225	KS05F				
TOMT060302PDER-MJ	0.008	0.236	●	●				0.244	0.220	0.126	0.055
TOMT060304PDER-MJ	0.016	0.236	●	●		●		0.244	0.220	0.126	0.047
TOMT060308PDER-MJ	0.031	0.236	●	●	●	●		0.244	0.220	0.126	0.031
TOMT100404PDER-MJ	0.016	0.394	●	●		●		0.413	0.339	0.185	0.059
TOMT100408PDER-MJ	0.031	0.394	●	●	●	●		0.413	0.339	0.185	0.043
TOMT100416PDER-MJ	0.063	0.394	●	●				0.413	0.339	0.185	0.008
TOMT150604PDER-MJ	0.016	0.590	●	●		●		0.618	0.500	0.236	0.087
TOMT150608PDER-MJ	0.031	0.590	●	●	●	●		0.618	0.500	0.236	0.075
TOMT150616PDER-MJ	0.063	0.590	●	●				0.618	0.500	0.236	0.043
TOMT150620PDER-MJ	0.079	0.590	●	●				0.618	0.500	0.236	0.028
TOMT150608PDER-NMJ	0.031	0.590	●	●		●		0.618	0.500	0.236	0.075
TOGT100404PDFR-AJ	0.016	0.394					●	0.413	0.339	0.205	0.059
TOGT100408PDFR-AJ	0.031	0.394					●	0.413	0.339	0.201	0.043
TOGT150604PDFR-AJ	0.016	0.590					●	0.618	0.493	0.220	0.087
TOGT150608PDFR-AJ	0.031	0.590					●	0.618	0.493	0.218	0.075

● : Line up

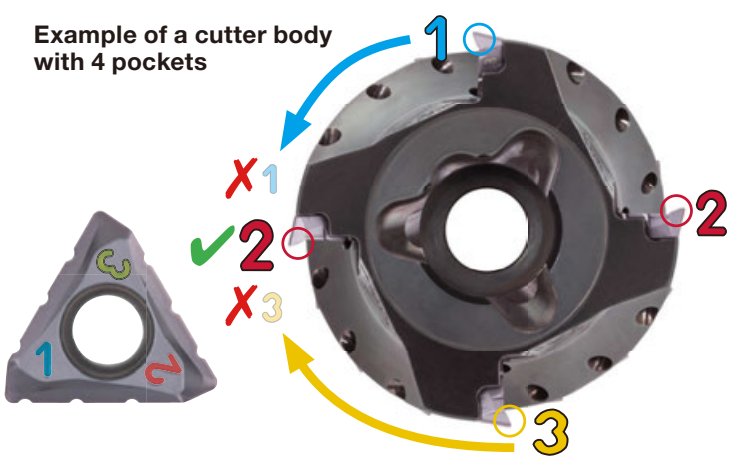
Caution for using NMJ chipbreaker

⚠ Insert with NMJ chipbreaker has a number marked on each corner.
DO NOT place the corners with the same number in adjacent flute as the cutter may be damaged.

For example, if you place the corner #1 in one flute, be sure to use #2 or #3 (and avoid #1) in the next one.

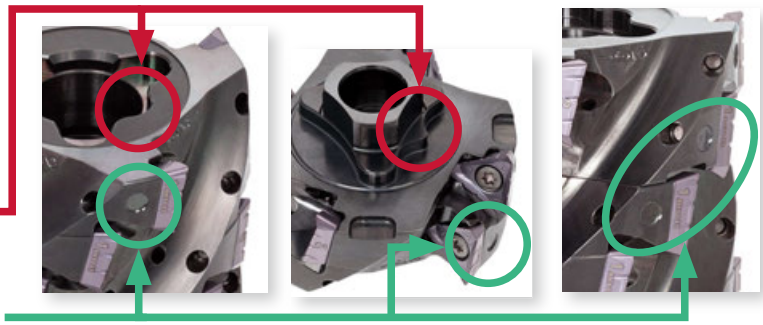
Item: TOMT150608PDER-NMJ

Example of a cutter body with 4 pockets



How to set a sub-unit

When setting a sub-unit on the main unit or another sub-unit, be sure to match the markings on the units. Sub-unit has a projection for error-proofing (Poka-yoke) to avoid setting error.



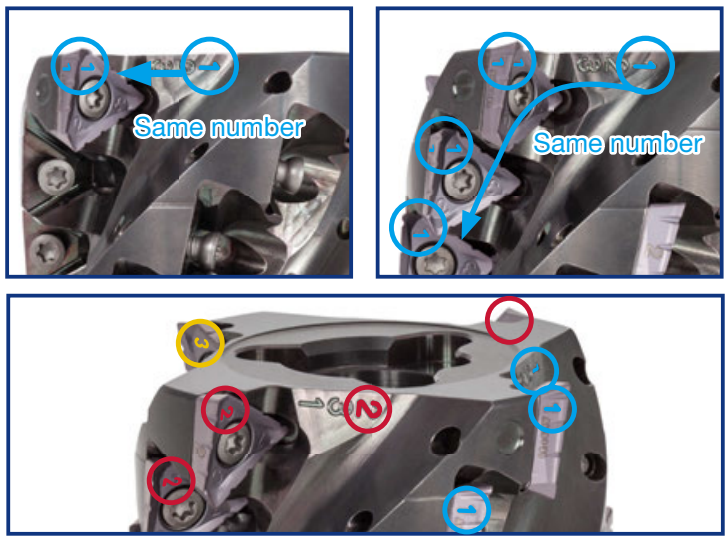
Directions for setting NMJ inserts on roughing type bodies

1. Attach the insert on the cutter body so that the number on the working cutting edge matches the first number marked on the cutter body.
(See the image on the right.)

2. Attach the remaining inserts on the same flute with the same number marked on the working cutting edge.

3. Repeat steps 1 and 2 for the other flutes.

4. Make sure the number on the working cutting edge is different from the number used on the adjacent flutes.



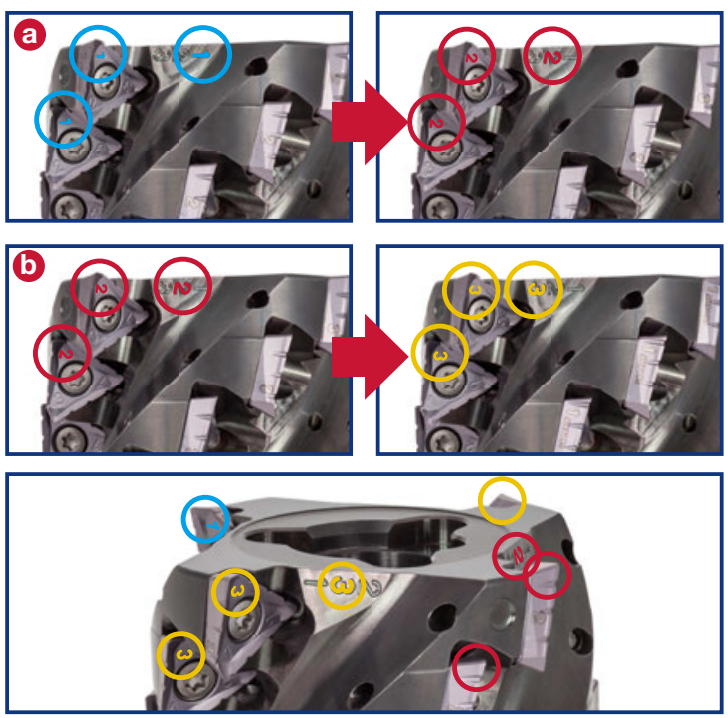
Directions for changing corners for inserts on roughing type bodies

1. a First time to change the corner rotate the insert clock-wise to match the number on the working cutting edge with the second number marked on the cutter body.
(See the image on the right.)
Ex: 1 ➡ 2
2 ➡ 3
3 ➡ 1

   b Second time to change the corner rotate the insert clock-wise to match the number on the working cutting edge with the last number marked on the cutter body.
(See the image on the right.)
Ex: 2 ➡ 3
3 ➡ 1
1 ➡ 2

2. Repeat step 1 for all inserts.

3. Make sure the number on the working cutting edge is different from the number used on the adjacent flutes.



STANDARD CUTTING CONDITIONS

TPA/EPA/HPA

	Workpiece materials	Hardness HB	Grades	Cutting speed *Vc* (sfm)			Feed per tooth: *fz* (ipt)				
							MJ			NMJ	AJ
				T/E/HPA06	T/E/HPA10	T/EPA15	T/E/HPA06	T/E/HPA10	T/EPA15	T/EPA15	T/E/HPA10
P	Low carbon steel 1015, etc.	- 200	AH3135	330 - 2360	330 - 820	330 - 820	0.002 - 0.006	0.003 - 0.008	0.003 - 0.010	0.003 - 0.006	-
P	High carbon steel 1045, etc.	200 - 300	AH3135	330 - 560	330 - 660	330 - 755	0.002 - 0.005	0.003 - 0.006	0.003 - 0.008	0.003 - 0.006	-
P	Alloy steel 4140, etc.	150 - 300	AH3135	330 - 560	330 - 660	330 - 755	0.002 - 0.005	0.003 - 0.006	0.003 - 0.008	0.003 - 0.006	-
P	Tool steel H13, etc	30 - 40 HRC	AH3135	330 - 390	330 - 490	330 - 590	0.002 - 0.005	0.003 - 0.006	0.003 - 0.008	0.003 - 0.006	-
M	Stainless steel 304, etc.	-	AH3135	260 - 490	260 - 660	295 - 660	0.002 - 0.006	0.003 - 0.008	0.003 - 0.008	0.003 - 0.006	-
K	Grey cast iron No.250B, etc.	150 - 250	AH120	330 - 660	330 - 820	460 - 820	0.002 - 0.006	0.003 - 0.008	0.003 - 0.010	0.003 - 0.006	-
K			T1215	150 - 250	490 - 300	660 - 984	0.002 - 0.005	0.003 - 0.006	0.003 - 0.007	-	-
K	Ductile cast iron 65-45-12, etc.	150 - 250	AH120	260 - 490	260 - 660	360 - 660	0.002 - 0.006	0.003 - 0.008	0.003 - 0.010	0.003 - 0.006	-
K			T1215	330 - 660	430 - 820	490 - 820	0.002 - 0.005	0.003 - 0.006	0.003 - 0.007	-	-
N	Aluminum Si < 13%	-	KS05F	-	984 - 3280	-	-	-	-	-	0.003 - 0.009
N	Aluminum Si ≥ 13%	-	KS05F	-	330 - 660	-	-	-	-	-	0.003 - 0.009
S	Titanium alloys Ti-6Al-4V, etc.	-	AH120	66 - 164	66 - 200	66 - 200	0.002 - 0.004	0.003 - 0.006	0.003 - 0.007	0.003 - 0.006	-
S	Heat-resistant alloys Inconel 718, etc.	-	AH120	66 - 115	66 - 130	66 - 130	0.001 - 0.003	0.002 - 0.005	0.003 - 0.006	0.003 - 0.006	-

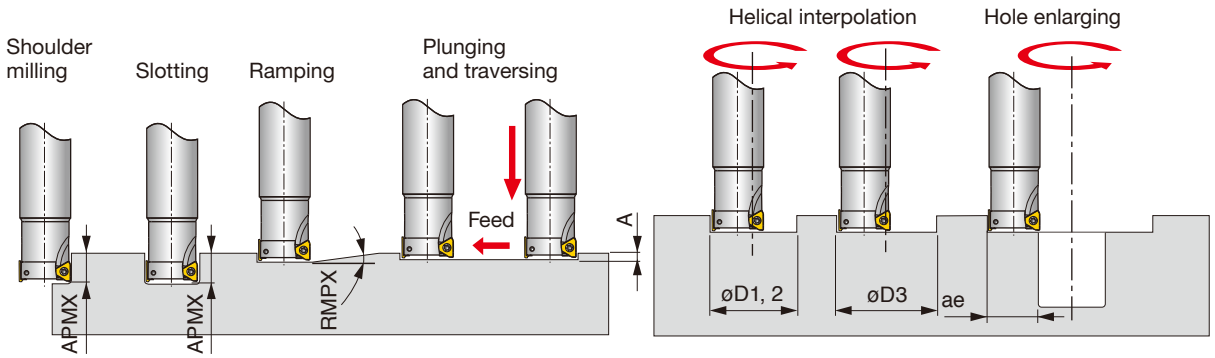
· When you use the NMJ chipbreaker, please set up the feed less than 0.006 ipt.
· Remove excessive chip accumulation with an air blast.
· For the operation with depth of cut which varies (ex.casting skin) and machining of workpiece materials with interrupted surface, the feed per tooth (*fz*) should be set to the lower recommended value shown in the above table.
· Cutting conditions maybe limited depending on machine power, workpiece rigidity, and spindle output. When the cutting width, depth, or overhang length is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

TLA (Roughing type)

ISO	Workpiece materials	Hardness HB	Grades	Cutting speed *Vc* (sfm)		Feed per tooth: *fz* (ipt)				
						MJ		NMJ	AJ	
				TLA10	TLA15	TLA10	TLA15	TLA15	TLA10	
P	Low carbon steel 1015, etc.	- 200	AH3135	330 - 820	330 - 820	0.003 - 0.007	0.003 - 0.009	0.003 - 0.006	-	
P	High carbon steel 1045, etc.	200 - 300	AH3135	330 - 660	330 - 270	0.003 - 0.006	0.003 - 0.007	0.003 - 0.006	-	
P	Alloy steel 4140, etc.	30 - 40 HRC	AH3135	330 - 490	330 - 590	0.003 - 0.006	0.003 - 0.007	0.003 - 0.006	-	
M	Stainless steel 304, etc.	-	AH3135	260 - 660	295 - 660	0.003 - 0.006	0.003 - 0.007	0.003 - 0.006	-	
K	Grey cast iron No.250B, etc.	150 - 250	AH120	330 - 820	460 - 820	0.003 - 0.007	0.003 - 0.010	0.003 - 0.006	-	
K			T1215	490 - 820	490 - 820	0.003 - 0.006	0.003 - 0.007	-	-	
K	Ductile cast iron 65-45-12, etc.	150 - 250	AH120	260 - 660	360 - 660	0.003 - 0.007	0.003 - 0.010	0.003 - 0.006	-	
K			T1215	490 - 820	490 - 820	0.003 - 0.006	0.003 - 0.007	-	-	
N	Aluminum Si < 13%	-	KS05F	990 - 3280	-	-	-	-	0.003 - 0.009	
N	Aluminum Si ≥ 13%	-	KS05F	330 - 660	-	-	-	-	0.003 - 0.009	
S	Titanium alloys Ti-6Al-4V, etc.	-	AH120	66 - 217	66 - 217	0.003 - 0.006	0.003 - 0.007	0.003 - 0.006	-	
S	Heat-resistant alloys Inconel 718, etc.	-	AH120	66 - 130	66 - 130	0.002 - 0.005	0.003 - 0.006	0.003 - 0.006	-	

· When using NMJ chipbreaker, please set up the feed not to exceed 0.006 ipt.

APPLICATION RANGE



		Max. depth of cut	Max. ramping angle	Max. plunging depth	Min. machining depth	Max. machining diameter		Max. cutting width in enlarging
Inch	DC	APMX	RMPX	A	øD1	øD2	øD3 *	ae
EPA06R050U...	0.500	0.236	5°	0.024	0.748	0.984	0.882	0.480
EPA06R063U...	0.625	0.236	4°	0.024	0.984	1.234	1.132	0.605
EPA06R075U...	0.750	0.236	3°	0.024	1.240	1.484	1.382	0.730
EPA06R100U...	1.000	0.236	2°	0.024	1.752	1.984	1.882	0.980
TPA06R200U...	2.000	0.236	0.7°	0.024	3.740	3.984	3.882	1.980
EPA10R100U...	1.000	0.394	2°	0.024	1.689	1.984	1.882	0.980
EPA10R125U...	1.250	0.394	2°	0.024	2.189	2.484	2.382	1.230
EPA10R150U...	1.500	0.394	1.4°	0.024	2.689	2.984	2.882	1.480
TPA10R200U...	2.000	0.394	0.8°	0.024	3.689	3.984	3.882	1.980
TPA10R250U...	2.500	0.394	0.7°	0.024	4.689	4.984	4.882	2.480
TPA10R300U...	3.000	0.394	0.6°	0.024	5.689	5.984	5.882	2.980
TPA10R400U...	4.000	0.394	0.5°	0.024	7.689	7.984	7.882	3.980
EPA15R150U...	1.500	0.590	2.3°	0.031	2.547	2.969	2.823	1.461
E/TPA15R200U...	2.000	0.590	1.7°	0.031	3.547	3.969	3.823	1.961
TPA15R250U...	2.500	0.590	1.4°	0.031	4.547	4.969	4.823	2.461
TPA15R300U...	3.000	0.590	1°	0.031	5.547	5.969	5.823	2.961
TPA15R400U...	4.000	0.590	0.8°	0.031	7.547	7.969	7.823	3.961
TPA15R500U...	5.000	0.590	0.6°	0.031	9.547	9.969	9.823	4.961
TPA15R600U...	6.000	0.590	0.5°	0.031	11.547	11.969	11.823	5.961

* Flat bottom hole

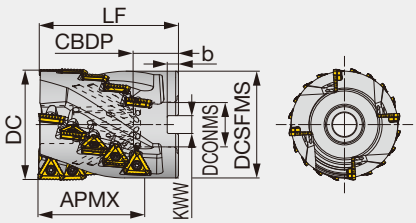
Corner RE for dimensions of øD1, øD2 and øD3: RE = 0.016" for E/TPA06, E/TPA10 and RE = 0.031" for E/TPA15.

TUNGTRI SHRED

LPTC16

Square shoulder mill for roughing, with screw clamp system, for shred inserts

GAMP = +5.5°~ +6.5°, GAMF = -11.5°~ -11.3°



Inch	APMX	DC	ZEFP	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert
LPTC16U2.50B1.00L2.4R03	2.402	2.500	3	12	2.350	3.350	1.000	1.024	0.374	0.236	2.820	With	TC*T16...
LPTC16U3.00B1.25L3.0R04	2.992	3.000	4	20	2.839	4.000	1.250	1.260	0.500	0.315	4.670	With	TC*T16...

Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Shell locking bolt	Torx bit
LPTC16U2.50B1.00L2.4R03	TS 40B100I	H-TB2W	M-1000	SD-08-C8	BT15S
LPTC16U3.00B1.25L3.0R04	TS 40B100I	H-TB2W	M-1000	SD-10-54	BT15S

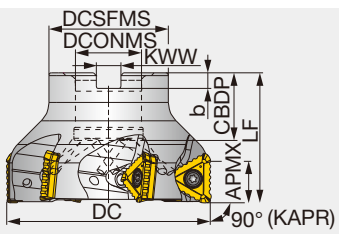
*Recommended clamping torque : TS 40B100I = 2.58 lbs·ft

TUNGTRI SHRED

TPTC16

Square shoulder mill, with screw clamp system, for shred inserts

GAMP = +5.5°~ +6.5°, GAMF = -11.5°~ -11.3°



Inch	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert	Arbor type
TPTC16U2.00B0.75R04	0.630	2.000	4	1.625	1.570	0.750	0.750	0.315	0.197	0.710	With	TC*T16...	A
TPTC16U2.50B0.75R05	0.630	2.500	5	2.125	1.570	0.750	0.750	0.315	0.197	1.260	With	TC*T16...	A
TPTC16U3.00B1.00R06	0.630	3.000	6	2.250	1.752	1.000	1.024	0.374	0.236	1.810	With	TC*T16...	A
TPTC16U4.00B1.50R07	0.630	4.000	7	3.000	2.000	1.500	1.193	0.626	0.394	3.170	With	TC*T16...	B

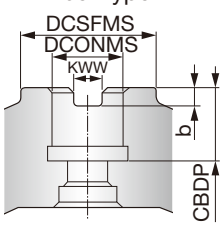
SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Torx bit	Shell locking bolt (Optional parts)
TPTC16U2.00B0.75R04	TS 40B100I	H-TB2W	M-1000	BT15S	TCS9.525-35-I
TPTC16U2.50B0.75R05	TS 40B100I	H-TB2W	M-1000	BT15S	(C0.375X1.125H)
TPTC16U3.00B1.00R06	TS 40B100I	H-TB2W	M-1000	BT15S	(C0.500X1.375H)
TPTC16U4.00B1.50R07	TS 40B100I	H-TB2W	M-1000	BT15S	(TMBA-0.750H)

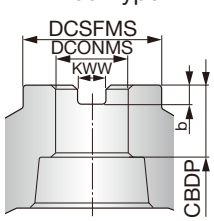
*Recommended clamping torque : TS 40B100I = 2.58 lbs·ft

Arbor type

Arbor type A



Arbor type B

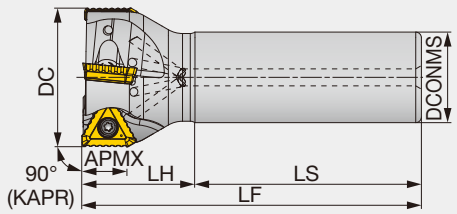


Reference pages: Inserts → H109, Standard cutting conditions → H110

EPTC16

Square shoulder endmill, shank type, with screw clamp system, for shred inserts

GAMP = +5.5°~ +6.5°, GAMF = -11.5°~ -11.3°



Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
EPTC16U2.00W1.25R04	0.630	2.000	4	1.250	2.250	2.250	4.500	1.700	With	TC*T16...

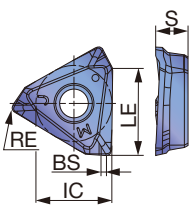
SPARE PARTS

Designation	Clamping screw	Grip	Lubricant	Torx bit
EPTC16...	TS 40B100I	H-TB2W	M-1000	BT15S

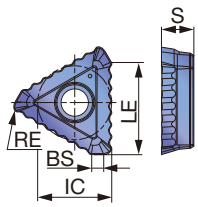
*Recommended clamping torque : TS 40B100I = 2.58 lb·ft

INSERT

TCGT-MJ



TCMT-NMJ



		AH120	AH3135	T1215	T3225
P	Steel	☆	★		☆
M	Stainless		★		
K	Cast iron	★		☆	
N	Non-ferrous				
S	Superalloys	★	☆		
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH120	AH3135	T1215	T3225	LE	IC	S	BS
TCGT160608PDER-MJ	0.031	0.630	●	●			0.630	0.539	0.228	0.039
TCMT160620PDER-NMJ	0.079	0.630	●	●	●	●	0.630	0.524	0.228	0.079

● : Line up

Reference pages: Standard cutting conditions → H110

STANDARD CUTTING CONDITIONS

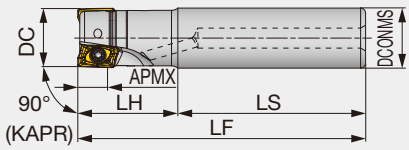
ISO	Workpiece materials	Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steels 1015, 1020, etc.	- 300 HB	First choice	AH3135	NMJ*	330 - 820	0.003 - 0.006
		- 300 HB	Wear resistance	T3225	NMJ*	330 - 990	0.003 - 0.006
		- 300 HB	For finishing	AH3135	MJ	330 - 820	0.003 - 0.008
	Carbon steels, Alloy steels 1055, 4140, etc.	- 300 HB	First choice	AH3135	NMJ*	330 - 760	0.003 - 0.006
		- 300 HB	Wear resistance	T3225	NMJ*	330 - 920	0.003 - 0.006
		- 300 HB	For finishing	AH3135	MJ	330 - 760	0.003 - 0.008
	Prehardened steel NAK80, PX5, etc.	30 - 40 HRC	First choice	AH3135	NMJ*	330 - 590	0.003 - 0.006
		30 - 40 HRC	Wear resistance	T3225	NMJ*	330 - 200	0.003 - 0.006
		30 - 40 HRC	For finishing	AH3135	MJ	330 - 590	0.003 - 0.008
M	Stainless steels 304, 316, etc.	-	First choice	AH3135	NMJ*	300 - 660	0.003 - 0.006
		-	Wear resistance	T3225	NMJ*	300 - 820	0.003 - 0.006
		-	For finishing	AH3135	MJ	300 - 660	0.003 - 0.008
K	Gray cast irons No.25, No.30, etc.	150 - 250 HB	First choice	AH120	NMJ*	460 - 820	0.003 - 0.006
		150 - 250 HB	Wear resistance	T1215	NMJ*	490 - 980	0.003 - 0.006
		150 - 250 HB	For finishing	AH120	MJ	460 - 820	0.003 - 0.010
	Ductile cast irons 60-40-18, 80-55-06, etc.	150 - 250 HB	First choice	AH120	NMJ*	460 - 820	0.003 - 0.006
		150 - 250 HB	Wear resistance	T1215	NMJ*	490 - 980	0.003 - 0.006
		150 - 250 HB	For finishing	AH120	MJ	460 - 820	0.003 - 0.010
S	Titanium alloys Ti-6Al-4V, etc.	-	First choice	AH120	NMJ*	70 - 200	0.003 - 0.006
		-	For finishing	AH120	MJ	70 - 200	0.003 - 0.007
	Heat-resistant alloys Inconel718, etc.	-	First choice	AH120	NMJ*	70 - 130	0.003 - 0.005
		-	For finishing	AH120	MJ	70 - 130	0.003 - 0.006

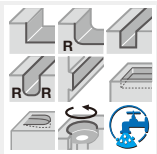
* When using the -NMJ chipbreaker, do not feed higher than 0.006 ipt.

EPAV06

Mini square shoulder endmill, shank type, with screw clamp system

GAMP = +6.0°~ +7.6°, GAMF = -37.1°~ -32.4°





Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
EPAV06U0.31C0.37R01	0.236	0.313	1	0.375	2.463	0.787	3.250	0.090	With	AVGT06...
EPAV06U0.37C0.37R01	0.236	0.375	1	0.375	2.463	0.787	3.250	0.090	With	AVGT06...
EPAV06U0.37C0.37R01L	0.236	0.375	1	0.375	2.622	1.378	4.000	0.110	With	AVGT06...
EPAV06U0.50C0.50R02	0.236	0.500	2	0.500	2.463	0.787	3.250	0.150	With	AVGT06...
EPAV06U0.50C0.50R03	0.236	0.500	3	0.500	2.463	0.787	3.250	0.150	With	AVGT06...
EPAV06U0.50C0.50R02L	0.236	0.500	2	0.500	3.388	1.362	4.750	0.220	With	AVGT06...
EPAV06U0.62C0.62R03	0.236	0.625	3	0.625	2.713	0.787	3.500	0.260	With	AVGT06...
EPAV06U0.62C0.62R04	0.236	0.625	4	0.625	2.713	0.787	3.500	0.260	With	AVGT06...
EPAV06U0.62C0.62R03L	0.236	0.625	3	0.625	4.122	1.378	5.500	0.420	With	AVGT06...
EPAV06U0.75C0.62R04	0.236	0.750	4	0.625	2.815	1.185	4.000	0.330	With	AVGT06...
EPAV06U0.75C0.75R04	0.236	0.750	4	0.750	2.815	1.185	4.000	0.440	With	AVGT06...
EPAV06U0.75C0.75R05	0.236	0.750	5	0.750	2.815	1.185	4.000	0.440	With	AVGT06...
EPAV06U0.75C0.75R04L	0.236	0.750	4	0.750	6.500	1.375	7.875	0.900	With	AVGT06...
EPAV06U1.00C0.75R06	0.236	1.000	6	0.750	3.125	1.375	4.500	0.550	With	AVGT06...
EPAV06U1.00C1.00R05	0.236	1.000	5	1.000	3.125	1.375	4.500	0.930	With	AVGT06...
EPAV06U1.00C1.00R06	0.236	1.000	6	1.000	3.125	1.375	4.500	0.930	With	AVGT06...
EPAV06U1.00C1.00R04L	0.236	1.000	4	1.000	6.425	1.575	8.000	1.680	With	AVGT06...

SPARE PARTS



Designation	Clamping screw	Lubricant	Wrench
EPAV06U...	CSPB-2H	M-1000	IP-6DB

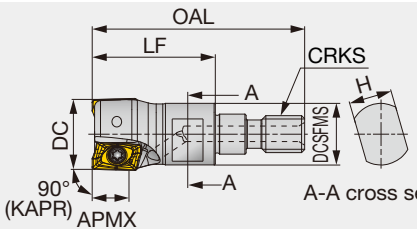
*Recommended clamping torque : CSPB-2H = 0.52 lbs·ft

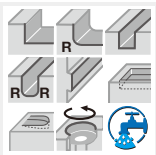
Reference pages: Inserts, Standard cutting conditions → H114

HPAV06-M

Mini square shoulder endmill, modular type (TungFlex)

GAMP = +6.0°~ +7.6°, GAMF = -37.1°~ -32.4°





Metric	APMX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HPAV06M010M06R02	6	10	2	34.5	20	7	9.5	M6	0.01	With	AVGT06...
HPAV06M012M06R02	6	12	2	34.5	20	7	10	M6	0.01	With	AVGT06...
HPAV06M012M06R03	6	12	3	34.5	20	7	10	M6	0.01	With	AVGT06...
HPAV06M016M08R03	6	16	3	42	25	10	13	M8	0.03	With	AVGT06...
HPAV06M016M08R04	6	16	4	42	25	10	13	M8	0.03	With	AVGT06...

See page **H167** for TungFlex modular shank.

SPARE PARTS



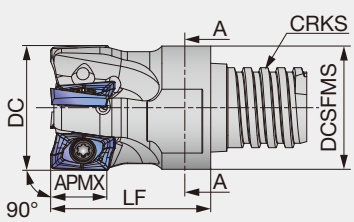
Designation	Clamping screw	Lubricant	Wrench
HPAV06M...	CSPB-2H	M-1000	IP-6DB

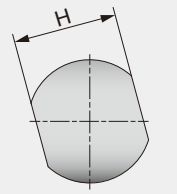
*Recommended clamping torque：CSPB-2H = 0.7 N·m

Reference pages: Inserts, Standard cutting conditions → **H114**, TungFlex → **H167**

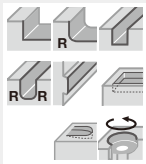
HPAV06-S

Mini square shoulder endmill, modular type (TungMeister)





A-A cross section



Metric	APMX	DC	CICT	LF	H	DCSFMS	CRKS	WT (kg)	Air hole	Insert
HPAV06M010S05R02	6 (0.236)	10 (0.394)	2	10 (0.394)	8	8 (0.315)	S05	0.01	Without	AVGT06...
HPAV06M010S06R02	6 (0.236)	10 (0.394)	2	16 (0.630)	8	9.8 (0.386)	S06	0.01	Without	AVGT06...
HPAV06M012S08R02	6 (0.236)	12 (0.472)	2	18 (0.709)	10	11.7 (0.461)	S08	0.02	Without	AVGT06...
HPAV06M012S08R03	6 (0.236)	12 (0.472)	3	18 (0.709)	10	11.7 (0.461)	S08	0.02	Without	AVGT06...
HPAV06M016S10R03	6 (0.236)	16 (0.630)	3	20 (0.787)	13	15.4 (0.606)	S10	0.03	Without	AVGT06...
HPAV06M016S10R04	6 (0.236)	16 (0.630)	4	20 (0.787)	13	15.4 (0.606)	S10	0.03	Without	AVGT06...

Unit: mm (inch)

- Applicable shank: VSSD, VTSD, VSC, VSTD, VER
  Please see page **I032 - I035** for the types and the selection of TungMeister shank.
  Please use VAD-M adapter to connect TungMeister with a metric thread shank.

Spanner*	Designation	Connection screw size
	KEYV-S05	S05
	KEYV-S06	S06
	KEYV-S08	S08
	KEYV-S10	S10

*sold separately

SPARE PARTS



Designation	Clamping screw	Lubricant	Wrench
HPAV06M...	CSPB-2H	M-1000	IP-6DB

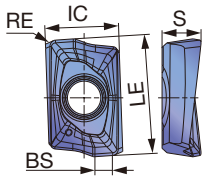
*Recommended clamping torque：CSPB-2H = 0.7 N·m

Reference pages: Inserts, Standard cutting conditions → **H114**, TungMeister shank → **I032 - I035**

INSERT

AVGT-MJ

AVGT-AJ



P	Steel	★		★			
M	Stainless		☆	★			
K	Cast iron	★					
N	Non-ferrous				★		
S	Superalloys	★	★	☆			
H	Hard materials	★					

★ : First choice
☆ : Second choice

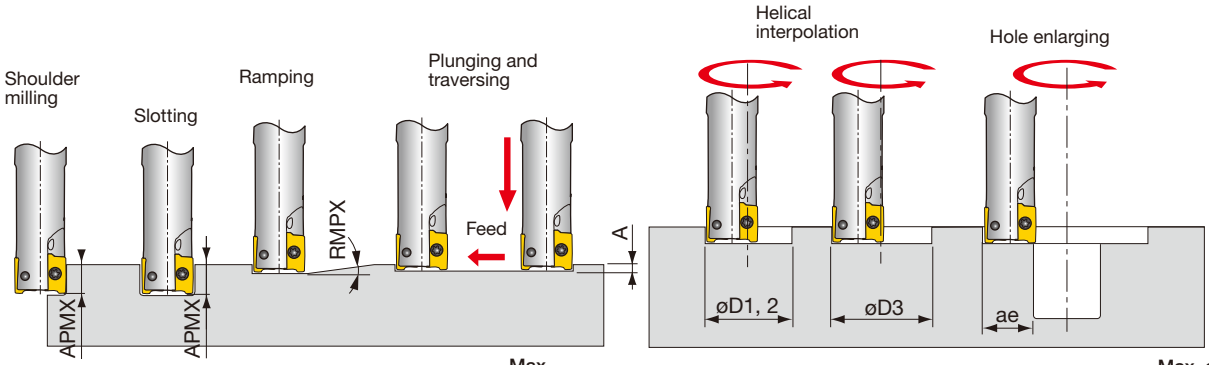
Designation	RE	APMX	Coated			Uncoated		LE	IC	S	BS
			AH120	AH130	AH3135	KS05F					
AVGT060300PBER-MJ	-	0.236			●			0.315	0.197	0.106	0.063
AVGT060302PBER-MJ	0.008	0.236	●	●	●			0.315	0.197	0.106	0.059
AVGT060304PBER-MJ	0.016	0.236	●	●	●			0.315	0.197	0.106	0.051
AVGT060308PBER-MJ	0.031	0.236	●	●	●			0.315	0.197	0.102	0.035
AVGT060300PBFR-AJ	-	0.236				●		0.315	0.197	0.106	0.063
AVGT060302PBFR-AJ	0.008	0.236				●		0.315	0.197	0.106	0.059
AVGT060304PBFR-AJ	0.016	0.236				●		0.315	0.197	0.106	0.051
AVGT060308PBFR-AJ	0.031	0.236				●		0.315	0.197	0.102	0.035

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steels 1018, 1026, etc.		- 200 HB	First choice	AH3135	755 - 1410	0.003 - 0.005
	Carbon steel and alloy steel 1055, 4140, etc.		- 300 HB	First choice	AH3135	490 - 1150	0.003 - 0.005
	Prehardened steel H-13, P-20, etc.		30 - 40 HRC	First choice	AH3135	325 - 750	0.003 - 0.005
M	Stainless steel 304, 316, etc.		-	First choice	AH3135	490 - 720	0.003 - 0.004
K	Gray cast iron Class 25, Class 30, etc.		150 - 250 HB	First choice	AH120	655 - 1080	0.003 - 0.005
	Ductile cast iron 60-40-12, 80-55-06, etc.		150 - 250 HB	First choice	AH120	490 - 785	0.003 - 0.005
N	Aluminum alloys Si < 13%		-	First choice	KS05F	2130 - 3280	0.003 - 0.005
	Aluminum alloys Si ≥ 13%		-	First choice	KS05F	325 - 750	0.003 - 0.005
S	Titanium alloys Ti-6Al-4V, etc.		-	First choice	AH130	130 - 295	0.0016 - 0.004
	Superalloys Inconel718, etc.		-	First choice	AH130	145 - 210	0.0016 - 0.004
H	Hardened steel	H13, etc.	40 - 50 HRC	First choice	AH120	145 - 225	0.002 - 0.004
		D2, etc.	50 - 60 HRC	First choice	AH120	130 - 210	0.0016 - 0.003

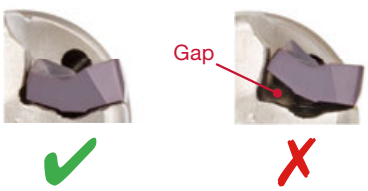
MACHINING APPLICATIONS



		Max. depth of cut	Max. ramping angle	Max. plunging	Min. machining	Max. machining		Max. cutting width in enlarging
Inch	DC	APMX	RMPX	A	øD1	øD2	øD3*	ae
EPAV06U0.31…	0.313	0 .236	-	-	-	-	-	-
EPAV06U0.37…	0.375	0 .236	3°	0.012	0.591	0.748	0.709	0.374
EPAV06U0.50…	0.500	0 .236	3°	0.012	0.709	0.906	0.866	0.453
EPAV06U0.62…	0.625	0 .236	2°	0.012	1.026	1.220	1.181	0.610
EPAV06U0.75…	0.750	0 .236	1.5°	0.012	1.276	1.460	1.421	0.730
EPAV06U1.00…	1.000	0 .236	1°	0.012	1.775	1.960	1.921	0.980

*Flat bottom hole

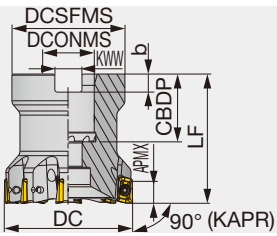
When clamping the insert, please confirm that there is no gap between the cutter body and the insert as shown in the picture.

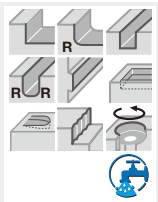


TUNGREC
TPO07

High precision square shoulder mill, with screw clamp system, for AOMT/AOGT07 inserts

GAMP = +7°, GAMF = +13°~ +18°





Inch	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert
TPO07R200U0075A12	2.000	12	1.693	1.575	0.750	0.789	0.315	0.197	0.660	With	AO*T0702...

SPARE PARTS



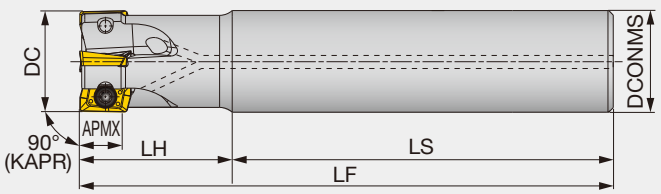
Designation	Clamping screw	Shell locking bolt (Optional parts)	Wrench
TPO07R200U0075A12	CSTB-2.5L046	(C0.375X1.125H)	T-7DB

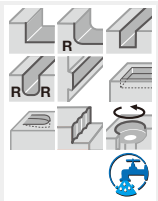
*Recommended clamping torque : CSTB-2.5L046 = 0.66 lb·ft

TUNGREC
EPO07

High precision square shoulder endmill, shank type, with screw clamp system, for AOMT/AOGT07 inserts

GAMP = +7°, GAMF = +13°~ +18°





Inch	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
EPO07R050U0050-02	0.500	2	0.500	2.250	0.750	3.000	0.140	With	AO*T0702...
EPO07R063U0063-04	0.625	4	0.625	2.563	0.937	3.500	0.250	With	AO*T0702...
EPO07R075U0075-05	0.750	5	0.750	2.875	1.125	4.000	0.410	With	AO*T0702...
EPO07R100U0075-03	1.000	3	0.750	2.000	1.500	3.500	0.400	With	AO*T0702...
EPO07R100U0100W07	1.000	7	1.000	2.281	1.500	3.781	0.680	With	AO*T0702...

*The DC above is the diameter when using MJ or AJ chipbreaker.
With HJ chipbreaker, the tool diameter is (DC above + 0.0024").
**The LF and LH above are the lengths when using MJ chipbreaker.
With AJ chipbreaker, the length is (LF, L + 0.004"). With HJ chipbreaker, the length is (LF, L + 0.02").

SPARE PARTS


Designation	Clamping screw	Wrench
EPO07R...	CSTB-2.5L046	T-7DB

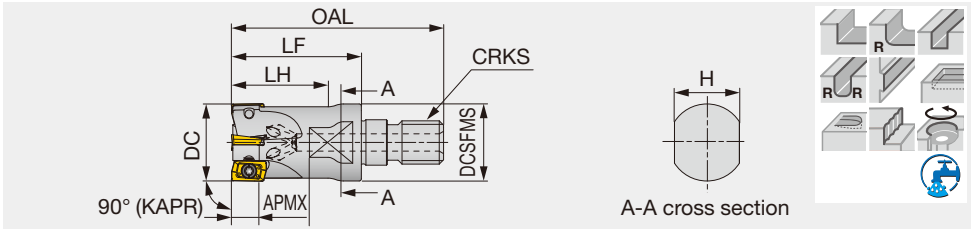
*Recommended clamping torque : CSTB-2.5L046 = 0.66 lbs·ft

Reference pages: Inserts → H117, Standard cutting conditions → H118

HPO07-M

High precision square shoulder endmill, modular type, for AOMT/AOGT07 inserts (TungFlex)

GAMP = +7°, GAMF = +13°~ +18°

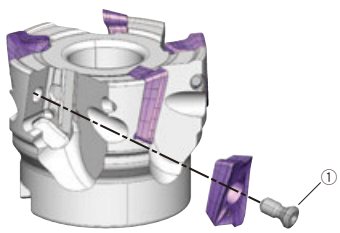


Metric	DC	CICT	OAL	LF	LH	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HPO07R012MM06-02	12	2	39.5	25	-	7	9.8	M6	0.01	With	AO*T0702...
HPO07R012MM08-02	12	2	42	25	20	10	12.8	M8	0.02	With	AO*T0702...
HPO07R016MM08-04	16	4	42	25	-	10	12.8	M8	0.03	With	AO*T0702...
HPO07R016MM10-04	16	4	49	30	20	15	17.8	M10	0.05	With	AO*T0702...
HPO07R020MM10-05	20	5	49	30	-	15	17.8	M10	0.06	With	AO*T0702...
HPO07R025MM12-07	25	7	57	35	-	17	20.8	M12	0.1	With	AO*T0702...

SPARE PARTS

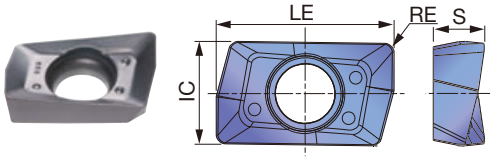
Designation	①Clamping screw	Lubricant	Wrench
HPO07R012MM0*-02	SR-10503833-S	M-1000	T-7DB
HPO07R016 - 025...	CSTB-2.5L046	M-1000	T-7DB

*Recommended clamping torque：SR-10503833-S = 0.9 N·m, CSTB-2.5L046 = 0.9 N·m

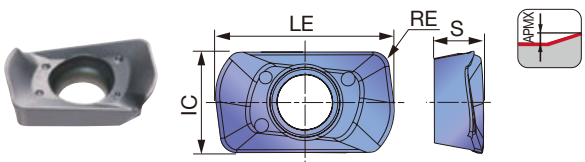


INSERT

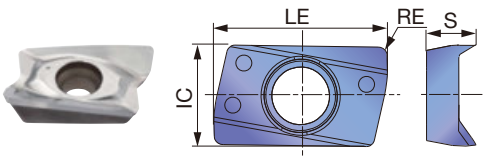
AOMT07-MJ



AOMT07-HJ (High feed insert geometry)



AOGT07-AJ



		AH140	AH725	KS15F
P	Steel		★	
M	Stainless	★	☆	
K	Cast iron		★	
N	Non-ferrous			★
S	Superalloys		★	
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH140	Coated AH725	Uncoated KS15F	LE	IC	S
AOMT070202PDPR-MJ	0.008	0.276	●	●		0.315	0.185	0.091
AOMT070204PDPR-MJ	0.016	0.276	●	●		0.315	0.185	0.091
AOMT070208PDPR-MJ	0.031	0.276	●	●		0.315	0.185	0.091
AOMT070216PDPR-MJ	0.063	0.276	●	●		0.315	0.185	0.091
AOMT070208PDPR-HJ	0.031	0.031	●	●		0.346	0.185	0.094
AOGT070204PDFR-AJ	0.016	0.252			●	0.319	0.185	0.091

● : Line up

Reference pages: Standard cutting conditions → H118, TungFlex → H167

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Hardness HB	Grades	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) MJ	HJ	AJ
P	Low carbon steel 1018, 1020, 1026, etc.	< 200	AH725	300 - 660	0.002 - 0.004	0.015 - 0.035	-
P	High carbon steel and alloy steel 1045, 4140, etc.	200 - 300	AH725	300 - 500	0.002 - 0.004	0.015 - 0.035	-
P	Tool steel H13, etc.	150 - 300	AH725	260 - 400	0.002 - 0.004	0.015 - 0.035	-
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	-	AH140	300 - 500	0.002 - 0.004	0.015 - 0.035	-
K	Gray cast iron Class 25, Class 30, etc.	150 - 250	AH725	330 - 600	0.002 - 0.004	0.015 - 0.035	-
K	Ductile cast iron 60-40-18, 60-55-06, etc.	150 - 250	AH725	260 - 500	0.002 - 0.004	0.015 - 0.035	-
N	Aluminum alloys Si < 13%	-	KS15F	1000 - 3300	-	-	0.003 - 0.008
N	Aluminum alloys Si ≥ 13%	-	KS15F	330 - 660	-	-	0.003 - 0.008
S	Titanium alloys Ti-6Al-4V, etc.	-	AH725	60 - 160	0.002 - 0.004	0.008 - 0.035	-
S	Superalloys Inconel 718, etc.	-	AH725	60 - 115	0.002 - 0.003	0.008 - 0.024	-

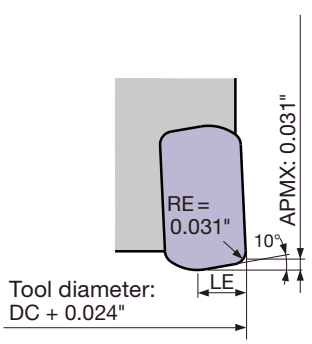
- To remove excessive chip accumulation use an air blast.
- To avoid built up edge on the cutting edges (Aluminum machining), use a water soluble coolant.
- When cutting an interrupted surface or a casted skin, the feed per tooth (*fz*) should be reduced to the lower recommended value shown in the above table.
- Cutting conditions are limited by machine power, workpiece rigidity, and spindle output. When the cutting width, depth, or overhang length is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

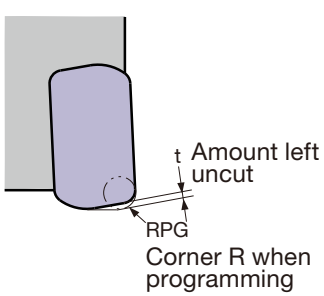
CAUTIONARY POINTS WHEN USING HJ INSERTS

HJ type inserts are designed for high feed machining.
Please note the following when using HJ inserts:

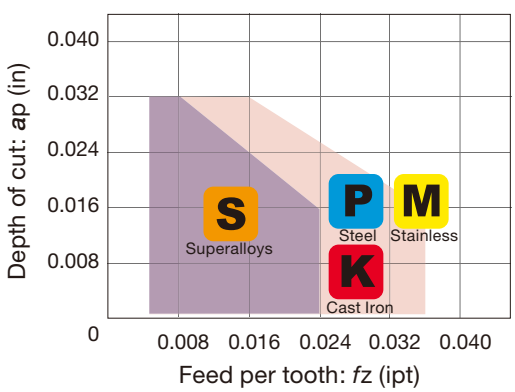
1. The shape of HJ insert differs from that of other inserts (MJ, AJ). However the same insert pocket can be used.
2. When using HJ inserts, all the inserts on the cutter body must be HJ type. Do not use other types of inserts (MJ and AJ types) with HJ inserts on the same cutter body.
3. When using CAD/CAM, please program it as a radius cutter. The table below shows the corner R when programming and the uncut area (t).
4. With HJ inserts, the tool diameter increases by 0.024" over the diameter DC shown in the table.

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others





TungRec 07 type HJ inserts Standard conditions



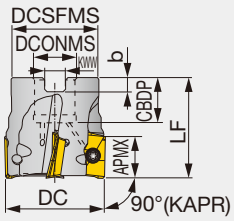
Max. depth of cut APMX (in)	Main cutting edge length LE (in)	Corner R when programming	Amount left uncut t (in)
0.031"	0.118"	R 0.020"	0.016"
		R 0.039"	0.012"

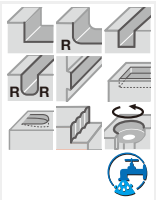
TUNGREC

TPS11

High precision square shoulder mills with ASMT/ASGT11 inserts

A.R. = +8.7°~ +18°, R.R. = –5.3°~ –19.4°





Inch	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(lb)	Air hole	Insert
TPS11200RBU	0.417	2.000	7	1.693	0.750	0.750	1.575	0.197	0.315	0.88	With	AS*T11T3...
TPS11300RBU	0.417	3.000	10	2.283	1.000	1.024	1.969	0.236	0.374	2.64	With	AS*T11T3...
TPS11400RBU	0.417	4.000	11	3.150	1.500	1.457	2.480	0.394	0.626	5.29	With	AS*T11T3...

SPARE PARTS



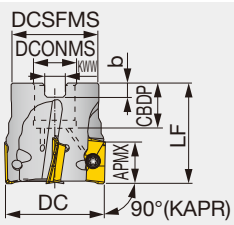

Designation	Clamping screw	Lubricant	Wrench	Shell locking bolts (Optional parts)
TPS11200RBU	CSPB-2.5	M-1000	IP-8D	(C0.375x1.125H)
TPS11300RBU	CSPB-2.5	M-1000	IP-8D	(C0.500x1.375H)
TPS11400RBU	CSPB-2.5	M-1000	IP-8D	(TMBA-0.750H)

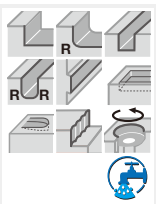
TUNGREC

TPO11

Square shoulder mill, with screw clamp system, for double sided triangular inserts

GAMP = +8.7°~ +18°, GAMF = –5.3°~ –19.4°





Metric	APMX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(kg)	Air hole	Insert
TPO11R040M16.0E06	10.6	40	6	35	16	18	40	5.6	8.4	0.21	With	AS*T11T3...
TPO11R050M22.0E07	10.6	50	7	45	22	20	40	6.3	10.4	0.35	With	AS*T11T3...
TPO11R063M22.0E08	10.6	63	8	47	22	20	45	6.3	10.4	0.59	With	AS*T11T3...
TPO11R080M25.4-10	10.6	80	10	58	25.4	26	50	6	9.5	1.07	With	AS*T11T3...
TPO11R100M31.75-11	10.6	100	11	70	31.75	32	63	8	12.7	1.95	With	AS*T11T3...
TPO11R080M27.0E10	10.6	80	10	58	27	22	50	7	12.4	1.05	With	AS*T11T3...
TPO11R100M32.0E11	10.6	100	11	70	32	25	63	8	14.4	2.01	With	AS*T11T3...

SPARE PARTS




Designation	Clamping screw	Lubricant	Shell locking bolt	Wrench
TPO11R040M16.0E06	CSPB-2.5	M-1000	CM8X30H	IP-8D
TPO11R050, 063...	CSPB-2.5	M-1000	CM10X30H	IP-8D
TPO11R080M25.4-10	CSPB-2.5	M-1000	CM12X30H	IP-8D
TPO11R100M31.75-11	CSPB-2.5	M-1000	CM16X40H	IP-8D
TPO11R080M27.0E10	CSPB-2.5	M-1000	CM12X30H	IP-8D
TPO11R100M32.0E11	CSPB-2.5	M-1000	CM16X40H	IP-8D

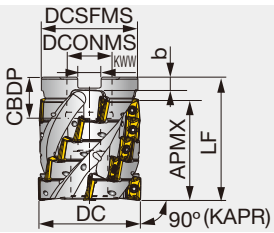
*Recommended clamping torque : CSPB-2.5 = 1.3 N·m

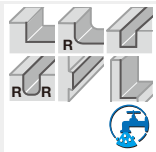
Reference pages: Inserts → H123, Standard cutting conditions → H124 - H125

TUNGREC
TLS11

High efficiency square shoulder mill for roughing, for ASMT/ASGT11 inserts

GAMP = +8.7°~ +18°, GAMF = –5.3°~ –19.4°





Inch	APMX	DC	ZEFP	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert
TLS11R200U0075A04	1.921	2.000	4	20	1.875	2.356	0.750	0.750	0.315	0.197	1.330	With	AS*T11T3...

Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

SPARE PARTS

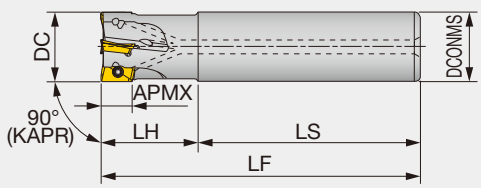
Designation	Clamping screw	Lubricant	Shell locking bolt	Wrench
TLS11R200U0075A04	CSPB-2.5	M-1000	C0.375X1.125H	IP-8D

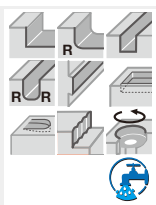
*Recommended clamping torque : CSPB-2.5 = 1.3 lb·ft

TUNGREC
EPS11

High precision square shoulder endmills with ASMT/ASGT11 inserts

A.R. = +8.7°~ +18°, R.R. = –5.3°~ –19.4°





Approach angle: 10°-20° | 45° | 70° | 85° | 88° | 90° | Others

Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
EPS11050RLU	0.417	0.500	1	0.625	3.750	1.250	5.000	0.350	With	AS*T11T3...
EPS11050RSU	0.417	0.500	1	0.625	2.362	0.984	3.346	0.240	With	AS*T11T3...
EPS11062RLU	0.417	0.625	2	0.625	4.250	1.500	5.750	0.440	With	AS*T11T3...
EPS11062RSU	0.417	0.625	2	0.625	2.362	0.984	3.346	0.240	With	AS*T11T3...
EPS11075RLU	0.417	0.750	2	0.750	5.250	2.000	7.250	0.790	With	AS*T11T3...
EPS11075RSBU	0.417	0.750	3	0.750	2.362	1.181	3.543	0.370	With	AS*T11T3...
EPS11100RLU	0.417	1.000	2	1.000	5.750	2.750	8.500	1.700	With	AS*T11T3...
EPS11100RSBU	0.417	1.000	4	1.000	2.362	1.378	3.740	0.700	With	AS*T11T3...
EPS11100RSBU-3/4	0.417	1.000	4	0.750	2.360	1.378	3.738	0.480	With	AS*T11T3...
EPS11125RLU	0.417	1.250	2	1.250	7.000	3.000	10.000	3.190	With	AS*T11T3...
EPS11125RSBU	0.417	1.250	5	1.250	2.362	1.378	3.740	1.120	With	AS*T11T3...

SPARE PARTS

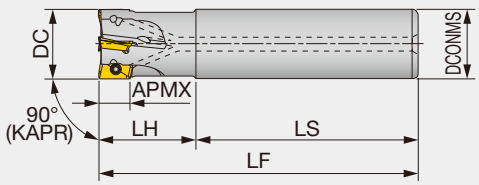
Designation	Clamping screw	Lubricant	Wrench
EPS11050RLU	CSPB-2.5	M-1000	IP-8D
EPS11050RSU	CSPB-2.5S	M-1000	IP-8D
EPS11062RLU	CSPB-2.5	M-1000	IP-8D
EPS11062RSU	CSPB-2.5S	M-1000	IP-8D
EPS11075RLU	CSPB-2.5	M-1000	IP-8D
EPS11075RSBU	CSPB-2.5S	M-1000	IP-8D
EPS11100RLU	CSPB-2.5	M-1000	IP-8D
EPS11100RSBU	CSPB-2.5	M-1000	IP-8D
EPS11100RSBU-3/4	CSPB-2.5	M-1000	IP-8D
EPS11125RLU	CSPB-2.5	M-1000	IP-8D
EPS11125RSBU	CSPB-2.5	M-1000	IP-8D

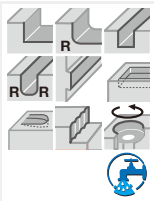
Reference pages: Inserts → H123, Standard cutting conditions → H124 - H125

EPO11

High precision square shoulder endmill, shank type, with screw clamp system, for ASMT/ASGT11 inserts

GAMP = +8.7°~ +18°, GAMF = –5.3°~ –19.4°





Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPO11R012M16.0-01	10.6	12	1	16	60	25	85	0.11	With	AS*T11T3...
EPO11R012M16.0-01L	10.6	12	1	16	95	30	125	0.16	With	AS*T11T3...
EPO11R016M16.0-02	10.6	16	2	16	60	25	85	0.12	With	AS*T11T3...
EPO11R016M16.0-02L	10.6	16	2	16	105	40	145	0.2	With	AS*T11T3...
EPO11R018M16.0-02	10.6	18	2	16	60	25	85	0.12	With	AS*T11T3...
EPO11R018M16.0-02L	10.6	18	2	16	105	40	145	0.21	With	AS*T11T3...
EPO11R020M20.0-02	10.6	20	2	20	70	30	100	0.22	With	AS*T11T3...
EPO11R020M20.0-02L	10.6	20	2	20	135	50	185	0.41	With	AS*T11T3...
EPO11R020M20.0-03	10.6	20	3	20	70	30	100	0.21	With	AS*T11T3...
EPO11R022M20.0-02	10.6	22	2	20	70	30	100	0.22	With	AS*T11T3...
EPO11R022M20.0-02L	10.6	22	2	20	155	30	185	0.42	With	AS*T11T3...
EPO11R022M20.0-03	10.6	22	3	20	70	30	100	0.22	With	AS*T11T3...
EPO11R025M25.0-02L	10.6	25	2	25	150	70	220	0.76	With	AS*T11T3...
EPO11R025M25.0-03	10.6	25	3	25	80	35	115	0.39	With	AS*T11T3...
EPO11R025M25.0-04	10.6	25	4	25	80	35	115	0.38	With	AS*T11T3...
EPO11R028M25.0-02L	10.6	28	2	25	185	35	220	0.8	With	AS*T11T3...
EPO11R028M25.0-03	10.6	28	3	25	80	35	115	0.4	With	AS*T11T3...
EPO11R028M25.0-04	10.6	28	4	25	80	35	115	0.39	With	AS*T11T3...
EPO11R030M25.0-02L	10.6	30	2	25	180	40	220	0.8	With	AS*T11T3...
EPO11R030M25.0-03	10.6	30	3	25	80	40	120	0.43	With	AS*T11T3...
EPO11R030M25.0-04	10.6	30	4	25	80	40	120	0.42	With	AS*T11T3...
EPO11R032M32.0-02L	10.6	32	2	32	175	80	255	1.48	With	AS*T11T3...
EPO11R032M32.0-03	10.6	32	3	32	80	40	120	0.68	With	AS*T11T3...
EPO11R032M32.0-05	10.6	32	5	32	80	40	120	0.67	With	AS*T11T3...
EPO11R035M32.0-02L	10.6	35	2	32	215	40	255	1.49	With	AS*T11T3...
EPO11R035M32.0-03	10.6	35	3	32	80	40	120	0.69	With	AS*T11T3...
EPO11R035M32.0-05	10.6	35	5	32	80	40	120	0.67	With	AS*T11T3...
EPO11R040M32.0-02L	10.6	40	2	32	205	50	255	1.53	With	AS*T11T3...
EPO11R040M32.0-04	10.6	40	4	32	80	40	120	0.72	With	AS*T11T3...
EPO11R040M32.0-06	10.6	40	6	32	80	40	120	0.71	With	AS*T11T3...
EPO11R050M32.0-05	10.6	50	5	32	80	40	120	0.83	With	AS*T11T3...
EPO11R050M32.0-07	10.6	50	7	32	80	40	120	0.82	With	AS*T11T3...
EPO11R050M42.0-03L	10.6	50	3	42	310	50	360	3.78	With	AS*T11T3...

SPARE PARTS



Designation	Clamping screw	Lubricant	Wrench
EPO11R012 - 022...	CSPB-2.5S	M-1000	IP-8D
EPO11R025 - 050...	CSPB-2.5	M-1000	IP-8D

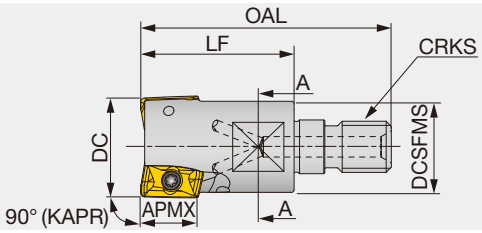
*Recommended clamping torque：CSPB-2.5/CSPB-2.5S = 1.3 N·m

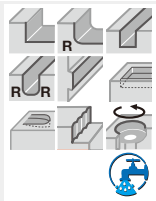
Reference pages: Inserts → H123, Standard cutting conditions → H124 - H125

TUNGREC
HPO11-M

High precision square shoulder endmill, modular type, for ASMT/ASGT11 inserts (TungFlex)

GAMP = +8.7° ~ +18°, GAMF = -5.3° ~ -19.4°





Metric	APMX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HPO11R020MM10-02	10.6	20	2	49	30	15	17.8	M10	0.06	With	AS*T11T3...
HPO11R025MM12-03	10.6	25	3	57	35	17	20.8	M12	0.1	With	AS*T11T3...
HPO11R032MM16-03	10.6	32	3	63	40	22	28.8	M16	0.2	With	AS*T11T3...

SPARE PARTS

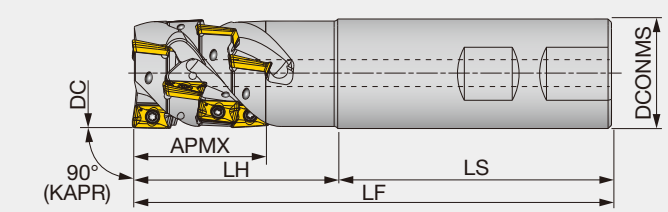
Designation	Clamping screw	Lubricant	Wrench
HPO11R020MM10-02	CSPB-2.5S	M-1000	IP-8D
HPO11R025, 032...	CSPB-2.5	M-1000	IP-8D

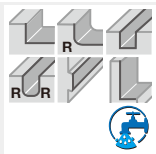
*Recommended clamping torque：CSPB-2.5/CSPB-2.5S = 1.3 N·m

TUNGREC
ELS11

High efficiency roughing endmill, shank type, for ASMT/ASGT11 inserts

GAMP = +8.7° ~ +18°, GAMF = -5.3° ~ -19.4°





Inch	APMX	DC	ZEFP	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
ELS11R100U0100W02	1.197	1.000	2	6	1.000	2.250	1.500	3.750	0.670	With	AS*T11T3...
ELS11R125U0125W03	1.535	1.250	3	12	1.250	2.250	2.250	4.500	1.330	With	AS*T11T3...
ELS11R150U0125W03	1.575	1.500	3	12	1.250	2.329	2.171	4.500	1.330	With	AS*T11T3...

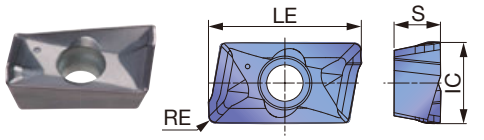
SPARE PARTS

Designation	Clamping screw	Lubricant	Wrench
ELS11...	CSPB-2.5	M-1000	IP-8D

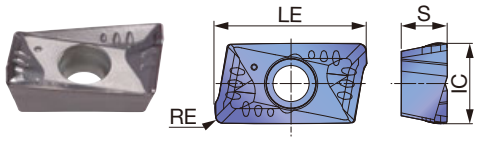
*Recommended clamping torque : CSPB-2.5 = 1.3 lbs·ft

Reference pages: Inserts → H123, Standard cutting conditions → H124 - H125, Tung Flex → H167

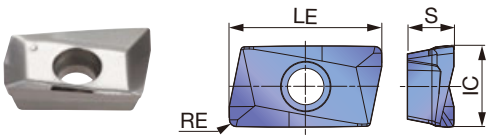
ASMT11-MJ



ASMT11-MS



ASGT11-AJ



		Coated							Cermet	Uncoated				
P	Steel	☆			★			★		★				
M	Stainless		★	★	☆									
K	Cast iron	★			☆	☆	★							
N	Non-ferrous								★		★			
S	Superalloys	★	★		★									
H	Hard materials													

★ : First choice
☆ : Second choice

Designation	RE	APMX	AH120	AH130	AH140	AH725	T1115	T1215	T3130	DS1100	NS740	KS05F	LE	IC	S
ASMT11T304PDPR-MJ	0.016	0.417	●	●		●	●		●		●		0.457	0.264	0.146
ASMT11T308PDPR-MJ	0.031	0.417	●	●	●	●	●	●	●		●		0.457	0.264	0.146
ASMT11T312PDPR-MJ	0.047	0.417	●			●			●		●		0.457	0.264	0.146
ASMT11T316PDPR-MJ	0.063	0.417	●			●			●		●		0.457	0.264	0.146
ASMT11T320PDPR-MJ	0.079	0.417	●										0.457	0.264	0.146
ASMT11T330PDPR-MJ	0.118	0.417	●	●									0.457	0.264	0.146
ASMT11T304PDPR-MS	0.016	0.417		●	●								0.457	0.264	0.146
ASGT11T304PDFR-AJ	0.016	0.417								●		●	0.457	0.264	0.146
ASGT11T308PDFR-AJ	0.031	0.417								●		●	0.457	0.264	0.146

● : Line up

STANDARD CUTTING CONDITIONS

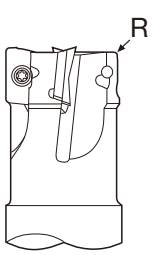
TPO11/EPO11/HPO11 type

ISO	Workpiece material	Brinell hardness HB	Priority	Grade	Cutting speed: *Vc* (sfm)	Feed per tooth: *fz* (ipt) MJ	MS	AJ
P	Low carbon steel 1018, 1020, 1026, etc.	~ 200	First choice	AH725	330 - 820	0.004 - 0.008	-	-
		~ 200	Wear resistance	T3130	330 - 820	0.004 - 0.008	-	-
		~ 200	Surface quality	NS740	330 - 820	0.002 - 0.006	-	-
	High carbon steel and alloy steel 1045, 4140, etc.	200 ~ 300	First choice	AH725	330 - 660	0.004 - 0.008	-	-
		200 ~ 300	Wear resistance	T3130	330 - 660	0.004 - 0.008	-	-
		200 ~ 300	Surface quality	NS740	330 - 660	0.002 - 0.005	-	-
	Tool steel H13, etc.	150 ~ 300	First choice	AH725	330 - 500	0.003 - 0.006	-	-
		150 ~ 300	Wear resistance	T3130	330 - 500	0.003 - 0.006	-	-
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	-	-	AH130	260 - 660	-	0.003 - 0.008	-
K	Gray cast iron Class 25, Class 30, etc.	150 ~ 250	First choice	AH120	330 - 820	0.005 - 0.01	-	-
		150 ~ 250	Wear resistance	T1215 T1115	330 - 820	0.005 - 0.01	-	-
	Ductile cast iron 60-40-18, 60-55-06, etc.	150 ~ 250	First choice	AH120	260 - 660	0.005 - 0.01	-	-
		150 ~ 250	Wear resistance	T1215 T1115	260 - 660	0.005 - 0.01	-	-
N	Aluminum alloys Si < 13%	-	-	DS1100	1000 - 3300	-	-	0.002 - 0.008
	Aluminum alloys Si ≥ 13%	-	-	DS1100	330 - 660	-	-	0.002 - 0.008
	Copper alloys	-	-	KS05F	660 - 1650	-	-	0.002 - 0.008
S	Titanium alloys Ti-6Al-4V, etc.	-	-	AH130	60 - 200	-	0.003 - 0.006	-
	Superalloys Inconel 718, etc.	-	-	AH725	60 - 130	0.003 - 0.005	-	-

CAUTIONARY POINT IN MODIFYING CUTTER BODIES

When using inserts with corner radius RE ≥ 0.079" (2 mm), standard cutter bodies have to be modified "R". (Only for TPO11, EPO11, TLS11, ELS11, HPO11)

About roughing type TLS11, ELS11
From 2nd row onwards, please use insert with RE = 0.016" or 0.031"



Corner radius RE (in)	The dimension of modifying (in)
0.016 - 0.063	Unnecessary
0.079 - 0.118	0.080

STANDARD CUTTING CONDITIONS

Roughing type TLS11 / ELS11

ISO	Workpiece material	Brinell hardness HB	Priority	Grade	Cutting speed: *Vc* (sfm)	Feed per tooth: *fz* (ipt)		
						MJ	MS	AJ
P	Low carbon steel 1018, 1020, 1026, etc.	~ 200	First choice	AH725	330 - 820	0.002 - 0.007	-	-
		~ 200	Wear resistance	T3130	330 - 820	0.002 - 0.007	-	-
	High carbon steel and alloy steel 1045, 4140, etc.	200 ~ 300	First choice	AH725	330 - 660	0.003 - 0.006	-	-
		200 ~ 300	Wear resistance	T3130	330 - 660	0.003 - 0.006	-	-
	Tool steel H13, etc.	150 ~ 300	First choice	AH725	330 - 500	0.003 - 0.006	-	-
		150 ~ 300	Wear resistance	T3130	330 - 500	0.003 - 0.006	-	-
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	-	-	AH130	330 - 500	-	0.003 - 0.006	-
K	Gray cast iron Class 25, Class 30, etc.	150 ~ 250	First choice	AH120	330 - 800	0.004 - 0.007	-	-
		150 ~ 250	Wear resistance	T1215 T1115	330 - 800	0.004 - 0.007	-	-
	Ductile cast iron 60-40-18, 60-55-06, etc.	150 ~ 250	First choice	AH120	260 - 650	0.004 - 0.007	-	-
		150 ~ 250	Wear resistance	T1215 T1115	260 - 650	0.004 - 0.007	-	-
N	Aluminum alloys Si < 13%	-	-	DS1100	650 - 1650	-	-	0.002 - 0.007
	Aluminum alloys Si ≥ 13%	-	-	DS1100	330 - 650	-	-	0.002 - 0.007
S	Titanium alloys Ti-6Al-4V, etc.	-	-	AH130	60 - 200	0.003 - 0.006	-	-
	Superalloys Inconel718, etc.	-	-	AH725	60 - 130	0.003 - 0.005	-	-

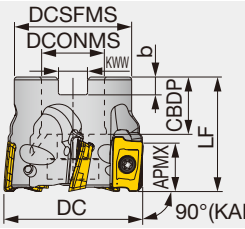
· To remove excessive chip accumulation use an air blast.
· To avoid built up edge on the cutting edges (Aluminum machining), use a water soluble coolant.
· When cutting an interrupted surface or a casted skin, the feed per tooth (*fz*) should be reduced to the lower recommended value shown in the above table.
· Cutting conditions are limited by machine power, workpiece rigidity, and spindle output. When the cutting width, depth, or overhang length is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

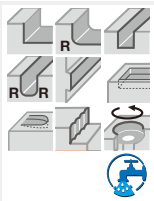
TUNGREC

TPO18

High precision square shoulder mill, with screw clamp system, for AOMT/AOGT18 inserts

GAMP = +14° ~ +17°, GAMF = +22° ~ +31°





Inch	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert	Arbor type
TPO18R200U0075A05	0.657	2.000	5	1.625	1.570	0.750	0.750	0.315	0.197	0.780	With	AO*T1805...	A
TPO18R250U0075A06	0.657	2.500	6	2.125	1.570	0.750	0.750	0.315	0.197	1.320	With	AO*T1805...	A
TPO18R300U0100A07	0.657	3.000	7	2.250	1.750	1.000	1.000	0.374	0.236	1.890	With	AO*T1805...	A
TPO18R400U0150A08	0.657	4.000	8	3.000	2.000	1.500	1.060	0.630	0.354	3.140	Without	AO*T1805...	B
TPO18R500U0150A09	0.657	5.000	9	4.000	2.000	1.500	1.060	0.630	0.354	6.270	Without	AO*T1805...	B
TPO18R600U0200A10	0.657	6.000	10	4.750	2.000	2.000	1.060	0.748	0.394	8.370	Without	AO*T1805...	B

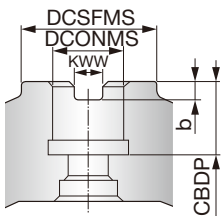
SPARE PARTS

Designation	Clamping screw	Grip	Torx bit	Shell locking bolt (Optional parts)
TPO18R200..., 250...	CSTB-4L093	H-TBS	BT15M	(C0.375X1.125H)
TPO18R300...	CSTB-4L120	H-TBS	BT15M	(C0.500X1.375H)
TPO18R400..., 500...	CSTB-4L120	H-TBS	BT15M	(TMBA-0.750H)
TPO18R600...	CSTB-4L120	H-TBS	BT15M	-

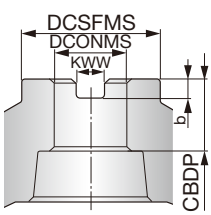
*Recommended clamping torque :
CSTB-4L093 = 2.58 lbs·ft, CSTB-4L120 = 2.58 lbs·ft

Arbor type

Arbor type A



Arbor type B

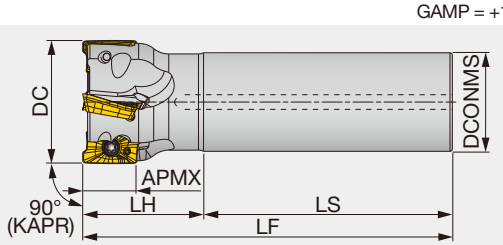


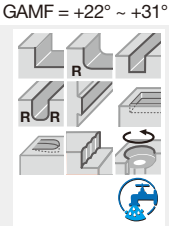
TUNGREC

EPO18

High precision square shoulder endmill, shank type, with screw clamp system, for AOMT/AOGT18 inserts

GAMP = +14° ~ +17°, GAMF = +22° ~ +31°





Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
EPO18R100U0100W02	0.657	1.000	2	1.000	2.250	1.750	4.000	0.730	With	AO*T1805...
EPO18R100U0100W02L	0.657	1.000	2	1.000	2.250	2.750	5.000	0.910	With	AO*T1805...
EPO18R125U0125W03	0.657	1.250	3	1.250	2.250	2.250	4.500	1.320	With	AO*T1805...
EPO18R125U0125W03L	0.657	1.250	3	1.250	2.250	4.250	6.500	1.880	With	AO*T1805...
EPO18R150U0125W03L	0.657	1.500	3	1.250	2.250	4.250	6.500	2.420	With	AO*T1805...
EPO18R150U0125W04	0.657	1.500	4	1.250	2.250	2.250	4.500	1.460	With	AO*T1805...
EPO18R200U0125W05	0.657	2.000	5	1.250	2.250	2.250	4.500	1.680	With	AO*T1805...

*The DC above is the diameter when using MJ chipbreaker. With AJ chipbreaker, the tool diameter is (DC above + 0.008").

SPARE PARTS

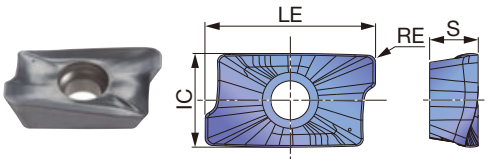
Designation	Clamping screw	Wrench
EPO18R100U...	CSTB-4L085	T-15DB
EPO18R125U..., -200U	CSTB-4L093	T-15DB

*Recommended clamping torque : CSTB-4L093 = 2.58 lbs·ft, CSTB-4L120 = 2.58 lbs·ft

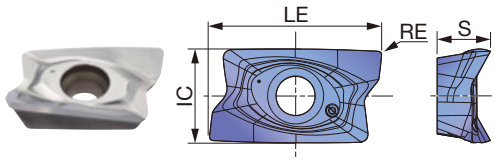
Reference pages: Inserts, Standard cutting conditions → H127

INSERT

AOMT18-MJ



AOGT18-AJ



P	Steel		★	
M	Stainless	★	☆	
K	Cast iron		★	
N	Non-ferrous			★
S	Superalloys		★	
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated		Uncoated	LE	IC	S
			AH140	AH725	KS15F			
AOMT180508PDPR-MJ	0.031	0.657	●	●		0.768	0.421	0.220
AOMT180516PDPR-MJ	0.063	0.657	●	●		0.768	0.421	0.220
AOMT180524PDPR-MJ	0.094	0.657	●	●		0.768	0.421	0.220
AOMT180532PDPR-MJ	0.126	0.657	●	●		0.768	0.421	0.220
AOGT180504PDFR-AJ	0.016	0.657			●	0.780	0.425	0.240
AOGT180508PDFR-AJ	0.031	0.657			●	0.780	0.425	0.240

● : Line up

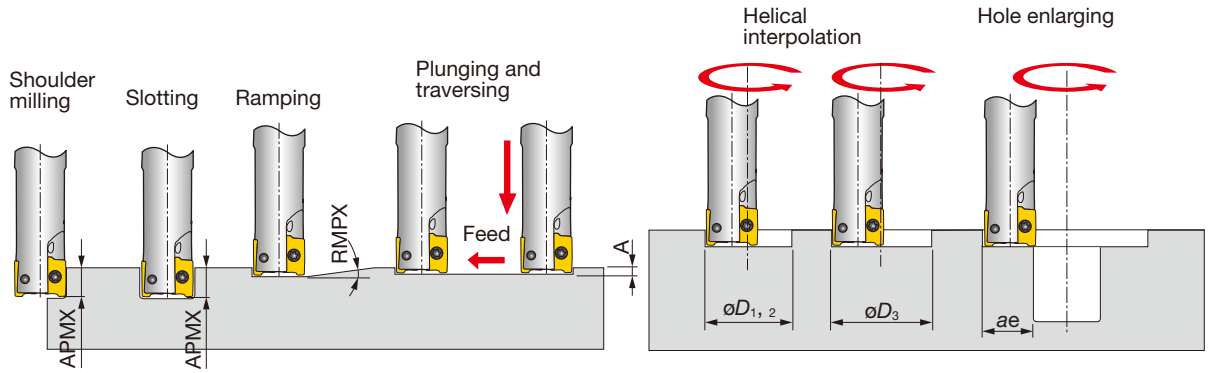
STANDARD CUTTING CONDITIONS

TPO18/EPO18 type

ISO	Workpiece material	Brinell hardness HB	Priority	Cutting speed: *Vc* (sfm)	Feed per tooth: *fz* (ipt)	
					MJ	AJ
P	Low carbon steel 1018, 1020, 1026, etc.	~ 200	AH725	330 - 820	0.003 - 0.010	-
P	High carbon steel and alloy steel 1045, 4140, etc.	200 ~ 300	AH725	330 - 750	0.003 - 0.008	-
P	Tool steel H13, etc.	150 ~ 300	AH725	330 - 600	0.003 - 0.008	-
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	-	AH140	330 - 660	0.003 - 0.008	-
K	Gray cast iron Class 25, Class 30, etc.	150 ~ 250	AH725	330 - 820	0.003 - 0.010	-
K	Ductile cast iron 60-40-18, 60-55-06, etc.	150 ~ 250	AH725	260 - 660	0.003 - 0.010	-
N	Aluminum alloys Si < 13%	-	KS15F	1000 - 3300	-	0.002 - 0.010
N	Aluminum alloys Si ≥ 13%	-	KS15F	330 - 660	-	0.002 - 0.010
S	Titanium alloys Ti-6Al-4V, etc.	-	AH725	60 - 200	0.003 - 0.007	-
S	Superalloys Inconel718, etc.	-	AH725	60 - 130	0.003 - 0.006	-

· To remove excessive chip accumulation use an air blast.
· To avoid built up edge on the cutting edges (Aluminum machining), use a water soluble coolant.
· When cutting an interrupted surface or a casted skin, the feed per tooth (fz) should be reduced to the lower recommended value shown in the above table.
· Cutting conditions are limited by machine power, workpiece rigidity, and spindle output. When the cutting width, depth, or overhang length is large, set Vc and fz to the lower recommended values and check the machine power and vibration.

APPLICATION RANGE



Inch	DC	Chipbreaker	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Min. machining øD1	Max. machining øD2	Max. machining øD3*	Max. cutting width in enlarging ae
EPO07R050U0050-02	0.500	MJ, AJ	0.276	7.5	0.020	0.750	0.862	0.862	0.480
	0.524	HJ	0.031	4.5	0.030	0.786	-	-	0.406
EPO07R063U0063-04	0.625	MJ, AJ	0.276	5	0.020	0.938	1.112	1.112	0.610
	0.649	HJ	0.031	4	0.030	0.974	-	-	0.531
EPO07R075U0075-05	0.750	MJ, AJ	0.276	3.5	0.020	1.125	1.362	1.362	0.730
	0.774	HJ	0.031	2.5	0.030	1.161	-	-	0.656
EPO07R100U…	1.000	MJ, AJ	0.276	2.4	0.020	1.500	1.862	1.862	0.980
	1.024	HJ	0.031	2	0.030	1.536	-	-	0.906
EPS11050...	0.500	MJ, MS, AJ	0.417	6	0.020	0.590	0.882	0.882	0.480
EPS11062...	0.625	MJ, MS, AJ	0.417	5	0.020	0.790	1.332	1.332	0.610
EPS11075...	0.750	MJ, MS, AJ	0.417	3	0.020	1.100	1.382	1.382	0.730
EPS11100...	1.000	MJ, MS, AJ	0.417	2	0.020	1.500	1.882	1.882	0.980
EPS11125...	1.250	MJ, MS, AJ	0.417	1.5	0.020	2.050	2.382	2.382	1.230
EPO18R100U…	1.000	MJ, AJ	0.657	5.5	0.039	1.272	1.764	1.764	0.961
EPO18R125U…	1.250	MJ, AJ	0.657	3.5	0.039	1.772	2.264	2.264	1.211
EPO18R150U…	1.500	MJ, AJ	0.657	2.7	0.039	2.272	2.764	2.764	1.461
T/EPO18R200U…	2.000	MJ, AJ	0.657	1.9	0.039	3.272	3.764	3.764	1.961

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

Inch	DC	Chipbreaker	Max. depth of cut APMX	Max. ramping angle RMPX	Max. plunging depth A	Min. machining øD1	Max. machining øD2	Max. machining øD3*	Max. cutting width in enlarging ae
TPO07R200U0075A12	2.000	MJ, AJ	0.276	0.9	0.020	3.000	3.960	3.862	1.980
	2.024	HJ	0.031	0.6	0.030	3.036	4.008	-	1.906
TPS11200RBU	2.000	MJ, MS, AJ	0.417	0.7	0.020	3.460	3.900	3.882	1.950
TPS11300RBU	3.000	MJ, MS, AJ	0.417	0.4	0.020	5.830	6.260	5.882	3.130
TPS11400RBU	4.000	MJ, MS, AJ	0.417	0.3	0.020	7.400	7.830	7.882	3.920
TPO18R250U0075A06	2.500	MJ, AJ	0.657	1.4	0.039	4.272	4.921	4.764	2.461
TPO18R300U0100A07	3.000	MJ, AJ	0.657	1.1	0.039	5.272	5.921	5.764	2.961
TPO18R400U0150A08	4.000	MJ, AJ	0.657	0.8	0.039	7.272	7.921	7.764	3.961
TPO18R500U0150A09	5.000	MJ, AJ	0.657	0.6	0.039	9.272	9.921	9.764	4.961
TPO18R600U0200A10	6.000	MJ, AJ	0.657	0.5	0.039	11.272	11.921	11.764	5.961

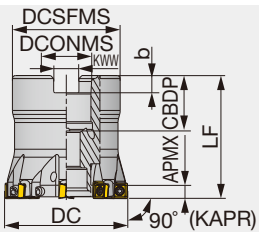
*Flat bottom hole
Corner RE for dimensions of øD_1, øD_2, and øD_3: RE = 0.016" for EPO07 / EPO11 and RE = 0.031" for EPO18.

TUNGQUAD

TPD05

High density square shoulder mill, with screw clamp system, for SDMT/SDHT05 inserts

GAMP = +5°, GAMF = -7° ~ +12°



Right hand (R) shown.

Inch	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert
TPD05R150U0075A08	0.157	1.500	8	1.461	1.570	0.750	0.750	0.313	0.170	0.220	With	SD*T0502...
TPD05R200U0075A10	0.157	2.000	10	1.750	1.570	0.750	0.750	0.313	0.170	0.440	With	SD*T0502...

SPARE PARTS



Designation	Clamping screw	Wrench	Shell locking bolt (Optional parts)
TPD05...	CSPB-2L043	IP-6DB	(C0.375X1.125H)

*Recommended clamping torque : CSPB-2L043 = 0.52 lbs·ft

TUNGQUAD

EPD05

High density square shoulder endmill, shank type, with screw clamp system, for SDMT/SDHT05 inserts

GAMP = +5°, GAMF = -7° ~ +12°

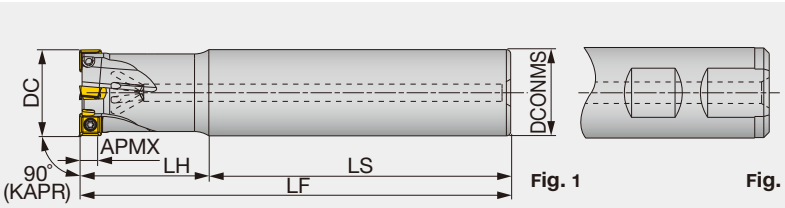


Fig. 1 Fig. 2

Right hand (R) shown.

Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Shank	Insert	Shank type
EPD05R050U0050-02	0.157	0.500	2	0.500	1.780	1.220	3.000	0.220	With	Straight	SD*T0502...	Fig .1
EPD05R063U0063-03	0.157	0.625	3	0.625	2.000	1.500	3.500	0.440	With	Straight	SD*T0502...	Fig .1
EPD05R075U0075W04	0.157	0.750	4	0.750	2.030	1.720	3.750	0.440	With	Weldon	SD*T0502...	Fig .2
EPD05R100U0100W05	0.157	1.000	5	1.000	2.280	1.720	4.000	0.660	With	Weldon	SD*T0502...	Fig .2
EPD05R125U0100W06	0.157	1.000	6	1.250	2.280	1.720	4.000	1.100	With	Weldon	SD*T0502...	Fig .2

SPARE PARTS


Designation	Clamping screw	Wrench
EPD05...	CSPB-2L043	IP-6DB

*Recommended clamping torque : CSPB-2L043 = 0.52 lbs·ft

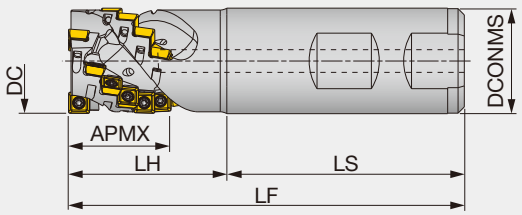
Reference pages: Inserts → H130, Standard cutting conditions → H131

TUNGQUAD

ELD05

High density square shoulder endmill for roughing, shank type, with screw clamp system, for SDMT/SDHT05 inserts

GAMP = +5°, GAMF = -3°



Inch	APMX	DC	ZEFP	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
ELD05R075U0075W02	0.799	0.750	2	10	0.750	2.031	1.219	3.250	0.440	With	SD*T0502...
ELD05R100U0100W03	0.953	1.000	3	18	1.000	2.250	1.500	3.750	0.670	With	SD*T0502...

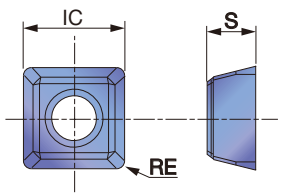
SPARE PARTS


Designation	Clamping screw	Wrench
ELD05...	CSPB-2L043	IP-6DB

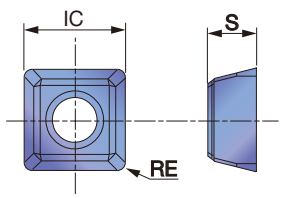
*Recommended clamping torque : CSPB-2L043 = 0.52 lbs·ft

INSERT

SDMT05-MJ

SDHT05-AJ

Approach angle: 10°-20° | 45° | 70° | 85° | 88° | 90° | Others

		Coated		Uncoated
P	Steel		★	
M	Stainless	★	☆	
K	Cast iron		★	
N	Non-ferrous			★
S	Superalloys		★	
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH140	Coated AH725	Uncoated TH10	S	IC
SDMT050204PN-MJ	0.016	0.157	●	●		0.094	0.200
SDHT050204FN-AJ	0.016	0.157			●	0.094	0.200

● : Line up

Reference pages: Inserts → H130, Standard cutting conditions → H131

STANDARD CUTTING CONDITIONS

Bore, shank type TPD05/EPD05

ISO	Workpiece material	Brinell hardness HB	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1018, 1020, 1026, etc.	~ 200	AH725	750 - 1050	0.0015 - 0.004
	High carbon steel 1045, 1055, etc.	200 ~ 300	AH725	500 - 750	0.0015 - 0.004
	Alloyed steel 4140, 8620, etc.	150 ~ 300	AH725	500 - 750	0.0015 - 0.004
	Tool steel W1-8, etc.	~ 300	AH725	350 - 440	0.001 - 0.0035
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	-	AH140	330 - 650	0.001 - 0.0035
K	Gray cast iron Class 25, Class 30, etc.	150 ~ 250	AH725	500 - 820	0.002 - 0.005
	Ductile cast iron 60-40-18, 60-55-06, etc.	150 ~ 250	AH725	330 - 590	0.002 - 0.005
N	Aluminum alloys Si < 13%	-	TH10	1150 - 1600	0.002 - 0.006
	Aluminum alloys Si ≥ 13%	-	TH10	330 - 650	0.002 - 0.006

* For deep and wide cutting, set the *Vc* and *fz* to the lower recommended limits and check the vibration and spindle load of the machine.

Roughing type ELD05

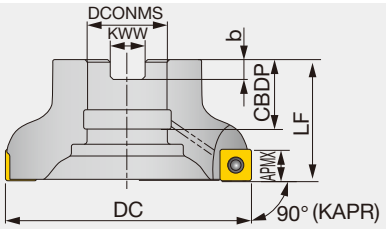
ISO	Workpiece material	Brinell hardness HB	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1018, 1020, 1026, etc.	~ 200	AH725	330 - 820	0.0015 - 0.004
	High carbon steel 1045, 1055, etc.	200 ~ 300	AH725	330 - 660	0.0015 - 0.004
	Alloyed steel 4140, 8620, etc.	150 ~ 300	AH725	330 - 660	0.0015 - 0.004
	Tool steel W1-8, etc.	~ 300	AH725	330 - 400	0.0012 - 0.0035
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	-	AH140	300 - 500	0.0012 - 0.0035
K	Gray cast iron Class 25, Class 30, etc.	150 ~ 250	AH725	330 - 820	0.002 - 0.005
	Ductile cast iron 60-40-18, 60-55-06, etc.	150 ~ 250	AH725	260 - 660	0.002 - 0.005
N	Aluminum alloys Si < 13%	-	TH10	660 - 1650	0.002 - 0.006
	Aluminum alloys Si ≥ 13%	-	TH10	330 - 650	0.002 - 0.006

TUNGMILL

TPW13

Square shoulder mill, with screw clamp system, for SWMT/SWGT13 inserts

GAMP = +11.5°, GAMF = -13° ~ -10.5°



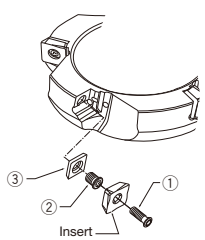
Right hand (R) shown.

Inch	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert	Arbor type
TPW13R200U0075A03	0.394	2.000	3	1.575	0.750	0.750	0.315	0.197	0.660	With	SW*T1304...	A
TPW13R200U0075A04	0.394	2.000	4	1.575	0.750	0.750	0.315	0.197	0.660	With	SW*T1304...	A
TPW13R200U0075A05	0.394	2.000	5	1.575	0.750	0.750	0.315	0.197	0.660	With	SW*T1304...	A
TPW13R300U0100A04	0.394	3.000	4	1.969	1.000	1.024	0.374	0.236	1.760	With	SW*T1304...	A
TPW13R300U0100A06	0.394	3.000	6	1.969	1.000	1.024	0.374	0.236	1.540	With	SW*T1304...	A
TPW13R300U0100A08	0.394	3.000	8	1.969	1.000	1.024	0.374	0.236	1.760	With	SW*T1304...	A
TPW13R400U0150A05	0.394	4.000	5	1.969	1.500	1.378	0.626	0.394	3.530	With	SW*T1304...	B
TPW13R400U0150A07	0.394	4.000	7	1.969	1.500	1.378	0.626	0.394	3.310	With	SW*T1304...	B
TPW13R400U0150A10	0.394	4.000	10	1.969	1.500	1.378	0.626	0.394	3.310	With	SW*T1304...	B
TPW13R500U0150A06	0.394	5.000	6	2.480	1.500	1.457	0.626	0.394	5.510	With	SW*T1304...	B
TPW13R500U0150A08	0.394	5.000	8	2.480	1.500	1.457	0.626	0.394	5.290	With	SW*T1304...	B
TPW13R500U0150A12	0.394	5.000	12	2.480	1.500	1.457	0.626	0.394	5.510	With	SW*T1304...	B
TPW13R600U0200A08	0.394	6.000	8	2.480	2.000	1.496	0.748	0.433	7.940	Without	SW*T1304...	B
TPW13R600U0200A12	0.394	6.000	12	2.480	2.000	1.496	0.748	0.433	8.160	Without	SW*T1304...	B
TPW13R600U0200A15	0.394	6.000	15	2.480	2.000	1.496	0.748	0.433	8.160	Without	SW*T1304...	B

SPARE PARTS

Designation	①Clamping screw	Lubricant	②Shim screw	Shell locking bolt	③Shim	Wrench for ①	Wrench for ②
TPW13R200...	CSPB-3.5	M-1000	DTS5-3.5SS	C0.375X1.125H	FSSP1102	IP-15D	P-3.5
TPW13R300...	CSPB-3.5	M-1000	DTS5-3.5SS	C0.500X1.375H	FSSP1102	IP-15D	P-3.5
TPW13R400..., 500...	CSPB-3.5	M-1000	DTS5-3.5SS	TMBA-0.750H	FSSP1102	IP-15D	P-3.5
TPW13R600...	CSPB-3.5	M-1000	DTS5-3.5SS	-	FSSP1102	IP-15D	P-3.5

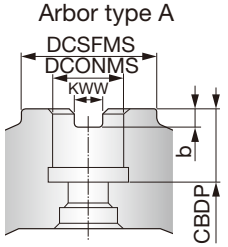
*Recommended clamping torque : CSPB-3.5 = 2.58 lbs·ft



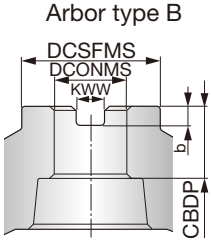
Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

Arbor type

Arbor type A



Arbor type B

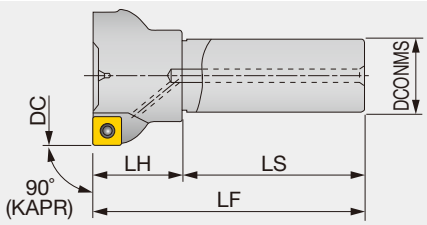


Reference pages: Inserts → H134, Standard cutting conditions → H135

EPW13

Square shoulder endmill, shank type, with screw clamp system, for SWMT/SWGT13 inserts

GAMP = +11.5°, GAMF = -13° ~ -10.5°



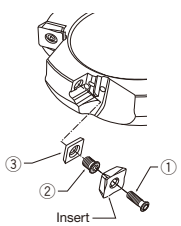
Right hand (R) shown.

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(kg)	Air hole	Insert
EPW13R032M32.0-02	10	32	2	32	80	35	115	0.6	With	SW*T1304...
EPW13R040M32.0-03	10	40	3	32	80	35	115	0.7	With	SW*T1304...
EPW13R050M32.0-03	10	50	3	32	80	40	120	0.9	With	SW*T1304...
EPW13R050M32.0-04	10	50	4	32	80	40	120	0.9	With	SW*T1304...
EPW13R063M32.0-04	10	63	4	32	80	40	120	1	With	SW*T1304...
EPW13R063M32.0-05	10	63	5	32	80	40	120	1	With	SW*T1304...
EPW13R080M32.0-04	10	80	4	32	80	40	120	1.3	With	SW*T1304...
EPW13R080M32.0-06	10	80	6	32	80	40	120	0.8	With	SW*T1304...

SPARE PARTS

Designation	①Clamping screw	Lubricant	②Shim screw	③Shim	Wrench for ①	Wrench for ②
EPW13R032, 040...	CSPB-3.5	M-1000	-	-	IP-15D	-
EPW13R050 - 080...	CSPB-3.5	M-1000	DTS5-3.5SS	FSSP1102	IP-15D	P-3.5

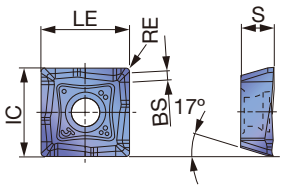
*Recommended clamping torque：CSPB-3.5 = 3.5 N·m



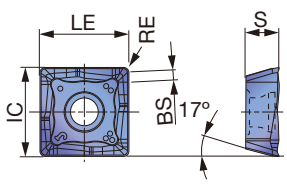
Reference pages: Inserts → H134, Standard cutting conditions → H135

INSERT

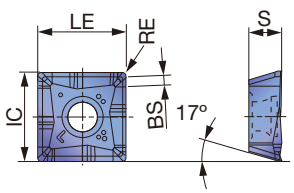
SWGT1304-MJ



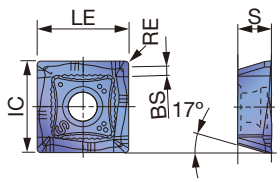
SWMT1304-MJ



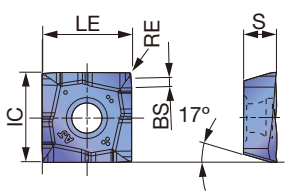
SWMT1304-ML



SWMT1304-MS



SWGT1304-AJ



P	Steel	☆			★			☆	☆		★			
M	Stainless		★	☆	★				☆					
K	Cast iron	★				☆	★							
N	Non-ferrous									★			★	
S	Superalloys	★	☆											
H	Hard materials													

★ : First choice
☆ : Second choice

Approach angle: 10°-20° | 45° | 70° | 85° | 88° | 90° | Others

Designation	RE	APMX	Coated								Cermet	Uncoated			LE	IC	S	BS
			AH120	AH130	AH140	AH3135	T1115	T1215	T3130	T3225	DS1100	NS740	KS05F							
SWGT1304PDPR-MJ	0.031	0.394	●	●								●				0.535	0.535	0.197	0.055
SWMT1304PDPR-MJ	0.031	0.394	●	●	●	●	●	●	●	●		●				0.535	0.535	0.197	0.055
SWMT1304PDER-ML	0.031	0.394	●			●										0.535	0.535	0.197	0.055
SWMT1304PDPR-MS	0.031	0.394		●	●											0.535	0.535	0.197	0.055
SWGT1304PDFR-AJ	-	0.394	●	●							●		●			0.535	0.535	0.197	0.063

● : Line up

STANDARD CUTTING CONDITIONS TPW / EPW13 type

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Roughing (Depth of cut: APMX ≥ 0.040")				Light cutting to finishing (Depth of cut: APMX ≥ 0.040")			
				Feed per tooth: *fz* (ip)				Feed per tooth: *fz* (ip)			
				MJ	ML	MS	AJ	MJ	ML	MS	AJ
P	Mild steels Low carbon steels < 180HB	AH3135 (First choice)	330 - 890	0.002 - 0.010	0.002 - 0.008	-	-	0.002 - 0.008	0.002 - 0.007	-	-
		T3225 (Wear resistance)	500 - 980	0.002 - 0.010	-	-	-	0.002 - 0.008	-	-	-
		AH130 (Fracture resistance)	260 - 590	0.002 - 0.010	-	0.002 - 0.008	-	0.002 - 0.008	-	0.002 - 0.007	-
		NS740 (Surface finish)	330 - 980	0.002 - 0.006	-	-	-	0.002 - 0.005	-	-	-
	Carbon steels Alloy steels < 300HB	AH3135 (First choice)	330 - 760	0.002 - 0.008	0.002 - 0.006	-	-	0.002 - 0.007	0.002 - 0.005	-	-
		T3225 (Wear resistance)	490 - 920	0.002 - 0.008	-	-	-	0.002 - 0.007	-	-	-
		AH130 (Fracture resistance)	260 - 490	0.002 - 0.008	-	-	-	0.002 - 0.007	-	-	-
		NS740 (Surface finish)	330 - 760	0.002 - 0.006	-	-	-	0.002 - 0.005	-	-	-
	Die steels < 30HRC	AH3135 (First choice)	330 - 590	0.002 - 0.006	0.002 - 0.005	-	-	0.002 - 0.005	0.002 - 0.004	-	-
		T3225 (Wear resistance)	330 - 590	0.002 - 0.006	-	-	-	0.002 - 0.005	-	-	-
M	Stainless steels < 50HB	AH130 / AH3135 (First choice)	260 - 650	0.002 - 0.008	-	0.002 - 0.007	-	0.002 - 0.007	-	0.002 - 0.006	-
		AH120 (Wear resistance)	490 - 820	0.002 - 0.008	0.002 - 0.006	-	-	0.002 - 0.007	0.002 - 0.005	-	-
K	Gray cast irons Ductile cast irons	T1215 (First choice)	330 - 820	0.002 - 0.008	-	-	-	0.002 - 0.007	-	-	-
		AH120 (Fracture resistance)	330 - 820	0.002 - 0.008	0.002 - 0.006	-	-	0.002 - 0.007	0.002 - 0.005	-	-
N	Aluminum alloys Si < 13 %	DS1100 / KS05F (First choice)	980 - 3300	-	-	-	0.002 - 0.008	-	-	-	0.002 - 0.008
	Aluminum alloys Si ≥ 13 %	DS1100 / KS05F (First choice)	260 - 980	-	-	-	0.002 - 0.008	-	-	-	0.002 - 0.008
	Copper alloys	DS1100 / KS05F (First choice)	660 - 1650	-	-	-	0.002 - 0.008	-	-	-	0.002 - 0.008

- When machining at large depth of cut or large cutting width, *Vc* and *fz* should be reduced.
- As a rule, dry machining (including air blow) is recommended. But, for excessive chip welding, such as when machining stainless steels, use a water soluble cutting fluid. In this case, use AH140 and set the cutting speed to *Vc* ≤ 328 sfm.
- When machining mild steel, carbon steel or alloy steel in wet conditions the T3130 is recommended. In this case, *Vc* and *fz* should be reduced.
- TPW13 type can not be used for ramping, plunging and drilling.

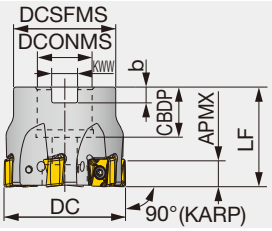
Cautionary notes in use

- In slotting or pocketing, when chips are likely to remain in the cutting zone, internal air supplying or air blow is recommended to prevent chip recutting.
- Use of inserts other than those specified, can result in poor cutting and cause damage to the cutter body. Therefore, specified inserts from the Tungaloy catalog must be used.
- Before changing or indexing the inserts, remove chips or other foreign matter from the insert, insert pocket and cutter body by using an air blast or cloth.
- The inserts should be clamped by using the wrench supplied with the TAC Mill.
- After a long period of use, the clamping screws and wrench may become deformed or damaged. These elements must be replaced as soon as possible.

DOREC
TPQ11,18

Square shoulder mill, with screw clamp system, for LQMU inserts

GAMP = +4° ~ +5°, GAMF = +13° ~ +15°



Right hand (R) shown.

Inch	APMX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert	Arbor type
TPQ11R200U0075A06	0.354	2.000	6	1.693	1.575	0.750	0.787	0.320	0.187	0.880	With	LQMU1107...	A
TPQ11R250U0075A07	0.354	2.500	7	1.693	1.575	0.750	0.787	0.320	0.187	1.320	With	LQMU1107...	A
TPQ11R300U0100A10	0.354	3.000	10	2.165	1.969	1.000	1.024	0.383	0.219	2.310	With	LQMU1107...	A
TPQ11R400U0150A12	0.354	4.000	12	3.150	1.969	1.500	1.496	0.633	0.375	4.410	With	LQMU1107...	B
TPQ18R200U0075A03	0.630	2.000	3	1.772	1.575	0.750	0.750	0.320	0.187	0.880	With	LQMU1808...	A
TPQ18R250U0100A04	0.630	2.500	4	2.165	1.969	1.000	1.024	0.383	0.219	1.760	With	LQMU1808...	A
TPQ18R300U0100A05	0.630	3.000	5	2.165	1.969	1.000	1.024	0.383	0.219	2.430	With	LQMU1808...	A
TPQ18R400U0150A06	0.630	4.000	6	3.150	1.969	1.500	1.496	0.633	0.375	3.750	With	LQMU1808...	B
TPQ18R500U0150A08	0.630	5.000	8	3.150	2.480	1.500	1.693	0.626	0.394	6.170	With	LQMU1808...	B
TPQ18R600U0200A09	0.630	6.000	9	3.937	2.480	2.000	1.811	0.758	0.437	9.040	Without	LQMU1808...	B

SPARE PARTS



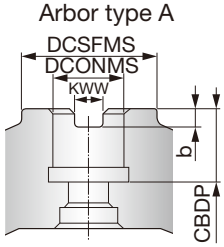

Designation	Clamping screw	Grip	Torx bit	Shell locking bolt (Optional parts)
TPQ11R200..., TPQ11R250..., TPQ18R200..., TPQ18R250...	CSTB-3.5L115	SW6-SD	BLDT10/S7	(C0.375X1.125H)
TPQ11R300..., TPQ18R300...	CSTB-3.5L115	SW6-SD	BLDT10/S7	(C0.500X1.375H)
TPQ11R400..., TPQ18R400..., TPQ18R500...,	CSTB-3.5L115	SW6-SD	BLDT10/S7	(TMBA-0.750H)
TPQ18R600U0200A09	CSTB-3.5L115	SW6-SD	BLDT10/S7	-

*Recommended clamping torque : CSTB-3.5L115 = 1.84 lbs·ft, SR14-591 = 3.69 lbs·ft

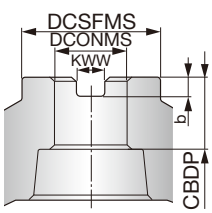
Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

Arbor type

Arbor type A



Arbor type B



Reference pages: Inserts → H137, Standard cutting conditions → H138

Square shoulder endmill, shank type, with screw clamp system, for LQMU inserts

GAMP = +4° ~ +5°, GAMF = +13° ~ +15°

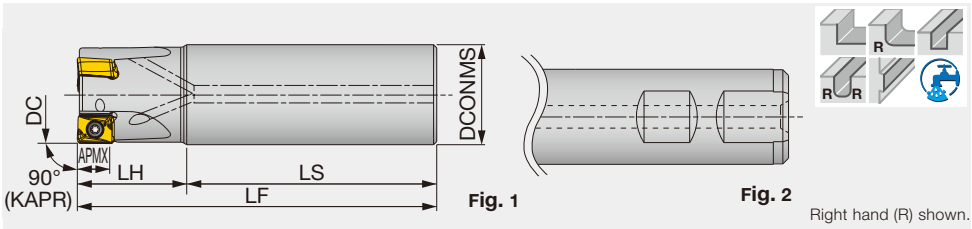


Fig. 1 Fig. 2

Right hand (R) shown.

Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert	Shank type
EPQ11R100U0100W02	0.354	1.000	2	1.000	2.280	1.220	3.500	0.750	With	LQMU1107...	Fig .2
EPQ11R125U0125W03	0.354	1.250	3	1.250	2.500	1.500	4.000	1.540	With	LQMU1107...	Fig .2
EPQ11R150U0125W04	0.354	1.500	4	1.250	2.250	1.750	4.000	1.650	With	LQMU1107...	Fig .2

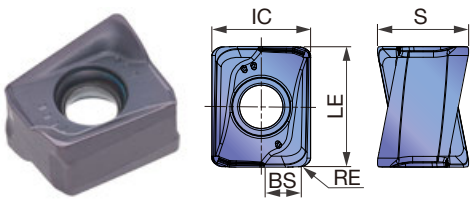
SPARE PARTS

Designation	Clamping screw	Grip 1	Grip 2	Torx bit	Wrench
EPQ11...	CSTB-3.5L115	SW6-SD	-	BLDT10/S7	T-10D

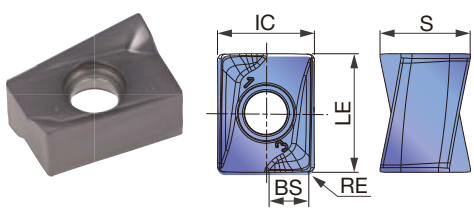
*Recommended clamping torque : CSTB-3.5L115 = 1.84 lbs·ft

INSERT

LQMU11-PXER-MJ (Suitable for ramping)



LQMU11/18-PNER-MJ



P	Steel	☆		★	★	
M	Stainless		★	☆	★	
K	Cast iron	★		☆		
N	Non-ferrous					
S	Superalloys	★		★	☆	
H	Hard materials					

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH120	Coated AH140	Coated AH725	Coated AH3135	LE	S	IC	BS
LQMU110704PNER-MJ	0.016	0.354	●	●	●		0.433	0.327	0.354	0.059
LQMU110708PNER-MJ	0.031	0.354	●	●	●		0.433	0.327	0.354	0.043
LQMU110708PXER-MJ	0.031	0.354	●			●	0.433	0.327	0.354	0.043
LQMU110716PNER-MJ	0.063	0.354	●	●	●		0.433	0.327	0.354	0.012
LQMU110720PNER-MJ	0.079	0.354	●				0.433	0.327	0.354	-
LQMU180804PNER-MJ	0.016	0.630	●	●	●		0.689	0.429	0.453	0.079
LQMU180808PNER-MJ	0.031	0.630	●	●	●		0.689	0.429	0.453	0.063
LQMU180816PNER-MJ	0.630	0.630	●	●	●		0.689	0.429	0.453	0.031
LQMU180824PNER-MJ	0.094	0.630	●	●	●		0.689	0.429	0.453	-

● : Line up

Reference pages: Standard cutting conditions → H138

STANDARD CUTTING CONDITIONS

LQMU11-PXER-MJ

ISO	Workpiece material		Hardness	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, etc.		- 200HB	AH3135	330 - 820	0.004 - 0.010*
P	Alloy steel 1055, etc.		- 300HB	AH3135	325 - 755	0.004 - 0.008*
P	Prehardened steel NAK80, PX5, etc.		30 - 40HRC	AH3135	325 - 750	0.004 - 0.008*
M	Stainless steel 304SS, etc.		-	AH3135	295 - 590	0.004 - 0.010*
K	Gray cast iron Class 25, etc.		150 - 250HB	AH120	455 - 820	0.004 - 0.010*
K	Ductile cast iron 60-40-18, etc.		150 - 250HB	AH120	360 - 655	0.004 - 0.010*
S	Titanium alloys Ti-6Al-4V, etc.		-	AH120	95 - 195	0.0032 - 0.008*
S	Superalloys Inconel 718, etc.		-	AH120	65 - 160	0.0024 - 0.004*
H	Hardened steel	SKD61, etc. X40CrMoV5-1, etc.	40 - 50HRC	AH120	145 - 225	0.004 - 0.006*
H		SKD11, etc. X153CrMoV12, etc.	50 - 60HRC	AH120	130 - 210	0.0024 - 0.004*

LQMU11/18-PNER-MJ

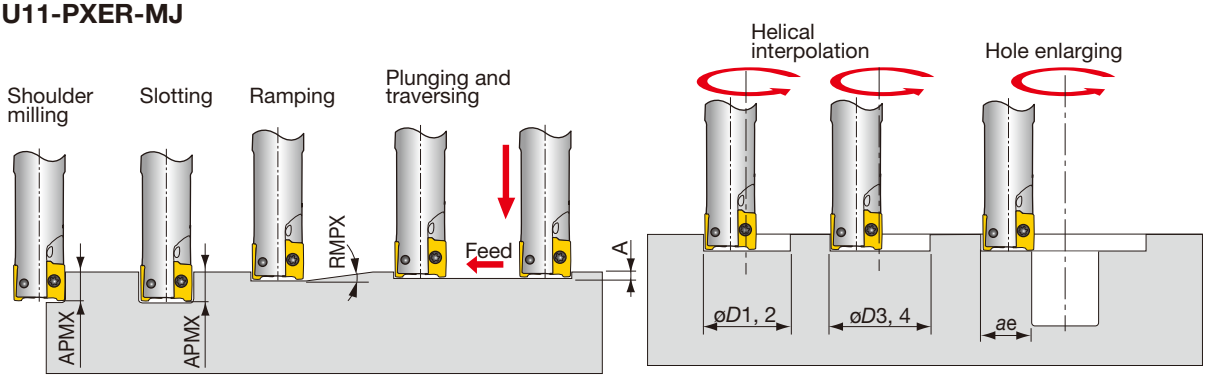
ISO	Workpiece material	Hardness HB	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1018, 1020, 1026, etc.	- 200	AH725	330 - 800	0.004 - 0.010*
P	High carbon steel 1045, 1055, etc.	200 - 300	AH725	330 - 750	0.004 - 0.008*
P	Alloyed steel 4140, 8620, etc.	150 - 300	AH725	330 - 750	0.004 - 0.008*
P	Tool steel H13, D2, etc.	- 300	AH725	330 - 600	0.004 - 0.008*
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	-	AH140	300 - 600	0.004 - 0.010*
K	Gray cast iron Class 25, Class 30, etc.	150 - 250	AH120	450 - 800	0.004 - 0.010*
K	Ductile cast iron 60-40-18, 60-55-06, etc.	150 - 250	AH120	450 - 800	0.004 - 0.010*
S	Heat-resistant alloy Inconel 718, etc.	-	AH725	65 - 160	0.003 - 0.008*

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

* When using LQMU11 inserts, see page **H139** for proper feed per tooth setting.
· For applications with poor chip evacuation, use air gun to remove chips from the machining area to avoid chip re-cutting and part damage.
· To machine cast surface with unstable cutting depths or interruptions, it is recommended to lower the feed rate (*fz*) to the lowest parameter in the recommended range.
· Rigidity of the machine and/or workpiece and the spindle power capability greatly influence the cutting conditions. For applications with large cutting width/depth and/or long tool overhang, start with a *Vc* and *fz* in the lower range of the recommended cutting parameters and monitor the machine stability.

APPLICATION RANGE

LQMU11-PXER-MJ



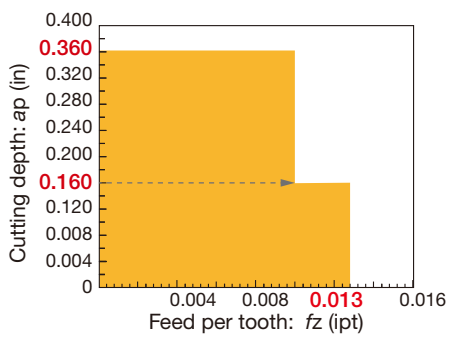
		Max. depth of cut	Max. ramping angle	Max. plunging	Min. machining	Max. machining				Max. cutting width in enlarging
Inch	DC	APMX	RMPX	A	øD1	øD2*	øD3	øD4*	RE	ae
EPQ11R100…	1.00	0.354	1.8°	0.023	1.41	1.87	1.96	1.94	0.031	0.96
EPQ11R125…	1.25	0.354	1.3°	0.023	1.91	2.37	2.46	2.44	0.031	1.21
TPQ11R150…	1.50	0.354	0.9°	0.023	2.41	2.87	2.96	2.94	0.031	1.46
TPQ11R200…	2.00	0.354	0.7°	0.023	3.41	3.87	3.96	3.94	0.031	1.96
TPQ11R250…	2.50	0.354	0.5°	0.023	4.41	4.87	4.96	4.94	0.031	2.46
TPQ11R300…	3.00	0.354	0.4°	0.023	5.41	5.87	5.96	5.94	0.031	2.96
TPQ11R400…	4.00	0.354	0.3°	0.023	7.41	7.87	7.96	7.94	0.031	3.96

*For a flat bottom

NOTE WHEN USING LQMU11 INSERTS

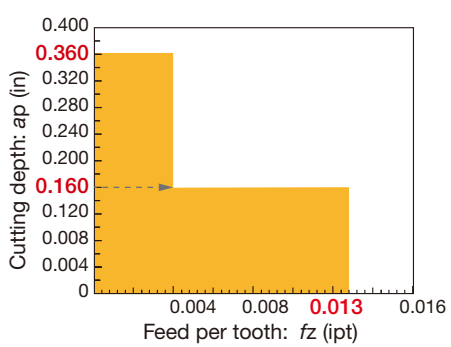
Maximum feed rate per tooth varies depending on the cutting depth and width.
Use proper feed rate as described below.
Use caution. Tool may damage if the parameters are not properly set.

Applicable feed rate (for ae < 10% of tool diameter)



Cutter : TPQ11R200U0075A06 (DC = 2.000", z = 6)
Insert : LQMU110708PXER-MJ
Grade : AH3135
Workpiece material : 1055 (200HB)
Cutting Speed : *Vc* = 660 sfm
Cutting width : *ae* = 0.200"
Coolant : Dry
Machine : Vertical M/C, 22 HP

Applicable feed rate (for ae > 10% of tool diameter)

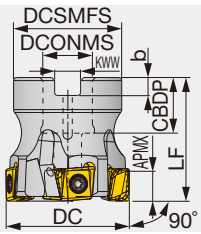


Cutter : TPQ11R200U0075A06 (DC = 2.000", z = 6)
Insert : LQMU110708PXER-MJ
Grade : AH3125
Workpiece material : 1055 (200HB)
Cutting Speed : *Vc* = 660 sfm
Cutting width : *ae* = 1.673"
Coolant : Dry
Machine : Vertical M/C, 22 HP

TECMILL
TPM11,16

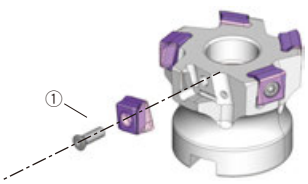
Square shoulder mill, with screw clamp system, for LMMU tangential clamp inserts

GAMP = +5° ~ +6°, GAMF = +9° ~ +13°



Right hand (R) shown.

Inch	APMX	DC	CICT	DCSMFS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert	Arbor type
TPM11R200U0075A05	0.381	2.000	5	1.770	1.570	0.750	0.750	0.320	0.240	0.660	With	LMMU1107...	A
TPM11R250U0075A06	0.381	2.500	6	1.770	1.570	0.750	0.750	0.320	0.240	1.100	With	LMMU1107...	A
TPM11R300U0100A06	0.381	3.000	6	2.170	1.970	1.000	0.750	0.390	0.240	1.980	With	LMMU1107...	A
TPM11R300U0100A08	0.381	3.000	8	2.170	1.970	1.000	0.750	0.390	0.240	2.200	With	LMMU1107...	A
TPM11R400U0150A08	0.381	4.000	8	3.070	1.970	1.500	1.060	0.630	0.310	3.090	With	LMMU1107...	B
TPM11R400U0150A11	0.381	4.000	11	3.070	1.970	1.500	1.060	0.630	0.310	3.310	With	LMMU1107...	B
TPM16R300U0100A05	0.594	3.000	5	2.170	1.970	1.000	0.750	0.390	0.240	2.200	With	LMMU1107...	A
TPM16R400U0150A06	0.594	4.000	6	3.070	1.970	1.500	1.060	0.630	0.310	3.530	With	LMMU1107...	B
TPM16R500U0150A07	0.594	5.000	7	3.070	2.480	1.500	1.060	0.630	0.390	6.610	With	LMMU1107...	B



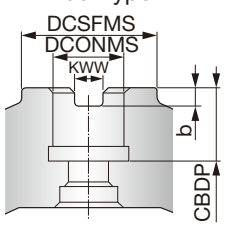
SPARE PARTS

Designation	①Clamping screw	Wrench	Torx bit	Shell locking bolt (Optional parts)
TPM11R200..., 250...	SM35-114-H0	T-15DF	-	(C0.375X1.125H)
TPM11R300...	SM35-114-H0	T-15DF	-	(C0.500X1.375H)
TPM11R400...	SM35-114-H0	T-15DF	-	(TMBA-0.750H)
TPM16R300...	CSTB-5L159	-	BT20S	(C0.500X1.375H)
TPM16R400..., 500...	CSTB-5L159	-	BT20S	(TMBA-0.750H)

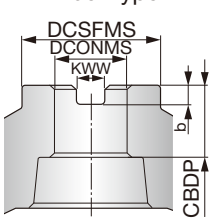
*Recommended clamping torque : CSTB-3.5L110 = 2.58 lbs·ft, CSTB-5L159 = 3.69 lbs·ft, SM35-114-H0 = 2.58 lbs·ft

Arbor type

Arbor type A



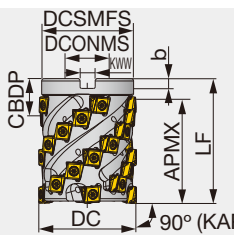
Arbor type B



TECMILL
TLM11

Square shoulder mill for roughing, with screw clamp system, for LMMU tangential clamp inserts

GAMP = +5° ~ +6°, GAMF = +9° ~ +13°



Inch	APMX	DC	ZEFP	CICT	DCSMFS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert
TLM11R200U0075A03	2.303	2.000	3	21	1.850	2.750	0.750	0.750	0.315	0.157	1.780	With	LMMU1107...
TLM11R250U0100A04	2.634	2.500	4	32	2.323	3.250	1.000	0.750	0.374	0.197	3.330	With	LMMU1107...

SPARE PARTS

Designation	Clamping screw	Wrench	Torx bit	Shell locking bolt
TLM11R200...	SM35-114-H0	T-15DF	BT15S	SD06-A2
TLM11R250...	SM35-114-H0	T-15DF	BT15S	SD08-52

Coolant needs to be supplied from the end of the arbor inlay. Coolant cannot be supplied from the set bolt.

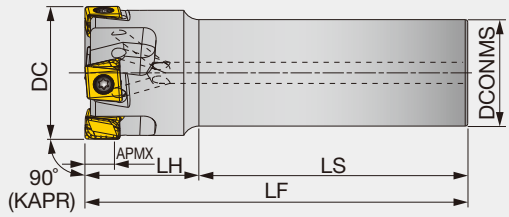
*Recommended clamping torque : SM35-114-H0 = 2.58 lbs·ft

Reference pages: Inserts → H141, Standard cutting conditions → H142

EPM11

Square shoulder endmill, shank type, with screw clamp system, for LMMU tangential clamp inserts

GAMP = +5° ~ +6°, GAMF = +9° ~ +13°



Right hand (R) shown.

Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Insert
EPM11R125U0125W03	0.381	1.250	3	1.250	2.250	1.750	4.000	0.66	With	LMMU1107...
EPM11R150U0125W04	0.381	1.500	4	1.250	2.250	1.750	4.000	1.10	With	LMMU1107...

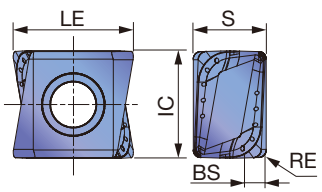
SPARE PARTS

Designation	Clamping screw	Wrench
EPM11...	SM35-114-H0	T-15DF

*Recommended clamping torque : SM35-114-H0 = 2.58 lbs·ft

INSERT

LMMU11/16-MJ



P	Steel	★	☆				☆
M	Stainless	★			☆		
K	Cast iron			★		☆	
N	Non-ferrous						
S	Superalloys	☆	★	☆			
H	Hard materials		★				

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated						LE	IC	S	BS
			AH3135	AH725	AH120	AH140	T1215	T3225				
LMMU110708PNER-MJ	0.031	0.381	●	●	●	●	●	●	0.460	0.413	0.280	0.079
LMMU110716PNER-MJ	0.063	0.381	●	●	●	●	●	●	0.453	0.413	0.280	0.047
LMMU110724PNER-MJ	0.094	0.381		●	●	●			0.445	0.413	0.280	0.014
LMMU110732PNER-MJ	0.126	0.381		●	●	●			0.437	0.413	0.280	-
LMMU160908PNER-MJ	0.031	0.594	●	●	●	●	●	●	0.681	0.630	0.375	0.094
LMMU160916PNER-MJ	0.063	0.594	●	●	●	●			0.673	0.630	0.375	0.063
LMMU160924PNER-MJ	0.094	0.594		●	●	●			0.665	0.630	0.375	0.031
LMMU160932PNER-MJ	0.126	0.594		●	●	●			0.661	0.630	0.375	-

● : Line up

Reference pages: Standard cutting conditions → H142

STANDARD CUTTING CONDITIONS

Bore, shank type EPM / TPM

ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, etc.		- 200 HB	First choice	AH3135	328 - 820	0.005 - 0.012
			- 200 HB	Wear resistance	T3225	492 - 1148	0.003 - 0.008
	Carbon steel and alloy steel 1055, 4140 etc.		- 300 HB	First choice	AH3135	328 - 755	0.004 - 0.010
			- 300 HB	Wear resistance	T3225	492 - 1148	0.003 - 0.008
	Prehardend steel NAK80, PX5, etc.		30 - 40 HRC	First choice	AH3135	328 - 755	0.004 - 0.010
			30 - 40 HRC	Wear resistance	T3225	394 - 1148	0.003 - 0.008
M	Stainless steel S30400, etc.		-	First choice	AH3135	295 - 591	0.004 - 0.010
K	Gray cast iron No.250B, etc.		150 - 250 HB	First choice	AH120	459 - 820	0.005 - 0.012
			150 - 250 HB	Wear resistance	T1215	394 - 1148	0.003 - 0.008
	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250 HB	First choice	AH120	361 - 656	0.005 - 0.012
			150 - 250 HB	Wear resistance	T1215	394 - 1148	0.003 - 0.008
S	Titanium alloys Ti-6Al-4V, etc.		-	First choice	AH725	98 - 197	0.003 - 0.008
	Superalloys Inconel718, etc.		-	First choice	AH725	66 - 164	0.002 - 0.004
H	Hardened steel	H13, etc.	40 - 50 HRC	First choice	AH725	148 - 230	0.003 - 0.006
		D2, etc.	50 - 60 HRC	First choice	AH725	131 - 213	0.002 - 0.004

Roughing type TLM

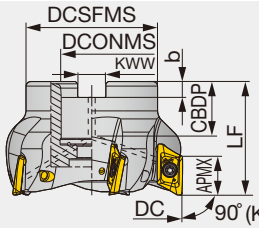
ISO	Workpiece materials		Hardness	Priority	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, etc.		- 200 HB	First choice	AH3135	328 - 820	0.004 - 0.010
			- 300 HB	Wear resistance	T3225	492 - 1148	0.004 - 0.008
	Carbon steel and alloy steel 1055, 4140 etc.		- 300 HB	First choice	AH3135	328 - 656	0.004 - 0.008
			- 300 HB	Wear resistance	T3225	492 - 984	0.004 - 0.008
	Prehardend steel NAK80, PX5, etc.		30 - 40 HRC	First choice	AH3135	328 - 656	0.004 - 0.008
			30 - 40 HRC	Wear resistance	T3225	394 - 984	0.004 - 0.008
M	Stainless steel S30400, etc.		-	First choice	AH3135	295 - 492	0.004 - 0.010
K	Gray cast iron No.250B, etc.		150 - 250 HB	First choice	AH120	328 - 820	0.004 - 0.010
			150 - 250 HB	Wear resistance	T1215	394 - 1148	0.004 - 0.010
	Ductile cast iron 60-40-18, 80-55-06, etc.		150 - 250 HB	First choice	AH120	328 - 656	0.004 - 0.010
			150 - 250 HB	Wear resistance	T1215	394 - 1148	0.004 - 0.010
S	Titanium alloys Ti-6Al-4V, etc.		-	First choice	AH725	66 - 164	0.002 - 0.006
	Superalloys Inconel718, etc.		-	First choice	AH725	66 - 131	0.002 - 0.004
H	Hardened steel	H13, etc.	40 - 50 HRC	First choice	AH725	98 - 197	0.003 - 0.006
		D2, etc.	50 - 60 HRC	First choice	AH725	82 - 180	0.002 - 0.004

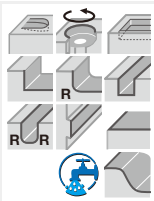
TUNG-ALUMILL

TPV16

90° shoulder mill for Aluminum machining, with screw clamp system, for XVCT16 inserts

GAMP = +10° ~ +11°, GAMF = -9° ~ -5.5°





Inch	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(lb)	Air hole	Max. RPM (min^{-1})	Insert
TPV16R150U0075A03	1.500	3	1.421	0.750	0.750	2.000	0.315	0.170	0.440	With	30,000	XVCT1605...
TPV16R200U0075A04	2.000	4	1.890	0.750	0.750	2.000	0.315	0.170	0.890	With	27,000	XVCT1605...
TPV16R250U0100A05	2.500	5	2.165	1.000	0.750	2.000	0.375	0.197	1.340	With	24,000	XVCT1605...
TPV16R300U0100A05	3.000	5	2.362	1.000	0.750	2.000	0.375	0.197	1.920	With	21,000	XVCT1605...
TPV16R400U0150A06	4.000	6	3.150	1.500	1.059	2.500	0.625	0.319	4.280	With	19,000	XVCT1605...
TPV16R500U0150A07	5.000	7	3.740	1.500	1.059	2.500	0.625	0.319	6.700	With	17,000	XVCT1605...

SPARE PARTS

Designation	Clamping screw	Grip	Torx bit	Shell locking bolt
TPV16R150U0075A03	TS40093I/HG	H-TBS	BT15S	TCS 9.525-35-I
TPV16R200U0075A04	TS40093I/HG	H-TBS	BT15S	SD06-46
TPV16R250..., 300...	TS40093I/HG	H-TBS	BT15S	SD08-47
TPV16R400..., 500...	TS40093I/HG	H-TBS	BT15S	SD12-82

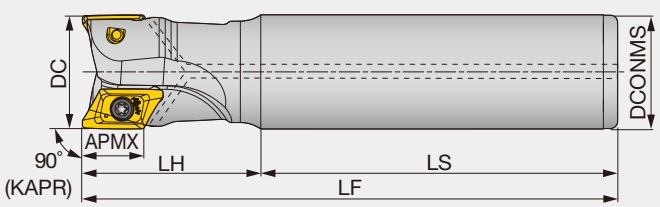
*Recommended clamping torque : TS40093I/HG = 3.32 lbs·ft

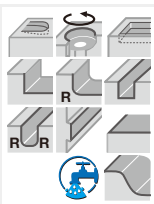
TUNG-ALUMILL

EPV16

90° shoulder endmill for Aluminum machining, shank type, with screw clamp system, for XVCT16 inserts

GAMP = +6° ~ +10°, GAMF = -12° ~ -9°





Inch	DC	CICT	DCONMS	LS	LH	LF	WT(lb)	Air hole	Max. RPM (min^{-1})	Insert
EPV16R100U0100W02	1.000	2	1.000	3.000	2.000	5.000	0.820	With	38,000	XVCT1605...
EPV16R100U0100W02L	1.000	2	1.000	4.000	3.000	7.000	1.170	With	38,000	XVCT1605...
EPV16R125U0125W02	1.250	2	1.250	4.000	2.000	6.000	1.690	With	34,000	XVCT1605...
EPV16R125U0125W02L	1.250	2	1.250	5.000	3.000	8.000	2.280	With	34,000	XVCT1605...
EPV16R125U0125W03	1.250	3	1.250	4.000	2.000	6.000	1.680	With	34,000	XVCT1605...
EPV16R125U0125W03L	1.250	3	1.250	5.000	3.000	8.000	2.270	With	34,000	XVCT1605...
EPV16R150U0125W03	1.500	3	1.250	5.000	2.000	7.000	2.080	With	30,000	XVCT1605...
EPV16R150U0125W03L	1.500	3	1.250	8.000	2.000	10.000	3.140	With	30,000	XVCT1605...

SPARE PARTS

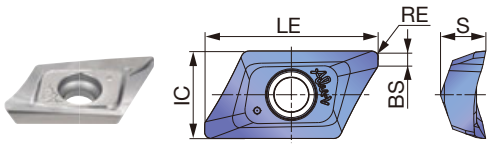
Designation	Clamping screw	Grip	Torx bit
EPV16R100...	TS40085I/HG	H-TBS	BT15S
EPV16R125,150...	TS40093I/HG	H-TBS	BT15S

*Recommended clamping torque : TS40085I/HG = 3.32 lbs·ft, TS40093I/HG = 3.3 lbs·ft

Reference pages: Inserts, Standard cutting conditions → H44

INSERT

XVCT16-AJ



P	Steel
M	Stainless
K	Cast iron
N	Non-ferrous
S	Superalloys
H	Hard materials

★ : First choice
☆ : Second choice

Designation	RE	APMX	Uncoated TH10	LE	IC	S	BS
XVCT160504R-AJ	0.016	0.630	●	0.874	0.442	0.232	0.051
XVCT160508R-AJ	0.031	0.630	●	0.874	0.442	0.232	0.039
XVCT160512R-AJ	0.047	0.610	●	0.854	0.442	0.228	0.039
XVCT160516R-AJ	0.063	0.591	●	0.835	0.442	0.226	0.039
XVCT160520R-AJ	0.079	0.571	●	0.819	0.442	0.226	0.039
XVCT160524R-AJ	0.094	0.551	●	0.800	0.442	0.224	0.039
XVCT160525R-AJ	0.098	0.551	●	0.800	0.442	0.224	0.039
XVCT160530R-AJ	0.118	0.551	●	0.768	0.442	0.220	0.039
XVCT160532R-AJ	0.126	0.551	●	0.756	0.442	0.220	0.039
XVCT160540R-AJ	0.157	0.512	●	0.724	0.442	0.217	0.047
XVCT160550R-AJ	0.197	0.512	●	0.724	0.442	0.213	0.016

* When using inserts with corner radius RE ≥ 0.126", standard cutter body has to be modified with "R". "R" = RE - 0.012".

● : Line up

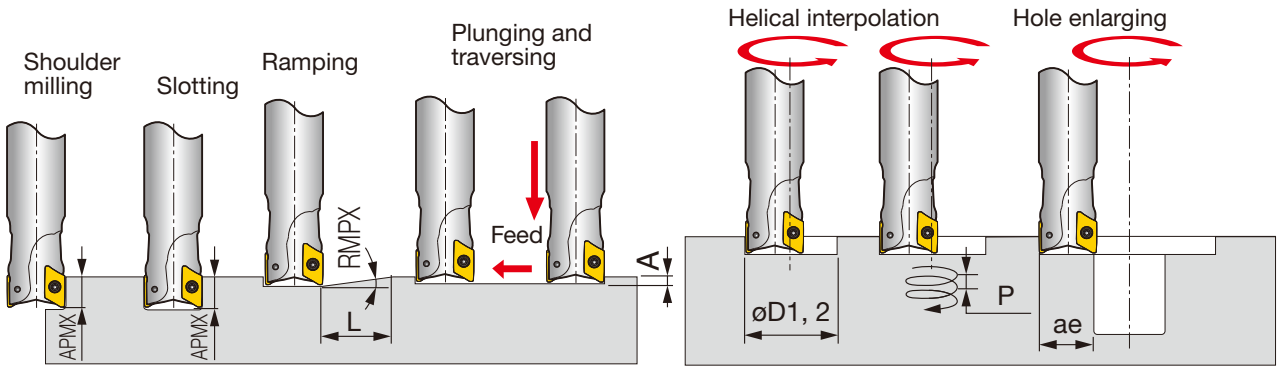
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness HB	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
N	Aluminum alloy	60	TH10	AJ	984 - 16404	0.006 - 0.014
		100	TH10	AJ	656 - 6562	0.004 - 0.010
	Cast Aluminum alloy Si ≤ 12%	75	TH10	AJ	656 - 6562	0.006 - 0.012
		90	TH10	AJ	656 - 4921	0.004 - 0.010
	Cast Aluminum alloy Si > 12%	130	TH10	AJ	656 - 3281	0.003 - 0.006
	Copper alloys Pb > 1%	110	TH10	AJ	656 - 2625	0.003 - 0.006
	Copper alloys	90	TH10	AJ	984 - 3281	0.004 - 0.006
		100	TH10	AJ	984 - 2625	0.004 - 0.006
	Duroplastics, fiber plastics	-	TH10	AJ	328 - 1640	0.004 - 0.006
	Hard rubber	-	TH10	AJ	328 - 984	0.004 - 0.006

Safety guidelines

1. Use only the original inserts, cutters and spare parts.
2. Insert pocket must be cleaned before clamping the insert.
3. Clamp torque of screw should be 3.32 lbf·ft.
4. For safety reasons, use a new screw when changing the insert.
5. Maximum RPM values are determined based on the burst test. Using RPM beyond maximum values may cause insert breakage, machine damage or personal injury.
6. XVCT insert has sharp cutting edges. Always wear gloves for protection from injury when handling.

APPLICATION RANGE

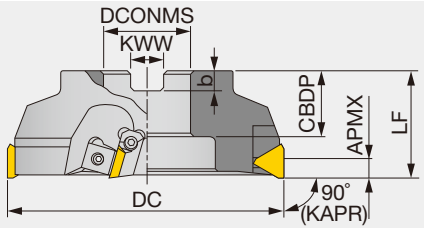


	Tool			Straight ramp down		Step down		Helical ramp down				Hole enlarging
		Corner radius	Max. depth of cut	Max. ramping angle	Min. length	Max. plunging depth	Min. machining	Min. pitch/rev	Max. machining	Max. pitch/rev	Max. width
Inch	DC	RE	APMX	RMPX	L	A	øD1	P	øD2	P	ae
EPV16R100...	1.000	0.016, 0.031	0.630	22°	1.570	0.166	1.150	0.173	1.970	0.535	0.886
EPV16R100...	1.000	0.047	0.610	22°	1.570	0.166	1.150	0.173	1.970	0.535	0.886
EPV16R100...	1.000	0.063	0.591	22°	1.500	0.146	1.150	0.173	1.970	0.520	0.886
EPV16R100...	1.000	0.079	0.571	22°	1.500	0.146	1.150	0.173	1.970	0.520	0.886
EPV16R100...	1.000	0.118, 0.126	0.551	21°	1.500	0.098	1.150	0.165	1.970	0.484	0.886
EPV16R100...	1.000	0.157, 0.197	0.512	18.5°	1.570	0.090	1.150	0.146	1.970	0.484	0.886
EPV16R125...	1.250	0.016, 0.031	0.630	16.5°	2.130	0.158	1.690	0.346	2.520	0.535	1.134
EPV16R125...	1.250	0.047	0.610	16.5°	2.130	0.158	1.690	0.346	2.520	0.535	1.134
EPV16R125...	1.250	0.063	0.591	16°	2.130	0.138	1.690	0.335	2.520	0.520	1.134
EPV16R125...	1.250	0.079	0.571	16°	2.130	0.138	1.690	0.335	2.520	0.520	1.134
EPV16R125...	1.250	0.118, 0.126	0.551	15°	2.130	0.118	1.700	0.311	2.520	0.484	1.134
EPV16R125...	1.250	0.157, 0.197	0.512	13.5°	2.200	0.098	1.700	0.280	2.520	0.484	1.134
T/EPV16R150...	1.500	0.016, 0.031	0.630	11.5°	3.110	0.158	2.330	0.409	3.150	0.535	1.417
T/EPV16R150...	1.500	0.047	0.610	11.5°	3.110	0.158	2.330	0.409	3.150	0.535	1.417
T/EPV16R150...	1.500	0.063	0.591	11°	3.150	0.138	2.330	0.390	3.150	0.520	1.417
T/EPV16R150...	1.500	0.079	0.571	11°	3.150	0.138	2.330	0.390	3.150	0.520	1.417
T/EPV16R150...	1.500	0.118, 0.126	0.551	10°	3.230	0.118	2.330	0.354	3.150	0.484	1.417
T/EPV16R150...	1.500	0.157, 0.197	0.512	8.5°	3.540	0.098	2.330	0.299	3.150	0.484	1.417
TPV16R200...	2.000	0.016, 0.031	0.630	9.5°	3.780	0.158	3.110	0.512	3.940	0.535	1.772
TPV16R200...	2.000	0.047	0.610	9.5°	3.780	0.158	3.110	0.512	3.940	0.535	1.772
TPV16R200...	2.000	0.063	0.591	9°	3.860	0.138	3.110	0.484	3.940	0.520	1.772
TPV16R200...	2.000	0.079	0.571	9°	3.860	0.138	3.110	0.484	3.940	0.520	1.772
TPV16R200...	2.000	0.118, 0.126	0.551	8°	4.060	0.118	3.110	0.429	3.940	0.484	1.772
TPV16R200...	2.000	0.157, 0.197	0.512	7°	4.330	0.098	3.110	0.374	3.940	0.484	1.772
TPV16R250...	2.500	0.016, 0.031	0.630	7°	5.120	0.158	4.130	0.535	4.960	0.535	2.232
TPV16R250...	2.500	0.047	0.610	7°	5.120	0.158	4.130	0.535	4.960	0.535	2.232
TPV16R250...	2.500	0.063	0.591	6.5°	5.350	0.138	4.130	0.504	4.960	0.520	2.232
TPV16R250...	2.500	0.079	0.571	6.5°	5.350	0.138	4.130	0.504	4.960	0.520	2.232
TPV16R250...	2.500	0.118, 0.126	0.551	6°	5.350	0.118	4.140	0.465	4.960	0.484	2.232
TPV16R250...	2.500	0.157, 0.197	0.512	5.5°	5.510	0.098	4.140	0.425	4.960	0.484	2.232
TPV16R300...	3.000	0.016, 0.031	0.630	5°	7.200	0.158	5.470	0.535	6.300	0.535	2.835
TPV16R300...	3.000	0.047	0.610	5°	7.200	0.158	5.470	0.535	6.300	0.535	2.835
TPV16R300...	3.000	0.063	0.591	4.5°	7.760	0.138	5.470	0.488	6.300	0.520	2.835
TPV16R300...	3.000	0.079	0.571	4.5°	7.760	0.138	5.470	0.488	6.300	0.520	2.835
TPV16R300...	3.000	0.118, 0.126	0.551	4°	8.150	0.118	5.480	0.433	6.300	0.484	2.835
TPV16R300...	3.000	0.157, 0.197	0.512	3.5°	8.700	0.098	5.480	0.378	6.300	0.484	2.835
TPV16R400...	4.000	0.016, 0.031	0.630	3.5°	10.310	0.158	7.040	0.508	7.870	0.535	3.543
TPV16R400...	4.000	0.047	0.610	3.5°	10.310	0.158	7.040	0.508	7.870	0.535	3.543
TPV16R400...	4.000	0.063	0.591	3°	11.650	0.138	7.040	0.437	7.870	0.520	3.543
TPV16R400...	4.000	0.079	0.571	3°	11.650	0.138	7.040	0.437	7.870	0.520	3.543
TPV16R400...	4.000	0.118, 0.126	0.551	2.5°	13.070	0.118	7.050	0.362	7.870	0.484	3.543
TPV16R400...	4.000	0.157, 0.197	0.512	2.5°	12.170	0.098	7.050	0.362	7.870	0.457	3.543
TPV16R500...	5.000	0.016, 0.031	0.630	2.5°	14.450	0.158	9.020	0.476	9.840	0.535	4.429
TPV16R500...	5.000	0.047	0.610	2.5°	14.450	0.158	9.020	0.476	9.840	0.535	4.429
TPV16R500...	5.000	0.063	0.591	2°	17.480	0.138	9.020	0.382	9.840	0.520	4.429
TPV16R500...	5.000	0.079	0.571	2°	17.480	0.138	9.020	0.382	9.840	0.520	4.429
TPV16R500...	5.000	0.118, 0.126	0.551	1.5°	21.810	0.118	9.020	0.287	9.840	0.343	4.429
TPV16R500...	5.000	0.157, 0.197	0.512	1.5°	20.310	0.098	9.020	0.287	9.840	0.343	4.429

TSE4000RIAU

Square shoulder mill, with wedge clamp system, for positive triangular inserts

GAMP = +17°, GAMF = +5°



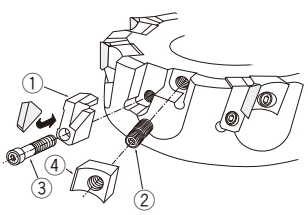
Right hand (R) shown.

Inch	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(lb)
TSE4003RIAU	0.394	3.150	4	1.970	1.000	1.020	0.375	0.236	2.20
TSE4004RIAU	0.394	4.000	6	2.480	1.500	1.260	0.500	0.394	4.19
TSE4005RIAU	0.394	4.920	6	2.480	1.500	1.500	0.625	0.394	6.39
TSE4006RIAU	0.394	6.300	8	2.480	2.000	1.500	0.750	0.433	10.80
TSE4008RIA	0.394	7.870	10	2.480	2.500	1.500	1.000	0.551	16.31
TSE4010RIA	0.394	9.840	12	2.480	2.500	1.500	1.000	0.551	30.42
TSE4012RIA	0.394	12.400	14	2.480	2.500	1.500	1.000	0.551	48.72

SPARE PARTS

Designation	①Locator	②Wedge	③Wedge fixing screw	④Locator fixing screw	Wrench	Shell locking bolt (optional parts)
TSE4003RIAU	LE403R	WF330N	FDS-8S	CM4X0.7X14	TP-4	(C0.500X1.375H)
TSE4004RIAU	LE403R	WF330N	FDS-8S	CM4X0.7X14	TP-4	(TMBA-0.750H)
TSE4005RIAU	LE405R	WF500R	FDS-8S	CM4X0.7X14	TP-4	(TMBA-0.750H)
TSE4006... - 4012...	LE405R	WF500R	FDS-8S	CM4X0.7X14	TP-4	-

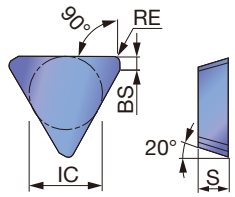
*Recommended clamping torque : FDS-8SS/FDS-8S = 5.9 lbs･ft



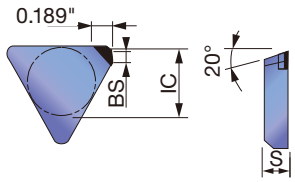
Reference pages: Inserts, Standard cutting conditions → H147

INSERT

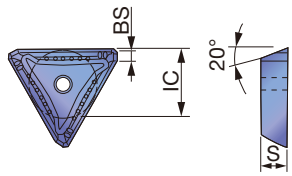
TECN/TEEN 43Z



TECN43ZFR-DIA



TEKR22-MS



		AH120	AH130	AH140	AH330	GH330	T1115	T3130	AH3135	T1215	T3225	NS740	N308	UX30	TH10	DX140
P	Steel	☆		☆	☆	☆		☆	★		☆	★	☆		☆	
M	Stainless	☆	★	☆					★		☆					
K	Cast iron	★					☆			★					☆	
N	Non-ferrous														★	★
S	Superalloys	☆	☆													
H	Hard materials															

★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated										Cermet		Uncoated		PCD		IC	S	BS
			AH120	AH130	AH140	AH330	GH330	T1115	T3130	AH3135	T1215	T3225	NS740	N308	UX30	TH10	DX140				
TECN43ZFR	C0.020	0.394														●			0.500	0.187	0.079
TECN43ZTR	0.039	0.394											●	●	●				0.500	0.187	0.052
TEEN43ZFR	C0.020	0.394														●			0.500	0.187	0.079
TEEN43ZTR	0.039	0.394	●	●	●	●	●	●	●	●	●	●	●	●	●				0.500	0.187	0.052
TECN43ZFR-DIA	-	0.138															●		0.500	0.187	0.079
TEKR2204PEPR-MS	-	0.394			●														0.500	0.187	0.071

T-DIA is a diamond-based ultra high pressure sintered body. Available in 1-corner type.

● : Line up

DX140: 1 piece per package

STANDARD CUTTING CONDITIONS

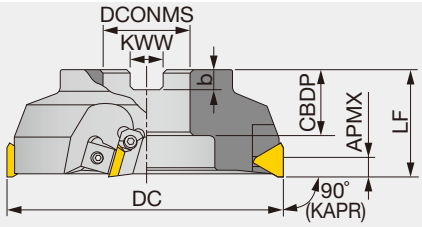
ISO	Workpiece material	Grades	Roughing (Depth of cut: > 0.059")		Finishing (Depth of cut: 0.012 ~ 0.028")	
			Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Mild steels Unhardened steels < 180 HB	AH3135	98 ~ 230	0.004 ~ 0.008	490 ~ 820	0.004 ~ 0.009
		T3225	98 ~ 984	0.004 ~ 0.009	180 ~ 984	0.004 ~ 0.010
		NS740	98 ~ 660	0.004 ~ 0.007	490 ~ 820	0.004 ~ 0.008
	Carbon steels Alloy steels < 300 HB	AH3135	330 ~ 660	0.004 ~ 0.007	98 ~ 755	0.004 ~ 0.008
		T3225	98 ~ 919	0.004 ~ 0.008	591 ~ 919	0.004 ~ 0.009
		NS740	330 ~ 490	0.004 ~ 0.006	490 ~ 660	0.004 ~ 0.007
	Die steels < 30 HRC	T3225	330 ~ 820	0.004 ~ 0.006	330 ~ 820	0.004 ~ 0.008
		AH3135	330 ~ 490	0.004 ~ 0.006	330 ~ 490	0.004~ 0.008
M	Stainless steels < 250 HB	AH3135	260 ~ 590	0.004 ~ 0.008	330 ~ 660	0.004 ~ 0.010
		T3225	490 ~ 660	0.004 ~ 0.007	660 ~ 820	0.004 ~ 0.010
K	Cast irons Ductile cast iron	T1215	330 ~ 820	0.004 ~ 0.008	330 ~ 820	0.004 ~ 0.010
		AH120	330 ~ 660	0.004 ~ 0.008	330 ~ 660	0.004 ~ 0.010
N	Aluminum alloys Si < 13%	TH10	660 ~ 3281	0.002 ~ 0.010	1150 ~ 3281	0.004 ~ 0.010
		DX140	660 ~ 3281	0.002 ~ 0.006	1150 ~ 3281	0.004 ~ 0.008
	Copper alloys	TH10	660 ~ 1640	0.004 ~ 0.006	660 ~ 1640	0.004 ~ 0.008
S	Titanium alloys Ti-6Al-4V, etc.	AH130	66 ~ 217	0.002 ~ 0.006	131 ~ 217	0.002 ~ 0.006
	Heat-resistant alloys Inconel 718, etc.	AH120	66 ~ 131	0.002 ~ 0.004	66 ~ 131	0.002 ~ 0.004

Dry cutting is recommended except for Aluminum alloys
Maximum depth of cut for DX140 TECN43ZFR-DIA is 0.138".

TSP4000RIA-U

Square shoulder mill, with wedge clamp system, for positive triangular inserts

GAMP = +5°, GAMF = 0°



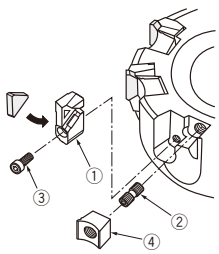
Right hand (R) shown.

Inch	APMX	DC	CICT	LF	DCONMS	CBDP	KWW	b	WT(lb)	Insert
TSP4003RIA-U	0.394	3.150	4	1.970	1.000	1.020	0.375	0.236	2.43	TP*N43 / TP*R...
TSP4004RIA-U	0.394	4.000	6	2.480	1.500	1.260	0.625	0.394	4.41	TP*N43 / TP*R...
TSP4005RIA-U	0.394	4.920	6	2.480	1.500	1.500	0.625	0.394	6.83	TP*N43 / TP*R...
TSP4006RIA-U	0.394	6.300	8	2.480	2.000	1.500	0.750	0.433	11.24	TP*N43 / TP*R...
TSP4008RIA-U	0.394	7.870	10	2.480	2.500	1.500	1.000	0.551	16.98	TP*N43 / TP*R...
TSP4010RIA	0.394	9.840	12	2.480	2.500	1.500	1.000	0.551	31.08	TP*N43 / TP*R...
TSP4012RIA	0.394	12.400	14	2.480	2.500	1.500	1.000	0.551	49.82	TP*N43 / TP*R...

SPARE PARTS

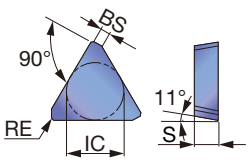
Designation	①Locator	②Wedge	③Wedge fixing screw	④Locator fixing screw	Wrench	Shell locking bolt (Optional parts)
TSP4003RIA-U	LP403R	WF330N	FDS-8S	CM4X0.7X14	TP-4	(C0.500X1.375H)
TSP4004RIA-U	LP403R	WF330N	FDS-8S	CM4X0.7X14	TP-4	(TMBA-0.750H)
TSP4005RIA-U	LP405R	WF500R	FDS-8S	CM4X0.7X14	TP-4	(TMBA-0.750H)
TSP4006... - 4012...	LP405R	WF500R	FDS-8S	CM4X0.7X14	TP-4	-

*Recommended clamping torque : FDS-8S = 5.9 lbs·ft



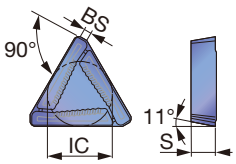
INSERT

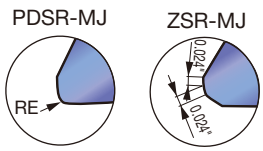
TPCN/TPEN/TPKN 43Z



Right hand (R) shown.

TPKR/TPMR-MJ





Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

		Coated						Cermet		Uncoated					
		AH120	AH130	AH140	GH330	T1115	T3130	NS740	N308	UX30	TH10				
P	Steel	★			☆		★	★	☆		☆				
M	Stainless		★	★											
K	Cast iron	★				★									
N	Non-ferrous										★				
S	Superalloys	★	☆												
H	Hard materials														

★ : First choice
☆ : Second choice

Designation	RE	APMX	IC	LE	S	BS
TPCN43ZFR	C0.020	0.394	0.500	-	0.187	0.079
TPCN43ZTR	C0.020	0.394	0.500	-	0.187	0.079
TPEN43ZTR	C0.020	0.394	0.500	-	0.187	0.079
TPEN43ZTRCR	0.039	0.394	0.500	-	0.187	0.079
TPKN43ZFR	C0.020	0.394	0.500	-	0.187	0.079
TPKN43ZFL	C0.020	0.394	0.500	-	0.187	0.079
TPKN43ZTR	C0.020	0.394	0.500	-	0.187	0.079
TPKR43ZSR-MJ	-	0.394	0.500	-	0.187	0.059
TPMR2204PDSR-MJ	0.031	0.394	0.500	-	0.187	0.047

● : Line up

Reference pages: Standard cutting conditions → H149

STANDARD CUTTING CONDITIONS

TSP4000RIA-U (When finishing insert is not in use)

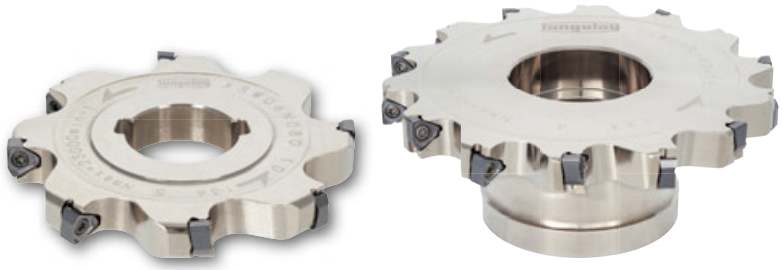
ISO	Workpiece material	Grades	Roughing (Depth of cut: > 0.059")		Finishing (Depth of cut: 0.012" ~ 0.028")	
			Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Mild steels Unhardened steels < 180 HB	AH120 · GH330	330 ~ 755	0.004 ~ 0.010	430 ~ 820	0.004 ~ 0.012
		T3130	430 ~ 990	0.004 ~ 0.011	590 ~ 990	0.004 ~ 0.012
		UX30	330 ~ 590	0.004 ~ 0.010	430 ~ 660	0.004 ~ 0.012
		NS740 · N308	430 ~ 660	0.004 ~ 0.008	490 ~ 820	0.004 ~ 0.010
	Carbon steels Alloy steels < 300 HB	AH120 · GH330	330 ~ 590	0.004 ~ 0.008	490 ~ 660	0.004~ 0.011
		T3130	430 ~ 590	0.004 ~ 0.010	590 ~ 919	0.004 ~ 0.011
		UX30	260 ~ 430	0.004 ~ 0.008	330 ~ 490	0.004~ 0.011
		NS740 · N308	330 ~ 490	0.004 ~ 0.007	490 ~ 660	0.004 ~ 0.009
	Die steels < 30 HRC	T3130 · AH120 · GH330	330 ~ 490	0.004 ~ 0.007	330 ~ 490	0.004 ~ 0.008
		UX30	260 ~ 430	0.004 ~ 0.007	260 ~ 430	0.004 ~ 0.008
M	Stainless steels < 250 HB	AH130 · AH140	490 ~ 660	0.006 ~ 0.009	660 ~ 755	0.15 ~ 0.010
		AH120	490 ~ 755	0.006 ~ 0.008	660 ~ 820	0.15 ~ 0.009
K	Cast irons Ductile cast iron	T1115	330 ~ 660	0.004 ~ 0.008	330 ~ 660	0.004 ~ 0.010
		TH10 · UX30	260 ~ 430	0.004 ~ 0.008	260 ~ 430	0.004 ~ 0.010
S	Titanium alloys	AH130	66 ~ 217	0.002~ 0.006	66 ~ 217	0.002 ~ 0.006
	Heat-resistant alloys	AH120	66 ~ 131	0.002 ~ 0.004	66 ~ 131	0.002 ~ 0.004

MJ INSERT TPM/KR

ISO	Workpiece material	Roughing (Depth of cut: > 0.059")	
		Feed per tooth *fz* (ipt)	
		TPKR43ZSR-MJ	TPMR2204PDSR-MJ
P	Mild steels·Unhardened steels < 180 HB	0.004 ~ 0.009	0.004 ~ 0.016
	Carbon steels · Alloy steels < 300 HB	0.004 ~ 0.008	0.004 ~ 0.014
	Die steels < 30 HRC	0.004 ~ 0.007	0.004 ~ 0.010

Please refer to the above table for cutting speeds and finishing conditions.

TUNGUSLOT NIVERSAL

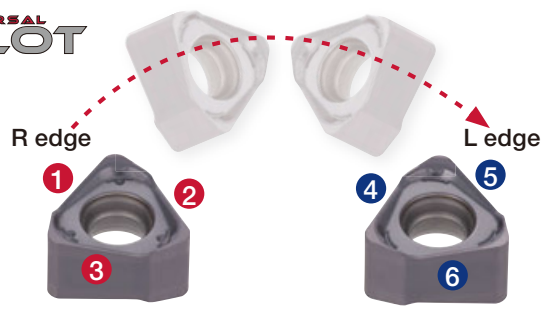


High economy with 6-corner wiper insert
Machining stability with the cutter design for optimum chip evacuation

High economy with 6-corner insert

6-corner insert provides economical advantage. Self-wiper edge delivers good surface quality.

TUNGUSLOT NIVERSAL
6 corners
with wiper



ASW / TSW
CW = 0.394", 0.472", 0.551", 0.630"

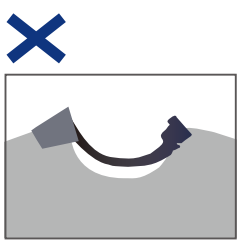
Excellent chip evacuation even in deep slot milling - optimum pocket design

TUNGUSLOT NIVERSAL

OK

Optimum chipbreaker and big gullets create compact chip formation and smooth evacuation!

Competitor



Unformed chip and narrow gullet cause chip packing.

TUNGUSLOT NIVERSAL ASW / TSW type

P **Steel** 1055 (200HB)
Edge width: CW = 0.394", Dry
Corner radius: RE = 0.031"

Cutter	Depth of slot: *ae* (in)		
	0.394"	0.787"	1.181"
TUNGUSLOT NIVERSAL	O	O	O
Competitor A	O	O	×

Chips at *ae* = 1.181" depth

TUNGUSLOT NIVERSAL

Competitor A

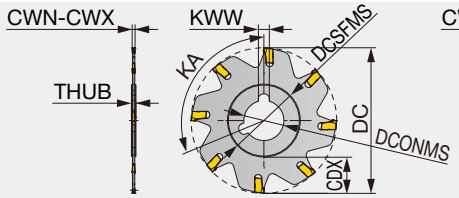
Packed chips

Chips are packed because of bad chip control and flow.

Reference pages: H157 - H158

S/ASG

Side cutter for thin slitting and cutting off



Metric	CWN	CWX	DC	CICT	Seat size	CDX	DCONMS	THUB	DCSFMS	DBC	KA	KWW	SS	SS	Drive flange	Key	Insert
SSG01R063-E1.6	1.5	1.79	63	6	1	14	10	2.4	32	22	-	3	SW25-32	SW1.00-32	-	K	SSM1*N/ SSS1*N
ASG01N076-1.6	1.5	1.79	76.2	8	1	14	25.4	2.4	39	-	112.5	6.35	-	-	-	A	SSM1*N/ SSS1*N
ASG01N080-E1.6	1.5	1.79	80	8	1	16	22	2.4	39	-	112.5	6	-	-	-	A	SSM1*N/ SSS1*N
ASG01N100-1.6	1.5	1.79	100	10	1	30	25.4	2.4	39	-	90	6.35	-	-	-	A	SSM1*N/ SSS1*N
ASG01N100-E1.6	1.5	1.79	100	10	1	30	22	2.4	39	-	90	6	-	-	-	A	SSM1*N/ SSS1*N
ASG01N125-1.6(4)	1.5	1.79	125	12	1	30	31.75	2.4	64	-	75	7.92	-	-	-	A	SSM1*N/ SSS1*N
ASG01N125-E1.6(4)	1.5	1.79	125	12	1	30	27	2.4	64	-	75	7	-	-	-	A	SSM1*N/ SSS1*N
SSG02R063-E2	1.8	2.69	63	6	2	15	10	2.4	32	22	-	3	SW25-32	SW1.00-32	-	K	SSM2*N/ SSS2*N
ASG02N076-2	1.8	2.69	76.2	8	2	17	25.4	2.4	39	-	112.5	6.35	-	-	-	A	SSM2*N/ SSS2*N
ASG02N080-E2	1.8	2.69	80	8	2	20	22	2.4	39	-	112.5	6	-	-	-	A	SSM2*N/ SSS2*N
ASG02N100-2	1.8	2.69	100	10	2	30	25.4	2.4	39	-	90	6.35	-	-	-	A	SSM2*N/ SSS2*N
ASG02N100-E2	1.8	2.69	100	10	2	30	22	2.4	39	-	90	6	-	-	-	A	SSM2*N/ SSS2*N
ASG02N125-2(4)	1.8	2.69	125	12	2	32	31.75	2.4	60	-	75	7.92	-	-	-	A	SSM2*N/ SSS2*N
ASG02N125-E2(4)	1.8	2.69	125	12	2	32	27	2.4	60	-	75	7	-	-	-	A	SSM2*N/ SSS2*N
SSG03R063-E3	1.8	2.69	63	5	3	15	10	2.4	32	22	-	3	SW25-32	SW1.00-32	-	K	SSM3*N/ SSS3*N
SSG03R080-3	2.7	3.53	80	6	3	16	25.4	2.4	46	36	-	6.35	SW32-25.4-46-J	SW1.25-46	R1.00-46	K	SSM3*N/ SSS3*N
SSG03R080-E3	2.7	3.53	80	6	3	19(2)	22	2.4	40(1)	32	-	6	SW32-40	-	R22-46	K	SSM3*N/ SSS3*N
SSG03R100-3	2.7	3.53	100	6	3	26	25.4	2.4	46	36	-	6.35	SW32-25.4-46-J	SW1.25-46	R1.00-46	K	SSM3*N/ SSS3*N
SSG03R100-E3	2.7	3.53	100	6	3	29(3)	22	2.4	40(1)	32	-	6	SW32-40	-	R22-46	K	SSM3*N/ SSS3*N
SSG03R125-3(4)	2.7	3.53	125	8	3	34	31.75	2.4	55	45	-	7.92	-	-	R1.25-55	K	SSM3*N/ SSS3*N
SSG03R125-E3(4)	2.7	3.53	125	8	3	34	32	2.4	55	45	-	8	S32-55	-	R32-55	K	SSM3*N/ SSS3*N
SSG04R063-E4	3.54	4.52	63	5	4	15	10	3.2	32	22	-	3	SW25-32	SW1.00-32	-	K	SSM4*N/ SSS4*N
SSG04R080-4	3.54	4.52	80	6	4	16	25.4	3.2	46	36	-	6.35	SW32-25.4-46-J	SW1.25-46	R1.00-46	K	SSM4*N/ SSS4*N
SSG04R080-E4	3.54	4.52	80	6	4	19(2)	22	3.2	40(1)	32	-	6	SW32-40	-	R22-46	K	SSM4*N/ SSS4*N
SSG04R100-4	3.54	4.52	100	6	4	26	25.4	3.2	46	36	-	6.35	SW32-25.4-46-J	SW1.25-46	R1.00-46	K	SSM4*N/ SSS4*N
SSG04R100-E4	3.54	4.52	100	6	4	29(3)	22	3.2	40(1)	32	-	6	SW32-40	-	R22-46	K	SSM4*N/ SSS4*N
SSG04R125-4(4)	3.54	4.52	125	8	4	34	31.75	3.2	55	45	-	7.92	-	-	R1.25-55	K	SSM4*N/ SSS4*N
SSG04R125-E4(4)	3.54	4.52	125	8	4	34	32	3.2	55	45	-	8	S32-55	-	R32-55	K	SSM4*N/ SSS4*N

Tolerance of slot width*

±0.1

*Just for reference

(1) When using a drive flange, DCSFMS = 46 mm
(2) When using a drive flange, CDX = 16 mm
(3) When using a drive flange, CDX = 26 mm

(4) Cutters ø125, only one keyway.
Note: Since a single insert cuts the full groove width, use an insert with a width that is equal to the groove width in the application.
The CWN and the CWX are the min and max width of the groove respectively possible using the exact width of the insert. the cutter body is not adjustable.

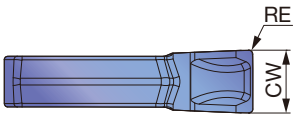
SPARE PARTS

Designation	Grip	Extractor
SSG01/02...	ESG0.5	-
ASG01/02...	ESG0.5	-
SSG03/04...	-	ESG1

Reference pages: Inserts, Standard cutting conditions → H152

INSERT

SSM



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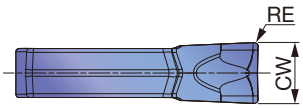


P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	RE	Coated	CW±0.04
		GH130	
SSM22N	0.008	●	0.087
SSM31N	0.008	●	0.122
SSM41N	0.010	●	0.161
SSS16N	0.006	●	0.063
SSS22N	0.008	●	0.087
SSS31N	0.008	●	0.122
SSS41N	0.010	●	0.161

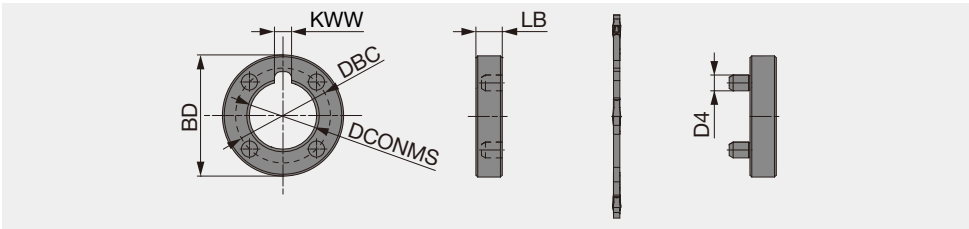
● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness (HB)	Insert	Cutting speed *Vc* (sfm)	Chip thickness t (in)
P	Low carbon steel 1015, etc.	- 200	SSM...	490 - 760	0.0020 - 0.006
	High carbon steel 1045, etc.	200 - 300	SSM...	330 - 560	0.0016 - 0.005
	Alloy steels 4140, etc.	150 - 300	SSM...	300 - 530	0.0016 - 0.005
	Tool steel D2, etc.	- 300	SSM...	230 - 390	0.0016 - 0.005
M	Stainless steel 304, etc.	-	SSS...	300 - 660	0.0016 - 0.005
K	Gray cast iron No250B, etc.	150 - 250	SSM...	330 - 660	0.0020 - 0.006
	Ductile cast iron 65-45-12, etc.	150 - 250	SSM...	260 - 430	0.0020 - 0.006

R (drive flange set)

Drive flange set for side cutters

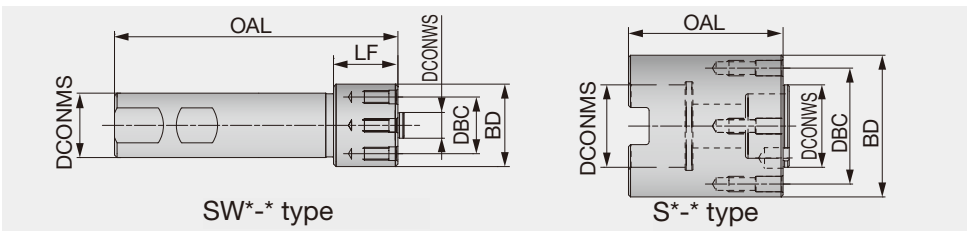


Inch	DCONMS	BD	D4	DBC	LB	KWW
R1.00-46	1.000	1.811	0.197	1.417	0.394	0.250
R1.25-55	1.250	2.165	0.236	1.772	0.394	0.236

Metric	DCONMS	BD	D4	DBC	LB	KWW
R1.00-46	25.4	46	5	36	10	6.35
R22-46	22	46	6	32	10	6

SW

Drive shank for side cutters



Inch	DCONMS	DCONMS	DCONWS	BD	DBC	LF	OAL
SW1.00-32	1.000	-	0.394	1.260	0.866	1.000	4.331
SW1.25-46	1.250	-	1.000	1.811	1.417	1.181	4.724
S1.25-55	-	1.250	1.250	2.165	1.772	-	2.362

Metric	DCONMS	DCONMS	DCONWS	BD	DBC	LF	OAL
SW25-32	25	-	10	32	22	25	110
SW32-40	32	-	22	40	32	30	120
SW32-25.4-46-J	32	-	25.4	46	36	30	120
S32-55	-	32	32	55	45	-	60

SPARE PARTS




Designation	Screw	Wrench		
		Mono block type	Torx bit	Handle
SW25-32	SR76-961	SETT-15/5	-	-
SW32-40	SR76-963	SETT-15/5	-	-
SW32-25.4-46-J	SR76-963	SETT-15/5	-	-
SW1.00-32	SR76-961	SETT-15/5	-	-
SW1.25-46	SR76-963	SETT-15/5	-	-
S1.25-55	SR76-943	-	BT20M	H-TB
S32-55	SR76-943	-	BT20M	H-TB

*Recommended clamping torque : SR76-961, SR76-963 = 2.58 lbs·ft, 3.5 N·m, SR76-943 = 3.69 lbs·ft, 5 N·m

COMBINATION OF ARBORS / ATTACHMENTS

Cutter bodies : “A” type

A-type disk cutters are without clamping holes on the hub and can be mounted only by using axial drive arbors.

Axial drive arbor

Cutter bodies : “K” type

K-type disk cutters are with clamping holes on the hub and can be mounted by using intermediate shanks or shell adaptors, making it possible to use endmills / shell mill arbors.

Drive flange

Axial drive arbor

Shank adaptor

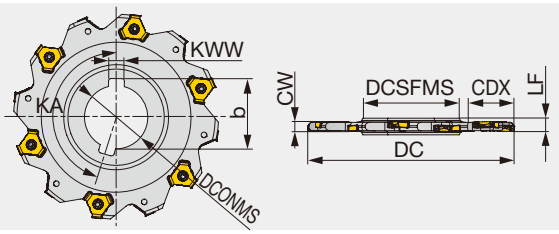
Shell adaptor

Shell mill / Endmill arbor

Tool dia.	ø2.480"	ø3.150"	ø3.937"	ø4.921"
Drive flange	-	✔	✔	✔
Shank / Shell adaptor	✔	✔	✔	✔

ASV 02/03/04/05

Axial drive slot mill, for tangentially mounted inserts



Inch	CW	DC	ZEFP/CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	KA	Insert
ASV04N300-U025	0.250	3.000	4/8	1.614	1.000	0.394	1.102	0.250	0.595	157.5	TVKX04H3**
ASV04N400-U025	0.250	4.000	5/10	1.890	1.250	0.394	1.386	0.312	0.957	162	TVKX04H3**
ASV04N500-U025	0.250	5.000	6/12	2.283	1.500	0.394	1.665	0.375	1.260	165	TVKX04H3**
ASV04N600-U025	0.250	6.000	8/16	2.283	1.500	0.394	1.665	0.375	1.760	168.75	TVKX04H3**
ASV04N800-U025	0.250	8.000	10/20	2.717	2.000	0.394	2.197	0.500	2.543	171	TVKX04H3**
ASV05N300-U031	0.313	3.000	4/8	1.614	1.000	0.472	1.102	0.250	0.595	157.5	TVKX0504**
ASV05N400-U031	0.313	4.000	5/10	1.890	1.250	0.472	1.386	0.312	0.957	162	TVKX0504**
ASV05N500-U031	0.313	5.000	6/12	2.283	1.500	0.472	1.665	0.375	1.260	165	TVKX0504**
ASV05N600-U031	0.313	6.000	8/16	2.283	1.500	0.472	1.665	0.375	1.760	168.75	TVKX0504**
ASV05N800-U031	0.313	8.000	10/20	2.717	2.000	0.472	2.197	0.500	2.543	171	TVKX0504**

Metric	CW	DC	ZEFP/CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	KA	Insert
ASV02N080-4	4	80	5/10	41	25.4	6	28	6.35	15	162	TVKX0202...
ASV02N080-E4	4	80	5/10	41	27	6	29.8	7	15	162	TVKX0202...
ASV02N100-4	4	100	6/12	48	31.75	6	35.2	7.92	20	165	TVKX0202...
ASV02N100-E4	4	100	6/12	47	32	6	34.8	8	20	165	TVKX0202...
ASV02N125-4	4	125	8/16	58	38.1	6	42.3	9.52	30	168.75	TVKX0202...
ASV02N125-E4	4	125	8/16	55	40	6	43.5	10	30	168.75	TVKX0202...
ASV02N160-4	4	160	10/20	58	38.1	6	42.3	9.52	45	171	TVKX0202...
ASV02N160-E4	4	160	10/20	55	40	6	43.5	10	45	171	TVKX0202...
ASV03N080-5	5	80	5/10	41	25.4	6.5	28	6.35	15	162	TVKX03X3...
ASV03N080-E5	5	80	5/10	41	27	6.5	29.8	7	15	162	TVKX03X3...
ASV03N100-5	5	100	6/12	48	31.75	6.5	35.2	7.92	20	165	TVKX03X3...
ASV03N100-E5	5	100	6/12	47	32	6.5	34.8	8	20	165	TVKX03X3...
ASV03N125-5	5	125	8/16	58	38.1	6.5	42.3	9.52	30	168.75	TVKX03X3...
ASV03N125-E5	5	125	8/16	55	40	6.5	43.5	10	30	168.75	TVKX03X3...
ASV03N160-5	5	160	10/20	58	38.1	6.5	42.3	9.52	45	171	TVKX03X3...
ASV03N160-E5	5	160	10/20	55	40	6.5	43.5	10	45	171	TVKX03X3...
ASV04N080-6	6	80	4/8	41	25.4	8	28	6.35	17	157.5	TVKX04H3...
ASV04N080-E6	6	80	4/8	41	27	8	29.8	7	17	157.5	TVKX04H3...
ASV04N100-6	6	100	5/10	48	31.75	8	35.2	7.92	23.5	162	TVKX04H3...
ASV04N100-E6	6	100	5/10	47	32	8	34.8	8	23.5	162	TVKX04H3...
ASV04N125-6	6	125	6/12	58	38.1	8	42.3	9.52	31	165	TVKX04H3...
ASV04N125-E6	6	125	6/12	55	40	8	43.5	10	32.5	165	TVKX04H3...
ASV04N160-6	6	160	8/16	58	38.1	8	42.3	9.52	48.5	168.75	TVKX04H3...
ASV04N160-E6	6	160	8/16	55	40	8	43.5	10	50	168.75	TVKX04H3...
ASV04N200-6	6	200	10/20	69	50.8	8	55.8	12.7	63	171	TVKX04H3...
ASV04N200-E6	6	200	10/20	69	50	8	53.5	12	63	171	TVKX04H3...
ASV05N080-8	8	80	4/8	41	25.4	10	28	6.35	17	157.5	TVKX0504...
ASV05N080-E8	8	80	4/8	41	27	10	29.8	7	17	157.5	TVKX0504...
ASV05N100-8	8	100	5/10	48	31.75	10	35.2	7.92	23.5	162	TVKX0504...
ASV05N100-E8	8	100	5/10	47	32	10	34.8	8	23.5	162	TVKX0504...
ASV05N125-8	8	125	6/12	58	38.1	10	42.3	9.52	31	165	TVKX0504...
ASV05N125-E8	8	125	6/12	55	40	10	43.5	10	32.5	165	TVKX0504...
ASV05N160-8	8	160	8/16	58	38.1	10	42.3	9.52	48.5	168.75	TVKX0504...
ASV05N160-E8	8	160	8/16	55	40	10	43.5	10	50	168.75	TVKX0504...
ASV05N200-8	8	200	10/20	69	50.8	10	55.8	12.7	63	171	TVKX0504...
ASV05N200-E8	8	200	10/20	69	50	10	53.5	12	63	171	TVKX0504...

SPARE PARTS

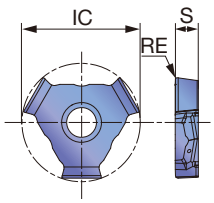


Designation	Clamping screw	Grip	Lubricant
ASV04N...	SR14-500/L5.1	BT15S	H-TBS
ASV05N...	SR14-500-L7.0	BT15S	H-TBS
ASV05N...	SR14-500-L7.0	H-TB2W	M-1000

*Recommended clamping torque：SR14-500/L5.1 = 3.32 lbs·ft, 3.5 N·m, SR14-500-L7.0 = 2.58 lbs·ft, 3.5 N·m

INSERT

TVKX-MJ



P	Steel	☆		★
M	Stainless		★	☆
K	Cast iron	★		☆
N	Non-ferrous			
S	Superalloys	★	☆	★
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	RE	Coated			S	IC
		AH120	AH130	AH725		
TVKX020202TN-MJ	0.008	●		●	0.094	0.370
TVKX020204TN-MJ	0.016	●		●	0.094	0.370
TVKX03X302TN-MJ	0.008	●		●	0.126	0.370
TVKX03X304TN-MJ	0.016	●		●	0.126	0.370
TVKX04H304TN-MJ	0.016	●	●	●	0.138	0.665
TVKX04H308TN-MJ	0.031	●	●	●	0.138	0.665
TVKX050404TN-MJ	0.016	●	●	●	0.177	0.665
TVKX050408TN-MJ	0.031	●	●	●	0.177	0.665

● : Line up

STANDARD CUTTING CONDITIONS

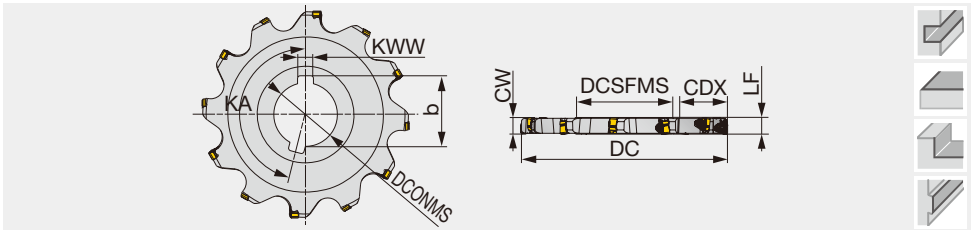
Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

ISO	Workpiece material	Hardness (HB)	Priority	Grade	Cutting speed *Vc* (sfm)	Feed per edge line: *fz* (ipt) ASV *ae* / DC (in) 10%	ASV *ae* / DC (in) 20%	30%	≤ 50%
P	Low carbon steels 1015, etc.	- 200	First choice	AH725	300 - 590	0.0031 - 0.0098	0.0024 - 0.0075	0.0020 - 0.0063	0.0020 - 0.0059
		- 200	Fracture resistance	AH130	300 - 590	0.0031 - 0.0098	0.0024 - 0.0075	0.0020 - 0.0063	0.0020 - 0.0059
	High carbon steels 1045, etc.	200 - 300	First choice	AH725	300 - 590	0.0028 - 0.0087	0.0020 - 0.0063	0.0016 - 0.0055	0.0016 - 0.0051
		200 - 300	Fracture resistance	AH130	300 - 590	0.0028 - 0.0087	0.0020 - 0.0063	0.0016 - 0.0055	0.0016 - 0.0051
	Alloy steels 4140, etc.	150 - 300	First choice	AH725	300 - 590	0.0028 - 0.0087	0.0020 - 0.0063	0.0016 - 0.0055	0.0016 - 0.0051
		150 - 300	Fracture resistance	AH130	300 - 590	0.0028 - 0.0087	0.0020 - 0.0063	0.0016 - 0.0055	0.0016 - 0.0051
	Tool steels D2, etc.	- 300	First choice	AH725	300 - 590	0.0028 - 0.0087	0.0020 - 0.0063	0.0016 - 0.0055	0.0016 - 0.0051
		- 300	Fracture resistance	AH130	300 - 590	0.0028 - 0.0087	0.0020 - 0.0063	0.0016 - 0.0055	0.0016 - 0.0051
M	Stainless steel 304, etc.	-	-	AH130	300 - 660	0.0028 - 0.0087	0.0020 - 0.0063	0.0016 - 0.0055	0.0016 - 0.0051
K	Gray cast irons No250B, etc.	150 - 250	-	AH120	390 - 760	0.0031 - 0.0098	0.0024 - 0.0075	0.0020 - 0.0063	0.0020 - 0.0059
	Ductile cast irons 65-45-12, etc.	150 - 250	-	AH120	300 - 490	0.0031 - 0.0098	0.0024 - 0.0075	0.0020 - 0.0063	0.0020 - 0.0059
S	Titanium alloys Ti-6Al-4V, etc.	-	First choice	AH725	100 - 130	0.0028 - 0.0047	0.0020 - 0.0035	0.0016 - 0.0028	0.0016 - 0.0028
		-	Fracture resistance	AH130	100 - 130	0.0028 - 0.0047	0.0020 - 0.0035	0.0016 - 0.0028	0.0016 - 0.0028
	Nickel-based alloys Inconel 718, etc.	-	First choice	AH725	70 - 120	0.0028 - 0.0047	0.0020 - 0.0035	0.0016 - 0.0028	0.0016 - 0.0028
		-	Fracture resistance	AH130	70 - 120	0.0028 - 0.0047	0.0020 - 0.0035	0.0016 - 0.0028	0.0016 - 0.0028

TUNGUSLOT UNIVERSAL

ASW 06/07/09

Axial drive slot mill, for 6-corner double sided inserts



Inch	CW	DC	ZEFP/CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	KA	Insert
ASW06N300-U037	0.375	3.000	4/8	1.614	1.000	0.375	1.102	0.250	0.654	157.5°	WNGU0603**
ASW06N400-U037	0.375	4.000	5/10	1.890	1.250	0.375	1.386	0.312	1.016	162°	WNGU0603**
ASW06N500-U037	0.375	5.000	6/12	2.283	1.500	0.375	1.665	0.375	1.319	165°	WNGU0603**
ASW06N600-U037	0.375	6.000	7/14	2.283	1.500	0.375	1.665	0.375	1.819	167.14°	WNGU0603**
ASW07N400-U050	0.500	4.000	5/10	1.890	1.250	0.500	1.386	0.312	1.016	162°	WNGU07T3**
ASW07N500-U050	0.500	5.000	6/12	2.283	1.500	0.500	1.665	0.375	1.319	165°	WNGU07T3**
ASW07N600-U050	0.500	6.000	7/14	2.283	1.500	0.500	1.665	0.375	1.819	167.14°	WNGU07T3**
ASW09N600-U062	0.625	6.000	7/14	2.283	1.500	0.625	1.665	0.375	1.819	167.14°	WNGU0904**

SPARE PARTS

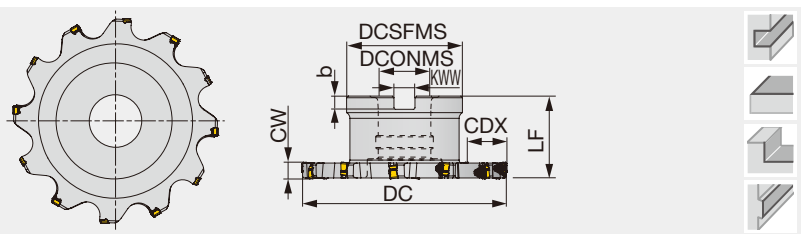
Designation	Clamping screw	Clamping screw 1	Grip	Grip 1	Torx bit	Wrench	Lubricant
ASW06N...	-	CSPB-2.5	-	-	-	IP-8D	M-1000
ASW07N400...	-	CSPD-3	-	SW6-SD	BLD IP10/S7	-	M-1000
ASW07N500...	-	CSPD-3	-	SW6-SD	BLD IP10/S7	-	M-1000
ASW07N600...	-	CSPD-3	-	-	-	IP-10D	M-1000
ASW09N400...	CSPB-3.5	-	H-TBS	-	BLD IP15/S7	-	M-1000
ASW09N600...	CSPB-3.5	-	-	-	-	IP-15D	M-1000

*Recommended clamping torque ：CSPB-2.5 = 0.96 lbs·ft, CSPB-3.5 ＝ 2.58 lbs·ft, CSPD-3 = 1.84 lbs·ft

TUNGUSLOT UNIVERSAL

TSW 06/07/09

Radial drive slot mill, for 6-corner double sided inserts



Inch	CW	DC	ZEFP/CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	Insert
TSW06R400-U037	0.375	4.000	5/10	1.969	1.000	1.969	0.236	0.374	0.976	WNGU0603...
TSW06R500-U037	0.375	5.000	6/12	2.756	1.250	1.969	0.315	0.500	1.083	WNGU0603...
TSW06R600-U037	0.375	6.000	7/14	3.937	1.500	2.480	0.394	0.626	0.992	WNGU0603...
TSW07R400-U050	0.500	4.000	5/10	1.969	1.000	1.969	0.236	0.374	0.976	WNGU07T3...
TSW07R500-U050	0.500	5.000	6/12	2.756	1.250	1.969	0.315	0.500	1.083	WNGU07T3...
TSW07R600-U050	0.500	6.000	7/14	3.937	1.500	2.480	0.394	0.626	0.992	WNGU07T3...
TSW09R600-U062	0.625	6.000	7/14	3.937	1.500	2.480	0.394	0.626	0.992	WNGU0904...

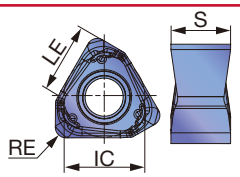
SPARE PARTS

Designation	Clamping screw1	Clamping screw2	Grip	Lubricant	Torx bit	Mono block type Torx bit	Shell locking bolt (Optional parts)
TSW06R400-U037	-	CSPB-2.5	-	M-1000	-	IP-8D	(C0.500X1.375H)
TSW06R500-U037	-	CSPD-3	-	M-1000	-	IP-8D	-
TSW06R600-U037	-	CSPD-3	-	M-1000	-	IP-8D	(TMBA-0.750H)
TSW07R400-U050	-	CSPD-3	SW6-SD	M-1000	BLD IP10/S7	-	(C0.500X1.375H)
TSW07R500-U050	-	CSPD-3	SW6-SD	M-1000	BLD IP10/S7	-	-
TSW07R600-U050	-	CSPD-3	-	M-1000	-	IP-10D	(TMBA-0.750H)
TSW09R600-U062	CSPB-3.5	-	-	M-1000	-	IP-15D	(TMBA-0.750H)

*Recommended clamping torque ：CSPB-2.5 = 0.96 lbs·ft, CSPB-3.5 ＝ 2.58 lbs·ft, CSPD-3 = 1.84 lbs·ft

INSERT

WNGU-MJ



P	Steel	☆		★	★
M	Stainless		★	☆	★
K	Cast iron	★		☆	
N	Non-ferrous				
S	Superalloys	★	☆	★	
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	RE	Coated				LE	IC	S
		AH120	AH130	AH725	AH3135			
WNGU060304TN-MJ	0.016	●			●	0.220	0.240	0.173
WNGU060308TN-MJ	0.031	●	●	●	●	0.220	0.240	0.173
WNGU060310TN-MJ	0.039	●			●	0.220	0.240	0.173
WNGU060316TN-MJ	0.063	●	●	●		0.220	0.240	0.173
WNGU060320TN-MJ	0.079	●			●	0.220	0.240	0.173
WNGU07T304TN-MJ	0.016	●			●	0.268	0.291	0.217
WNGU07T308TN-MJ	0.031	●	●	●		0.268	0.291	0.217
WNGU07T310TN-MJ	0.039	●			●	0.268	0.291	0.217
WNGU07T316TN-MJ	0.063	●	●	●		0.268	0.291	0.217
WNGU07T320TN-MJ	0.079	●			●	0.268	0.291	0.217
WNGU090404TN-MJ	0.016	●			●	0.335	0.339	0.256
WNGU090408TN-MJ	0.031	●	●	●		0.335	0.339	0.256
WNGU090410TN-MJ	0.039	●			●	0.335	0.339	0.256
WNGU090416TN-MJ	0.063	●	●	●		0.335	0.339	0.256
WNGU090420TN-MJ	0.079	●			●	0.335	0.339	0.256

● : Line up

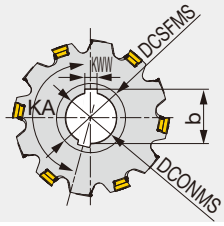
Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

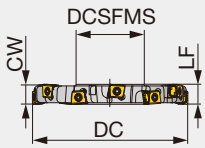
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness (HB)	Priority	Grade	Cutting speed *Vc* (sfm)	Feed per edge line: *fz* (ipt) TSW / ASW ae / DC (in) 10%	20%	30%	≤ 50%
P	Low carbon steels 1015, etc.	- 200	First choice	AH725	300 - 590	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
		- 200	Fracture resistance	AH130	300 - 590	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
	High carbon steels 1045, etc.	200 - 300	First choice	AH725	300 - 590	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
		200 - 300	Fracture resistance	AH130	300 - 590	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
	Alloy steels 4140, etc.	150 - 300	First choice	AH725	300 - 590	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
		150 - 300	Fracture resistance	AH130	300 - 590	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
	Tool steels D2, etc.	- 300	First choice	AH725	300 - 590	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
		- 300	Fracture resistance	AH130	300 - 590	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
M	Stainless steel 304, etc.	-	-	AH130	300 - 660	0.0047 - 0.0130	0.0035 - 0.0098	0.0028 - 0.0083	0.0028 - 0.0079
K	Gray cast irons No250B, etc.	150 - 250	-	AH120	390 - 760	0.0047 - 0.0165	0.0035 - 0.0122	0.0028 - 0.0106	0.0028 - 0.0098
	Ductile cast irons 65-45-12, etc.	150 - 250	-	AH120	300 - 490	0.0047 - 0.0165	0.0035 - 0.0122	0.0028 - 0.0106	0.0028 - 0.0098
S	Titanium alloys Ti-6Al-4V, etc.	-	First choice	AH725	100 - 130	0.0039 - 0.0067	0.0031 - 0.0051	0.0024 - 0.0043	0.0024 - 0.0039
		-	Fracture resistance	AH130	100 - 130	0.0039 - 0.0067	0.0031 - 0.0051	0.0024 - 0.0043	0.0024 - 0.0039
	Nickel-based alloys Inconel 718, etc.	-	First choice	AH725	70 - 120	0.0039 - 0.0067	0.0031 - 0.0051	0.0024 - 0.0043	0.0024 - 0.0039
		-	Fracture resistance	AH130	70 - 120	0.0039 - 0.0067	0.0031 - 0.0051	0.0024 - 0.0043	0.0024 - 0.0039

ASN 10/12/15

Axial drive slot mill, for tangentially mounted inserts





Inch	CW	DC	ZEFP	CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	KA	Insert
ASN10R100M31.7-16-05	0.630	3.937	5	10	1.890	1.250	0.630	1.386	0.312	0.984	162°	LMEU1008**ZNEN-MJ
ASN10R125M38.1-16-06	0.630	4.921	6	12	2.283	1.500	0.630	1.665	0.375	1.280	165°	LMEU1008**ZNEN-MJ
ASN10R160M38.1-16-07	0.630	6.299	7	14	2.283	1.500	0.630	1.665	0.375	1.969	167.14°	LMEU1008**ZNEN-MJ
ASN12R100M31.7-19-05	0.748	3.937	5	10	1.890	1.250	0.748	1.386	0.312	0.984	162°	LMEU1208**ZNEN-MJ
ASN12R125M38.1-19-06	0.748	4.921	6	12	2.283	1.500	0.748	1.665	0.375	1.280	165°	LMEU1208**ZNEN-MJ
ASN12R160M38.1-19-07	0.748	6.299	7	14	2.283	1.500	0.748	1.665	0.375	1.969	167.14°	LMEU1208**ZNEN-MJ
ASN15R125M38.1-25-05	0.984	4.921	5	10	2.283	1.500	0.984	1.665	0.375	1.280	162°	LMEU1509**ZNEN-MJ
ASN15R160M38.1-25-06	0.984	6.299	6	12	2.283	1.500	0.984	1.665	0.375	1.969	165°	LMEU1206**ZNEN-MJ

SPARE PARTS

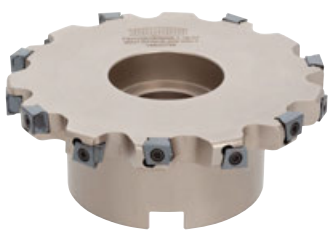
Designation	Clamping screw	Grip	Torx bit
ASN10/12R...	SM40-143-H0	H-TB	BT15S
ASN15R...	CSTB-5L159	H-TB	BT20S

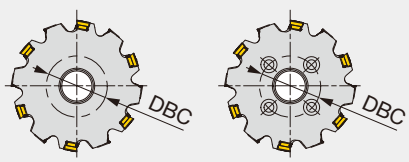
*Recommended clamping torque : SM40-143-H0 = 0.96 lbs·ft, CSTB-5L159 = 3.69 lbs·ft

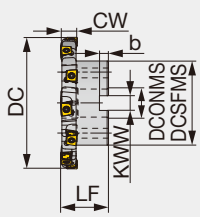
TECTSLOT TANGENTIAL

TSN

Radial drive slot mill, for tangentially mounted inserts







Inch	CW	DC	ZEFP	CICT	DCSFMS	DCONMS	LF	b	KWW	CDX	DBC	Insert
TSN10R100M25.4-16-05	0.630	3.937	5	10	1.969	1.000	1.969	0.236	0.374	0.945	-	LMEU1008**ZNEN-MJ
TSN10R125M31.7-16-06	0.630	4.921	6	12	2.756	1.250	1.969	0.315	0.500	1.043	-	LMEU1008**ZNEN-MJ
TSN10R160M38.1-16-07	0.630	6.299	7	14	3.937	1.500	2.480	0.394	0.626	1.142	-	LMEU1008**ZNEN-MJ
TSN10R200M47.6-16-08	0.630	7.874	8	16	5.315	1.875	2.480	0.551	1.000	1.240	4.000	LMEU1008**ZNEN-MJ
TSN12R100M25.4-19-05	0.748	3.937	5	10	1.969	1.000	1.969	0.236	0.374	0.945	-	LMEU1208**ZNEN-MJ
TSN12R125M31.7-19-06	0.748	4.921	6	12	2.756	1.250	1.969	0.315	0.500	1.043	-	LMEU1208**ZNEN-MJ
TSN12R160M38.1-19-07	0.748	6.299	7	14	3.937	1.500	2.480	0.394	0.626	1.142	-	LMEU1208**ZNEN-MJ
TSN12R200M47.6-19-08	0.748	7.874	8	16	5.315	1.875	2.480	0.551	1.000	1.240	4.000	LMEU1208**ZNEN-MJ
TSN12R250M47.6-19-09	0.748	9.843	9	18	5.512	1.875	2.480	0.551	1.000	2.126	4.000	LMEU1208**ZNEN-MJ
TSN15R125M31.7-25-05	0.984	4.921	5	10	2.756	1.250	1.969	0.315	0.500	1.043	-	LMEU1509**ZNEN-MJ
TSN15R160M38.1-25-06	0.984	6.299	6	12	3.937	1.500	2.480	0.394	0.626	1.142	-	LMEU1509**ZNEN-MJ
TSN15R200M50.8-25-07	0.984	7.874	7	14	5.315	2.000	2.480	0.551	1.000	1.240	4.000	LMEU1509**ZNEN-MJ
TSN15R250M63.5-25-08	0.984	9.843	8	16	5.512	2.500	2.480	0.551	1.000	2.126	4.000	LMEU1509**ZNEN-MJ

SPARE PARTS

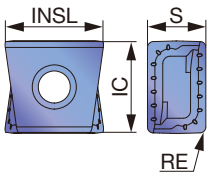
Designation	Clamping screw	Grip	Torx bit	Shell locking bolts (Optional parts)
TSN10R100M25.4-16-05	SM40-143-H0	H-TB	B_T15S	(C0.500X1.375H)
TSN10/12R125M..., TSN10/12R200M..., TSN12R125M..., TSN12R250M...	SM40-143-H0	H-TB	B_T15S	-
TSN10/12R160M...	SM40-143-H0	H-TB	B_T15S	(TMBA-0.750H)
TSN15R125M..., TSN15R200M..., TSN15R250M...	CSTB-5L159	H-TB	BT-20S	-
TSN15R160M38.1-25-06	CSTB-5L159	H-TB	BT-20S	(TMBA-0.750H)

*Recommended clamping torque : SM40-143-H0 = 0.96 lbs·ft, CSTB-5L159 = 3.69 lbs·ft

Reference pages: Inserts, Standard cutting conditions → H160

INSERT

LMEU-MJ



P	Steel	☆		☆	★
M	Stainless		☆	☆	★
K	Cast iron	★		☆	
N	Non-ferrous				
S	Superalloys	★		★	
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	RE	Coated				INSL	IC	S
		AH120	AH140	AH725	AH3135			
LMEU100808ZNEN-MJ	0.031	●	●	●	●	0.500	0.413	0.315
LMEU100810ZNEN-MJ	0.039	●			●	0.500	0.413	0.315
LMEU100816ZNEN-MJ	0.063	●	●	●	●	0.492	0.413	0.315
LMEU100820ZNEN-MJ	0.079	●			●	0.488	0.413	0.315
LMEU100824ZNEN-MJ	0.094	●	●	●	●	0.488	0.413	0.315
LMEU100830ZNEN-MJ	0.118	●			●	0.480	0.413	0.315
LMEU100832ZNEN-MJ	0.126	●	●	●	●	0.480	0.413	0.315
LMEU120808ZNEN-MJ	0.031	●	●	●	●	0.535	0.500	0.315
LMEU120816ZNEN-MJ	0.063	●	●	●	●	0.528	0.500	0.315
LMEU120820ZNEN-MJ	0.079	●			●	0.524	0.500	0.315
LMEU120824ZNEN-MJ	0.094	●	●	●	●	0.520	0.500	0.315
LMEU120830ZNEN-MJ	0.118	●			●	0.516	0.500	0.315
LMEU120832ZNEN-MJ	0.126	●	●	●	●	0.516	0.500	0.315
LMEU150908ZNEN-MJ	0.031	●	●	●	●	0.614	0.591	0.374
LMEU150916ZNEN-MJ	0.063	●	●	●	●	0.606	0.591	0.374
LMEU150920ZNEN-MJ	0.079	●			●	0.606	0.591	0.374
LMEU150924ZNEN-MJ	0.094	●	●	●	●	0.602	0.591	0.374
LMEU150930ZNEN-MJ	0.118	●			●	0.598	0.591	0.374
LMEU150932ZNEN-MJ	0.126	●	●	●	●	0.594	0.591	0.374
LMEU150940ZNEN-MJ*	0.157	●			●	0.587	0.591	0.374
LMEU150950ZNEN-MJ*	0.197	●			●	0.579	0.591	0.374

* Please note that LMEU150940 and LMEU150950 inserts are for special cutter bodies only and do not fit standard versions.

● : Line up

Approach angle
10°-20°
45°
70°
85°
88°
90°
Others

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness (HB)	Priority	Grade	Cutting speed *Vc* (sfm)	Feed per edge line: *fz* (ipt) TSN / ASN ae / DC (in) 10%	20%	30%	≤ 50%
P	Low carbon steels 1015, etc.	- 200	First choice	AH3135	300 - 590	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
		- 200	Fracture resistance	AH725	300 - 590	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
	High carbon steels 1045, etc.	200 - 300	First choice	AH3135	300 - 590	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
		200 - 300	Fracture resistance	AH725	300 - 590	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
	Alloy steels 4140, etc.	150 - 300	First choice	AH3135	300 - 590	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
		150 - 300	Fracture resistance	AH725	300 - 590	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
	Tool steels D2, etc.	- 300	First choice	AH3135	300 - 590	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
		- 300	Fracture resistance	AH725	300 - 590	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
M	Stainless steel 304, etc.	-	-	AH3135	300 - 660	0.0087 - 0.0165	0.0063 - 0.0122	0.0055 - 0.0106	0.0051 - 0.0098
K	Gray cast irons No250B, etc.	150 - 250	-	AH120	390 - 760	0.0087 - 0.0200	0.0063 - 0.0150	0.0055 - 0.0126	0.0051 - 0.0118
	Ductile cast irons 65-45-12, etc.	150 - 250	-	AH120	300 - 490	0.0087 - 0.0130	0.0063 - 0.0098	0.0055 - 0.0083	0.0051 - 0.0079
S	Titanium alloys Ti-6Al-4V, etc.	-	First choice	AH725	100 - 130	0.0047 - 0.0087	0.0035 - 0.0063	0.0028 - 0.0055	0.0028 - 0.0051
	Nickel-based alloys Inconel 718, etc.	-	First choice	AH725	70 - 120	0.0047 - 0.0087	0.0035 - 0.0063	0.0028 - 0.0055	0.0028 - 0.0051

MEMO

PROFILEMILL SERIES

Lineups and Application Ranges

- All inserts are precision ground, making them suitable for various applications ranging from roughing to finishing
- Increased reliability thanks to the innovative insert clamping design

Finishing

Semi-Finishing

Roughing

Ball type

BALLFINISHNOSE

Tool diameter ø0.375" - ø1.250"
(R4 – R16)

BALLROUGHNOSE

Tool diameter ø0.625" - ø1.000"
(R8 - R12.5)

Radius type

BALLFINISHNOSE

Tool diameter ø0.375" - ø1.250"
(R0.5 – R1.5)

DOMINIMILL

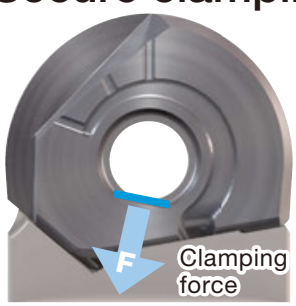
Tool diameter ø16 mm - 25 mm
(R0.5, R1.0)

Reference pages: BallFinishNose → H166 - H170, BallRoughNose → H164 - H165, DoMini-Mill → H171

FINISH BALL NOSE

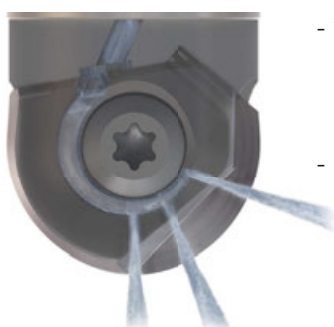
Indexable endmill for high precision finishing!

Secure clamping mechanism



- Clamping force gathers on the flat part of the insert hole as the screw is tightened.
- The force pushes the insert towards the cutter body, providing high repeatability and rigidity as well as minimum run-out.

Unique coolant delivery system



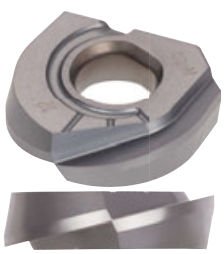
- The coolant channel on insert surface, delivers coolant to the cutting edge from three directions.

- Excellent chip evacuation and cooling effect provides good surface finish and long tool life in machining of hardened steel.

Two insert varieties

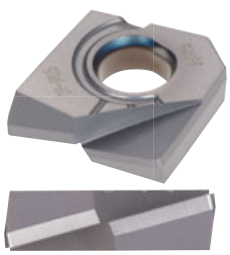
MJ chipbreaker

Ball nose type: ZFBM



- Suitable for finishing and three-dimensional milling of die & mold
- Applicable for a wide range of operations

Radius type: ZFRM



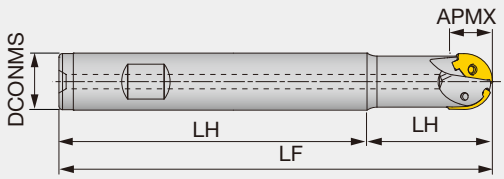
- Suitable for finishing of die & mold
- Designed for milling with high productivity

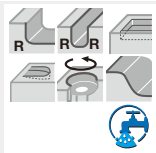
Reference pages: H166 - H170

ROUGH BALL NOSE

EBRU...

Ball nose endmill for semi-roughing, shank type, with screw clamp system





Inch	APMX	DC	CICT	DCONMS	LS	LF	LH	LB	BHTA	WT(lb)	Air hole	Insert
EBRU062SW062S0475	0.470	0.625	2	0.625	3.375	4.748	1.373	0.331	3.000	0.330	With	ZRBU062-MM
EBRU075SW075S0600	0.510	0.750	2	0.750	4.000	6.000	2.000	0.606	3.000	0.610	With	ZRBU075-MM
EBRU100SW100S0600	0.690	1.000	2	1.000	3.250	6.000	2.750	1.080	3.000	1.080	With	ZRBU100-MM

SPARE PARTS

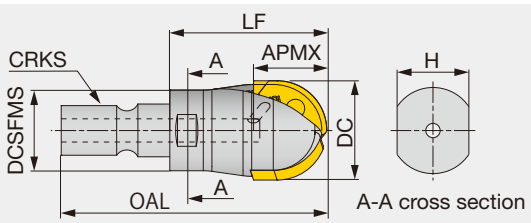
Designation	Clamping screw	Wrench
EBRU062...	TS25064I	T-8D
EBRU075...	TS30C72I	T-9D
EBRU100...	TS35085I/HG	T-15D

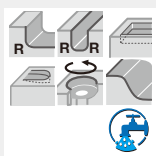
*Recommended clamping torque：TS25064I = 0.96 lbs·ft, TS35085I/HG = 2.58 lbs·ft

ROUGH BALL NOSE

HBRM...

Ball nose endmill for semi-roughing, modular type, with screw clamp system (TungFlex)





Metric	APMX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HBRM16M08	11.8	16	2	42.5	25	10	13	M8	0.025	With	ZRBM160...
HBRM20M10	13.6	20	2	50	30	15	18	M10	0.05	With	ZRBM200...
HBRM25M12	17.7	25	2	57	35	17	21	M12	0.08	With	ZRBM250...

SPARE PARTS

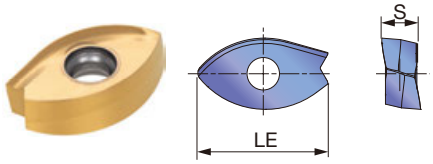
Designation	Clamping screw	Wrench
HBRM16...	TS25064I	T-8D
HBRM20...	TS30085I/HG	T-9D
HBRM25...	TS35085I/HG	T-15D

*Recommended clamping torque：TS25064I = 1.3 N·m, TS30085I/HG = 2.3 N·m, TS35085I/HG = 3.5 N·m

Reference pages: Inserts, Standard cutting conditions → H165

INSERT

ZRBU...



Inch

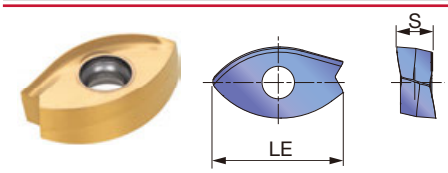
P	Steel	★
M	Stainless	☆
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	☆

★ : First choice
☆ : Second choice

Designation	RE	Coated APH730	LE	S
ZRBU062-MM	0.313	●	0.586	0.118
ZRBU075-MM	0.375	●	0.648	0.146
ZRBU100-MM	0.500	●	0.865	0.177

● : Line up
5 piece per package

ZRBM...



Metric

P	Steel	★
M	Stainless	☆
K	Cast iron	☆
N	Non-ferrous	
S	Superalloys	☆
H	Hard materials	☆

★ : First choice
☆ : Second choice

Designation	RE	Coated APH730	LE	S
ZRBM160-MM	8	●	12.4	3.7
ZRBM200-MM	10	●	14.9	4.8
ZRBM250-MM	12.5	●	18.9	5.9

● : Line up
5 piece per package

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Hardness	Selection criteria	Recommended grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1015, 1020, etc.	- 300HB	First choice	APH730	MM	490 - 1145	0.004 - 0.024
	High carbon and alloy steel 1055, 4140, etc.	- 300HB	First choice	APH730	MM	390 - 1045	0.002 - 0.02
	Prehardened steels NAK80, PX5 etc.	30 - 40HRC	First choice	APH730	MM	325 - 655	0.002 - 0.02
M	Austenitic stainless steel 304SS, 316SS, etc.	- 200HB	First choice	APH730	MM	325 - 915	0.002 - 0.024
	Martensitic stainless steel 420SS, etc.	- 200HB	First choice	APH730	MM	325 - 980	0.002 - 0.024
K	Gray cast irons Class25, Class30, etc.	150 - 250HB	First choice	APH730	MM	390 - 1245	0.004 - 0.024
	Ductile cast iron 60-40-18, 80-55-06, etc.	150 - 250HB	First choice	APH730	MM	325 - 915	0.004 - 0.02
S	Titanium alloy Ti-6Al-4V, etc.	-	First choice	APH730	MM	65 - 260	0.002 - 0.024
	Heat-resistant alloys Inconel718, etc.	-	First choice	APH730	MM	65 - 195	0.002 - 0.016
H	Hardened steel H13, etc.	40 - 50HRC	First choice	APH730	MM	130 - 260	0.002 - 0.008
	Hardened steel D2, etc.	50 - 60HRC	First choice	APH730	MM	95 - 195	0.002 - 0.006

The above cutting parameters are for reference. Adjustments may be required depending on applications, machine powers and rigidity, and/or workpiece fixture/clamping methods.

BALL FINISH NOSE

EBFU

High precision finishing endmill, shank type, with screw clamp system

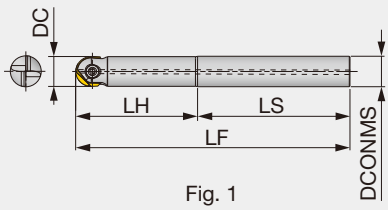


Fig. 1

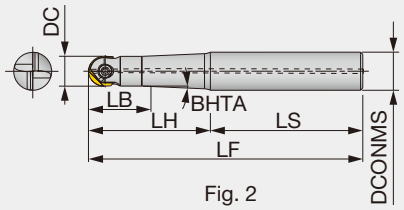
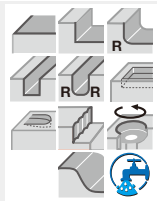


Fig. 2



Inch	DC	DCONMS	LS	LH	LF	LB	BHTA	Air hole	Fig.	Shank material	Insert
EBFU037T050S0400	0.375	0.500	3.000	1.000	4.000	0.625	9.0°	With	2	Steel	ZF*U037
EBFU037S037C0550	0.375	0.375	2.500	3.000	5.500	-	-	Without	1	Carbide	ZF*U037
EBFU037T062S0600	0.375	0.625	3.500	2.500	6.000	0.625	3.5°	With	2	Steel	ZF*U037
EBFU037S037C0875	0.375	0.375	3.250	5.500	8.750	-	-	Without	1	Carbide	ZF*U037
EBFU050S050S0437	0.500	0.500	3.187	1.188	4.375	-	-	With	1	Steel	ZF*U050
EBFU050S050C0637	0.500	0.500	2.750	3.625	6.375	-		Without	1	Carbide	ZF*U050
EBFU050T062S0637	0.500	0.625	4.000	2.375	6.375	1.000	2.5°	With	2	Steel	ZF*U050
EBFU050S050C0875	0.500	0.500	2.750	6.000	8.750	-	-	Without	1	Carbide	ZF*U050
EBFU062T075S0500	0.625	0.750	3.000	2.000	5.000	0.563	2.0°	With	2	Steel	ZF*U062
EBFU062S062C0637	0.625	0.625	3.375	3.000	6.375	-	-	Without	1	Carbide	ZF*U062
EBFU062T075S0637	0.625	0.750	3.625	2.750	6.375	0.563	1.5°	With	2	Steel	ZF*U062
EBFU062S062C0875	0.625	0.625	2.750	6.000	8.750	-	-	Without	1	Carbide	ZF*U062
EBFU075T100S0700	0.750	1.000	4.000	3.000	7.000	1.563	4.5°	With	2	Steel	ZF*U075
EBFU075S075C0875	0.750	0.750	4.000	4.750	8.750	-	-	Without	1	Carbide	ZF*U075
EBFU075T100S0875	0.750	1.000	4.000	4.750	8.750	1.000	1.5°	With	2	Steel	ZF*U075
EBFU075S075C1200	0.750	0.750	3.250	8.750	12.000	-	-	Without	1	Carbide	ZF*U075
EBFU100T125S0800	1.000	1.250	4.000	4.000	8.000	1.250	2.5°	With	2	Steel	ZF*U100
EBFU100S100C0875	1.000	1.000	4.000	4.750	8.750	-	-	Without	1	Carbide	ZF*U100
EBFU100T125S1000	1.000	1.250	4.000	6.000	10.000	1.188	1.4°	With	2	Steel	ZF*U100
EBFU100S100C1200	1.000	1.000	3.250	8.750	12.000	-	-	Without	1	Carbide	ZF*U100
EBFU125S125S1000	1.250	1.250	6.000	4.000	10.000	-	-	With	1	Steel	ZF*U125
EBFU125S125C1200	1.250	1.250	3.250	8.750	12.000	-	-	Without	1	Carbide	ZF*U125

SPARE PARTS



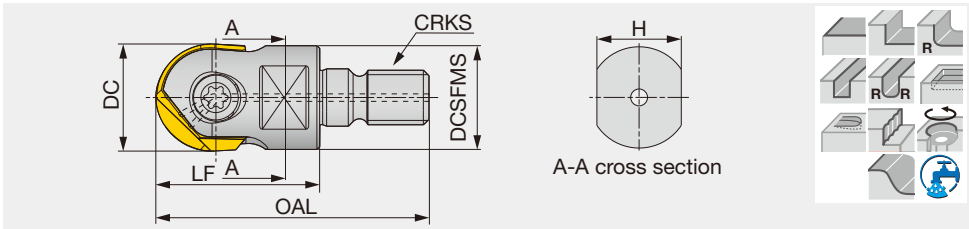

Designation	Clamping screw	Torx bit	Grip	Wrench
EBFU037...	TS30F100A	-	-	T10D
EBFU050...	TS40F120A	-	-	T15D
EBFU062...	TS50F160A	-	-	T-T20
EBFU075...	TS60F200A	BLDT25/M7	SW6-T	-
EBFU100...	TS70F250A	BLDT25/M7	SW6-T	-
EBFU125...	TS70F300A	-	-	T-T30

*Recommended clamping torque : TS 30F100A = 1.84 lbs·ft, TS 40F120A = 2.58 lbs·ft, TS 50F160A = 3.69 lbs·ft, TS 60F200A = 5.16 lbs·ft, TS 70F250A = 5.16 lbs·ft

Reference pages: Inserts → H168 - H169, Standard cutting conditions → H170

HBFM

High precision finishing endmill, modular type, with screw clamp system (TungFlex)



Metric	DC	OAL	LF	H	DCSFMS	CRKS	Air hole	Insert
HBFM10M06	10	34.5	20	7	9.7	M6	With	ZFBM100...
HBFM12M06	12	37.5	23	7	11.5	M6	With	ZF*M120...
HBFM12M08	12	40	23	10	13	M8	With	ZF*M120...
HBFM16M08	16	47	30	10	13	M8	With	ZF*M160...
HBFM20M10	20	49	30	15	19	M10	With	ZF*M200...
HBFM25M12	25	57	35	17	24	M12	With	ZFBM250...
HBFM30M16	30	66	43	22	29	M16	With	ZFBM300...
HBFM32M16	32	66	43	22	29.5	M16	With	ZFBM320...

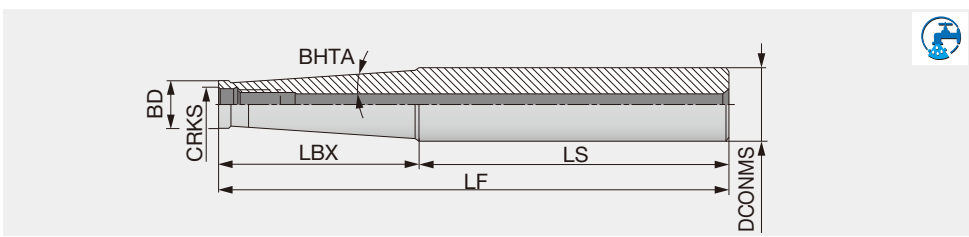
SPARE PARTS

Designation	Clamping screw	Torx bit	Grip	Wrench
HBFM10...	TS 30F100A	-	-	T-10D
HBFM12...	TS 40F120A	-	-	T-15D
HBFM16...	TS 50F160A	BT20S	H-TB2W	-
HBFM20...	TS 60F200A	BLDT25/M7	H-TB2W	-
HBFM25...	TS 70F250A	BLDT25/M7	H-TB2W	-
HBFM30...	TS 80F300A	-	-	T-T30
HBFM32...	TS 80F300A	-	-	T-T30

*Recommended clamping torque : TS 25F080A = 1.3 N·m, TS 30F100A = 2.5 N·m, TS 40F120A = 3.5 N·m, TS 50F160A = 5 N·m, TS 60F200A = 7 N·m, TS 70F250A = 7 N·m, TS 80F300A = 10 N·m

TungFlex

TungFlex modular shank

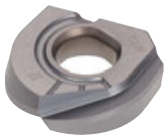


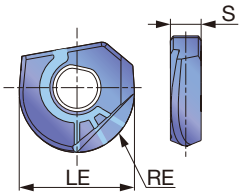
Metric	DCONMS	LF	LS	LBX	BD	CRKS	BHTA	Shank type
SM06-L60C10	10	60	40	20	9.7	M6	0°	Cylindrical
SM06-L105-C12	12	105	45	60	9.7	M6	1.2°	Cylindrical
SM06-L125-C16	16	125	65	60	9.7	M6	3.3°	Cylindrical
SM08-L73C16	16	73	48	25	13	M8	0°	Cylindrical
SM08-L128-C16	16	128	48	80	13	M8	0.9°	Cylindrical
SM08-L170-C20	20	170	103.2	66.8	13	M8	3.3°	Cylindrical
SM10-L80-C20	20	80	50	30	18	M10	0°	Cylindrical
SM10-L130-C20	20	130	50	80	18	M10	0.6°	Cylindrical
SM10-L200-C25	25	200	142.8	57.2	19	M10	3.3°	Cylindrical
SM12-L86-C25	25	86	56	30	21	M12	5.1°	Cylindrical
SM12-L200-C32	32	200	122	78	21	M12	4.4°	Cylindrical
SM16-L95-C32	32	95	60	35	29	M16	1.7°	Cylindrical
SM16-L230-C32	32	230	180	50	29	M16	1.8°	Cylindrical

Reference pages: Inserts → H168 - H169, Standard cutting conditions → H170

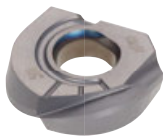
INSERT

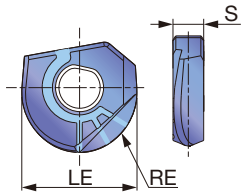
ZFBU-MJ / ZFBM-MJ





ZFBU-ML





Inch

P	Steel	★
M	Stainless	☆
K	Cast iron	☆
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	☆

★ : First choice
☆ : Second choice

Designation	RE	Coated	LE	S
		AH725		
ZFBU037R00-MJ	0.188	●	0.375	0.114
ZFBU050R00-MJ	0.250	●	0.500	0.134
ZFBU062R00-MJ	0.313	●	0.625	0.173
ZFBU075R00-MJ	0.375	●	0.750	0.213
ZFBU062R00-MJ	0.313	●	0.625	0.173
ZFBU100R00-MJ	0.500	●	1.000	0.252
ZFBU075R00-MJ	0.375	●	0.750	0.213
ZFBU125R00-MJ	0.625	●	1.250	0.291
ZFBU037R00-ML	0.188	●	0.375	0.114
ZFBU050R00-ML	0.250	●	0.500	0.134
ZFBU062R00-ML	0.313	●	0.625	0.173
ZFBU075R00-ML	0.375	●	0.750	0.213
ZFBU100R00-ML	0.500	●	1.000	0.252
ZFBU125R00-ML	0.625	●	1.250	0.291

● : Line up

ZFBU037 / 050 / 062... : 5 piece per package
ZFBU075 / 100 / 125... : 1 piece per package

Metric

P	Steel	☆
M	Stainless	
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	
H	Hard materials	★

★	★	
☆	☆	
☆	☆	
☆	☆	
★	☆	
☆	★	

★ : First choice
☆ : Second choice

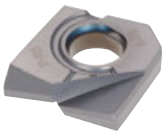
Designation	RE	Coated		LE	S
		AH710	AH725		
ZFBM080R00-MJ	4	●	●	8	2.4
ZFBM100R00-MJ	5	●	●	10	2.9
ZFBM120R00-MJ	6	●	●	12	3.4
ZFBM160R00-MJ	8	●	●	16	4.4
ZFBM200R00-MJ	10	●	●	20	5.4
ZFBM250R00-MJ	12.5	●	●	25	6.4
ZFBM300R00-MJ	15	●	●	30	7.4
ZFBM320R00-MJ	16	●	●	32	7.4

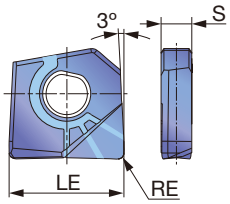
● : Line up

ZFBM080 / 100 / 120 / 160... : 5 piece per package
ZFBM200 / 250 / 300 / 320... : 1 piece per package

Reference pages: Standard cutting conditions → H170, TungFlex → H167

ZFRU-MJ / ZFRM-MJ (Corner radius type)





Inch

P	Steel	★
M	Stainless	☆
K	Cast iron	☆
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	☆

★ : First choice
☆ : Second choice

Designation	RE	Coated	LE	S
		AH725		
ZFRU037R003-MJ	0.031	●	0.375	0.114
ZFRU050R003-MJ	0.031	●	0.500	0.134
ZFRU050R006-MJ	0.062	●	0.500	0.134
ZFRU050R012-MJ	0.125	●	0.500	0.134
ZFRU062R003-MJ	0.031	●	0.625	0.173
ZFRU062R006-MJ	0.062	●	0.625	0.173
ZFRU062R012-MJ	0.125	●	0.625	0.173
ZFRU075R003-MJ	0.031	●	0.750	0.213
ZFRU075R006-MJ	0.062	●	0.750	0.213
ZFRU075R012-MJ	0.125	●	0.750	0.213
ZFRU100R003-MJ	0.031	●	1.000	0.252
ZFRU100R006-MJ	0.062	●	1.000	0.252
ZFRU100R012-MJ	0.125	●	1.000	0.252
ZFRU125R003-MJ	0.031	●	1.250	0.291
ZFRU125R006-MJ	0.062	●	1.250	0.291
ZFRU125R012-MJ	0.125	●	1.250	0.291

● : Line up
ZFRU037 / 050 / 062... : 5 piece per package
ZFRU075 / 100 / 125... : 1 piece per package

Metric

P	Steel	☆ ★
M	Stainless	☆
K	Cast iron	★ ☆
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★ ☆

★ : First choice
☆ : Second choice

Designation	RE	Coated		LE	S
		AH710	AH725		
ZFRM120R05-MJ	0.5	●	●	12	3.4
ZFRM120R10-MJ	1	●	●	12	3.4
ZFRM160R05-MJ	0.5	●	●	16	4.4
ZFRM160R10-MJ	1	●	●	16	4.4
ZFRM160R15-MJ	1.5	●	●	16	4.4
ZFRM200R10-MJ	1	●	●	20	5.4
ZFRM200R15-MJ	1.5	●	●	20	5.4

● : Line up
ZFRM120 / 160... : 5 piece per package
ZFRM200... : 1 piece per package

Reference pages: Standard cutting conditions → H170, TungFlex → H167

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Hardness	Priority	Grades	Max. depth of cut (in)	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt)							
							D0.315	D0.394	D0.490	D0.653	D0.816	D0.984	D1.181	D1.260
P	Low carbon steel, alloy steel	85 - 180 HB	First choice	AH725	≤0.04D	590 - 850	0.006	0.008	0.008	0.010	0.010	0.012	0.014	0.014
		85 - 180 HB	Wear resistance	AH710	≤0.04D	590 - 850	0.006	0.008	0.008	0.010	0.010	0.012	0.014	0.014
	High carbon steel, alloy steel	180 - 280 HB	First choice	AH725	≤0.03D	490 - 750	0.006	0.008	0.008	0.010	0.010	0.012	0.014	0.014
		180 - 280 HB	Wear resistance	AH710	≤0.03D	490 - 750	0.006	0.008	0.008	0.010	0.010	0.012	0.014	0.014
	Prehardened steel Die & mold tool steel	40 - 48 HRC	First choice	AH710	≤0.03D	590 - 980	0.006	0.006	0.008	0.008	0.010	0.010	0.012	0.012
		40 - 48 HRC	Fracture resistance	AH725	≤0.03D	590 - 980	0.006	0.006	0.008	0.008	0.010	0.010	0.012	0.012
M	Stainless steel	135 - 200 HB	First choice	AH725	≤0.03D	330 - 820	0.004	0.006	0.008	0.008	0.010	0.010	0.012	0.012
K	Cast iron	150 - 240 HB	First choice	AH710	≤0.04D	300 - 1150	0.008	0.008	0.010	0.012	0.012	0.014	0.016	0.016
		150 - 240 HB	Fracture resistance	AH725	≤0.04D	300 - 1150	0.008	0.008	0.010	0.012	0.012	0.014	0.016	0.016
N	Aluminum	-	First choice	AH725	≤0.03D	660 - 1310	0.010	0.010	0.014	0.014	0.014	0.016	0.016	0.018
S	Titanium alloy	-	First choice	AH725	≤ 0.03D	98 - 262	0.003	0.003	0.004	0.005	0.006	0.007	0.008	0.008
	Heat-resistant alloys	-	First choice	AH725	≤ 0.03D	98 - 328	0.003	0.003	0.004	0.005	0.006	0.007	0.008	0.008
H	High hardened steel	48 - 65 HRC	First choice	AH710	≤0.02D	330 - 720	0.003	0.003	0.004	0.005	0.006	0.008	0.008	0.010

· Remove excessive chip accumulation with an air blast.
· For the operation with depth of cut which varies (ex.casting skin) and machining of workpiece materials with interrupted surface, the feed per tooth (*fz*) should be set to the lower recommended value shown in the above table.
· Cutting conditions may be limited depending on machine power, workpiece rigidity, and spindle output. When the cutting width, depth, or overhang length is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

How to clamp the insert

1. Clear chips and dust from the pocket.
2. Place the insert in the pocket. The insert can be placed only in one direction.
3. Tighten the screw while pressing the insert into the pocket.

How to check the run-out

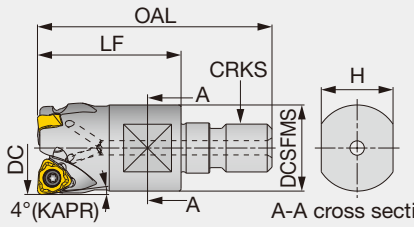
1. Clamp the insert on the shank.
2. Clamp the shank on a high-precision arbor.
3. Measure the run-out on tool presetter or by dial gauge.

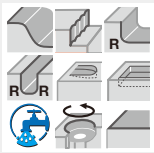
Notes:
1. Due to the helical cutting edge, it is important that the run-out is inspected with the insert clamped on the shank.
2. Do not use micrometer or caliper to inspect the insert diameter as inaccurate dimensions may be provided.

HFWX04-M

Small-radius finishing endmill, modular type (TungFlex)

GAMP = 0°, GAMF = -14°





Metric	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HFWX04M016M08R02	16	2	42	25	10	13	M8	0.03	With	WXHU04...
HFWX04M020M10R03	20	3	49	30	15	18	M10	0.05	With	WXHU04...
HFWX04M025M12R04	25	4	52	30	17	21	M12	0.09	With	WXHU04...

See page **H167** for TungFlex modular shank.

SPARE PARTS

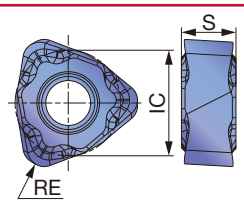


Designation	Clamping screw	Lubricant	Wrench
HFWX04M...	SR34-514	M-1000	T-7F

*Recommended clamping torque：SR34-514 = 0.9 N·m

INSERT

WXHU-MJ

		Coated
		AH110
P	Steel	★
M	Stainless	
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	RE	APMX	IC	S
WXHU040305R-MJ	0.020	0.020	0.250	0.125
WXHU040310R-MJ	0.039	0.039	0.250	0.125

* For plunging, the maximum cutting width is 0.079".

● : Line up

STANDARD CUTTING CONDITIONS

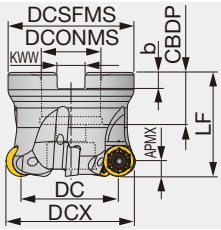
ISO	Workpiece material		Hardness	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	High carbon steel 1045, 1055, etc.		200 - 300 HB	AH110	328 - 984	0.004 - 0.012
P	Alloy steel 4140, etc.		150 - 300 HB	AH110	328 - 984	0.004 - 0.012
P	Prehardened steel NAK80, PX5, etc.		30 - 40 HRC	AH110	328 - 984	0.002 - 0.012
H	Hardened steel	H13, etc.	40 - 50 HRC	AH110	262 - 427	0.004 - 0.012
H	Hardened steel	D2, etc.	50 - 60 HRC	AH110	164 - 328	0.002 - 0.006

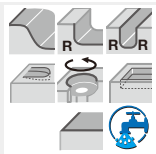
Reference pages: TungFlex → **H167**

FIXRMILL
TRP12/16

Radius mill with anti-rotation system

GAMP = +4°, GAMF = -4°





Inch	APMX	DCX	DC	CICT	DCSFMS	DCONMS	CBDP	LF	b	KWW	WT(lb)	Air hole	Insert
TRP12R200U0075A05	0.236	2.000	1.528	5	1.850	0.750	0.750	1.575	0.197	0.315	0.66	With	RPMT1204EN-M*
TRP12R250U0100A06	0.236	2.500	2.028	6	2.323	1.000	1.024	1.969	0.236	0.374	1.32	With	RPMT1204EN-M*
TRP16R250U0100A05	0.315	2.500	1.869	5	2.323	1.000	1.024	1.969	0.236	0.374	1.32	With	RPMT1606EN-M*

SPARE PARTS





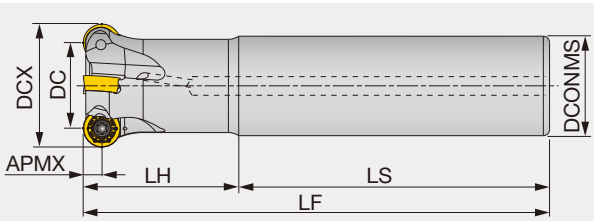
Designation	Clamping screw	Grip	Lubricant	Shell locking bolt (Optional parts)	Torx bit
TRP12R200U0075A05	CSTR-4L100	H-TBS	M-1000	(C0.375X1.125H)	BT15S
TRP12R250U0100A06	CSTR-4L100	H-TBS	M-1000	(C0.500X1.375H)	BT15S
TRP16R250U0100A05	CSPB-5	H-TBS	M-1000	(C0.500X1.375H)	BLDIP20/S7

*Recommended clamping torque：CSTR-4L100 = 2.58 lbs·ft, CSPB-5 = 3.69 lbs·ft

FIXRMILL
ERP10/12/16

Radius endmill with anti-rotation system, shank type

GAMP = +10°~ +4°, GAMF = -2°~ -8.5°



Inch	APMX	DCX	DC	CICT	DCONMS	LS	LH	LF	Air hole	Insert
ERP10R100U0100-02	0.197	1.000	0.606	2	1.000	4.000	2.000	6.000	With	RPMT10T3EN-M*
ERP10R125U0125-04	0.197	1.250	0.856	4	1.250	4.000	2.000	6.000	With	RPMT10T3EN-M*
ERP10R150U0125-04	0.197	1.500	1.106	4	1.250	4.000	2.000	6.000	With	RPMT10T3EN-M*
ERP12R125U0125-03	0.236	1.250	0.776	3	1.250	4.000	2.000	6.000	With	RPMT1204EN-M*
ERP12R150U0125-04	0.236	1.500	1.034	4	1.250	4.000	2.000	6.000	With	RPMT1204EN-M*
ERP16R150U0125-02	0.315	1.500	0.866	2	1.250	4.000	2.000	6.000	With	RPMT1606EN-M*

SPARE PARTS



Designation	Clamping screw	Lubricant	Wrench
ERP10R...	CSPB-3.5S	M-1000	IP-15D
ERP12R...	CSTR-4L100	M-1000	T-15DB
ERP16R...	CSPB-5	M-1000	IP-20D

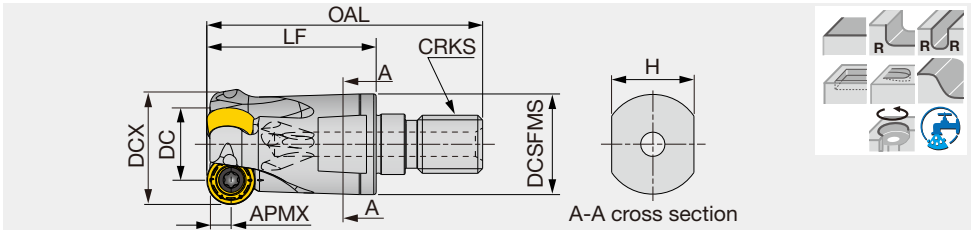
*Recommended clamping torque：CSPB-3.5S/CSTR-4L100 = 2.58 lbs·ft, CSPB-5 = 3.69 lbf·ft

Reference pages: Inserts → H173, Standard cutting conditions → H174 - H175

HRP10/12-M

Radius endmill with anti-rotation system, modular type (TungFlex)

GAMP = 1°~ 4°, GAMF = -8.5°~ 2°



Metric	APMX	DCX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole	Insert
HRP10R020MM10-02	5	20	10	2	49	30	15	17.8	M10	0.1	With	RPMT10T3...
HRP10R025MM12-02	5	25	15	2	57	35	17	20.8	M12	0.1	With	RPMT10T3...
HRP10R032MM16-04	5	32	22	4	63	40	22	28.8	M16	0.2	With	RPMT10T3...
HRP12R032MM16-03	6	32	20	3	63	40	22	28.8	M16	0.2	With	RPMT1204...

See page **H167** for TungFlex modular shank.

SPARE PARTS

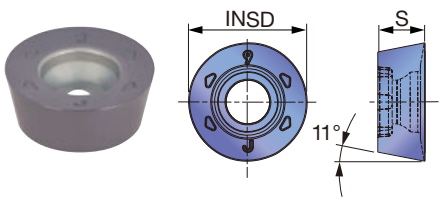


Designation	Clamping screw	Lubricant	Wrench	
			Bit	Grip
HRP10R**	CSPB-3.5S	M-1000	BLD IP15/S7	H-TBS
HRP12R**	CSTR-4L100	M-1000	BT15S	H-TBS

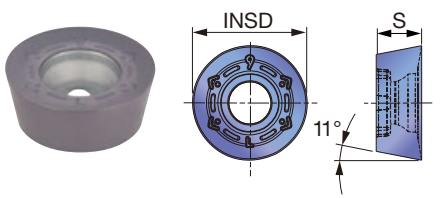
*Recommended clamping torque ：CSPB-3.5S/CSTR-4L100 = 3.5 N·m

INSERT

RPMT-MJ



RPMT-ML



P	Steel		★		
M	Stainless	★	☆	★	
K	Cast iron		☆		
N	Non-ferrous				
S	Superalloys	☆	★		
H	Hard materials				

★ : First choice
☆ : Second choice

Designation	APMX	Coated										INSD	S
		AH130	AH725	AH4035									
RPMT10T3EN-MJ	0.197	●	●	●								0.394	0.156
RPMT10T3EN-ML	0.197	●	●	●								0.394	0.156
RPMT1204EN-MJ	0.236	●	●	●								0.472	0.187
RPMT1204EN-ML	0.236	●	●	●								0.472	0.187
RPMT1606EN-MJ	0.315	●	●	●								0.630	0.250
RPMT1606EN-ML	0.315	●	●	●								0.630	0.250

● : Line up

Reference pages: Standard cutting conditions → **H174 - H175**, TungFlex → **H167**

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Priority	Grade	Chip-breaker	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steels 1045, 1055, etc.	< 300 HB	First choice	AH725	MJ	400 - 830	0.012 - 0.028
		< 300 HB	Fracture resistance	AH130	MJ	400 - 830	0.012 - 0.028
	Alloy steels 4140 (H), etc.	150 - 300 HB	First choice	AH725	MJ	330 - 830	0.008 - 0.024
		150 - 300 HB	Fracture resistance	AH130	MJ	330 - 830	0.008 - 0.024
	Tool steels W1-10, M2, etc.	< 300 HB	-	AH725	ML	260 - 590	0.008 - 0.016
M	Stainless steels 304, 316, etc.	< 200 HB	First choice	AH130	ML	330 - 830	0.008 - 0.024
		< 200 HB	Fracture resistance	AH130	MJ	330 - 830	0.008 - 0.024
	Stainless steels 420, 430, etc.	< 200 HB	First choice	AH4035	ML	330 - 1000	0.008 - 0.024
		< 200 HB	Fracture resistance	AH4035	MJ	330 - 1000	0.008 - 0.024
K	Gray cast irons No25, No30, etc.	150 - 250 HB	-	AH725	ML	400 - 830	0.012 - 0.028
	Ductile cast irons 60-40-18, etc.	150 - 250 HB	-	AH725	ML	330 - 660	0.012 - 0.028
H	Hardened steels H3, etc.	40 - 50 HRC	-	AH725	MJ	200 - 460	0.004 - 0.012
	Hardened steels D2, etc.	50 - 60 HRC	-	AH725	MJ	70 - 200	0.002 - 0.008

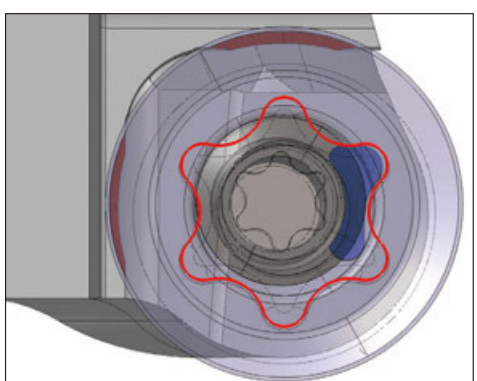
· Use air blast to remove chips from the work area in slot milling or pocketing operation.
· When machining at high cutting speeds of more than *Vc* = 3281 sfm, the dynamic balance of the tools must be adjusted.
· Cutting conditions are limited by machine power, workpiece rigidity and spindle output. When the cutting width or depth is large, set *Vc* and *fz* to the lower recommended values and check the machine power and vibration.

Tool dia.: DCX (in), Number of revolutions: *n* (rpm), Feed speed: *Vf* (ipm), Depth of cut: ap = 0.078"

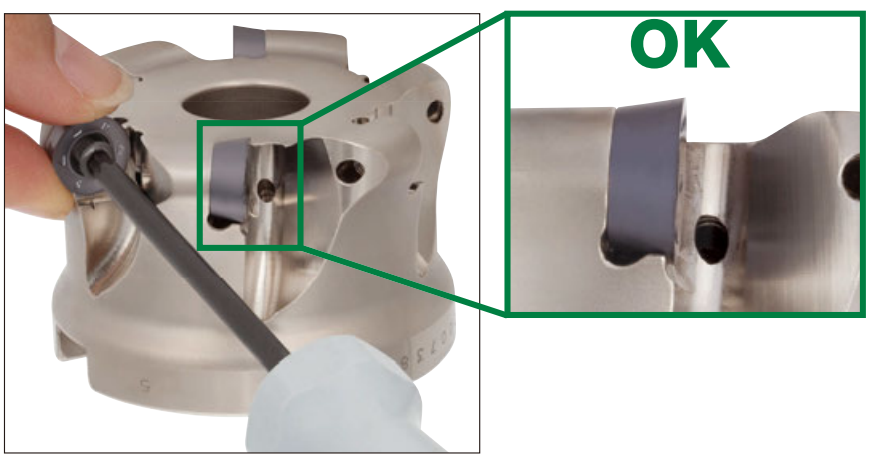
ø1.000		ø1.250			ø1.500			ø2.000		ø2.500		
n	*Vf*	*n*	*Vf*		*n*	*Vf*		*n*	*Vf*	*n*	*Vf*	
			ERP10	ERP12		ERP10/12	ERP16				TRP12	TRP16
2250	90	1790	143	110	1430	120	60	1150	110	910	110	90
						Vc = 590 sfm, *fz* = 0.020 ipt						
2250	90	1790	143	110	1430	120	60	1150	110	910	110	90
						Vc = 590 sfm, *fz* = 0.020 ipt						
2140	68	1690	108	80	1350	90	45	1080	85	860	80	70
						Vc = 560 sfm, *fz* = 0.016 ipt						
2140	51	1690	81	60	1350	90	45	1080	85	860	80	470
						Vc = 560 sfm, *fz* = 0.012 ipt						
1600	38	1290	62	45	1030	50	25	830	50	660	45	40
						Vc = 420 sfm, *fz* = 0.016 ipt						
2140	68	1690	108	80	1350	90	45	1080	52	860	80	70
						Vc = 560 sfm, *fz* = 0.016 ipt						
2140	68	1690	108	80	1350	90	45	1080	52	860	80	70
						Vc = 560 sfm, *fz* = 0.016 ipt						
2520	81	1990	127	95	1590	110	55	1270	100	1010	95	80
						Vc = 660 sfm, *fz* = 0.016 ipt						
2520	81	1990	127	95	1590	110	55	1270	100	1010	95	80
						Vc = 660 sfm, *fz* = 0.016 ipt						
2250	90	1790	143	110	1430	120	60	1150	110	910	110	90
						Vc = 590 sfm, *fz* = 0.020 ipt						
1910	76	1490	119	90	1190	100	50	950	90	760	90	75
						Vc = 500 sfm, *fz* = 0.020 ipt						
1260	20	990	32	25	800	25	15	640	25	510	25	20
						Vc = 330 sfm, *fz* = 0.008 ipt						
530	5	400	8	6	320	10	5	250	10	200	10	8
						Vc = 140 sfm, *fz* = 0.005 ipt						

Caution for insert clamping

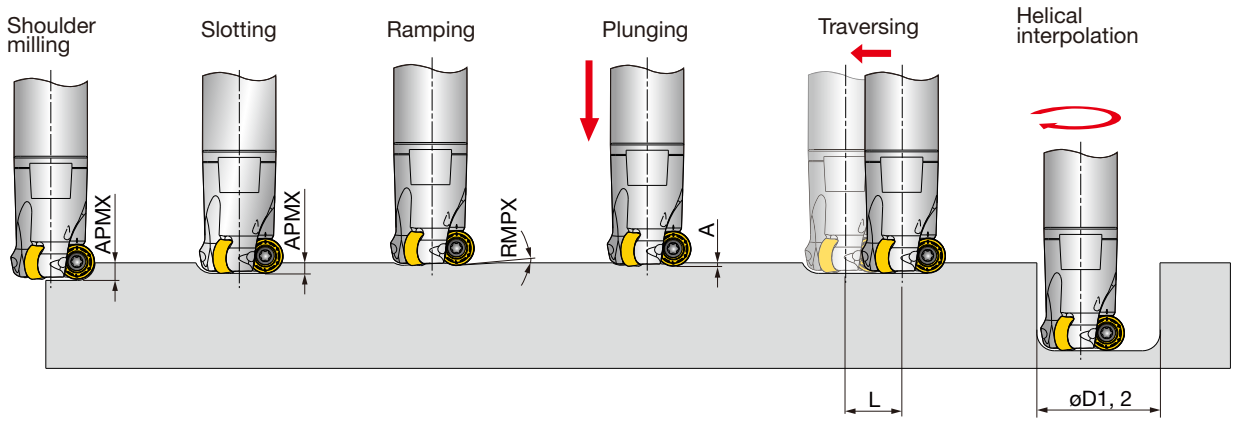
When clamping an insert, please carefully locate it in the seat, fasten the screw, and make sure there is no gap between it and the body.



Set the insert cavity to fit the protrusion on the body.



APPLICATION RANGE



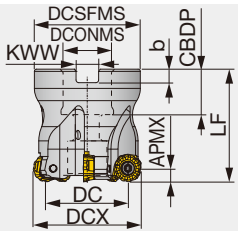
	Tool-ø	Max. depth of cut	Max. ramping angle	Max. plunging depth	Machining length for removing uncut portion	Min.machining	*Max. machining
Inch	DCX	APMX	RMPX	A	L	øD1	øD2
ERP10R100U0100-02	1.000	0.197	3	0.0276	0.630	1.457	1.969
ERP10R125U0125-04	1.250	0.197	8	0.0984	0.866	1.811	2.441
ERP10R150U0125-04	1.500	0.197	6	0.0984	1.142	2.283	2.953
ERP12R125U0125-03	1.250	0.236	8.3	0.0906	0.787	1.693	2.441
ERP12R150U0125-04	1.500	0.236	4	0.0630	1.063	2.244	2.953
ERP16R150U0125-02	1.500	0.315	6	0.0709	0.906	2.008	2.953
TRP12R200U0075A05	2.000	0.236	4	0.0984	1.575	3.189	3.937
TRP12R250U0100A06	2.500	0.236	2.7	0.0906	2.047	4.213	4.921
TRP16R250U0100A05	2.500	0.315	3	0.0906	1.890	3.976	4.921

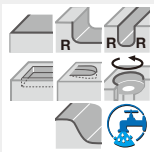
*For flat bottom hole

TRC12/16

Face mill, for round inserts with 0.236" (6 mm) or 0.315" (8 mm) radius

GAMP = +0°, GAMF = -1°~ -5°



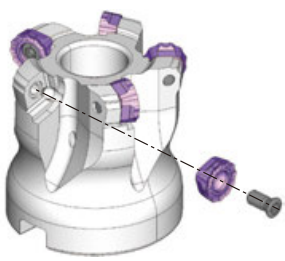


Inch	APMX	DCX	DC	CICT	DCSFMS	LF	DCONMS	CBDP	KWW	b	WT(lb)	Air hole	Insert	Arbor type
TRC12R200U0075A05	0.236	2.000	1.528	5	1.850	2.000	0.750	0.750	0.320	0.200	0.880	With	RCMT1204...	A
TRC12R250U0075A06	0.236	2.500	2.028	6	2.320	2.000	0.750	0.750	0.320	0.200	1.540	With	RCMT1204...	A
TRC12R300U0100A07	0.315	3.000	2.528	7	2.830	2.500	1.000	1.020	0.370	0.240	2.860	With	RCMT1204...	A
TRC16R200U0075A04	0.315	2.000	1.370	4	1.850	2.000	0.750	0.750	0.320	0.200	0.880	With	RCMT1204...	A
TRC16R250U0075A05	0.315	2.500	1.870	5	2.320	2.000	0.750	0 .750	0.320	0.200	1.540	With	RCMT1204...	A
TRC16R300U0100A06	0.315	3.000	2.370	6	2.830	2.500	1.000	1.020	0.370	0.240	2.860	With	RCMT1204...	A
TRC16R400U0150A07	0.315	4.000	3.370	7	3.820	2.500	1.500	1.460	0.620	0.390	3.520	With	RCMT1204...	B
TRC16R500U0150A08	0.315	5.000	4.370	8	3.780	2.500	1.500	1.460	0.620	0.390	7.930	With	RCMT1204...	B

SPARE PARTS

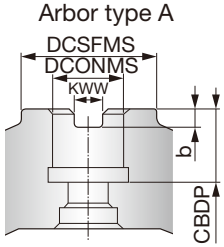
Designation	Clamping screw	Grip	Shell locking bolt (Optional parts)	Torx bit
TRC12R...	CSTB-4L090	H-TBS	(C0.375X1.125H)	BT15S
TRC16R200..., 250...	CSTB-5L120	H-TB	(C0.375X1.125H)	BT20S
TRC16R300...	CSTB-5L120	H-TB	(C0.500X1.375H)	BT20M
TRC16R400..., 500...	CSTB-5L120	H-TB	(TMBA-0.750H)	BT20M

*Recommended clamping torque : CSTB-4L090 = 2.58 lbs·ft, CSTB-5L120 = 3.69 lbs·ft

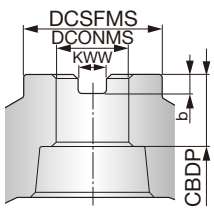


Arbor type

Arbor type A



Arbor type B

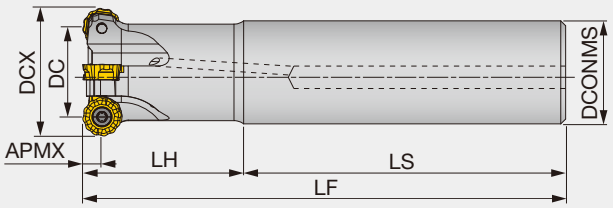


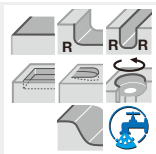
Reference pages: Inserts → H179, Standard cutting conditions → H180

ROUNDSPLIT
ERC12/16

Endmill, shank type, for round inserts with 0.236" (6 mm) or 0.315" (8 mm) radius

GAMP = +0°, GAMF = -1°~ -5°





Inch	APMX	DCX	DC	CICT	DCONMS	LF	LH	LS	WT(lb)	Air hole	Insert
ERC12R125U0125-03L	0.236	1.250	0.778	3	1.250	6.000	2.250	3.750	2.050	With	RCMT1204*N-***
ERC12R125U0125-03LL	0.236	1.250	0.778	3	1.250	12.000	7.000	5.000	3.370	With	RCMT1204*N-***
ERC12R125U0125-03LM	0.236	1.250	0.778	3	1.250	8.000	4.000	4.000	2.250	With	RCMT1204*N-***
ERC12R125U0125W03	0.236	1.250	0.778	3	1.250	5.000	2.750	2.250	1.320	With	RCMT1204*N-***
ERC12R125U150-03LL	0.236	1.250	0.778	3	1.500	12.000	7.000	5.000	4.190	With	RCMT1204*N-***
ERC12R150U0125-04LM	0.236	1.500	1.028	4	1.250	8.000	4.000	4.000	2.360	With	RCMT1204*N-***
ERC12R150U0125-04LX	0.236	1.500	1.028	4	1.250	12.000	7.000	5.000	3.550	With	RCMT1204*N-***
ERC12R150U0125W04	0.236	1.500	1.028	4	1.250	5.000	2.340	2.660	1.430	With	RCMT1204*N-***
ERC12R150U0150-04L	0.236	1.500	1.028	4	1.500	6.000	2.000	3.750	2.420	With	RCMT1204*N-***
ERC12R150U0150-04LM	0.236	1.500	1.028	4	1.500	8.000	4.000	4.000	3.080	With	RCMT1204*N-***
ERC12R150U0150-04LX	0.236	1.500	1.028	4	1.500	12.000	7.000	5.000	4.410	With	RCMT1204*N-***
ERC12R150U0150W04	0.236	1.500	1.028	4	1.500	5.000	2.340	2.660	1.830	With	RCMT1204*N-***
ERC12R150U150-04LL	0.236	1.500	1.028	4	1.500	12.000	2.000	10.000	5.290	With	RCMT1204*N-***
ERC16R150U0125-02LL	0.315	1.500	0.870	2	1.250	12.000	2.000	10.000	3.810	With	RCMT1606*N-***
ERC16R150U0125-02LM	0.315	1.500	0.870	2	1.250	8.000	2.000	6.000	2.470	With	RCMT1606*N-***
ERC16R150U0125W02	0.315	1.500	0.870	2	1.250	5.000	2.340	2.660	1.430	With	RCMT1606*N-***
ERC16R150U0150-02L	0.315	1.500	0.870	2	1.500	6.000	2.000	4.000	2.380	With	RCMT1606*N-***
ERC16R150U0150-02LM	0.315	1.500	0.870	2	1.500	8.000	4.000	4.000	3.080	With	RCMT1606*N-***
ERC16R150U0150-02LX	0.315	1.500	0.870	2	1.500	12.000	7.000	5.000	4.620	With	RCMT1606*N-***
ERC16R150U0150W02	0.315	1.500	0.870	2	1.500	5.000	2.340	2.660	1.830	With	RCMT1606*N-***
ERC16R150U150-02LL	0.315	1.500	0.870	2	1.500	12.000	2.000	10.000	5.290	Without	RCMT1606*N-***

SPARE PARTS

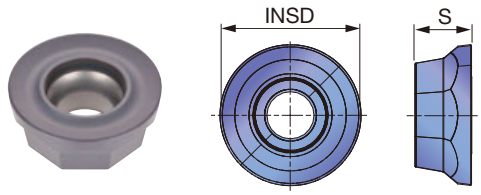
Designation	Clamping screw	Wewnch
ERC12R...	CSTB-4L090	T-15DB
ERC16R040...	CSTB-5L105	T-20DB
ERC16R050...	CSTB-5L120	T-20DB

*Recommended clamping torque：CSTB-4L090 = 2.58 lbs･ft, CSTB-5L105 = 3.69 lbs･ft, CSTB-5L120 = 3.69 lbs･ft

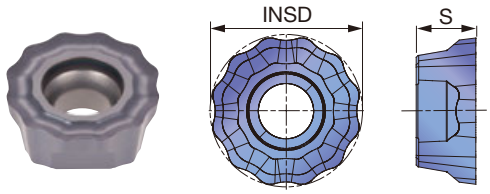
Reference pages: Inserts → H179, Standard cutting conditions → H180

INSERT

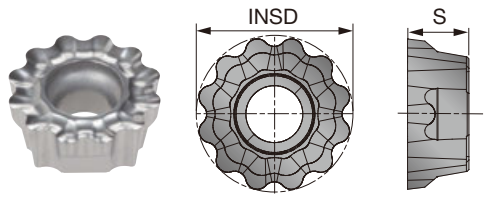
RCMT-MJ



RCMT-NMJ



RCMT-NAJ



P	Steel	☆		★			
M	Stainless		★	☆			
K	Cast iron	★		☆			
N	Non-ferrous				★		
S	Superalloys	★		★			
H	Hard materials						

★ : First choice
☆ : Second choice

Designation	APMX	Coated			Uncoated								INSD	S
		AH120	AH140	AH725	KS15F									
RCMT1204EN-MJ	0.236	●	●	●									0.472	0.189
RCMT1204EN-NMJ	0.236	●	●	●									0.472	0.189
RCMT1204FN-NAJ	0.236				●								0.472	0.189
RCMT1606EN-MJ	0.315	●	●	●									0.630	0.256
RCMT1606EN-NMJ	0.315	●	●	●									0.630	0.256
RCMT1606FN-NAJ	0.315				●								0.630	0.256

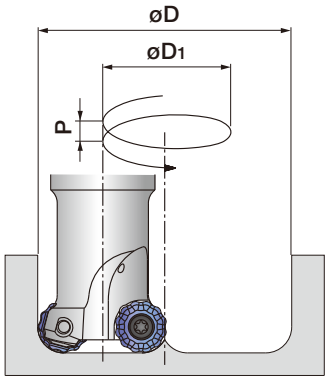
● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness HB	Grade	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) each chipbreaker		
					MJ	NMJ	NAJ
P	Low carbon steels 1010, 1015, etc.	~ 200	AH725	330 - 720	0.008 - 0.028	0.007 - 0.012	-
P	High carbon steels 1045, 1055, etc.	200 ~ 300	AH725	330 - 660	0.008 - 0.028	0.007 - 0.010	-
P	Alloyed steels 4140, 5120, etc.	150 ~ 300	AH725	330 - 660	0.008 - 0.028	0.007 - 0.010	-
P	Tool steels D3, etc.	~ 300	AH725	330 - 590	0.008 - 0.028	0.007 - 0.010	-
M	Stainless steels 304, 316, etc.	-	AH140	300 - 590	0.008 - 0.024	0.006 - 0.010	-
K	Gray cast irons No.250B, etc.	150 ~ 250	AH120	460 - 820	0.008 - 0.028	0.007 - 0.012	-
K	Ductile cast irons 60-40-18, etc.	150 ~ 250	AH120	460 - 820	0.008 - 0.028	0.007 - 0.012	-
N	Aluminum alloys Si < 13%	-	KS15F	1640 - 3940	-	-	0.004 - 0.012
N	Aluminum alloys Si ≥ 13%	-	KS15F	330 - 980	-	-	0.004 - 0.012
S	Heat-resistant alloy Inconel 718, Ti-6Al-4V, etc.	-	AH725	70 - 160	0.008 - 0.024	0.006 - 0.010	-

· To remove excessive chip accumulation use an air blast.
· When chips stick to the cutting edges (aluminum machining), use a water soluble cutting fluid.
· Cutting conditions are limited by machine power and material rigidity.
When the cutting width or depth is large, set *Vc* and *fz* below the recommended values and check the machine vibration and spindle load.

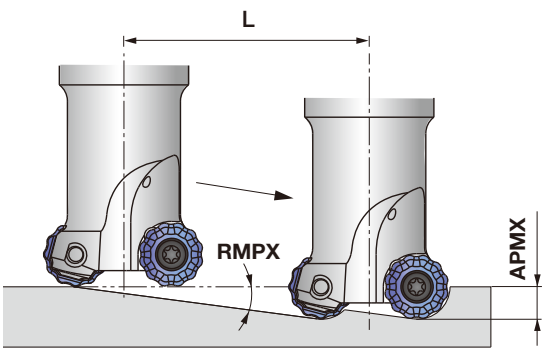
Holemaking with helical feed



Inch	Tool ø DCX (in)	Min. machining diameter (in)		Max. machining diameter (in)		Pitch P (in)
		øD	øD1	øD	øD1	
ERC12R125U...	1.250	2.028	0.778	2.421	1.171	< 0.236
ERC12R150U...	1.500	2.528	1.028	2.921	1.421	< 0.236
TRC12R200U...	2.000	3.528	1.528	3.921	1.921	< 0.236
TRC12R250U...	2.500	4.528	2.028	4.921	2.421	< 0.236
TRC12R300U...	3.000	5.528	2.528	5.921	2.921	< 0.236
ERC16R150U...	1.500	2.370	0.870	2.921	1.421	< 0.315
TRC16R200U...	2.000	3.370	1.370	3.921	1.921	< 0.315
TRC16R250U...	2.500	4.370	1.870	4.921	2.421	< 0.315
TRC16R300U...	3.000	5.370	2.370	5.921	2.921	< 0.315
TRC16R400U...	4.000	7.370	3.370	7.921	3.921	< 0.315
TRC16R500U...	5.000	9.370	4.370	9.921	4.921	< 0.315

When holemaking with a helical feed, the pitch (P) needs to be set at lower values than that shown above.

Ramping



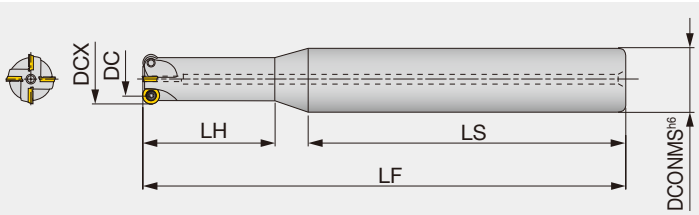
Inch	Tool ø DCX (in)	Max. ramping angle RMPX	L: tool pass length when ramping angle is 2°				
			APMX (in)				
			0.079	0.118	0.158	0.236	0.315
ERC12R125U...	1.250	10°	2.244	3.346	4.488	6.732	–
ERC12R150U...	1.500	7°	2.244	3.346	4.488	6.732	–
TRC12R200U...	2.000	5.5°	2.244	3.346	4.488	6.732	–
TRC12R250U...	2.500	3.5°	2.244	3.346	4.488	6.732	–
TRC12R300U...	3.000	2.5°	2.244	3.346	4.488	6.732	–
ERC16R150U...	1.500	16°	2.244	3.346	4.488	6.732	–
TRC16R200U...	2.000	9.5°	2.244	3.346	4.488	6.732	9.016
TRC16R250U...	2.500	6.5°	2.244	3.346	4.488	6.732	9.016
TRC16R300U...	3.000	4.5°	2.244	3.346	4.488	6.732	9.016
TRC16R400U...	4.000	3°	2.244	3.346	4.488	6.732	9.016
TRC16R500U...	5.000	2.5°	2.244	3.346	4.488	6.732	9.016

Tool pass length: L = *ap* / tan RMPX, Ramping angle needs to be set at smaller than 2 degrees in order to prevent chips from getting tangled.

EWD05/07/10

Endmill, shank type, for round inserts with 0.098", 0.138", and 0.196" (2.5, 3.5, and 5 mm) radius

GAMP = 0°, GAMF = -3°~ +0.5°



Inch	APMX	DCX	DC	CICT	DCONMS	LS	LH	LF	Air hole	Insert
EWD05050RU	0.098	0.500	0.304	2	0.750	3.250	0.750	5.000	With	RDMW0501M0
EWD05075RU	0.098	0.750	0.554	3	1.000	5.000	1.500	7.000	With	RDMW0501M0
EWD07075RU	0.138	0.750	0.475	4	1.000	5.000	1.500	7.000	With	RDMW0702M0
EWD07100RU	0.138	1.000	0.725	5	1.250	5.250	1.750	8.000	With	RDMW0702M0
EWD07125RU	0.138	1.250	0.975	3	1.500	5.500	1.750	9.000	With	RDMW0702M0
EWD10100RU	0.196	1.000	0.606	3	1.250	5.250	1.750	8.000	With	RDMW1003M0
EWD10125RU	0.196	1.250	0.856	5	1.500	5.500	1.750	9.000	With	RDMW1003M0

SPARE PARTS

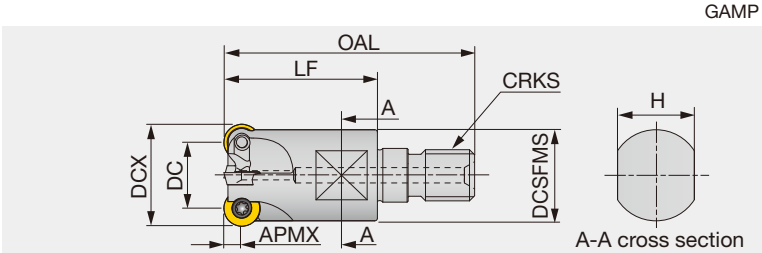

Designation	Clamping screw	Wrench
EWD05050RU	CSTD-1.8	T-6D
EWD05075RU	CSTD-1.8	T-6D
EWD07075RU	CSTB-2.5S	T-8D
EWD07100RU	CSTB-2.5S	T-8D
EWD07125RU	CSTB-2.5S	T-8D
EWD10100RU	CSTB-3.5H	T-15D
EWD10125RU	CSTB-3.5H	T-15D

*Recommended clamping torque：CSTD-1.8 = 0.52 lbs·ft, CSTB-2.5S = 0.74 lbs·ft, CSTB-3.5H = 2.58 lbs·ft

HWD07-M

Endmill, modular type, for round inserts with 3.5 mm radius (TungFlex)

GAMP = 0°, GAMF = -3°~ +0.5°



Metric	APMX	DCX	DC	CICT	OAL	LF	H	DCSFMS	CRKS	WT(kg)	Air hole
HWD07R015MM08-03	3.5	15	8	3	42	25	10	12.8	M8	0.03	With
HWD07R020MM10-04	3.5	20	13	4	49	30	15	17.8	M10	0.06	With
HWD07R025MM12-05	3.5	25	18	5	57	35	17	20.8	M12	0.1	With
HWD07R030MM16-05	3.5	30	23	5	63	40	22	28.8	M16	0.2	With

See page **H167** for TungFlex modular shank.

SPARE PARTS



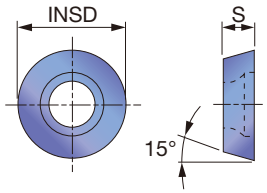
Designation	Clamping screw	Lubricant	Wrench
HWD07**M...	CSTB-2.5S	M-1000	T-8D

*Recommended clamping torque：CSTB-2.5S = 1 N·m

Reference pages: Inserts, Standard cutting conditions → **H183**, TungFlex → **H167**

INSERT

RDMW05/07/10



P	Steel	★	
M	Stainless		
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

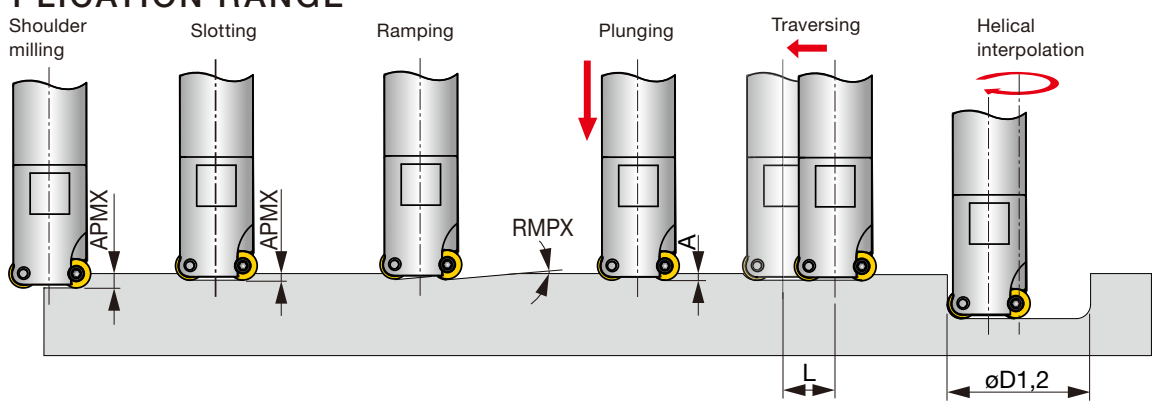
Designation	APMX	Coated AH120	INSD	S
RDMW0501M0	0.098	●	0.197	0.055
RDMW0702M0	0.138	●	0.276	0.094
RDMW1003M0	0.196	●	0.394	3.180

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	Depth of cut: APMX (in) Cutter dia. ø0.500"	Cutter dia. ø0.625", ø0.750"	Cutter dia. ø1.000"
P	Carbon steels 1018, 1055, etc. < 300 HB	AH120	650 - 1640	0.006 - 0.018	- 0.020	- 0.028	- 0.039
P	Alloy steels 4140, 4340, etc. < 300 HB	AH120	390 - 1150	0.006 - 0.014	- 0.020	- 0.028	- 0.039
P	Die steels H13, P20, etc. < 300 HB	AH120	330 - 980	0.004 - 0.012	- 0.020	- 0.028	- 0.039
K	Cast irons Class25-40, etc.	AH120	660 - 1640	0.008 - 0.020	- 0.020	- 0.028	- 0.039
H	Hardened steels, Prehardened steels < 40HRC	AH120	230 - 660	0.004 - 0.010	- 0.020	- 0.028	- 0.039

APPLICATION RANGE

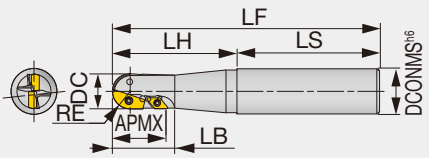


Inch	DCX	Tool-ø	Max. depth of cut	Max. ramping	Max. plunging depth	Machining length for removing uncut portion	Max. machining	*Max. machining
			APMX	RMPX	A	L	øD1	øD2
EWD05050RU	0.500		0.098	12.5°	0.060	0.342	0.804	0.921
EWD05075RU	0.750		0.098	4°	0.040	0.592	1.304	1.421
EWD07075RU	0.750		0.137	12°	0.080	0.513	1.225	1.421
EWD07100RU	1.000		0.137	7.5°	0.090	0.763	1.725	1.921
EWD07125RU	1.250		0.137	5°	0.080	1.013	2.225	2.421
EWD10100RU	1.000		0.196	15°	0.120	0.645	1.607	1.921
EWD10125RU	1.250		0.196	9.5°	0.120	0.895	2.107	2.421

*For flat bottom hole

EBP

Ball nose endmill for semi-finishing



Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	LB	RE	MK	Insert 1	Insert 2
EBP075MWU	0.625	0.750	2	1.000	2.280	2.750	5.030	1.250	0.375	-	ZPET075U-MJ	-
EBP100MWU	0.827	1.000	2	1.000	2.280	3.250	5.530	-	0.500	-	ZPET100U-MJ	-
EBP125MWU	1.000	1.250	2	1.250	2.280	3.750	6.030	-	0.625	-	ZPET125U-MJ	-
EBP075LWEU	1.140	0.750	2+2	1.000	2.280	3.750	6.030	1.250	0.375	MK2	ZPET075U-MJ	DCMW070204TN
EBP100LWEU	1.610	1.000	2+2	1.000	2.280	4.250	6.530	-	0.500	-	ZPET100U-MJ	DCMW11T304TN
EBP125LWEU	1.810	1.250	2+2	1.250	2.280	4.750	7.030	-	0.625	-	ZPET125U-MJ	DCMW11T304TN

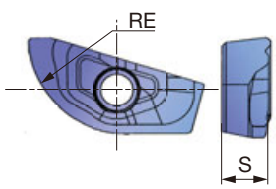
SPARE PARTS

Designation	Clamping screw for Insert 1	Clamping screw for Insert 2	Lubricant	Wrench 1 for Insert 1	Wrench 2 for Insert 2
EBP075MWU	CSTD-3T	-	T-10D	-	-
EBP100MWU	CSTB-4S	-	T-15D	-	-
EBP125MWU	CSTB-5S	-	T-20D	-	-
EBP075LWEU	CSTD-3T	CSTB-2.5S	T-10D	T-8D	T-8D
EBP100LWEU	CSTB-4S	CSTB-4S	T-15D	T-15D	-
EBP125LWEU	CSTB-5S	CSTB-4S	T-20D	T-15D	T-20D

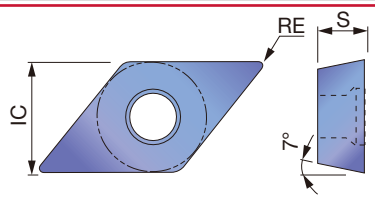
*Recommended clamping torque : CSTB-2.5S = 0.96 lbs·ft, CSTD-3T = 1.84 lbs·ft, CSTB-4S = 2.58 lbs·ft, CSTB-5S = 3.69 lbs·ft

INSERT

ZPET-MJ (For R edge)



DCMW-TN (For P edge)



		AH120	AH330
P	Steel	☆	★
M	Stainless		
K	Cast iron	★	
N	Non-ferrous		
S	Superalloys		
H	Hard materials	☆	

★ : First choice
☆ : Second choice

Designation	RE	Coated AH120	Coated AH330	IC	S
ZPET2004-MJ	0.375	●	●	-	0.169
ZPET2505-MJ	0.500	●	●	-	0.228
ZPET3006-MJ	0.625	●	●	-	0.276
ZPET3206-MJ	0.625	●	●	-	0.276
DCMW070204TN	0.016	●	●	0.252	0.266
DCMW11T304TN	0.016	●	●	0.375	0.094

ZPET30... : 5 piece per package
● : Line up

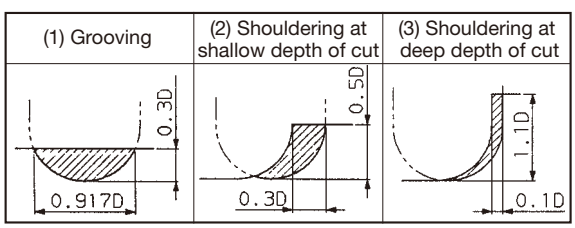
Reference pages: Standard cutting conditions→ H185

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Machining type	Cutting speed *Vc* (sfm)	Table feed: *Vf* (in/min)		
					Tool dia. ø0.787"	Tool dia. ø0.984"	Tool dia. ø1.181"
P	Carbon steels 1055, etc. < 300 HB	AH120	(1)	550 - 750	24 - 30	18 - 30	14 - 26
		AH120	(2)	650 - 850	35 - 51	27 - 43	21 - 37
		AH120	(3)	500 - 650	14 - 23	12 - 24	9 - 21
	Alloy steels 4140, 4340, etc. < 300 HB	AH120	(1)	500 - 690	21 - 33	16 - 28	12 - 24
		AH120	(2)	590 - 780	32 - 47	16 - 32	19 - 34
		AH120	(3)	425 - 590	14 - 26	10 - 22	8 - 19
	Die steels JIS SKD11, etc. < 300 HB	AH330	(1)	400 - 590	17 - 28	12 - 24	9 - 21
		AH330	(2)	500 - 690	26 - 42	19 - 35	15 - 30
		AH330	(3)	330 - 500	10 - 22	7 - 19	5 - 17
K	Cast irons JIS Class 25-40, etc.	AH120	(1)	550 - 750	32 - 43	24 - 36	19 - 31
		AH120	(2)	650 - 850	35 - 55	28 - 47	21 - 41
		AH120	(3)	500 - 650	17 - 28	12 - 24	9 - 21
H	Hardened steels Prehardened steels < 45 HRC	AH120	(1)	200 - 330	6 - 14	4 - 12	4 - 10
		AH120	(2)	230 - 425	6 - 18	4 ~16	4 - 14
		AH120	(3)	130 - 260	6 - 10	4 - 8	3 - 7

- Cutting speeds shown in the above table are of the most outer diameter of the tool.
- When the depth of cut is the upper limit shown in the above figures, set the cutting conditions to the lowest values shown left.
- When using long edge types, set the cutting speed and feed to 60 to 80 % of values shown in the table.
- When using long shank types, set the cutting speed and feed to 20 to 50 % of values shown in the table, bearing in mind the overhang length.

Machining types



EBD

Ball nose endmill for roughing

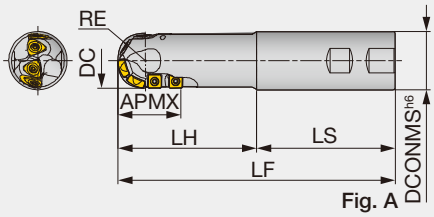


Fig. A

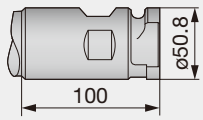
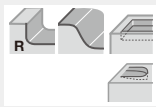


Fig. B



Combination shank

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	RE	Fig.	Insert R	Insert P
EBD040SSE	45	40	4 (7)	42	100	100	200	20	A	ZDMT4005-MJ	SCMT09T308-23
EBD040MSE	45	40	4 (7)	42	100	150	250	20	A	ZDMT4005-MJ	SCMT09T308-23
EBD050SSE	59	50	4 (7)	42	100	100	200	25	A	ZDMT5006-MJ	SCMT120408-23
EBD050MSE	59	50	4 (7)	42	100	150	250	25	A	ZDMT5006-MJ	SCMT120408-23
EBD050SCE	59	50	4 (7)	50.8	100	100	200	25	B	ZDMT5006-MJ	SCMT120408-23
EBD050MCE	59	50	4 (7)	50.8	100	150	250	25	B	ZDMT5006-MJ	SCMT120408-23

SPARE PARTS

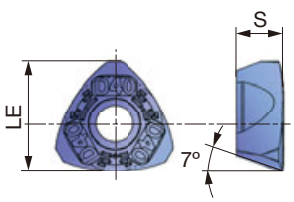


Designation	Clamping screw	Lubricant	Wrench
EBD040*SE	CSTB-4M	M-1000	T-15T
EBD050**-E	CSTB-5	M-1000	T-20T

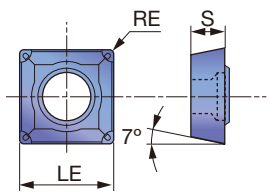
*Recommended clamping torque : CSTB-4M = 3.5 N·m, CSTB-5 = 5 N·m

INSERT

ZDMT-MJ (For R edge)



SCMT-23 (For P edge)



P	Steel	☆
M	Stainless	
K	Cast iron	★
N	Non-ferrous	
S	Superalloys	
H	Hard materials	☆

★ : First choice
☆ : Second choice

Designation	RE	Coated AH120	LE	S
ZDMT4005-MJ	-	●	0.512	0.217
ZDMT5006-MJ	-	●	0.638	0.256
SCMT09T308-23	0.031	●	0.375	0.156
SCMT120408-23	0.031	●	0.500	0.187

● : Line up

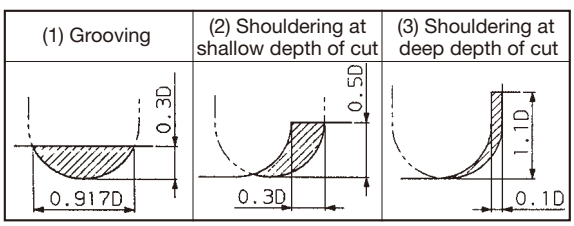
Reference pages: Standard cutting conditions→ H187

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Machining type	Cutting speed *Vc* (sfm)	Table feed: *Vf* (in/min)	
					Tool dia. ø1.570"	Tool dia. ø2.000"
P	Carbon steels 1055, etc. < 300 HB	AH120	(1)	500 - 690	16 - 22	3 - 18
		AH120	(2)	550 - 750	16 - 22	13 - 17
		AH120	(3)	425 - 625	8 - 12	6 - 10
	Alloy steels 4140, 4340, etc. < 300 HB	AH120	(1)	425 - 625	14 - 20	11 - 16
		AH120	(2)	500 - 690	14 - 20	11 - 16
		AH120	(3)	360 - 560	7 - 11	5 - 9
	Die steels JIS SKD11, etc. < 300 HB	AH120	(1)	360 - 560	12 - 18	10 - 15
		AH120	(2)	425 - 625	12 - 18	10 - 14
		AH120	(3)	295 - 500	6 - 10	5 - 8
K	Cast irons JIS Class 25-40, etc.	AH120	(1)	550 - 750	20 - 27	16 - 21
		AH120	(2)	625 - 820	20 - 27	16 - 21
		AH120	(3)	500 - 690	12 - 20	9 - 13
H	Hardened steels Prehardened steels < 45 HRC	AH120	(1)	230 - 360	6 - 10	5 - 8
		AH120	(2)	260 - 400	6 - 10	5 - 8
		AH120	(3)	160 - 300	3 - 6	2 - 5

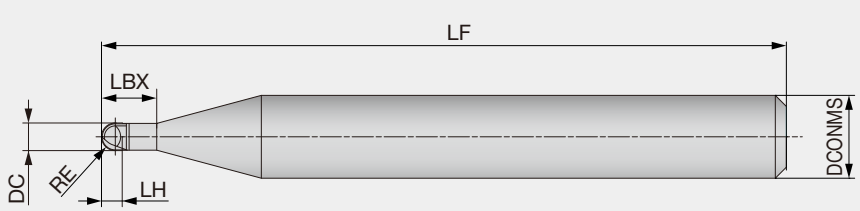
- Cutting speeds shown in the above table are of the most outer diameter of the tool.
- The values of the cutting speeds and feeds shown in the table are of under general cutting conditions.
  The values should be modified depending on the power and rigidity of the machine to be used, and work holding conditions.
- When using the long shank type, the depth of cut, pick feed, cutting speed, and table feed should be reduced to 70 %-90 % of the values shown in the tables.

Machining types



BBB2000

T-CBN ball nose endmill for dies and molds



Metric	BX850	NOF	RE	DC	LH	LBX	LF	DCONMS
BBB2006	●	2	0.3	0.6	0.5	1.2	50	6
BBB2008	●	2	0.4	0.8	0.6	1.6	50	6
BBB2010	●	2	0.5	1	0.7	2	50	6
BBB2020	●	2	1	2	1.5	4	50	6

● : Line up

Tolerance (BBB2000)

R	*R* Tolerance	Tolerance on shank
0.3 ~ 1	±0.005	h6

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hard-ness	No. of revolutions *n* (min^{-1})	Ball radius (RE) 0.3 Depth of cut APMX × *pf* (mm)	0.3 Feed rate (mm/min)	0.4 Depth of cut APMX × *pf* (mm)	0.4 Feed rate (mm/min)	0.5 Depth of cut APMX × *pf* (mm)	0.5 Feed rate (mm/min)	1 Depth of cut APMX × *pf* (mm)	1 Feed rate (mm/min)
H	Prehardened steel (NAK80, etc.) Die steel (JIS SKD61, etc.)	~ 52 HRC	50,000	0.02 × 0.03	2,000	0.03 × 0.05	2,000	0.05 × 0.05	3,000	0.10 × 0.10	5,000
	Die steel (JIS SKD11, DRM1 & 2, etc.)	~ 62 HRC	50,000	0.01 × 0.02	2,000	0.02 × 0.03	2,000	0.03 × 0.05	3,000	0.05 × 0.05	5,000
	High speed steel, Die steel (JIS SKH, DRM3, etc.)	~ 70 HRC	50,000	0.01 × 0.02	1,500	0.01 × 0.03	1,500	0.02 × 0.03	2,000	0.03 × 0.05	3,000

- Depths of cut (APMX) shown in the table are the allowable maximum values.
- Mist cooling or air blow is recommended.
- The maximum number of revolutions of the machine to be used is lower than 50,000 min^{-1}, the revolutions and feed rate should be modified at same rate.
- Use smallest possible overhang.

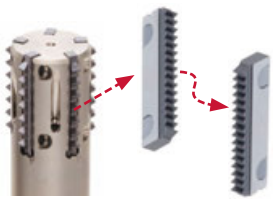
Ball radius (RE)	Inclined angle of workpiece (θ1) / Effective neck length (Z)			
0.3	0°30′/1.25	1°/1.30	2°/1.35	3°/1.45
0.4	0°30′/1.65	1°/1.70	2°/1.80	3°/1.90
0.5	0°30′/2.05	1°/2.10	2°/2.25	3°/2.40
1	0°30′/4.15	1°/4.25	2°/4.50	3°/4.80

MEMO

THREADMILLING

Highly economical tool design

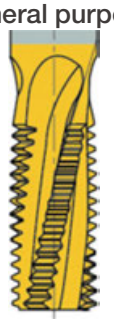
Cost reduction



2-corner double sided inserts

SOLIDTHREAD Selection Guide (for ISO metric)

External / General purpose



MTECE***ISO
P=1~2mm

Head changeable

Partial profile

VTR***IS**-***
P=0.5~4.5mm

Full profile

VMT***IS**-***
P=0.75~3mm

Head changeable

Partial profile

VTR***IS**-***
P=0.5~4.5mm

Internal / General purpose

MTEC***ISO
P=0.5~3mm

Coolant hole

Good chip evacuation

for Deep blind hole

MTECQ***ISO
P=1~3.5mm

for Blind hole

MTECB***ISO
P=0.5~3mm

Reduced cutting force

Short edge length

MTECS***ISO
P=0.25~2.5mm

for hardened metal

MTECSH***ISO
P=0.35~2mm

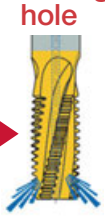
Threading simultaneously

End cutting edge

Left hand

MTECD***ISO
P=0.7~2mm

for Through hole



MTECZ***ISO
P=1~2mm

Reference pages: H191 - H203, L060

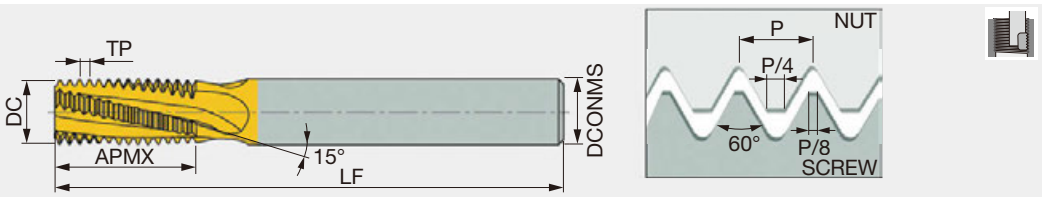
Designation System for Solid Carbide Endmills

MTEC□		06	04	C	10	1.0	ISO
ThreadMilling Endmill Carbide	I - Single Point S - Short SH - Short for Hardened steel B - with Coolant Bore Q - with Coolant Bore with long neck Z - with Coolant hole with through hole D - with Drilling (end mill) cutting edge E - for External thread	Shank Dia.	Tool Dia.	No. of Flutes C = 3 flutes D = 4 flutes E = 5 flutes F = 6 flutes	APMX	TPI	Thread Standard

ISO metric

MTEC-ISO

Solid carbide internal threading endmill, for ISO metric profile



Metric	TPI	Application range Fine	Application range Coarse	DCONMS	DC (in)	DC (mm)	NOF	APMX (in)	APMX (mm)	LF (in)	LF (mm)	Coolant hole	Grade
MTEC06038C100.5ISO	0.5	-	≥M5	6	0.150	3.8	3	0.406	10.3	2.283	58	Without	AH725
MTEC06022C50.5ISO	0.5	M3	≥M4	6	0.087	2.2	3	0.209	5.3	2.283	58	Without	AH725
MTEC06031C70.7ISO	0.7	M4	≥M5	6	0.122	3.1	3	0.291	7.4	2.283	58	Without	AH725
MTEC06045C100.75ISO	0.75	-	≥M6	6	0.177	4.5	3	0.394	10	2.283	58	Without	AH725
MTEC06036C90.8ISO	0.8	M5	≥M6	6	0.142	3.6	3	0.362	9.2	2.283	58	Without	AH725
MTEC0606C121.0ISO	1	-	≥M9	6	0.236	6	3	0.492	12.5	2.283	58	Without	AH725
MTEC0808D161.0ISO	1	-	≥M10	8	0.315	8	4	0.650	16.5	2.520	64	Without	AH725
MTEC0604C101.0ISO	1	M6	≥M7	6	0.157	4	3	0.413	10.5	2.283	58	Without	AH725
MTEC0604C141.0ISO	1	M6	≥M7	6	0.157	4	3	0.571	14.5	2.283	58	Without	AH725
MTEC0605C141.25ISO	1.25	M8	≥M10	6	0.197	5	3	0.567	14.4	2.283	58	Without	AH725
MTEC0605C191.25ISO	1.25	M8	≥M10	6	0.197	5	3	0.764	19.4	2.283	58	Without	AH725
MTEC1010D211.5ISO	1.5	-	≥M14	10	0.394	10	4	0.858	21.8	2.874	73	Without	AH725
MTEC1616F331.5ISO	1.5	-	≥M20	16	0.630	16	6	1.331	33.8	4.134	105	Without	AH725
MTEC0807C171.5ISO	1.5	M10	≥M12	8	0.276	7	3	0.681	17.3	2.520	64	Without	AH725
MTEC0807C241.5ISO	1.5	M10	≥M12	8	0.276	7	3	0.976	24.8	2.992	76	Without	AH725
MTEC0808C201.75ISO	1.75	M12	≥M14	8	0.315	8	3	0.791	20.1	2.520	64	Without	AH725
MTEC0808C281.75ISO	1.75	M12	≥M14	8	0.315	8	3	1.138	28.9	2.992	76	Without	AH725
MTEC1212D272.0ISO	2	-	≥M18	12	0.472	12	4	1.063	27	3.307	84	Without	AH725
MTEC2020F412.0ISO	2	-	≥M26	20	0.787	20	6	1.614	41	4.134	105	Without	AH725
MTEC1010C272.0ISO	2	M16	≥M17	10	0.394	10	3	1.063	27	2.874	73	Without	AH725
MTEC1010C392.0ISO	2	M16	≥M17	10	0.394	10	3	1.535	39	4.134	105	Without	AH725
MTEC1414D332.5ISO	2.5	M20	≥M22	14	0.551	14	4	1.331	33.8	3.307	84	Without	AH725
MTEC1414D482.5ISO	2.5	M20	≥M22	14	0.551	14	4	1.921	48.8	4.134	105	Without	AH725
MTEC1616C403.0ISO	3	M24	≥M25	16	0.630	16	3	1.594	40.5	4.134	105	Without	AH725
MTEC1616C583.0ISO	3	M24	≥M25	16	0.630	16	3	2.303	58.5	4.724	120	Without	AH725

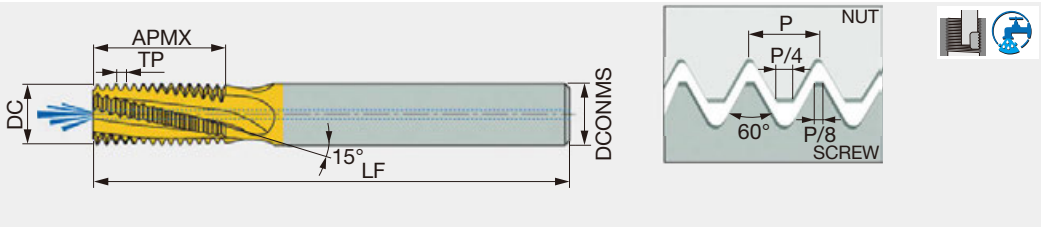
Reference pages: Standard cutting conditions → H206 - H207

SOLIDTHREAD

ISO metric

MTECB-ISO

Solid carbide internal threading endmill, with coolant hole, for ISO metric profile

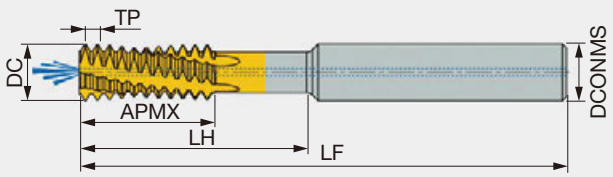


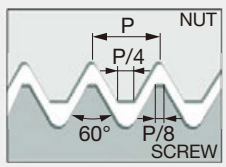
Metric	TP	Application range Fine	Application range Coarse	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECB06038C100.5ISO	0.5	-	≥M5	6	3.8	3	10.3	58	With	AH725
MTECB06031C70.7ISO	0.7	M4	≥M5	6	3.1	3	7.4	58	With	AH725
MTECB06045C100.75ISO	0.75	-	≥M6	6	4.5	3	10.1	58	With	AH725
MTECB1010D240.75ISO	0.75	-	≥M12	10	10	4	24.4	73	With	AH725
MTECB06038C90.8ISO	0.8	M5	≥M6	6	3.8	3	9.2	58	With	AH725
MTECB0606C121.0ISO	1	-	≥M9	6	6	3	12.5	58	With	AH725
MTECB0808D161.0ISO	1	-	≥M10	8	8	4	16.5	64	With	AH725
MTECB1010D241.0ISO	1	-	≥M12	10	10	4	24.5	73	With	AH725
MTECB06046C101.0ISO	1	M6	≥M7	6	4.6	3	10.5	58	With	AH725
MTECB06046C141.0ISO	1	M6	≥M6	6	4.6	3	14.5	58	With	AH725
MTECB0606C141.25ISO	1.25	M8	≥M10	6	6	3	14.4	58	With	AH725
MTECB0606C191.25ISO	1.25	M8	≥M10	6	6	3	19.4	58	With	AH725
MTECB1010D211.5ISO	1.5	-	≥M14	10	10	4	21.8	73	With	AH725
MTECB1616F331.5ISO	1.5	-	≥M20	16	16	6	33.8	105	With	AH725
MTECB1212D261.5ISO	1.5		≥M16	12	12	4	26.3	84	With	AH725
MTECB08078C171.5ISO	1.5	M10	≥M12	8	7.8	3	17	64	With	AH725
MTECB08078C241.5ISO	1.5	M10	≥M12	8	7.8	3	24.8	76	With	AH725
MTECB1009C201.75ISO	1.75	M12	≥M12	10	9	3	20.1	73	With	AH725
MTECB1009C281.75ISO	1.75	M12	≥M12	10	9	3	28.9	73	With	AH725
MTECB1010C272.0ISO	2	M14	≥M15	10	10	3	27	73	With	AH725
MTECB12118D272.0ISO	2	M16	≥M17	12	11.8	4	27	84	With	AH725
MTECB12118D392.0ISO	2	M16	≥M17	12	11.8	4	39	105	With	AH725
MTECB1615E332.5ISO	2.5	M20	≥M22	16	15	5	33.8	105	With	AH725
MTECB1615E482.5ISO	2.5	M20	≥M22	16	15	5	48.8	105	With	AH725
MTECB2018D583.0ISO	3	M24	≥M25	20	18	4	58.5	120	With	AH725

Reference pages: Standard cutting conditions → H206 - H207

MTECQ-ISO

Solid carbide deep internal threading endmill, with internal coolant hole, for ISO metric profile

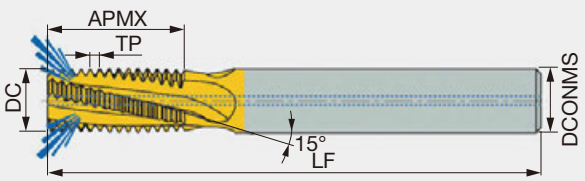


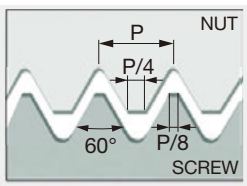


Metric	TP	Application range	DCONMS	DC	NOF	APMX	LH	LF	Coolant hole	Grade
MTECQ1212D381.0ISO	1	≥M14	12	12	4	21	38	84	With	AH725
MTECQ1010D301.5ISO	1.5	≥M13	10	10	4	18	30	73	With	AH725
MTECQ2020F562.0ISO	2	≥M24	20	20	6	34	56	105	With	AH725
MTECQ2020D453.5ISO	3.5	≥M26	20	20	4	28	45.5	105	With	AH725

MTECZ-ISO

Solid carbide internal threading endmill, with coolant hole in the flute, for ISO metric profile





Metric	TP	Application range Fine	Application range Coarse	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECZ0808D161.0ISO	1	-	≥M10	8	8	4	16.5	64	With	AH725
MTECZ06048C101.0ISO	1	M6	≥M7	6	4.8	3	10.5	58	With	AH725
MTECZ0606C141.25ISO	1.25	M8	≥M10	6	6	3	14.4	58	With	AH725
MTECZ0606C191.25ISO	1.25	M8	≥M10	6	6	3	19.4	58	With	AH725
MTECZ1010D211.5ISO	1.5	-	≥M14	10	10	4	21.8	73	With	AH725
MTECZ1212D261.5ISO	1.5	-	≥M16	12	12	4	26.3	84	With	AH725
MTECZ1616E331.5ISO	1.5	-	≥M20	16	16	5	33.8	101	With	AH725
MTECZ08078C171.5ISO	1.5	M10	≥M12	8	7.8	3	17	64	With	AH725
MTECZ1009C281.75ISO	1.75	M12	≥M12	10	9	3	28.9	73	With	AH725
MTECZ1010C272.0ISO	2	M14	≥M15	10	10	3	27	73	With	AH725
MTECZ12118D272.0ISO	2	M16	≥M17	12	11.8	4	27	84	With	AH725

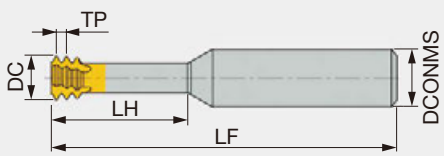
Reference pages: Standard cutting conditions → H206 - H207

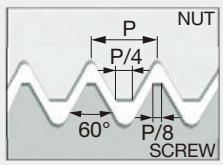
SOLIDTHREAD

ISO metric

MTECS-ISO

Small diameter solid carbide internal threading endmill, short edge type, for ISO metric profile



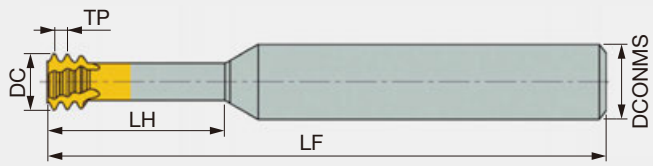


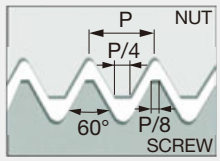
Metric	TP	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS03007C20.25ISO	0.25	≥M1	3	0.72	3	2.5	39	Without	AH725
MTECS03009C30.25ISO	0.25	≥M1.2	3	0.9	3	3	39	Without	AH725
MTECS03011C40.3ISO	0.3	≥M1.4	3	1.05	3	4	39	Without	AH725
MTECS03012C50.35ISO	0.35	≥M1.6	3	1.2	3	4.8	39	Without	AH725
MTECS03016C60.4ISO	0.4	≥M2	3	1.53	3	6	39	Without	AH725
MTECS06016C40.4ISO	0.4	≥M2	6	1.53	3	4.5	58	Without	AH725
MTECS03017C70.45ISO	0.45	≥M2.2	3	1.65	3	7	39	Without	AH725
MTECS06017C50.45ISO	0.45	≥M2.2	6	1.65	3	5	58	Without	AH725
MTECS0602C50.45ISO	0.45	≥M2.5	6	1.95	3	5.5	58	Without	AH725
MTECS0602C70.45ISO	0.45	≥M2.5	6	1.95	3	7.5	58	Without	AH725
MTECS06024C60.5ISO	0.5	≥M3	6	2.37	3	6.5	58	Without	AH725
MTECS06024C90.5ISO	0.5	≥M3	6	2.37	3	9.5	58	Without	AH725
MTECS06024C90.5ISOL	0.5	≥M3	6	2.37	3	9.5	105	Without	AH725
MTECS03024C120.5ISO	0.5	≥M3	3	2.4	3	12.5	39	Without	AH725
MTECS03024C150.5ISO	0.5	≥M3	3	2.4	3	15.5	39	Without	AH725
MTECS06054D200.5ISO	0.5	≥M6	6	5.35	4	20	58	Without	AH725
MTECS06028C100.6ISO	0.6	≥M3.5	6	2.75	3	10.5	58	Without	AH725
MTECS06028C70.6ISO	0.6	≥M3.5	6	2.75	3	7.5	58	Without	AH725
MTECS06031C120.7ISO	0.7	≥M4	6	3.1	3	12.5	58	Without	AH725
MTECS06031C120.7ISOL	0.7	≥M4	6	3.1	3	12.5	105	Without	AH725
MTECS06031C160.7ISO	0.7	≥M4	6	3.1	3	16.7	58	Without	AH725
MTECS06031C90.7ISO	0.7	≥M4	6	3.1	3	9	58	Without	AH725
MTECS0808D250.75ISO	0.75	≥M10	8	8	4	25	64	Without	AH725
MTECS06038C120.8ISO	0.8	≥M5	6	3.8	3	12.5	58	Without	AH725
MTECS06038C160.8ISO	0.8	≥M5	6	3.8	3	16	58	Without	AH725
MTECS06038C160.8ISOL	0.8	≥M5	6	3.8	3	16	105	Without	AH725
MTECS06047C141.0ISO	1	≥M6	6	4.65	3	14	58	Without	AH725
MTECS06047C201.0ISO	1	≥M6	6	4.65	3	20	58	Without	AH725
MTECS06047C201.0ISOL	1	≥M6	6	4.65	3	20	105	Without	AH725
MTECS0606C181.25ISO	1.25	≥M8	6	6	3	18	58	Without	AH725
MTECS0606C241.25ISO	1.25	≥M8	6	6	3	24	58	Without	AH725
MTECS08078C231.5ISO	1.5	≥M10	8	7.8	3	23	64	Without	AH725
MTECS08078C311.5ISO	1.5	≥M10	8	7.8	3	31.5	64	Without	AH725
MTECS1009C261.75ISO	1.75	≥M12	10	9	3	26	73	Without	AH725
MTECS12118D352.0ISO	2	≥M16	12	11.8	4	35	84	Without	AH725
MTECS12118D502.0ISO	2	≥M16	12	11.8	4	50	105	Without	AH725
MTECS1615E432.5ISO	2.5	≥M20	16	15	5	43	100	Without	AH725

Reference pages: Standard cutting conditions → H206 - H207

MTECSH-ISO

Small diameter solid carbide internal threading endmill, short edge type, left hand cutting, for ISO metric profile





Metric	TP	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECSH03012C50.35ISO	0.35	≥M1.6	3	1.2	3	4.8	39	Without	AH750
MTECSH03016C60.4ISO	0.4	≥M2	3	1.55	3	6	39	Without	AH750
MTECSH06016C40.4ISO	0.4	≥M2	6	1.55	3	4.5	58	Without	AH750
MTECSH06017C50.45ISO	0.45	≥M2.2	6	1.65	3	5	58	Without	AH750
MTECSH0602C50.45ISO	0.45	≥M2.5	6	1.95	3	5.5	58	Without	AH750
MTECSH0602C70.45ISO	0.45	≥M2.5	6	1.95	3	7.5	58	Without	AH750
MTECSH06024C60.5ISO	0.5	≥M3	6	2.35	3	6.5	58	Without	AH750
MTECSH06024C90.5ISO	0.5	≥M3	6	2.35	3	9.5	58	Without	AH750
MTECSH06028C70.6ISO	0.6	≥M3.5	6	2.75	3	7.5	58	Without	AH750
MTECSH06031C120.7ISO	0.7	≥M4	6	3.1	3	12.5	58	Without	AH750
MTECSH06038C120.8ISO	0.8	≥M5	6	3.8	3	12.5	58	Without	AH750
MTECSH06047C141.0ISO	1	≥M6	6	4.65	3	14	58	Without	AH750
MTECSH06047C201.0ISO	1	≥M6	6	4.65	3	20	58	Without	AH750
MTECSH0606C181.25ISO	1.25	≥M8	6	5.95	3	18	58	Without	AH750
MTECSH0606C241.25ISO	1.25	≥M8	6	5.95	3	24	58	Without	AH750
MTECSH08078C231.5ISO	1.5	≥M10	8	7.8	3	23	64	Without	AH750
MTECSH1009C261.75ISO	1.75	≥M12	10	9	3	26	73	Without	AH750
MTECSH12118D352.0ISO	2	≥M16	12	11.8	4	35	84	Without	AH750

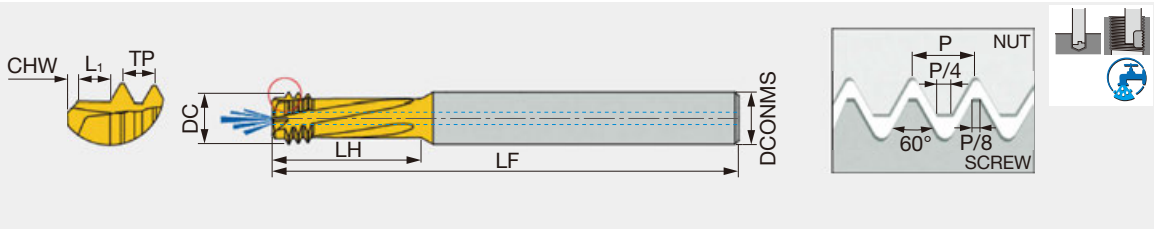
Reference pages: Standard cutting conditions → H206 - H207

SOLIDTHREAD

ISO metric

MTECD-ISO

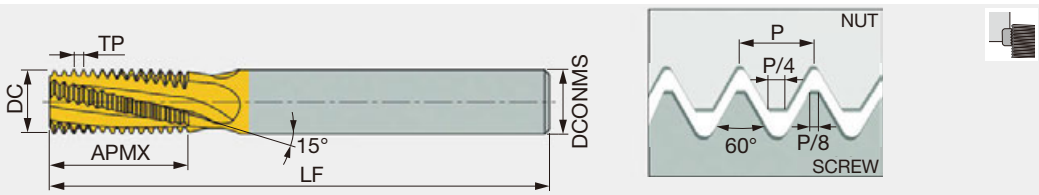
Small diameter solid carbide endmill for internal threading, drilling, and chamfering, short edge type, left hand cutting, for ISO metric profile



Metric	TP	Application range	DCONMS	DC	NOF	LH	LF	CHW	L1	Coolant hole	Grade
MTECD06032C110.7ISO	0.7	M4	6	3.15	3	11.6	58	0.2	0.7	Without	AH725
MTECD0604C140.8ISO	0.8	M5	6	4	3	14.4	58	0.3	0.8	Without	AH725
MTECD08047C141.0ISO	1	M6-M9	8	4.7	3	14	64	0.4	1	With	AH725
MTECD08061D181.25ISO	1.25	M8-M12	8	6.1	4	18	64	0.5	1.3	With	AH725
MTECD08078D231.5ISO	1.5	M10-M15	8	7.8	4	23	64	0.6	1.5	With	AH725
MTECD1009D261.75ISO	1.75	M12	10	9	4	26	73	0.6	1.8	With	AH725
MTECD12118D352.0ISO	2	M16-M23	12	11.8	4	35	84	0.6	2	With	AH725

MTEC E-ISO

Solid carbide external threading endmill, for ISO metric profile



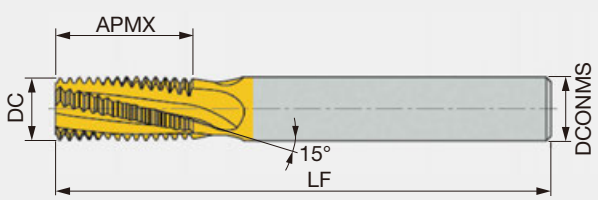
Metric	TP	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECE1010D161.0ISO	1	10	10	4	16.5	73	Without	AH725
MTECE1010D161.25ISO	1.25	10	10	4	16.9	73	Without	AH725
MTECE1010D151.5ISO	1.5	10	10	4	15.8	73	Without	AH725
MTECE1212D201.5ISO	1.5	12	12	4	20.3	84	Without	AH725
MTECE1212D201.75ISO	1.75	12	12	4	20.1	84	Without	AH725
MTECE1212D212.0ISO	2	12	12	4	21	84	Without	AH725

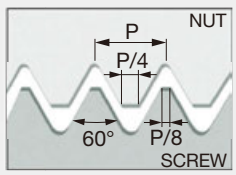
Reference pages: Standard cutting conditions → H206 - H207

Unified

MTEC-UN

Solid carbide internal threading endmill, for UN profile





Metric	TPI	Application range			DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
		UNC	UNF	UNEF							
MTEC06032C632UN	32	#8	#10	#12	6	3.2	3	6.8	58	Without	AH725
MTEC0604C1128UN	28	-	1/4	-	6	4	3	11.3	58	Without	AH725
MTEC0606C1428UN	28	-	-	7/16-1/2	6	6	3	14.5	58	Without	AH725
MTEC0605C1424UN	24	-	5/16	-	6	5	3	14.3	58	Without	AH725
MTEC0807C2124UN	24	-	3/8	9/16-5/8	8	7	3	20	64	Without	AH725
MTEC06045C1220UN	20	1/4	-	-	6	4.5	3	12.1	58	Without	AH725
MTEC0807C2120UN	20	-	7/16-1/2	-	8	7	3	20	64	Without	AH725
MTEC1212E2720UN	20	-	-	3/4-1	12	12	5	27.3	84	Without	AH725
MTEC0605C1418UN	18	5/16	-	-	6	5	3	14.8	58	Without	AH725
MTEC1010D2618UN	18	-	9/16-5/8	1 1/8-1 5/8	10	10	4	26.1	73	Without	AH725
MTEC0606C1616UN	16	3/8	-	-	6	6	3	16.7	58	Without	AH725
MTEC1212D3116UN	16	-	3/4	-	12	12	4	30	84	Without	AH725
MTEC1615E3714UN	14	-	7/8	-	16	15	5	37.2	105	Without	AH725
MTEC0808C2213UN	13	1/2	-	-	8	8	3	22.5	64	Without	AH725
MTEC1010C2612UN	12	9/16	-	-	10	10	3	26.5	73	Without	AH725
MTEC1616E4112UN	12	-	1-1 1/2	-	16	16	5	41.3	105	Without	AH725
MTEC1010C2811UN	11	5/8	-	-	10	10	3	28.9	73	Without	AH725
MTEC1212C3410UN	10	3/4	-	-	12	12	3	34.3	84	Without	AH725
MTEC1615C389UN	9	7/8	-	-	16	15	3	38.1	105	Without	AH725
MTEC1616C428UN	8	1	-	-	16	16	3	42.9	105	Without	AH725

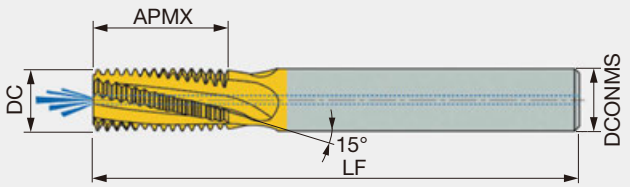
Reference pages: Standard cutting conditions → H206 - H207

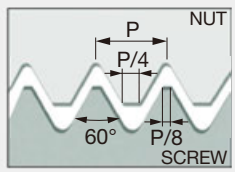
SOLIDTHREAD

Unified

MTECB-UN

Solid carbide internal threading endmill, with coolant hole, for UN profile

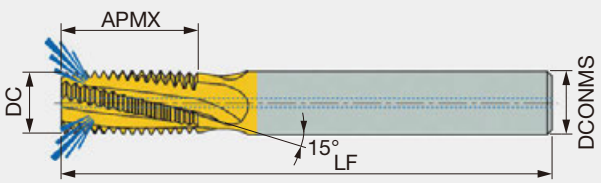


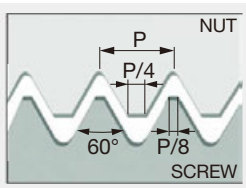


Metric	TPI	Application range			DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
		UNC	UNF	UNEF							
MTECB06032C632UN	32	#8	#10	#12	6	3.2	3	6.8	58	With	AH725
MTECB0606C1432UN	32	-	-	7/16-1/2	6	6	3	16	58	With	AH725
MTECB0605C1128UN	28	-	1/4	-	6	5	3	11.3	58	With	AH725
MTECB08066C1424UN	24	-	5/16	-	8	6.6	3	14.3	64	With	AH725
MTECB0808D2124UN	24	-	-	9/16-5/8	8	8	4	20.6	64	With	AH725
MTECB0808C2120UN	20	-	7/16	-	8	8	3	21	64	With	AH725
MTECB1010D2220UN	20	-	1/2	-	10	10	4	22.3	73	With	AH725
MTECB06056C1418UN	18	5/16	-	-	6	5.6	3	14.8	58	With	AH725
MTECB12113D2618UN	18	-	9/16-5/8	1 1/8-1 5/8	12	11.3	4	26.1	84	With	AH725
MTECB08067C1616UN	16	3/8	-	-	8	6.7	3	16.7	64	With	AH725
MTECB1212D3116UN	16	-	3/4	-	12	12	4	31	84	With	AH725
MTECB1616E3714UN	14	-	7/8	-	16	16	5	37.2	105	With	AH725
MTECB10092C2213UN	13	1/2	-	-	10	9.2	3	22.5	73	With	AH725
MTECB12114C2811UN	11	5/8	-	-	12	11.4	3	28.9	84	With	AH725
MTECB16144D3410UN	10	3/4	-	-	16	14.4	4	34.3	105	With	AH725
MTECB20195D428UN	8	1	-	-	20	19.5	4	42.9	105	With	AH725

MTECZ-UN

Solid carbide internal threading endmill, with coolant hole in the flute, for UN profile



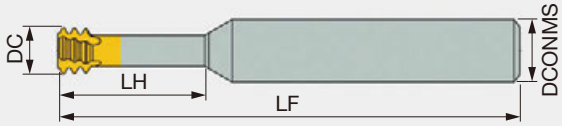


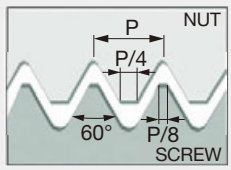
Metric	TPI	Application range			DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
		UNC	UNF	UNEF							
MTECZ1010D2220UN	20	-	1/2	-	10	10	4	22.3	73	With	AH725
MTECZ12113D2618UN	18	-	9/16-5/8	1 1/8-1 5/8	12	11.3	4	26.1	84	With	AH725
MTECZ08067C1616UN	16	3/8	-	-	8	6.7	3	16.7	64	With	AH725
MTECZ16144D3410UN	10	3/4	-	-	16	14.4	4	34.3	101	With	AH725

Reference pages: Standard cutting conditions → H206 - H207

MTECS-UN

Small diameter solid carbide internal threading endmill, short edge type, for UN profile





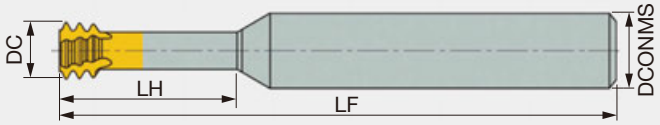
Metric	TPI	Application range UNC	Application range UNF	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS03012C880UN	80	-	#0	3	1.15	3	8	39	Without	AH725
MTECS03015C672UN	72	-	#1	3	1.45	3	6	39	Without	AH725
MTECS06016C656UN	56	#2	#3	6	1.65	3	6.6	58	Without	AH725
MTECS06016C456UN	56	#2	#3	6	1.65	3	4.4	58	Without	AH725
MTECS06019C548UN	48	#3	#4	6	1.9	3	5.2	58	Without	AH725
MTECS03021C1240UN	40	#4	-	3	2.1	3	12	39	Without	AH725
MTECS06021C840UN	40	#4	-	6	2.1	3	8	58	Without	AH725
MTECS06024C940UN	40	#5	#6	6	2.45	3	9.6	58	Without	AH725
MTECS06021C640UN	40	#4	-	6	2.1	3	6.3	58	Without	AH725
MTECS06033C936UN	36	-	#8	6	3.3	3	9	58	Without	AH725
MTECS06025C732UN	32	#6	-	6	2.55	3	7.1	58	Without	AH725
MTECS06025C1032UN	32	#6	-	6	2.55	3	10.5	58	Without	AH725
MTECS06032C932UN	32	#8	#10	6	3.2	3	9.5	58	Without	AH725
MTECS06032C1232UN	32	#8	#10	6	3.2	3	12.5	58	Without	AH725
MTECS06037C1032UN	32	-	#10	6	3.7	3	10.5	58	Without	AH725
MTECS06037C1532UN	32	-	#10	6	3.7	3	15	58	Without	AH725
MTECS0605C1428UN	28	-	1/4	6	5	3	14.5	58	Without	AH725
MTECS0605C1928UN	28	-	1/4	6	5	3	19	58	Without	AH725
MTECS08066C1724UN	24	-	5/16	8	6.6	3	17	64	Without	AH725
MTECS08066C2424UN	24	-	5/16	8	6.6	3	24	64	Without	AH725
MTECS06047C1420UN	20	1/4	-	6	4.75	3	14	58	Without	AH725
MTECS06047C1920UN	20	1/4	-	6	4.75	3	19	58	Without	AH725
MTECS06047C1920UN-L	20	1/4	-	6	4.75	3	19	105	Without	AH725
MTECS0808C2520UN	20	-	7/16	8	8	3	25	64	Without	AH725
MTECS0606C1718UN	18	5/16	-	6	6	3	17	58	Without	AH725
MTECS0606C2318UN	18	5/16	-	6	6	3	23	58	Without	AH725
MTECS1212D3518UN	18	-	5/8	12	12	4	35	84	Without	AH725
MTECS08067C2216UN	16	3/8	-	8	6.7	3	22	64	Without	AH725
MTECS08067C3016UN	16	3/8	-	8	6.7	3	30.2	64	Without	AH725
MTECS08077C2514UN	14	7/16	-	8	7.7	3	25	64	Without	AH725
MTECS10092C2713UN	13	1/2	-	10	9.2	3	27.5	73	Without	AH725
MTECS12114C3411UN	11	5/8	-	12	11.4	3	34.5	84	Without	AH725
MTECS12114C5011UN	11	5/8	-	12	11.4	3	50	105	Without	AH725

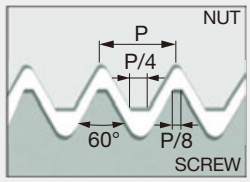
Reference pages: Standard cutting conditions → H206 - H207

Unified

MTECSH-UN

Small diameter solid carbide internal threading endmill, short edge type, left hand cutting, for UN profile

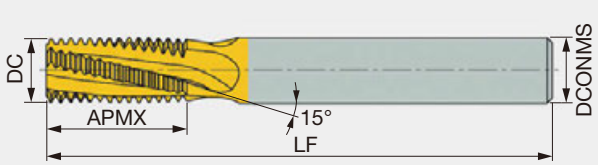


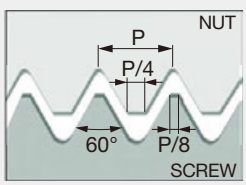


Metric	TPI	Application range UNC	Application range UNF	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECSH06012C480UN	80	-	#0	6	1.15	3	4	58	Without	AH725
MTECSH06016C656UN	56	#2	#3	6	1.65	3	6.6	58	Without	AH725
MTECSH06019C548UN	48	#3	#4	6	1.9	3	5.2	58	Without	AH725
MTECSH06021C640UN	40	#4	-	6	2.1	3	6.3	58	Without	AH725
MTECSH06024C740UN	40	#5	#6	6	2.45	3	7	58	Without	AH725
MTECSH06021C840UN	40	#4	-	6	2.1	3	8	58	Without	AH725
MTECSH06024C940UN	40	#5	#6	6	2.45	3	9.6	58	Without	AH725
MTECSH06025C1032UN	32	#6	-	6	2.55	3	10.5	58	Without	AH725
MTECSH06032C932UN	32	#8	-	6	3.2	3	9.5	58	Without	AH725
MTECSH06037C1032UN	32	-	#10	6	3.7	3	10.5	58	Without	AH725
MTECSH06037C1532UN	32	-	#10	6	3.7	3	15	58	Without	AH725
MTECSH06042C1128UN	28	-	#12	6	4.2	3	11	58	Without	AH725
MTECSH0605C1428UN	28	-	1/4	6	5	3	14.5	58	Without	AH725
MTECSH06035C1024UN	24	#10-#12	-	6	3.5	3	10.6	58	Without	AH725
MTECSH08066C1724UN	24	-	5/16	8	6.6	3	17	64	Without	AH725
MTECSH08066C2424UN	24	-	5/16	8	6.6	3	24	64	Without	AH725
MTECSH06047C1920UN	20	1/4	-	6	4.75	3	19	58	Without	AH725
MTECSH0808C2520UN	20	-	7/16	8	8	3	25	64	Without	AH725
MTECSH0606C1718UN	18	5/16	-	6	6	3	17	58	Without	AH725
MTECSH0606C2318UN	18	5/16	-	6	6	3	23	58	Without	AH725
MTECSH08067C2216UN	16	3/8	-	8	6.7	3	22	64	Without	AH725
MTECSH08077C2514UN	14	7/16	-	8	7.7	3	25	64	Without	AH725
MTECSH10092C2713UN	13	1/2	-	10	9.2	3	27.5	73	Without	AH725
MTECSH12114C3411UN	11	5/8	-	12	11.4	3	34.5	84	Without	AH725

MTEC E-UN

Solid carbide external threading endmill, for UN profile





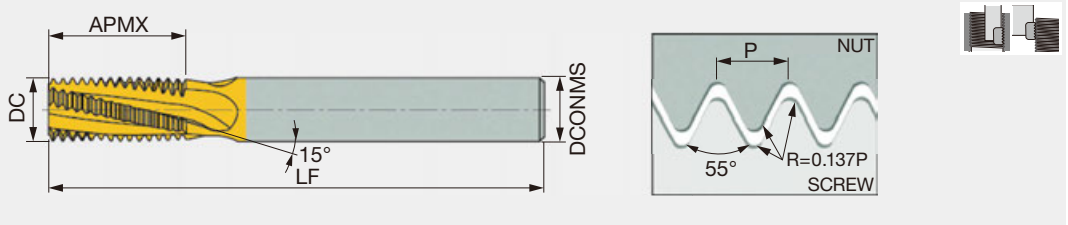
Metric	TPI	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECE1010D1624UN	24	10	10	4	16.4	73	Without	AH725
MTECE1212E2120UN	20	12	12	5	21	84	Without	AH725

Reference pages: Standard cutting conditions → H206 - H207

Whitworth

MTEC-W

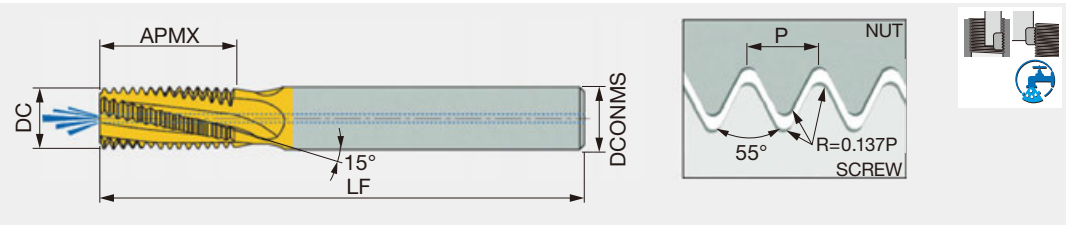
Solid carbide internal and external threading endmill, for BSP profile



Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTEC0606C928W	28	1/8	6	6	3	9.5	58	Without	AH725
MTEC0808C1419W	19	1/4-3/8	8	8	3	14	64	Without	AH725
MTEC1212D1914W	14	1/2-7/8	12	12	4	19.3	84	Without	AH725
MTEC1212D2614W	14	1/2-7/8	12	12	4	26.3	84	Without	AH725
MTEC1212C2411W	11	1-1 1/2	12	12	3	24.2	84	Without	AH725
MTEC1616D3811W	11	1-3	16	16	4	38.1	105	Without	AH725

MTECB-W

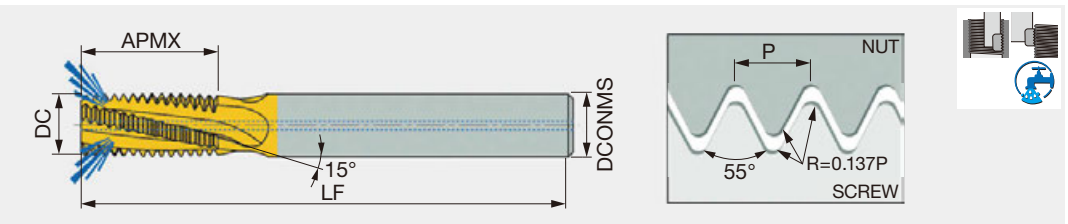
Solid carbide internal and external threading endmill, with coolant hole, for BSP profile



Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECB08078C1428W	28	1/8	8	7.8	3	14.1	64	Without	AH725
MTECB1010D1619W	19	1/4-3/8	10	10	4	16.7	73	Without	AH725
MTECB1616E2614W	14	1/2-7/8	16	16	5	26.3	105	Without	AH725
MTECB1616D3811W	11	≥1	16	16	4	38.1	105	Without	AH725
MTECB2020E4711W	11	≥1	20	20	5	47.3	105	Without	AH725

MTECZ-W

Solid carbide internal and external threading endmill, with coolant hole, for BSP profile



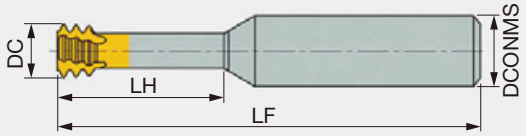
Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECZ08078C1428W	28	1/8	8	7.8	3	14.1	64	With	AH725
MTECZ1010D1619W	19	1/4-3/8	10	10	4	16.7	73	With	AH725
MTECZ1616E2614W	14	1/2-7/8	16	16	5	26.3	101	With	AH725

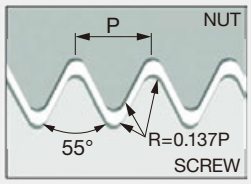
Reference pages: Standard cutting conditions → H206 - H207

SOLIDTHREAD

MTECS-W

Solid carbide internal and external threading endmill, short edge type, for BSP/BSF profile



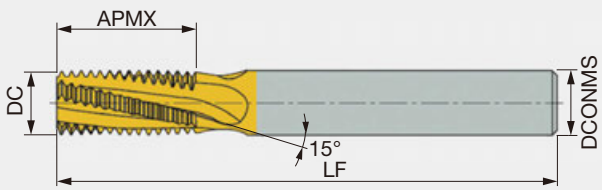


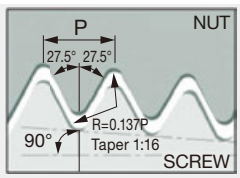
Metric	TPI	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS08078C1928W	28	1/8	8	7.8	3	19.5	64	Without	AH725
MTECS1010D3019W	19	1/4-3/8	10	10	4	30	73	Without	AH725
MTECS1212D3714W	14	1/2-7/8	12	12	4	37	84	Without	AH725

BSPT

MTEC-BSPT

Solid carbide internal and external threading endmill. for BSPT profile



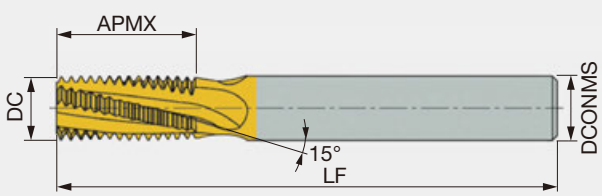


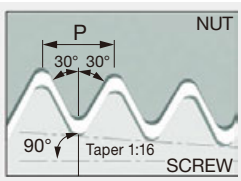
Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTEC0606C928BSPT	28	1/8	6	6	3	9.5	58	Without	AH725
MTEC0808C1419BSPT	19	1/4-3/8	8	8	3	14	64	Without	AH725
MTEC1212D1914BSPT	14	1/2-7/8	12	12	4	19.1	84	Without	AH725
MTEC1616D2811BSPT	11	1-2	16	16	4	28.9	105	Without	AH725

NPT

MTEC-NPT

Solid carbide internal and external threading endmill. for NPT profile

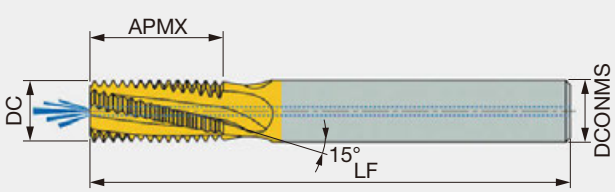


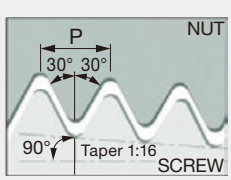


Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTEC0606C927NPT	27	1/16-1/8	6	6	3	9.9	58	Without	AH725
MTEC0808C1418NPT	18	1/4-3/8	8	8	3	14.8	64	Without	AH725
MTEC1212D2014NPT	14	1/2-3/4	12	12	4	20.9	84	Without	AH725
MTEC1616D2711.5NPT	11.5	1-2	16	16	4	27.6	105	Without	AH725
MTEC2020D398NPT	8	≥2 1/2	20	20	4	39.7	105	Without	AH725

MTECB-NPT

Solid carbide internal and external threading endmill, with coolant hole, for NPT profile



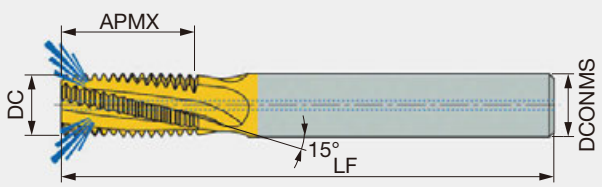


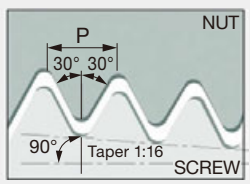
Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECB08076C1027NPT	27	1/8	8	7.6	3	10.8	64	With	AH725
MTECB1010D1618NPT	18	1/4-3/8	10	10	4	16.2	73	With	AH725
MTECB16155D2214NPT	14	1/2-3/4	16	15.5	4	22.7	105	With	AH725

NPTF

MTECZ-NPTF

Solid carbide internal and external threading endmill, with coolant hole in the flute, for NPTF profile



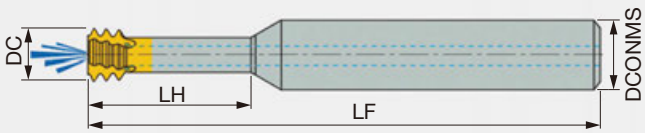


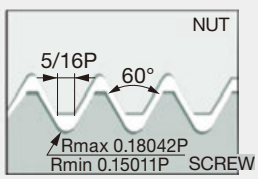
Metric	TPI	Application range	DCONMS	DC	NOF	APMX	LF	Coolant hole	Grade
MTECZ08076C1027NPTF	27	1/8	8	7.6	3	10.8	64	With	AH725
MTECZ1010D1618NPTF	18	1/4-3/8	10	10	4	16.2	73	With	AH725

MJ

MTECS-MJ

Small diameter solid carbide internal threading endmill, short edge type, with coolant hole, for MJ profile



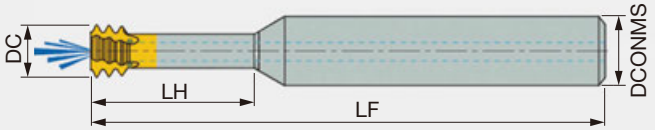


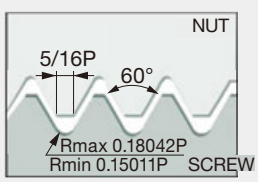
Metric	TP	Application range	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS06039C120.8MJ	0.8	5	6	3.9	3	12.5	58	With	AH725
MTECS08061C201.25MJ	1.25	8	8	6.1	3	20	64	With	AH725
MTECS10092C301.75MJ	1.75	12	10	9.2	3	30	73	With	AH725

UNJ

MTECS-UNJ

Small diameter solid carbide internal threading endmill, short edge type, with coolant hole, for UNJ profile





Metric	TPI	Application range UNJC	Application range UNJF	DCONMS	DC	NOF	LH	LF	Coolant hole	Grade
MTECS08051C1628UNJ	28	-	1/4	8	5.1	3	16	64	With	AH725
MTECS08067C2024UNJ	24	-	5/16-3/8	8	6.7	3	20	64	With	AH725
MTECS06049C1620UNJ	20	1/4	-	6	4.9	3	16	58	Without	AH725
MTECS0808C2820UNJ	20	-	7/16	8	8	3	28	64	With	AH725
MTECS08061C2018UNJ	18	5/16	-	8	6.15	3	20	64	With	AH725

Reference pages: Standard cutting conditions → H206 - H207

TUNGMEISTER

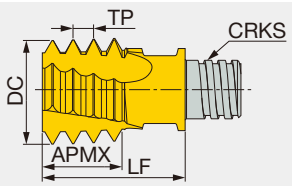
Designation System for TungMeister

VMT	100	L06	IS	15	-	4	S05
TungMeister ThreadMilling VMT : Full profile VTR : Partial profile	Tool Dia. x10	Cutting Length	Thread Profile ISO UN W	Pitch x10 TPI		No. of Flutes	Connection Size

ISO metric

VMT***IS

Internal threading head, for ISO metric profile (TungMeister)

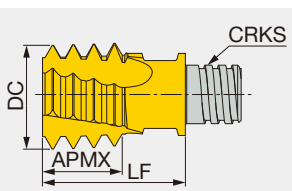


Metric	TP	Application range Fine	Application range Coarse	DC	NOF	APMX	LF	CRKS	Grade	Wrench
VMT100L06IS07-4S05	0.75	-	≥M12	10	4	6	12.8	S05	AH725	KEYV-S05
VMT100L06IS10-4S05	1	-	≥M12	10	4	6	12.8	S05	AH725	KEYV-S05
VMT100L06IS15-4S05	1.5	-	≥M14	10	4	6	12.8	S05	AH725	KEYV-S05
VMT120L09IS15-4S06	1.5	-	≥M16	12	4	9	14.3	S06	AH725	KEYV-T25
VMT120L10IS20-4S06	2	M16	≥M17	12	4	10	14.3	S06	AH725	KEYV-T25
VMT160L12IS15-6S08	1.5	-	≥M20	16	6	12	19	S08	AH725	KEYV-T30L
VMT160L12IS20-5S08	2	-	≥M19	16	5	12	19	S08	AH725	KEYV-T30L
VMT150L13IS25-5S08	2.5	M20	≥M22	15.4	5	12.5	19	S08	AH725	KEYV-T30L
VMT160L12IS30-3S08	3	M24	≥M25	16	3	12	19	S08	AH725	KEYV-T30L

Unified

VMT***UN

Internal threading head, for UN profile (TungMeister)



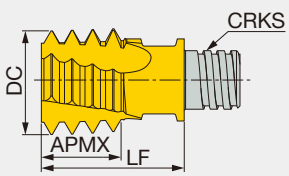
Metric	TPI	Application range UNC	Application range UNF	Application range UNEF	DC	NOF	APMX	LF	CRKS	Grade	Wrench
VMT100L06UN24-4S05	24	-	-	9/16-5/8	10	4	5.3	12.8	S05	AH725	KEYV-S05
VMT100L06UN20-4S05	20	-	1/2	-	10	4	5.1	12.8	S05	AH725	KEYV-S05
VMT100L06UN18-4S05	18	-	9/16-5/8	1 1/8-1 5/8	10	4	5.6	12.8	S05	AH725	KEYV-S05
VMT120L10UN16-4S06	16	-	3/4	-	12	4	9	14.3	S06	AH725	KEYV-T25
VMT120L10UN14-4S06	14	-	7/8	-	12	4	9	14.3	S06	AH725	KEYV-T25
VMT160L13UN12-5S08	12	-	1-1 1/2	-	16	5	12.7	19	S08	AH725	KEYV-T30L
VMT150L13UN10-4S08	10	3/4	-	-	15.4	4	12.7	19	S08	AH725	KEYV-T30L
VMT160L11UN09-3S08	9	7/8	-	-	16	3	11.3	19	S08	AH725	KEYV-T30L
VMT160L12UN08-3S08	8	1	-	-	16	3	12.7	19	S08	AH725	KEYV-T30L

Reference pages: ThreadMilling → H191 - H203

Whitworth

VMT***W

Internal and external threading head, for 55° BSP profile (TungMeister)

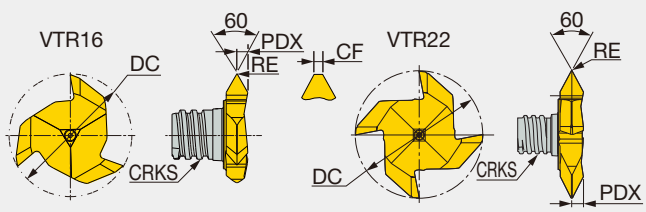


Metric	TPI	Application range	DC	NOF	APMX	LF	CRKS	Grade	Wrench
VMT100L06W19-4S05	19	1/4-3/8	10	4	5.3	12.8	S05	AH725	KEYV-S05
VMT160L12W14-4S08	14	1/2-7/8	16	4	12.7	19	S08	AH725	KEYV-T30L
VMT160L11W11-4S08	11	≥1	16	4	11.6	19	S08	AH725	KEYV-T30L

60° partial profile

VTR***IS

Internal and external threading head, for 60° partial profile (TungMeister)

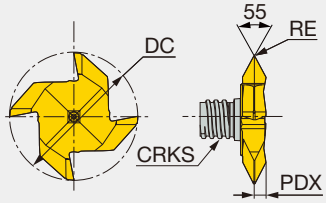


Metric	TP TPN	TP TPX	Smallest Possible thread	DC	NOF	RE	CF	PDX	CRKS	Grade	Wrench
VTR160L12IS05-3S06	0.5	2	M20	15.7	3	-	0.05	1.4	S06	GH130	KEYV-177
VTR160L12IS15-3S06	1.5	2	M22	15.7	3	0.05	-	1.4	S06	GH130	KEYV-177
VTR220L28IS30-4S08	3	4.5	M36	21.7	4	0.2	-	2.8	S08	GH130	KEYV-217

55° partial profile

VTR***W

Internal and external threading head, for 55° partial profile



Metric	TPI TPIN	TPI TPIX	Smallest Possible thread	DC	NOF	RE	PDX	CRKS	Grade	Wrench
VTR220L24W14-4S08	14	11	3/4	21.7	4	0.2	2.4	S08	GH130	KEYV-217

Reference pages: ThreadMilling → **H191 - H203**

THREADMILLING

STANDARD CUTTING CONDITIONS

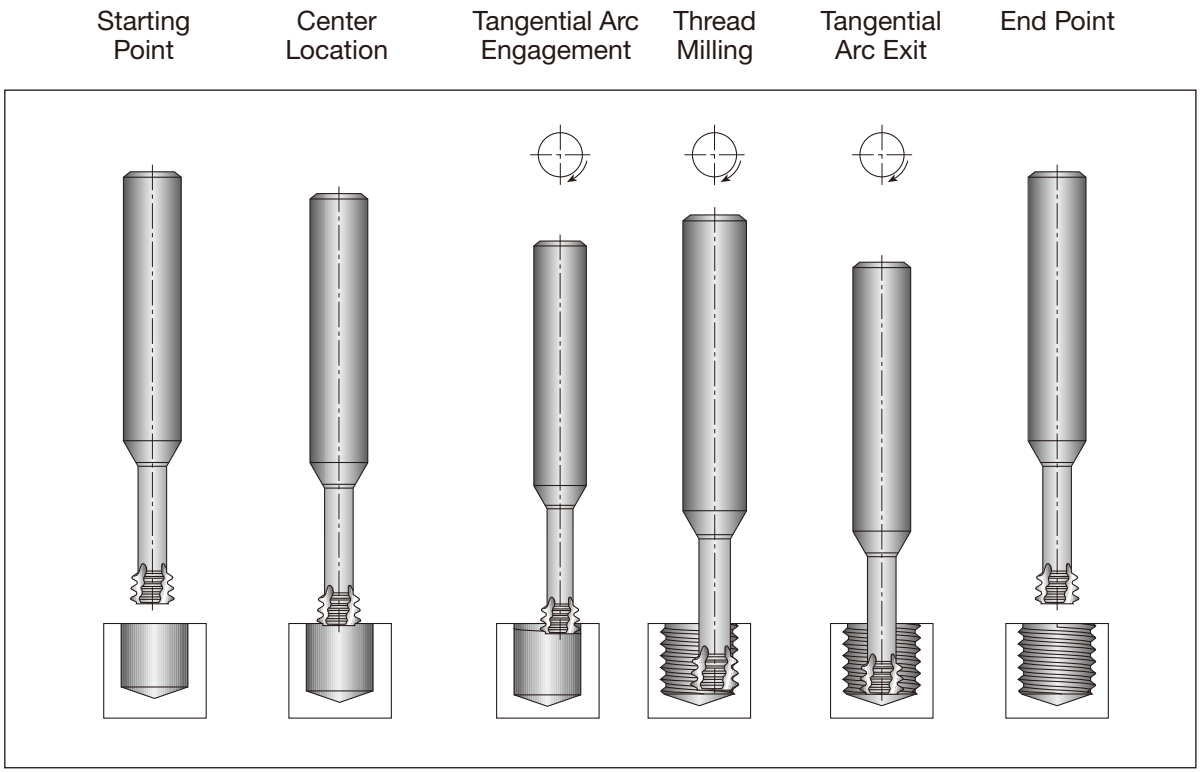
ISO	Material		Condition	Tensile strength [N/mm²]	Hardness HB	Cutting speed (sfm) AH725
P	Non-alloy steel and cast steel, free cutting steel	< 0.25 %C	Annealed	420	125	328 - 820
		≥ 0.25 %C	Annealed	650	190	262 - 689
		< 0.55 %C	Quenched and tempered	850	250	213 - 558
		≥ 0.55 %C	Annealed	750	220	361 - 591
			Quenched and tempered	1000	300	312 - 525
	Low alloy steel and cast steel (less than 5% of alloying elements)		Annealed	600	200	295 - 525
			Quenched and tempered	930	275	213 - 656
				1000	300	230 - 689
				1200	350	312 - 525
	High alloyed steel, cast steel, and tool steel		Annealed	680	200	427 - 558
			Quenched and tempered	1100	325	246 - 328
	Stainless steel and cast steel		Ferritic/martensitic	680	200	361 - 558
			Martensitic	820	240	230 - 509
M	Stainless steel		Annealed	600	180	279 - 328
K	Cast iron nodular (GGG)		Ferritic/martensitic		180	394 - 525
			Pearlitic		260	246 - 525
	Gray cast iron (GG)		Ferritic		160	230 - 492
			Pearlitic		250	361 - 459
	Malleable cast iron		Ferritic		130	394 - 525
			Pearlitic		230	361 - 459
N	Aluminum- wrought alloy		Not cureable		60	525 - 984
			Cured		100	
	Aluminum-cast, alloyed	≤12% Si	Not cureable		75	492 - 1148
			Cured		90	
		>12% Si	High temperature		130	328 - 820
	Copper alloys	>1% Pb	Free cutting		110	
			Brass		90	
			Electrolitic copper		100	
	Non-metallic		Duroplastics, fiber plastics			328 - 1312
			Hard rubber			
S	High temp. alloys	Fe based	Annealed		200	
			Cured		280	
		Ni or Co based	Annealed		250	66 - 262
			Cured		350	
			Cast		320	
	Titanium Ti alloys			RM 400		
			Alpha+beta alloys cured	RM 1050		66 - 262
H	Hardened steel		Hardened		55 HRC	180 - 213
			Hardened		60 HRC	148 - 180
	Chilled cast iron		Cast		400	295 - 344
	Cast iron		Hardened		55 HRC	180 - 213

Tool dia. : mm (in)											
Feed (ipr)											
ø2 (0.079")	ø3 (0.118")	ø4 (0.157")	ø6 (0.236")	ø8 (0.315")	ø10 (0.394")	ø12 (0.472")	ø14 (0.551")	ø16 (0.630")	ø20 (0.787")	ø25 (0.984")	ø30 (1.181")
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
0.0008	0.0012	0.0012	0.002	0.0024	0.0028	0.0031	0.0035	0.0039	0.0047	0.0059	0.0071
0.0008	0.0012	0.0012	0.002	0.0024	0.0028	0.0031	0.0035	0.0039	0.0047	0.0059	0.0071
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0043
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0043
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0043
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0043
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0043
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0043
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0043
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0043
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0043
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0083	0.0059	0.0071	0.0083
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
0.0012	0.0016	0.0016	0.0024	0.0028	0.0031	0.0035	0.0043	0.0047	0.0059	0.0071	0.0083
0.0008	0.0008	0.0012	0.0012	0.0016	0.002	0.002	0.0024	0.0028	0.0031	0.0039	0.0047
0.002	0.0024	0.0028	0.0035	0.0039	0.0043	0.0047	0.0051	0.0059	0.0071	0.0087	0.0098
0.0008	0.0008	0.0008	0.0012	0.0012	0.0012	0.0012	0.0016	0.0016	0.0016	0.002	0.002
0.0008	0.0008	0.0008	0.0012	0.0012	0.0012	0.0012	0.0016	0.0016	0.0016	0.002	0.002

With long edge, reduce feed rate to 40%.

MTECS
Small Diameter, Short type

Thread Milling - Recommended Procedure



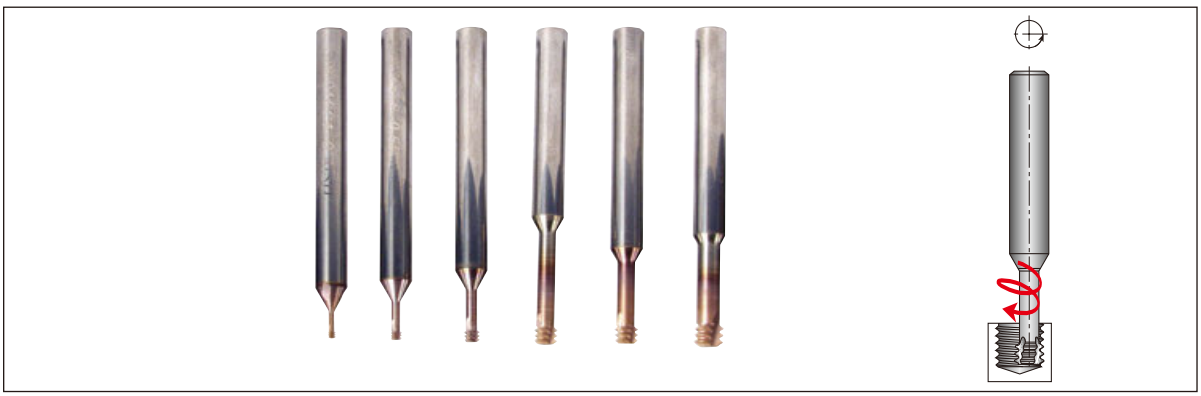
STANDARD CUTTING CONDITIONS

ISO	Material	Cutting speed (sfm)	ø0.059" (ø1.5 mm)	ø0.079" (ø2 mm)	ø0.118" (ø3 mm)	ø0.157" (ø4 mm)	ø0.197" (ø5 mm)	ø0.236" (ø6 mm)	ø0.276" (ø7 mm)	ø0.315" (ø8 mm)	ø0.354" (ø9 mm)	ø0.394" (ø10 mm)	ø0.472" (ø12 mm)	ø0.551" (ø14 mm)	ø0.591" (ø15 mm)
			Feed (ipr)												
P	Low & medium carbon steels	197 - 394	0.002	0.002	0.0028	0.0035	0.0043	0.0051	0.0055	0.0059	0.0063	0.0063	0.0067	0.0071	0.0071
P	High carbon steels	197 - 295	0.0016	0.002	0.0024	0.0031	0.0035	0.0039	0.0047	0.0051	0.0055	0.0055	0.0063	0.0067	0.0071
P	Alloy steels, treated steels	164 - 262	0.0016	0.0016	0.002	0.002	0.0024	0.0028	0.0028	0.0031	0.0035	0.0039	0.0047	0.0051	0.0055
P	Cast steels	230 - 295	0.0016	0.0016	0.002	0.002	0.0024	0.0028	0.0028	0.0031	0.0035	0.0039	0.0047	0.0051	0.0055
M	Stainless steels	197 - 295	0.0012	0.0012	0.0016	0.002	0.0024	0.0024	0.0028	0.0031	0.0035	0.0039	0.0043	0.0047	0.0051
S	Nickel alloys, titanium alloys	66 - 131	0.0012	0.0012	0.0016	0.0016	0.002	0.0024	0.0024	0.0024	0.0028	0.0028	0.0028	0.0031	0.0031
K	Cast iron	131 - 262	0.002	0.002	0.0028	0.0035	0.0043	0.0051	0.0055	0.0059	0.0063	0.0063	0.0067	0.0071	0.0071
N	Aluminum	262 - 492	0.002	0.002	0.0028	0.0035	0.0043	0.0051	0.0055	0.0059	0.0063	0.0063	0.0067	0.0071	0.0071
N	Synthetics, duroplastics, thermoplastics	164 - 656	0.0039	0.0043	0.0047	0.0055	0.0063	0.0071	0.0075	0.0075	0.0075	0.0075	0.0075	0.0079	0.0079

MTECS
Small Diameter, Short type

SolidThread MTECS is used for the production of small internal threads. These thread mills feature a short 3-tooth cutting zone with 3 flutes and a released neck between the cutting zone and the shank.

This unique tool design offers very precise profiles and a high performance AH725 submicron carbide grade with PVD titanium aluminum nitride coating.
The very short profile exerts a low force which minimizes tool bending. This facilitates parallel and high thread precision for the entire length.



Compared to taps, the **SOLIDTHREAD** is more accurate, thread machining is substantially faster and there is no danger of a broken tap being stuck in the hole.

SolidThread vs. Tap

Criteria	Thread mill	Taps
Thread surface quality	High	Medium
Thread geometry	Very accurate	Medium
Thread tolerance	4H, 5H, 6H with std. cutter	6H with standard tap, 4H with special tap
Machining time	Shorter or same as tap	Short
Machining load	Very low	High
Range of thread diameters	Wide range of diameters	Specific tap for each thread size
Right-/Left-hand threading	Same cutter	Specific tap for right- and left-hand
Geometric shape	Full profile	Partial profile

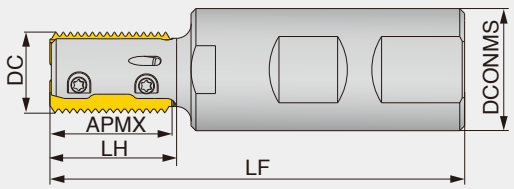
Features

- Minimum thread size of MTECS: **M1x0.25** (0.75 mm pre hole diameter) up to M20x2.50
- 2xD and 3xD threading lengths
- High cutting speeds
- Short cycle time
- Low cutting forces due to the short contact profile resulting in accurate and parallel thread
- Prevents oval threads near thin walls
- No more dealing with broken taps
- Reliable threading in blind holes
- Excellent performance on hardened steel, high temperature alloys and titanium

THREADMILLING

Thread milling cutter

Indexable thread milling cutter, long edge



Metric	DC	APMX	CICT	DCONMS	LH	LF	Oil hole	Insert
ETTL25M017W25.0F026R02 (1)	17	25	2	25	26	85	With	TL25D...
ETTL25M017W25.0F036R02 (1)	17	25	2	25	36	95	With	TL25D...
ETTL25M019W25.0F032R02	19	25	2	25	32	92	With	TL25D...
ETTL25M019W25.0F044R02	19	25	2	25	44	104	With	TL25D...
ETTL25M021W25.0F037R03	20.5	25	3	25	37	96	With	TL25D...
ETTL25M021W25.0F044R03	20.5	25	3	25	44	103	With	TL25D...
ETTL25M022W25.0F043R03	22	25	3	25	43	102	With	TL25D...
ETTL25M022W25.0F055R03	22	25	3	25	55	114	With	TL25D...
ETTL25M030W25.0F055R05	30	25	5	25	55	115	With	TL25D...

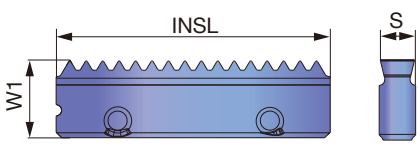
(1) Inserts with a thread pitch of ≥ 3 mm or ≥ 8TPI are not mountable.

SPARE PARTS


Designation	Clamping screw	Wrench
ETTL25...	SSTM4-3.6P	T-8D

INSERT

TL25D...



P	Steel	★
M	Stainless	☆
K	Cast iron	☆
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

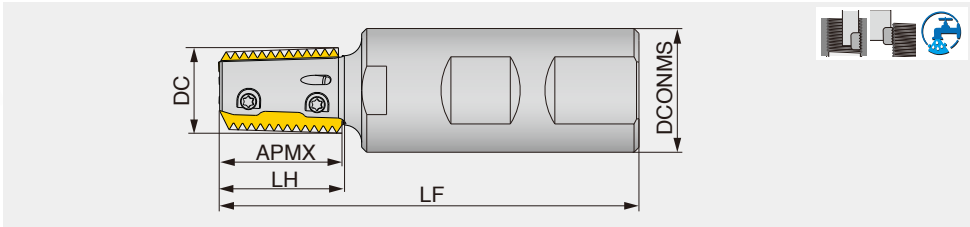
Thread type	Application	Designation	Pitch	Threads per inch	Number of threads per edge	Coated AH725	INSL	W1	S
ISO Metric	Internal	TL25DIR1.5ISO	1.5	-	16	●	0.984	0.276	0.122
		TL25DIR2.0ISO	2	-	12	●	0.984	0.276	0.122
		TL25DIR3.0ISO (2)	3	-	8	●	0.984	0.276	0.122
Unified	Internal	TL25DIR20UN	-	20	19	●	0.984	0.276	0.122
		TL25DIR12UN	-	12	11	●	0.984	0.276	0.122
		TL25DIR9UN	-	9	8	●	0.984	0.276	0.122
		TL25DIR8UN (2)	-	8	7	●	0.984	0.276	0.122
Whitworth	Internal and external	TL25DEIR14W	-	14	13	●	0.984	0.276	0.122
		TL25DEIR11W	-	11	10	●	0.984	0.276	0.122

(2) Does not fit the DC 17 holder

● : Line up

Reference pages: Standard cutting conditions → H213

Indexable thread milling cutter, long edge for Taper threads



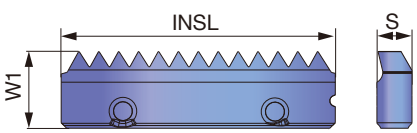
Metric	DC	APMX	CICT	DCONMS	LH	LF	Oil hole	Insert
ETTL25M017W25.0F026R02-PT	17.47	25	2	25	25.5	85	With	TL25SEIR...
ETTL25M022W25.0F043R03-PT	22.2	25	3	25	43	102	With	TL25SEIR...

SPARE PARTS

Designation	Clamping screw	Wrench
ETTL...-PT	SSTM4-3.6P	T-8D

INSERT

TL25SEIR...



P	Steel	★
M	Stainless	☆
K	Cast iron	☆
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Thread type	Application	Designation	Pitch	Threads per inch	Number of threads per edge	Coated AH725	INSL	W1	S
BSPT	Internal and external	TL25SEIR14BSPT	-	14	13	●	0.984	0.276	0.122
		TL25SEIR11BSPT	-	11	10	●	0.984	0.276	0.122
NPT	Internal and external	TL25SEIR14NPT	-	14	13	●	0.984	0.276	0.122
		TL25SEIR11.5NPT	-	11.5	11	●	0.984	0.276	0.122
NPTF	Internal and external	TL25SEIR14NPTF	-	14	13	●	0.984	0.276	0.122

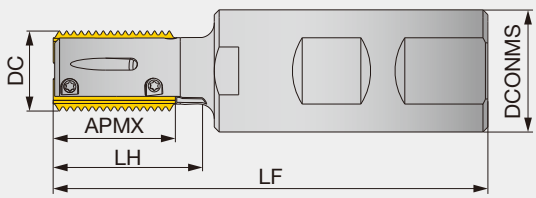
● : Line up

Reference pages: Standard cutting conditions → H213

THREADMILLING

Thread milling cutter

Indexable thread milling cutter, long edge type



Metric	DC	APMX	CICT	DCONMS	LH	LF	Coolant hole	Insert
ETLN25M017W25.0F026R02 (1)	17	25	2	25	26	85	With	LN25....
ETLN25M017W25.0F036R02 (1)	17	25	2	25	36	95	With	LN25....
ETLN25M019W25.0F032R02	19	25	2	25	32	92	With	LN25....
ETLN25M019W25.0F044R02	19	25	2	25	44	104	With	LN25....
ETLN25M021W25.0F037R03	20.5	25	3	25	37	96	With	LN25....
ETLN25M021W25.0F044R03	20.5	25	3	25	44	103	With	LN25....
ETLN25M022W25.0F043R03	22	25	3	25	43	102	With	LN25....
ETLN25M022W25.0F055R03	22	25	3	25	55	114	With	LN25....
ETLN25M030W25.0F055R05	30	25	5	25	55	115	With	LN25....

(1) Inserts with a thread pitch of ≥ 3 mm or ≥ 8TPI do not fit.

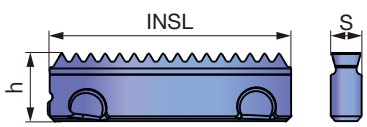
SPARE PARTS

Designation	Clamping screw	Wrench
ETLN25...	SSTM3-3	T-6F

* Recommended clamping torque: SSTM3-3 = 1 N·m

INSERT

LN25...



P	Steel	★	
M	Stainless	☆	
K	Cast iron	☆	
N	Non-ferrous	☆	
S	Superalloys	★	
H	Hard materials	★	

★ : First choice
☆ : Second choice

Thread type	Application	Designation	Pitch	Threads per inch	Coated AH725	INSL	h	S
ISO Metric	Internal	LN25DIR1.5ISO	1.5	-	●	0.984	0.276	0.122
		LN25DIR2.0ISO	2	-	●	0.984	0.276	0.122
		LN25DIR3.0ISO (2)	3	-	●	0.984	0.276	0.122
Unified	Internal	LN25DIR20UN	-	20	●	0.984	0.276	0.122
		LN25DIR12UN	-	12	●	0.984	0.276	0.122
		LN25DIR8UN (2)	-	8	●	0.984	0.276	0.122
Whitworth	Internal and external	LN25DEIR14W	-	14	●	0.984	0.276	0.122
		LN25DEIR11W	-	11	●	0.984	0.276	0.122

(2) Does not fit the DC 17 holder

● : Line up

Reference pages: Standard cutting conditions → H213

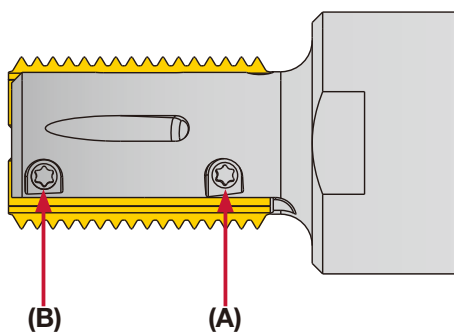
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel	AH725	328 - 656	0.004 - 0.012
	High carbon steel	AH725	230 - 492	0.004 - 0.012
	High carbon steels	AH725	230 - 558	0.004 - 0.012
	Cast steel	AH725	230 - 558	0.004 - 0.012
M	Stainless steel	AH725	295 - 459	0.004 - 0.012
K	Cast iron	AH725	197 - 427	0.002 - 0.012
N	Aluminum alloys	AH725	262 - 1312	0.004 - 0.016
S	Heat-resistant alloys	AH725	33 - 98	0.001 - 0.004
	Titanium alloy	AH725	66 - 295	0.001 - 0.004

Climb milling is recommended.

Insert installation

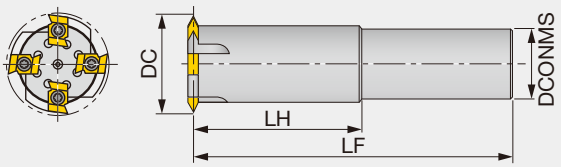
1. Use airgun or rag to thoroughly clean all the insert pockets free from dust or chips.
2. Lightly tighten Screw "A" first, then Screw "B" until the insert becomes stationary.
3. Lightly tighten the screws for other insert(s) in the same matter as mentioned in #2 above.
4. Firmly tighten Screw "A", then Screw "B".
   Use the recommended torque strengths when tightening the screws.
5. Firmly tighten the screws for other insert(s) in the same manner as mentioned in #4 above.
6. Inspect to make sure there is no gap between the insert and the insert seat. Measure the radial runout before use.



THREADMILLING

Thread milling cutter

Indexable thread milling cutter, single tooth



Right hand, 4 inserts

Metric	DC	CICT	DCONMS	LH	LF	Range of internal thread	Insert
D23-D25-45R	23	1	25	45	115	M28 - M30	T1-R...
D25-D25-45R	25	1	25	45	115	M32 - M42	T1-R...
D38-D32-85R	38	2	32	85	165	M45 - M56	T1-R...
D50-D42-100R	50	4	42	100	190	M58 - M68	T1-R...
D55-D42-100R	55	4	42	100	190	M64 - M85	T2-R...
D60-D42-100R	60	4	42	100	190	M70 - M85	T2-R...
D80-D42-100R	80	6	42	100	190	M90 -	T2-R...

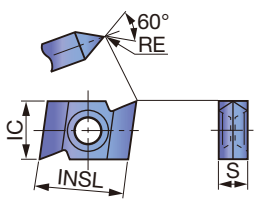
SPARE PARTS


Designation	Clamping screw	Wrench
D23-D25... - D50-D42...	CSTB-4	T-15F
D55-D42... - D80-D42...	CSTB-5	T-20F

* Recommended clamping torque : CSTB-4 = 3.5 N·m, CSTB-5 = 5 N·m

INSERT

T*-R...



P	Steel	★
M	Stainless	★
K	Cast iron	
N	Non-ferrous	
S	Superalloys	
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	RE	Coated GH330	INSL	IC	S
T1-R14	0.14	●	0.567	0.375	0.187
T1-R28	0.28	●	0.567	0.375	0.187
T2-R14	0.14	●	0.701	0.500	0.250
T2-R28	0.28	●	0.701	0.500	0.250

● : Line up

Reference pages: Standard cutting conditions → H215

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grades	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Mild steels / Unhardened steels < 200HB	GH330	490 - 660	0.012 - 0.016
P	Carbon steels / Alloy steels < 300HB	GH330	490 - 660	0.007 - 0.010
P	Die steels < 50HRC	GH330	100 - 160	0.006 - 0.008
M	Stainless steels < 300HB	GH330	270 - 400	0.002 - 0.005

Climb milling is recommended.
When threading a blind hole, use the right hand cutter in right-hand rotation. Cut up from the bottom to prevent chip recutting.

THREADING MILLS AND APPLICABLE THREADS

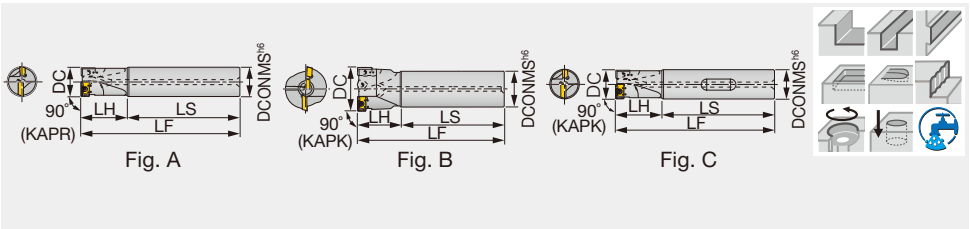
Cutter dia.	Applicable Thread							Minor diameter of max.pitch thread	
	Thread type	Coarse screw thread	Fine screw thread					Coarse screw thread	Fine screw thread
D23 X 1 tooth T1-type of inserts	M28					2	1.5		25.835
	M30	3.5			3	2	1.5	26.211	
D25 X 1 tooth T1-type of inserts	M32					2	1.5		29.835
	M33	3.5			3	2	1.5	29.211	
	M35						1.5		33.376
	M36	4			3	2	1.5	31.670	
	M38						1.5		36.376
	M39	4			3	2	1.5	34.670	
	M40				3	2	1.5		36.752
	M42	4.5		4	3	2	1.5	37.129	
D38 X 2 teeth T1-type of inserts	M45				3	2	1.5		40.152
	M48			4	3	2	1.5		43.670
	M50				3	2	1.5		46.752
	M52			4	3	2	1.5		47.670
	M55			4	3	2	1.5		50.670
	M56			4	3	2	1.5		51.670
D50 X 4 teeth T1-type of inserts	M58			4	3	2	1.5		53.670
	M60			4	3	2	1.5		55.670
	M62			4	3	2	1.5		57.670
	M64			4	3	2	1.5		59.670
	M65			4	3	2	1.5		60.670
	M68			4	3	2	1.5		63.670
D55 X 4 teeth T2-type of inserts	M64			4	3	2	1.5		59.670
	M65			4	3	2	1.5		60.670
	M68	6		4	3	2	1.5	61.505	
D60 X 4 teeth T2-type of inserts	M70			4	3	2	1.5		63.505
	M72		6	4	3	2	1.5		65.505
	M75			4	3	2	1.5		70.670
	M76		6	4	3	2	1.5		69.505
	M78					2			75.835
	M80		6	4	3	2	1.5		73.505
	M82					2			79.835
	M85		6	4	3	2			78.505
D80 X 6 teeth T2-type of inserts	M90		6	4	3	2			83.505
	M95		6	4	3	2			88.505

(Unit: mm)

EVX

Multi purpose endmill, shank type, with center cutting edge

Standard type GAMP = +2˚~ +5˚, GAMF = -10˚~ -3.5˚
Long type GAMP = +5˚, GAMF = -4˚~ -2˚



Inch	APMX	DC	CICT	DCONMS	LS	LH	LF	Coolant hole	Fig.	Insert
EVX08062RSU	0.276	0.625	2	0.625	1.906	1.250	3.156	With	C	XXMU08...
EVX10020RSU	0.276	0.787	2	0.750	2.031	1.250	3.281	With	C	XXMU10...
EVX12100RSU	0.276	1.000	2	1.000	2.281	1.625	3.906	With	C	XXMU12...
EVX16125RSU	0.276	1.250	2	1.250	2.281	2.000	4.281	Without	C	XXMU16...
EVX08062RLHU	0.276	0.625	2	0.625	5.375	1.625	7.000	With	A	XXMU08...
EVX10020RLHU	0.276	0.787	2	0.750	5.500	2.000	7.500	Without	A	XXMU10...
EVX12100RLHU	0.354	1.000	2	1.000	6.000	2.750	8.750	With	A	XXMU12...
EVX16125RLHU	0.354	1.250	2	1.250	6.750	3.250	10.000	With	A	XXMU16...

Metric	APMX	DC	CICT	DCONMS	LS	LH	LF	Coolant hole	Fig.	Insert
EVX08016RSA	7	16	2	16	90	30	120	With	A	XXMU08...
EVX08016RS	7	16	2	16	90	30	120	Without	A	XXMU08...
EVX08016RLA	7	16	2	16	135	40	175	With	A	XXMU08...
EVX08016RL	7	16	2	16	135	40	175	Without	A	XXMU08...
EVX10020RSA	9	20	2	20	90	30	120	With	A	XXMU10...
EVX10020RS	9	20	2	20	90	30	120	Without	A	XXMU10...
EVX10020RLA	9	20	2	20	135	50	185	With	A	XXMU10...
EVX10020RL	9	20	2	20	135	50	185	Without	A	XXMU10...
EVX12025RSA	11.5	25	2	25	100	40	140	With	A	XXMU12...
EVX12025RS	11.5	25	2	25	100	40	140	Without	A	XXMU12...
EVX12025RLA	11.5	25	2	25	150	70	220	With	A	XXMU12...
EVX12025RL	11.5	25	2	25	150	70	220	Without	A	XXMU12...
EVX16032RSA	15	32	2	32	110	50	160	With	A	XXMU16...
EVX16032RS	15	32	2	32	110	50	160	Without	A	XXMU16...
EVX16032RLA	15	32	2	32	175	80	255	With	A	XXMU16...
EVX16032RL	15	32	2	32	175	80	255	Without	A	XXMU16...
EVX12040RSA	11.5	40	2	42	120	60	180	With	B	XXMU12, WCMT05...
EVX12040RS	11.5	40	2	42	120	60	180	Without	B	XXMU12, WCMT05...
EVX12040RLA	11.5	40	2	42	210	100	310	With	B	XXMU12, WCMT05...
EVX12040RL	11.5	40	2	42	210	100	310	Without	B	XXMU12, WCMT05...
EVX16050RSA	15	50	2	42	160	50	210	With	B	XXMU16, WCMT06...
EVX16050RS	15	50	2	42	160	50	210	Without	B	XXMU16, WCMT06...
EVX16050RLA	15	50	2	42	310	50	360	With	B	XXMU16, WCMT06...
EVX16050RL	15	50	2	42	310	50	360	Without	B	XXMU16, WCMT06...
EVX16063RSA	15	63	2	42	190	50	240	With	B	XXMU16, WCMT06...
EVX16063RS	15	63	2	42	190	50	240	Without	B	XXMU16, WCMT06...
EVX16063RLA	15	63	2	42	310	50	360	With	B	XXMU16, WCMT06...
EVX16063RL	15	63	2	42	310	50	360	Without	B	XXMU16, WCMT06...

SPARE PARTS



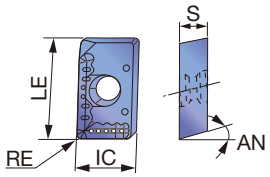

Designation	Clamping screw 1	Clamping screw 2	Lubricant	Wrench
EVX08...	-	CSPB-2.2	M-1000	IP-7D
EVX10...	-	CSPB-2.5	M-1000	IP-8D
EVX12...	-	CSPD-3	M-1000	IP-10D
EVX16...	CSPB-3.5	-	M-1000	IP-15D

* Recommended clamping torque : CSPB-2.2 = 0.74 lbs·ft, 1 N·m, CSPB-2.5 = 0.96 lbs·ft, 1.3 N·m, CSPB-3.5 = 2.58 lbs·ft, 3.5 N·m, CSPD-3 = 1.84 lbs·ft, 2.5 N·m, CSTB-3.5D = 1.7 lbs·ft, 2.3 N·m

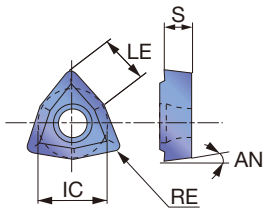
Reference pages: Insert, Standard cutting conditions → H217

INSERT

XXMU-MJ



WCMT-D4



P	Steel	★	★	
M	Stainless	★		★
K	Cast iron		★	
N	Non-ferrous			
S	Superalloys			
H	Hard materials	★		

★ : First choice
☆ : Second choice

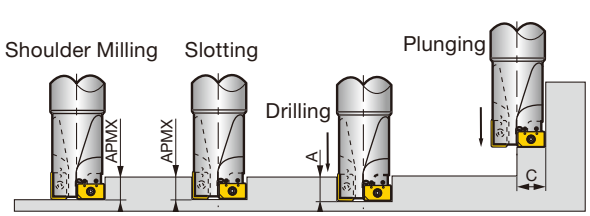
Designation	RE	Coated			LE	IC	S	AN
		AH3135	AH120	AH140				
XXMU08T204PR-MJ	0.016	●	●	●	0.323	0.220	0.109	10°
XXMU10H308PR-MJ	0.031	●	●	●	0.417	0.268	0.138	11°
XXMU12X408PR-MJ	0.031	●	●	●	0.520	0.311	0.165	11°
XXMU16X508PR-MJ	0.031	●	●	●	0.661	0.437	0.197	11°
WCMT050308-D4	0.031		●	●	0.213	0.313	0.125	7°
WCMT06T308-D4	0.031		●	●	0.256	0.375	0.156	7°

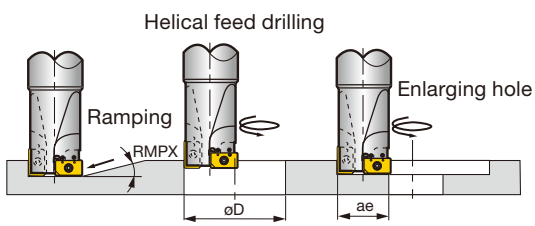
● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Grade	Tool diameter: ø0.625" - ø0.787"			Tool diameter: ø1.000" - ø1.250"		
			Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt)		Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt)	
				Slotting	Drilling		Slotting	Drilling
P	Carbon steels 1018, 1055, etc. < 300 HBt	AH3135	330 - 590	0.002 - 0.008	0.001 - 0.003	400 - 650	0.003 - 0.010	0.002 - 0.004
P	Alloy steels 4140, 4340, etc. < 300 HB	AH3135	260 - 525	0.002 - 0.006	0.001 - 0.003	330 - 590	0.003 - 0.008	0.002 - 0.004
P	Die steels H-13, etc. < 300 HB	AH3135	200 - 400	0.002 - 0.005	0.001 - 0.002	260 - 500	0.003 - 0.006	0.001 - 0.003
M	Stainless steels 304SS, etc.	AH3135	230 - 460	0.002 - 0.006	0.001 - 0.003	300 - 525	0.003 - 0.008	0.001 - 0.003
K	Cast irons Class 25, etc.	AH120	330 - 590	0.002 - 0.010	0.001 - 0.004	400 - 650	0.003 - 0.010	0.002 - 0.004

APPLICATION RANGE

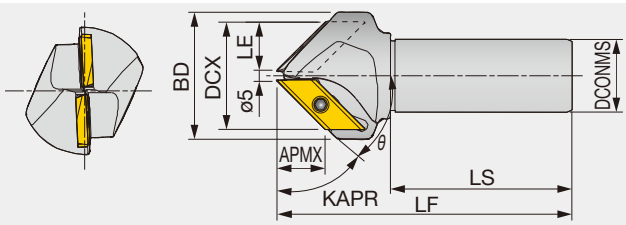




Inch	Tool dia. DC	Max. depth of cut APMX	Max. drilling depth A	Max. cutting width in plunging C	Max. ramping angle RMPX	Min. machining hole dia. øDmin	Max. machining hole dia. øDmax	Max. cutting width in enlarging hole ae
EVX08062RSU/RLHU	0.625	0.276	0.315	0.315	3°	0.756	1.250	0.551
EVX10020RSU/RLHU	0.750	0.354	0.394	0.394	3°	0.945	1.500	0.709
EVX12100RSU/RLHU	1.000	0.453	0.492	0.492	3°	1.250	1.890	0.906
EVX16125RSU/RLHU	1.250	0.591	0.630	0.630	3°	1.510	2.440	1.250

ECC31

Chamfering endmill, screw clamp system, for large parallelogram inserts



Inch	DCX	CICT	KAPR	θ	BD	LE	APMX	DCONMS	LS	LF	Insert
ECC31005RU-45	1.846	2	45°	45°	2.205	0.197	0.827	1.000	2.281	4.250	XCET3104...
ECC31005RU-30	1.338	1	60°	30°	1.575	0.197	1.004	1.000	2.281	4.250	XCET3104...
ECC31005RU-60	2.204	2	30°	60°	2.834	0.197	0.571	1.000	2.281	4.250	XCET3104...
ECC31005RU-41	1.698	2	49°	41°	2.205	0.197	0.866	1.000	2.281	4.250	XCET3104...

Metric	DCX	CICT	KAPR	θ	BD	LE	APMX	DCONMS	LS	LF	Insert
ECC31005R-30	34	1	60°	30°	40	14.5	25.5	32	80	130.2	XCET3104...
ECC31005R-45	46	2	45°	45°	56	20.5	20.5	32	80	130.1	XCET3104...
ECC31005R-60	55	2	30°	60°	72	25.5	14.5	32	80	130.1	XCET3104...

SPARE PARTS

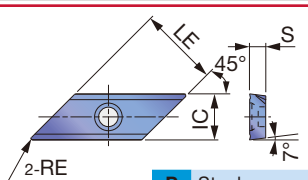


Designation	Clamping screw	Lubricant	Wrench
ECC31...	CSTB-5S	M-1000	T-20D

* Recommended clamping torque: CSTB-5S = 3.69 lbs·ft, 5 N·m

INSERT

XCET31



		Coated			Cermet	Un-coated				
	Designation	RE	AH3135	AH330	AH120	NS740	UX30	TH10	LE	IC	S
P	Steel	XCET310404ER	0.016	●	●	●	●	●	●	0.866	0.500	0.177
M	Stainless			★	★							
K	Cast iron				★	★						
N	Non-ferrous											
S	Superalloys											
H	Hard materials			☆								

★ : First choice
☆ : Second choice
●: Line up

STANDARD CUTTING CONDITIONS

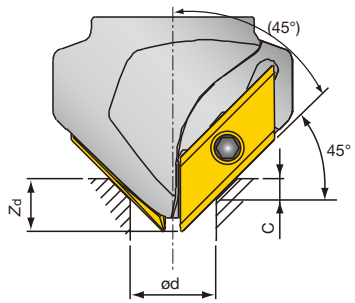
ISO	Workpiece material	Grade	No. of revolutions: *n* (min-1)	Feed per tooth: *fz* (ipt)
P	Carbon steels 1055, etc. Alloy steels 4140, etc. < 300 HB	NS740	1000 - 3000 - 7000	0.004 - 0.010
		UX30	700 - 2000 - 4900	0.004 - 0.010
	Die steels H13, etc. < 300 HB	AH3135	1000 - 3000 - 7000	0.004 - 0.008
M	Stainless steels S30400, etc. < 250 HB	AH3135	1000 - 3000 - 7000	0.004 - 0.010
K	Cast irons No.250B, etc.	AH330	1000 - 3000 - 7000	0.004 - 0.010

- When the hole diameter to be chamfered is small or the cutting edges near the front end of tool are used, use at higher side of the revolution range shown in the Table.
In contrast, when the hole diameter to be chamfered is large or the cutting edges far from the tool's front end are used, use the lower side of the revolution range shown in the Table.
- When chamfering a small diameter hole (smaller than ø0.400") in a plungemilling mode, peck-feeding should not be used.
- When the hole diameter to be chamfered is smaller than ø0.400" or the cutting edges near the tool's front end are used, the feed should be set within 0.006 ipt.

Guidelines for programming

Z-axis plunging depth Zd (in) in 45° chamfering of hole

Hole dia.	Size of chamfering C (in)						
ød (in)	0.020	0.039	0.059	0.079	0.118	0.157	0.197
0.197	0.028	0.047	0.067	0.087	0.126	-	-
0.236	0.047	0.067	0.087	0.106	0.146	-	-
0.268	0.063	0.083	0.102	0.122	0.161	-	-
0.315	0.087	0.106	0.126	0.146	0.185	-	-
0.335	0.094	0.114	0.134	0.154	0.193	-	-
0.394	0.126	0.146	0.165	0.185	0.224	0.264	0.303
0.402	0.130	0.150	0.169	0.189	0.228	0.268	0.307
0.472	0.165	0.185	0.205	0.224	0.264	0.303	0.343
0.551	0.205	0.224	0.244	0.264	0.303	0.343	0.382
0.630	0.244	0.264	0.283	0.303	0.343	0.382	0.421
0.689	0.272	0.291	0.311	0.331	0.370	0.408	0.449
0.787	0.323	0.343	0.362	0.382	0.421	0.461	0.500
0.827	0.343	0.362	0.382	0.402	0.441	0.480	0.520
0.945	0.402	0.421	0.441	0.461	0.500	0.539	0.579
1.181	0.520	0.539	0.559	0.579	0.618	0.657	0.697
1.299	0.579	0.598	0.618	0.638	0.677	0.717	0.756
1.417	0.638	0.657	0.677	0.697	0.736	0.776	-
1.654	0.756	0.776	0.795	-	-	-	-

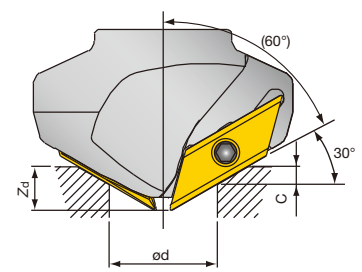


Tool: ECC31005R-45

When the hole depth is smaller than the Z-axis plunging depth (Zd), special care should be taken to avoid an interference between the tool's front end and the bottom of the hole.

Z-axis plunging depth Zd (in) in 30° chamfering of hole

Hole dia.	Size of chamfering C (in)						
ød (in)	0.020	0.039	0.059	0.079	0.098	0.118	0.138
0.197	0.024	0.043	0.063	0.083	-	-	-
0.236	0.035	0.055	0.075	0.094	-	-	-
0.268	0.043	0.063	0.083	0.102	-	-	-
0.315	0.055	0.075	0.094	0.114	-	-	-
0.335	0.063	0.083	0.102	0.122	-	-	-
0.394	0.079	0.098	0.118	0.138	0.157	0.177	0.197
0.402	0.083	0.102	0.122	0.142	0.161	0.181	0.201
0.472	0.102	0.122	0.142	0.161	0.181	0.201	0.220
0.551	0.146	0.165	0.185	0.205	0.224	0.244	0.264
0.630	0.165	0.185	0.205	0.224	0.244	0.264	0.283
0.689	0.193	0.213	0.232	0.252	0.272	0.291	0.311
0.787	0.205	0.224	0.244	0.264	0.283	0.303	0.323
0.827	0.240	0.260	0.280	0.299	0.319	0.339	0.358
0.945	0.307	0.327	0.346	0.366	0.386	0.406	0.45
1.181	0.343	0.362	0.382	0.402	0.421	0.441	0.461
1.299	0.374	0.394	0.413	0.433	0.453	0.472	0.492
1.417	0.398	0.417	0.437	0.457	0.476	0.496	0.516
1.654	0.441	0.461	0.480	0.500	0.520	0.539	0.559
1.811	0.488	0.508	0.528	0.547	0.567	-	-
1.890	0.512	0.531	0.551	0.571	-	-	-
2.047	0.555	-	-	-	-	-	-

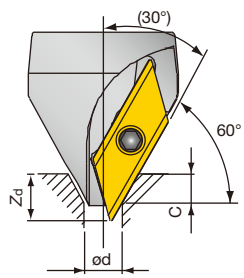


Tool: ECC31005R-60

When the hole depth is smaller than the Z-axis plunging depth (Zd), special care should be taken to avoid an interference between the tool's front end and the bottom of the hole.

Z-axis plunging depth Zd (in) in 60° chamfering of hole

Hole dia.	Size of chamfering C (in)							
ød (in)	0.020	0.039	0.059	0.079	0.098	0.118	0.138	0.157
0.197	0.031	0.051	0.071	0.091	0.110	-	-	-
0.236	0.067	0.087	0.106	0.126	0.146	-	-	-
0.268	0.094	0.114	0.134	0.154	0.173	-	-	-
0.315	0.134	0.154	0.173	0.193	0.213	-	-	-
0.335	0.150	0.169	0.189	0.209	0.228	-	-	-
0.394	0.201	0.220	0.240	0.260	0.280	0.299	0.319	0.339
0.402	0.209	0.228	0.248	0.268	0.287	0.307	0.327	0.346
0.472	0.272	0.291	0.311	0.331	0.350	0.370	0.390	0.409
0.551	0.406	0.425	0.445	0.465	0.484	0.504	0.524	0.543
0.630	0.457	0.476	0.496	0.516	0.535	0.555	0.575	0.594
0.689	0.539	0.559	0.579	0.598	0.618	0.638	0.657	0.677
0.787	0.575	0.594	0.614	0.634	0.654	0.673	0.693	0.713
0.827	0.677	0.697	0.717	0.736	0.756	0.776	0.795	0.815
0.945	0.882	0.902	0.921	0.941	0.961	0.980	1.000	-
1.181	0.980	1.000	-	-	-	-	-	-

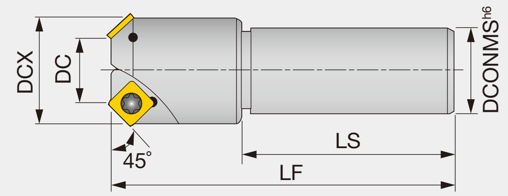


Tool: ECC31005R-30

When the hole depth is smaller than the Z-axis plunging depth (Zd), special care should be taken to avoid an interference between the tool's front end and the bottom of the hole.

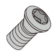
ECP4400R

Chamfering endmill, screw clamp system, for square inserts



Inch	DC	CICT	DCX	DCONMS	LF	LS	Insert
ECP440AR-U	0.394	1	1.083	1.250	4.500	2.480	SPMA422*N
ECP4423R-U	0.906	2	1.587	1.250	4.500	2.480	SPMA422*N
ECP4436R-U	1.417	3	2.098	1.250	4.500	2.480	SPMA422*N
Metric	**DC**	**CICT**	**DCX**	**DCONMS**	**LF**	**LS**	**Insert**
ECP440AR	10	1	27.5	32	130	80	SPMA422*N
ECP4423R	23	2	40.3	32	130	80	SPMA422*N
ECP4436R	36	3	53.3	32	130	80	SPMA422*N

SPARE PARTS

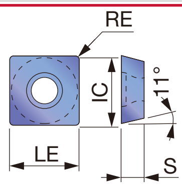


Designation	Clamping screw	Wrench
ECP44...	CSTA-4	T-15D

* Recommended clamping torque: CSTA-4 = 2.58 lbs·ft, 3.5 N·m

INSERT

SPMA42



		NS740	N308		UX30	TH10
P	Steel	★	☆		☆	
M	Stainless					
K	Cast iron					★
N	Non-ferrous					
S	Superalloys					
H	Hard materials					

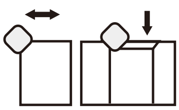
★ : First choice
☆ : Second choice

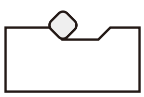
Designation	RE	Cermet NS740	Cermet N308		Uncoated UX30	Uncoated TH10	LE	IC	S
SPMA422TN	0.031	●	●		●		0.500	0.500	0.215
SPMA422FN	0.031					●	0.500	0.500	0.215

●: Line up

STANDARD CUTTING CONDITIONS

Operations		Workpiece material	Grade	Cutting speed *Vc* (sfm)	Maximum depth of cut *ap* (in)	Feed per tooth *fz* (ipt)
Single or double chamfering, Hole chamfering	P	Carbon steels, Alloy steels < 300HB	NS740 · N308 UX30	330 - 490	-	0.008 - 0.029
	P	Die steels < 30HRC	NS740 · N308 UX30	164 - 230	-	0.006 -0.016
	K	Cast irons	TH10	90 - 110	-	0.008 - 0.024
Facing, Grooving	P	Carbon steels, Alloy steels < 300HB	NS740 · N308 UX30	330 - 490	0.118	0.004 - 0.006
	P	Die steels < 30HRC	UX30	164 - 230	0.079	0.004 - 0.006
	K	Cast irons	TH10	295 - 360	0.118	0.004 - 0.006



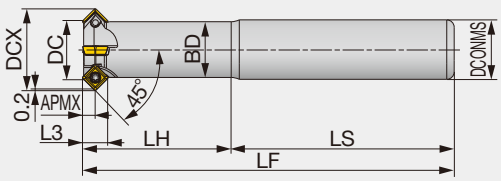


When chamfering stainless steel, down-milling is recommended. Conventional milling may cause edge chipping.
When chamfering above C3.0, the feed per tooth should be set at the lower side of the value shown in the above table.

EASD05

Chamfering endmill, for SDMT/SDHT05 inserts

GAMP = +5°, GAMF = -7° ~ +12°



Metric	DCX	CICT	DC*	BD	APMX	DCONMS	LH	L3	LS	LF	Air hole	Insert
EASD05M006C12.0R01	12 (0.472")	1	5.7 (0.224")	7.5 (0.295")	3 (0.118")	12 (0.472")	40 (1.575")	6.8 (0.268")	60 (2.362")	100 (3.937")	Without	SD*T0502...
EASD05M008C12.0R02	14 (0.551")	2	7.8 (0.307")	9.1 (0.358")	3 (0.118")	12 (0.472")	40 (1.575")	6.8 (0.268")	60 (2.362")	100 (3.937")	Without	SD*T0502...
EASD05M016C16.0R04	22 (0.866")	4	15.7 (0.618")	15 (0.591")	3 (0.118")	16 (0.630")	40 (1.575")	6.8 (0.268")	60 (2.362")	100 (3.937")	Without	SD*T0502...

The minimum chamfering diameter (DC) measures up to the point where the insert's nose radius ends.
This will offset the total tool length by shortening 0.012".

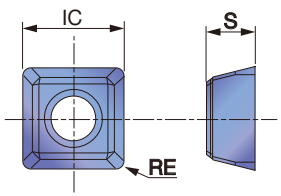
SPARE PARTS

Designation	Clamping screw	Wrench
EASD05...	CSPB-2L043	IP-6DB

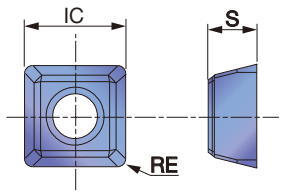
*Recommended clamping torque：CSPB-2L043 = 0.7 N·m

INSERT

SDMT05-MJ



SDHT05-AJ



		Coated		Uncoated			
		AH140	AH725	TH10			
P	Steel		★				
M	Stainless	★	☆				
K	Cast iron		★				
N	Non-ferrous			★			
S	Superalloys		★				
H	Hard materials						

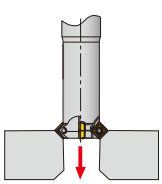
★ : First choice
☆ : Second choice

Designation	RE	APMX	Coated AH140	Coated AH725	Uncoated TH10	S	IC
SDMT050204PN-MJ	0.016	0.157	●	●		0.094	0.200
SDHT050204FN-AJ	0.016	0.157			●	0.094	0.200

● : Line up

CUTTING PERFORMANCE

Chamfering & countersinking

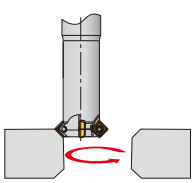


■ **C2.5 (45° x 0.098")**

Workpiece material: 1055

Designation	Cutting speed *Vc* (sfm)	Feed rate *fz* (in/z)
EASD05M006C12.0R01	262 - 394	0.001 - 0.003
EASD05M008C12.0R02	262 - 394	0.001 - 0.003
EASD05M016C16.0R04 (*z=2)	262 - 394	0.001 - 0.003

Interpolated chamfering

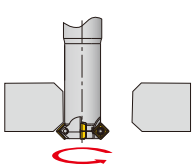


■ **C2.5 (45° x 0.098")**

Workpiece material: 1055

Designation	Cutting speed *Vc* (sfm)	Feed rate *fz* (in/z)
EASD05M006C12.0R01	262 - 394	0.003 - 0.005
EASD05M008C12.0R02	262 - 394	0.003 - 0.005
EASD05M016C16.0R04	262 - 394	0.003 - 0.005

Back chamfering



■ **C1.0 (45° x 0.039")**

Workpiece material: 1055

Designation	Cutting speed *Vc* (sfm)	Feed rate *fz* (in/z)
EASD05M006C12.0R01	262 - 394	0.003 - 0.005
EASD05M008C12.0R02	262 - 394	0.003 - 0.005
EASD05M016C16.0R04	262 - 394	0.003 - 0.005

Interpolated or back chamfering type

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1018, 1020, 1026, etc.	AH725	755 - 1050	0.002 - 0.004
P	High carbon steel 1045, 1055, etc.	AH725	492 - 755	0.002 - 0.004
P	Alloyed steel 4140, 8620, etc.	AH725	492 - 755	0.002 - 0.004
P	Tool steel W1-8, etc.	AH725	361 - 427	0.001 - 0.004
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	AH140	328 - 656	0.001 - 0.004
K	Gray cast iron Class 25, Class 30, etc.	AH725	492 - 820	0.002 - 0.005
K	Ductile cast iron 60-40-18, 60-55-06, etc.	AH725	328 - 591	0.002 - 0.005
N	Aluminum alloys Si < 13%	TH10	1148 - 1640	0.002 - 0.006
N	Aluminum alloys Si ≥ 13%	TH10	328 - 656	0.002 - 0.006

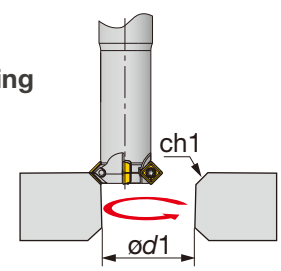
Front chamfering type

ISO	Workpiece material	Grade	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steel 1018, 1020, 1026, etc.	AH725	525 - 722	0.002 - 0.004
P	High carbon steel 1045, 1055, etc.	AH725	361 - 525	0.002 - 0.004
P	Alloyed steel 4140, 8620, etc.	AH725	361 - 525	0.002 - 0.004
P	Tool steel W1-8, etc.	AH725	262 - 295	0.001 - 0.004
M	Stainless steel 304SS, 316SS, 17-4 PH, etc.	AH140	230 - 459	0.001 - 0.004
K	Gray cast iron Class 25, Class 30, etc.	AH725	361 - 591	0.002 - 0.005
K	Ductile cast iron 60-40-18, 60-55-06, etc.	AH725	230 - 427	0.002 - 0.005
N	Aluminum alloys Si < 13%	TH10	820 - 1148	0.002 - 0.006
N	Aluminum alloys Si ≥ 13%	TH10	230 - 459	0.002 - 0.006

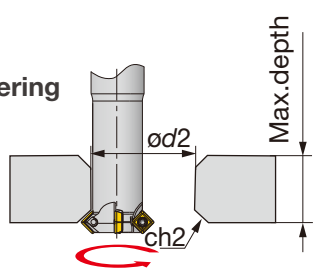
* When chamfering over C1.0 (45° x 0.039"), decrease the cutting parameters to 70% of the above parameters.

APPLICATION RANGE

Front chamfering



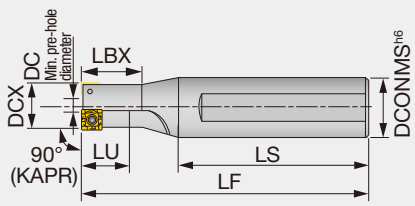
Back chamfering



Designation	Minimum hole diameter to be chamfered (in)		Maximum chamfer dimension (at 45°) (in)		Maximum reachable hole distance when back chamfering (in)
	Front-chamfer ø*d*1	Back-chamfer ø*d*2	Front ch1	Back ch2	Max. depth
EASD05M006C12.0R01	0.224	0.492	0.114 x 0.114	0.079 x 0.079	0.717
EASD05M008C12.0R02	0.307	0.571	0.114 x 0.114	0.059 x 0.059	1.307
EASD05M016C16.0R04	0.622	0.886	0.114 x 0.114	0.110 x 0.110	1.701

TCB

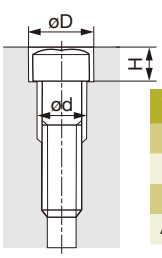
Counterboring endmill, monoblock type



Metric	DCX	CICT	DC	LU	LBX	LF	LS	DCONMS	Insert
TCB100F16	10	1	2.8	13	17	86	60	16	SPMP771...
TCB110F16	11	1	2.8	14	18.7	87	60	16	SPMP771...
TCB120F20	12	1	3.6	15	20.5	89	60	20	SPMP771...
TCB130F20	13	2	4.5	16	22.2	91	60	20	SPMP771...
TCB-140	14	1	4	11	18	117	80	25	SPMP831...
TCB140F25	14	2	5.5	18	24	113	80	25	SPMP771...
TCB150F25	15	2	6.5	19	25.7	114	80	25	SPMP771...
TCB160F25	16	2	7.5	20	27.5	116	80	25	SPMP771...
TCB170F25	17	2	6.6	13	21	114	80	25	SPMP831...
TCB175F25	17.5	2	7.1	14	22	115	80	25	SPMP831...
TCB180F25	18	2	7.5	15	23	116	80	25	SPMP831...
TCB190F25	19	2	8.5	15	24	118	80	25	SPMP831...
TCB-200	20	2	8.2	16	25	120	80	25	SPMP042...
TCB200F25	20	2	8.2	16	25	120	80	25	SPMP042...
TCB210F25	21	2	9	17	26	122	80	25	SPMP042...
TCB220F25	22	2	10	18	28	124	80	25	SPMP042...
TCB-230	23	2	11	19	29	126	80	25	SPMP042...
TCB230F25	23	2	11	19	29	126	80	25	SPMP042...
TCB240F25	24	2	12	20	-	128	80	25	SPMP042...
TCB250F25	25	2	13	25	-	130	80	25	SPMP042...
TCB-260	26	2	14	21	33	132	80	32	SPMP042...
TCB-290	29	2	14	23	36	138	80	32	SPMM322...
TCB-320	32	2	16.9	40	-	144	80	32	SPMM322...
TCB-350	35	2	14	43	-	150	80	32	SPMM432...
TCB-390	39	2	17.9	48	-	158	80	32	SPMM432...
TCB-430	43	2	21.7	53	-	171	85	42	SPMM432...

Tool diameter tolerance	Applicable tolerance range of hole diameter
+0.2 / 0	+0.3 / 0

Countersink dimensions of bolt hole



Thread size	M6	M8	M10	M12	M14	M16	M18	M20	M22	M24	M27
øD (mm)	11	14	17.5	20	23	26	29	32	35	39	43
H (mm)	6.5	8.6	10.8	13	15.2	17.5	19.5	21.5	23.5	25.5	29
ød (mm)	6	9	11	14	16	18	20	22	24	26	30
Applicable tool	TCB110	TCB140	TCB175	TCB200	TCB230	TCB260	TCB290	TCB320	TCB350	TCB390	TCB430

SPARE PARTS

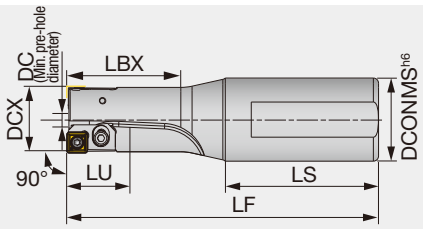

Designation	Clamping screw	Wrench
TCB100... - TCB160...	CSTB-2L040	T-6D
TCB-140...	CSTB-2.2S	T-7D
TCB170... - TCB190...	CSTB-2.2	T-7D
TCB200... - TCB260...	CSTA-NO3	T-9D
TCB-290 - TCB-320	CSTA-NO5	T-9D
TCB-350 - TCB-430	CSTA-4	T-15D

* Recommended clamping torque: CSTB-2L040 = 0.7 N·m, CSTB-2.2S, CSTB-2.2 = 1 N·m, CSTA-NO3, CSTA-NO5 = 2.3 N·m, CSTA-4 = 3.5 N·m

Reference pages: Inserts, Standard cutting conditions → H226 - H227

TCB

Counterboring endmill, cartridge type



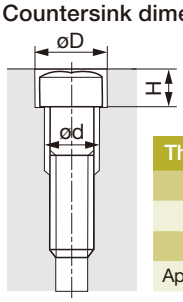
LU: Maximum hole depth

Metric	DCX	DCONMS	DC	LU	LS	LBX	LF	WT(kg)	Cartridge set Designation	Shim plate Designation	Shim plate Thickness	Insert
TCB260-290F32	26	32	13.2	40	59	43	120	0.6	TCB04CA-26-29	-	-	SPMP042...
TCB260-290F32	27	32	14.2	40	59	43	120	0.6	TCB04CA-26-29	AP16050	0.5	SPMP042...
TCB260-290F32	28	32	15.2	40	59	43	120	0.6	TCB04CA-26-29	AP16100	1	SPMP042...
TCB260-290F32	29	32	16.2	40	59	43	120	0.6	TCB04CA-26-29	AP16150	1.5	SPMP042...
TCB300-340F32	30	32	14.2	45	59	55	130	0.6	TCB32CA-30-39	-	-	SPMM322...
TCB300-340F32	31	32	15.2	45	59	55	130	0.6	TCB32CA-30-39	AP16050	0.5	SPMM322...
TCB300-340F32	32	32	16.2	45	59	55	130	0.6	TCB32CA-30-39	AP16100	1	SPMM322...
TCB300-340F32	33	32	17.2	45	59	55	130	0.6	TCB32CA-30-39	AP16150	1.5	SPMM322...
TCB300-340F32	34	32	18.2	45	59	55	130	0.6	TCB32CA-30-39	AP16200	2	SPMM322...
TCB350-390F32	35	32	19	50	59	70	140	0.7	TCB32CA-30-39	-	-	SPMM322...
TCB350-390F32	36	32	20	50	59	70	140	0.7	TCB32CA-30-39	AP16050	0.5	SPMM322...
TCB350-390F32	37	32	21	50	59	70	140	0.7	TCB32CA-30-39	AP16100	1	SPMM322...
TCB350-390F32	38	32	22	50	59	70	140	0.7	TCB32CA-30-39	AP16150	1.5	SPMM322...
TCB350-390F32	39	32	23	50	59	70	140	0.7	TCB32CA-30-39	AP16200	2	SPMM322...
TCB400-440F32	40	32	18	55	59	80	150	1	TCB43CA-40-59	-	-	SPMM432...
TCB400-440F32	41	32	19	55	59	80	150	1	TCB43CA-40-59	AP21050	0.5	SPMM432...
TCB400-440F32	42	32	20	55	59	80	150	1	TCB43CA-40-59	AP21100	1	SPMM432...
TCB400-440F32	43	32	21	55	59	80	150	1	TCB43CA-40-59	AP21150	1.5	SPMM432...
TCB400-440F32	44	32	22	55	59	80	150	1	TCB43CA-40-59	AP21200	2	SPMM432...
TCB450-490F32	45	32	23	65	59	90	160	1.2	TCB43CA-40-59	-	-	SPMM432...
TCB450-490F32	46	32	24	65	59	90	160	1.2	TCB43CA-40-59	AP21050	0.5	SPMM432...
TCB450-490F32	47	32	25	65	59	90	160	1.2	TCB43CA-40-59	AP21100	1	SPMM432...
TCB450-490F32	48	32	26	65	59	90	160	1.2	TCB43CA-40-59	AP21150	1.5	SPMM432...
TCB450-490F32	49	32	27	65	59	90	160	1.2	TCB43CA-40-59	AP21200	2	SPMM432...
TCB500-540F32	50	32	28	70	59	97	165	1.5	TCB43CA-40-59	-	-	SPMM432...
TCB500-540F32	51	32	29	70	59	97	165	1.5	TCB43CA-40-59	AP21050	0.5	SPMM432...
TCB500-540F32	52	32	30	70	59	97	165	1.5	TCB43CA-40-59	AP21100	1	SPMM432...
TCB500-540F32	53	32	31	70	59	97	165	1.5	TCB43CA-40-59	AP21150	1.5	SPMM432...
TCB500-540F32	54	32	32	70	59	97	165	1.5	TCB43CA-40-59	AP21200	2	SPMM432...
TCB550-590F32	55	32	33	75	59	105	175	1.9	TCB43CA-40-59	-	-	SPMM432...
TCB550-590F32	56	32	34	75	59	105	175	1.9	TCB43CA-40-59	AP21050	0.5	SPMM432...
TCB550-590F32	57	32	35	75	59	105	175	1.9	TCB43CA-40-59	AP21100	1	SPMM432...
TCB550-590F32	58	32	36	75	59	105	175	1.9	TCB43CA-40-59	AP21150	1.5	SPMM432...
TCB550-590F32	59	32	37	75	59	105	175	1.9	TCB43CA-40-59	AP21200	2	SPMM432...

The cartridge sets and shim plates are included.

Tool diameter tolerance	Applicable tolerance range of hole diameter
+0.2 / 0	+0.3 / 0

Countersink dimensions of bolt hole



Thread size	M16	M18	M20	M22	M24	M27	M30	M33	M36
øD (mm)	26	29	32	35	39	43	48	54	58
H (mm)	17.5	19.5	21.5	23.5	25.5	29	32	35	38
ød (mm)	18	20	22	24	26	30	33	36	39
Applicable tool	TCB260	TCB290	TCB320	TCB350	TCB390	TCB430	TCB480	TCB540	TCB580

Reference pages: Inserts, Standard cutting conditions → H226 - H227

Body
SPARE PARTS





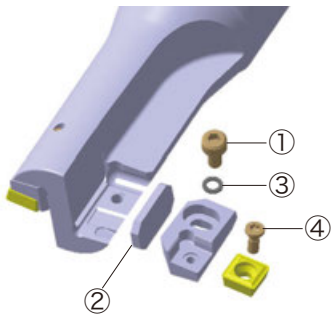


Designation	① Cartridge screw	② Shim plate	② Shim plate	② Shim plate	② Shim plate	Wrench for cartridge	③ Washer
TCB260-290F32	CM3×0.5×6	AP16050	AP16100	AP16150		P-2.5	3.2X6X0.5
TCB300-340F32	CM3×0.5×6	AP16050	AP16100	AP16150	AP16200	P-2.5	3.2X6X0.5
TCB350-390F32	CM3×0.5×6	AP16050	AP16100	AP16150	AP16200	P-2.5	3.2X6X0.5
TCB400-440F32	CM4×0.7×10	AP21050	AP21100	AP21150	AP21200	P-3	4.3X8X0.5
TCB450-490F32	CM4×0.7×10	AP21050	AP21100	AP21150	AP21200	P-3	4.3X8X0.5
TCB500-540F32	CM4×0.7×10	AP21050	AP21100	AP21150	AP21200	P-3	4.3X8X0.5
TCB550-590F32	CM4×0.7×10	AP21050	AP21100	AP21150	AP21200	P-3	4.3X8X0.5

Cartridge set
SPARE PARTS


Designation	④ Insert screw	Wrench
TCB04CA-26-29	CSTA-NO3	T-9D
TCB32CA-30-39	CSTA-NO5	T-9D
TCB32CA-30-39	CSTA-NO5	T-9D
TCB43CA-40-59	CSTA-4	T-15D
TCB43CA-40-59	CSTA-4	T-15D
TCB43CA-40-59	CSTA-4	T-15D
TCB43CA-40-59	CSTA-4	T-15D

* Recommended clamping torque: CSTA-NO3 / CSTA-NO5 = 2.3 N·m, CSTA-4 = 3.5 N·m



Fine adjustment shim plates (sold separately)
SPARE PARTS

Designation	Thickness
AP16005	0.05
AP16020	0.2
AP21005	0.05
AP21020	0.2

Cautions in preparing the cartridge type cutter

- Firmly press the cartridge in the arrowed direction while tightening the screw to install the cartridge on the cutter body. (Fig.1)
- Ensure that the shim plates thickness are always the same on both sides to equalize the tool diameter.
- Ensure to locate the shim plate fit within the cartridge pocket. (Fig.2)
- Use thin shim plates (not included) for fine diameter adjustments in ø0.1 mm increments.
- When using multiple shim plates in one pocket for a diameter adjustment, always use the thinnest shim plates at the bottom to prevent them from dislocating during machining. (Fig.3)
- Ensure that the top shim is always in contact with the rim of the cartridge pocket to prevent it from dislocation during machining. (Fig.4)


Fig.1


Fig.2

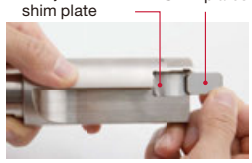


Fig.3

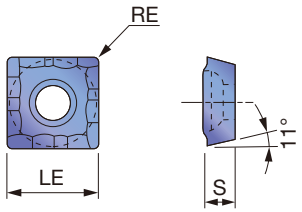
Fig.4

CUSTOM-BUILT TOOL SERVICE

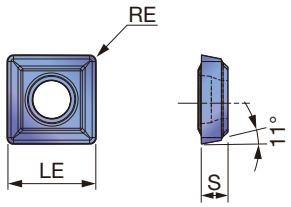
Tungaloy also designs and fabricates semi-standard or tailor-made tools with the TCB inserts according to the desired tool specifications. Contact your Tungaloy representative for further details.

INSERT

SPMP/SPMM



SPMP/SPMM-CG



P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	★
N	Non-ferrous	☆	☆
S	Superalloys	☆	☆
H	Hard materials	☆	☆

★ : First choice
☆ : Second choice

Designation	RE	Coated		LE	S
		T313W	AH6030		
SPMP771-CG	0.157		●	2.126	0.063
SPMP831-CG	0.157		●	2.500	0.094
SPMP042ER-CG	0.315		●	3.126	0.125
SPMM322ER-CG	0.315		●	3.752	0.125
SPMM432ER-CG	0.315		●	5.000	0.187
SPMP831DS	0.157	●		2.500	0.094
SPMP042ERD	0.315	●		3.126	0.125
SPMM322ERD	0.315	●		3.752	0.125
SPMM432ERD	0.315	●		5.000	0.187

●: Line up

STANDARD CUTTING CONDITIONS

Counterboring

ISO	Workpiece material	Cutting speed *Vc* (sfm)	Feed : *f* (ipr)	
			ø10 - 12 (z = 1)	ø13 - 59 (z = 2)
P	Carbon steel	260 - 660	0.001 - 0.003	0.004 - 0.012
M	Stainless steel	260 - 490	0.001 - 0.002	0.002 - 0.006
K	Grey cast iron	260 - 660	0.002 - 0.004	0.004 - 0.016
N	Non-ferrous	330 - 980	0.002 - 0.008	0.004 - 0.016
S	Superalloys	160 - 260	0.001 - 0.002	0.002 - 0.006
H	Hard materials	160 - 260	0.001 - 0.002	0.002 - 0.006

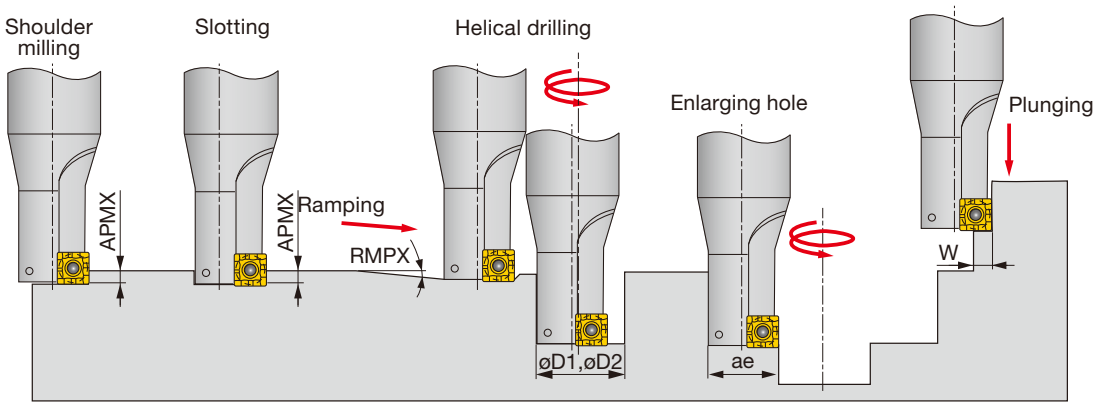
Milling

ISO	Workpiece material	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Carbon steel	260 - 660	0.002 - 0.006
M	Stainless steel	260 - 490	0.002 - 0.004
K	Grey cast iron	260 - 660	0.002 - 0.008
N	Non-ferrous	330 - 980	0.004 - 0.008
S	Superalloys	160 - 260	0.002 - 0.003
H	Hard materials	160 - 260	0.002 - 0.003

Internal boring (With one cutting edge)

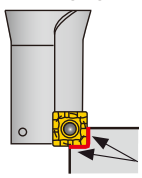
ISO	Workpiece material	Cutting speed *Vc* (sfm)	Depth of cut *ap* (in)	Feed : *f* (ipr)
P	Carbon steel	260 - 660	0.020 -	0.002 - 0.006
M	Stainless steel	260 - 490	0.020 -	0.002 - 0.004
K	Grey cast iron	260 - 660	0.020 -	0.002 - 0.008
N	Non-ferrous	330 - 980	0.020 -	0.004 - 0.008
S	Superalloys	160 - 260	0.020 -	0.002 - 0.003
H	Hard materials	160 - 260	0.020 -	0.002 - 0.003

APPLICATION



Metric	Tool dia. DCX	Max. depth of cut APMX	Max. ramping angle RMPX	Max.cutting width in plunging W	Min. machinable hole dia. øD1	Max. machinable hole dia. øD2	Max. cutting width in enlarging hole ae
TCB100F16	10	4	-	4	-	-	-
TCB110F16	11	4	2.1°	4	12	20	10
TCB120F20	12	4	2.1°	4	14	22	11
TCB130F20	13	4	2.1°	4	17	24	12
TCB-140	14	5	3°	5	20	25	13
TCB140F25	14	4	1.9°	4	19	26	13
TCB150F25	15	4	1.6°	4	21	28	14
TCB160F25	16	4	1.3°	4	23	30	15
TCB170F25	17	5	2.5°	5	25	32	16
TCB175F25	17.5	5	2.2°	5	25.5	33	16.5
TCB180F25	18	5	2°	5	26	34	17
TCB190F25	19	5	1.5°	5	27	36	18
TCB200F25	20	6	3°	6	29	38	19
TCB210F25	21	6	2.5°	6	30	40	20
TCB220F25	22	6	2°	6	31	42	21
TCB230F25	23	6	1.6°	6	32	44	22
TCB240F25	24	6	1.3°	6	33	46	23
TCB250F25	25	6	1.1°	6	34	48	24.5
TCB-260	26	6	1°	6	35	50	25
TCB-290	29	8	3°	8	37	56	28
TCB-320	32	8	2.5°	8	40	62	31
TCB-350	35	10	2.5°	10	45	68	34
TCB-390	39	10	2°	10	49	76	38
TCB-430	43	10	1.5°	10	53	84	42

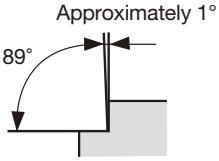
The insert can be used for a maximum 2 indexings.
(full 4 indexing for a plunging application.)



2 cutting edges in engagement

Cautions in shouldering operation

The cutter is design so that the insert provides 1° taper relief on the periphery. The wall, therefore, will be 89° when milled.

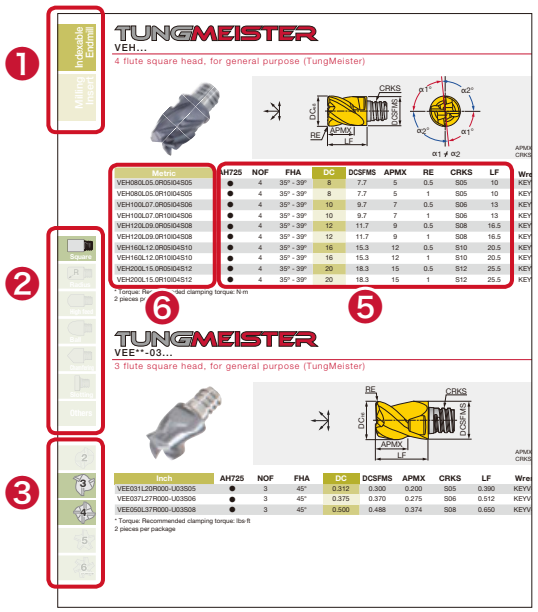


MEMO

Endmill

Endmill - Content structure

- Products are listed by application.
- Endmills in the catalog are our standard stock items.



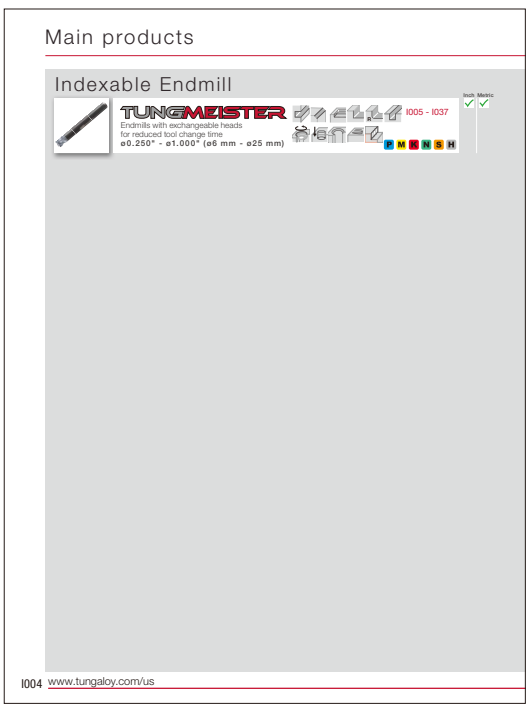
How to use the page

Method 1.

Select the tool type at the index on the right page, choose the application (❶), cutting edge shape (❷), and the number of cutting edges (❸), and check the designation you need (❻) in the dimension table (❺).

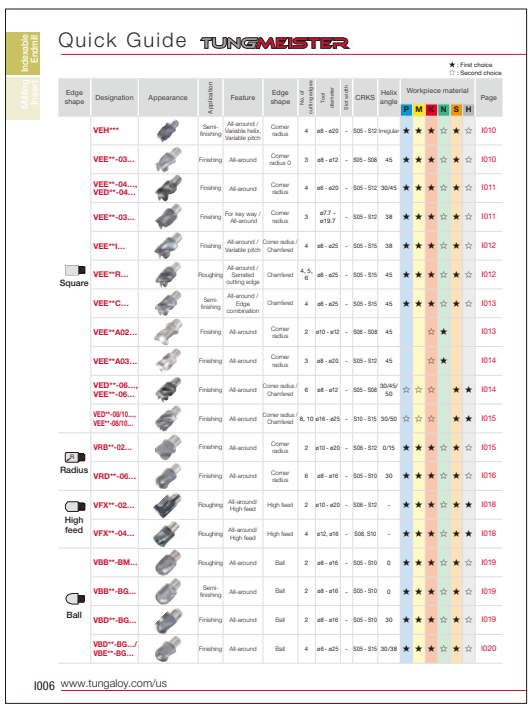
Method 2.

Select the tool series name on I004 and check the details on the product page.



Method 3.

Select the application and the cutting edge shape from Quick Guide on I006 - I007, and see the details on each page.



Icon

Edge shape

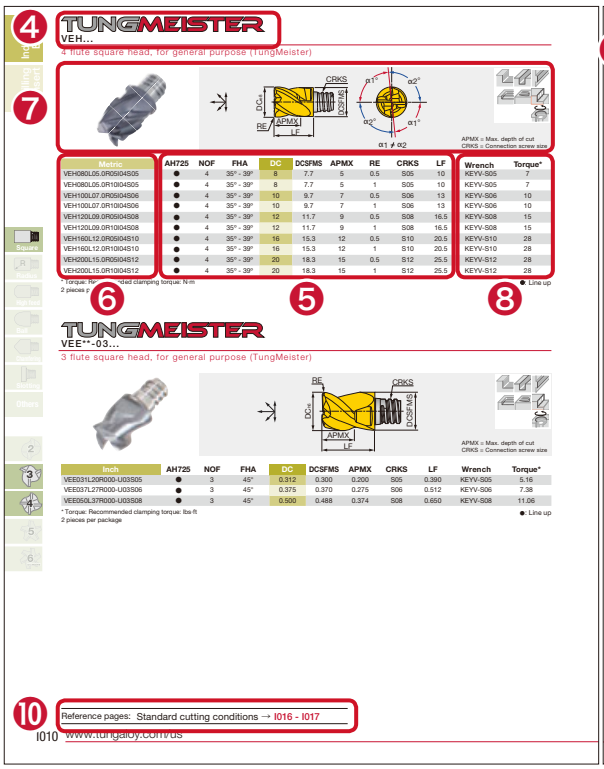
- Square
- Radius
- High feed
- Ball
- Chamfering
- Slotting

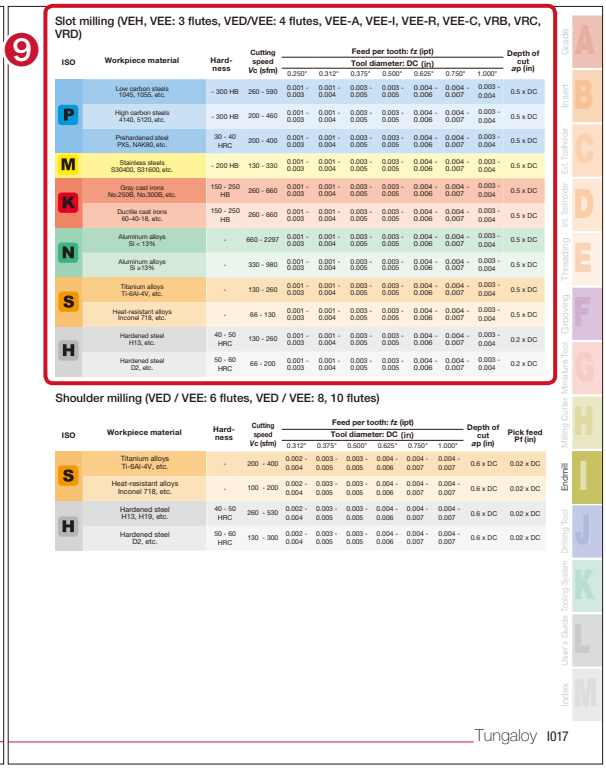
No. of cutting edges

- 2
- 3
- 4
- 5
- 6 or more

Application

- Shoulder milling
- Deep shoulder milling
- Shoulder milling (with radius)
- Face milling
- Slotting
- Slotting (with radius)
- Side slotting
- Side milling
- Pocketing
- Ramping
- Profiling
- Plunging
- Hole enlarging
- Holemaking
- Counterboring
- Hole chamfering
- Chamfering
- Cutting-off





❶ : Application
❷ : Cutting edge shape
❸ : Number of cutting edges
❹ : Endmill series name
❺ : Dimension table
❻ : Endmill designation
❼ : Dimension drawing (conforming to ISO13399)
❽ : Spare parts
❾ : Standard cutting conditions
❿ : Reference page

Machining accuracy

F	Finishing
M	Medium cutting
R	Roughing
	Coolant hole

Workpiece material

P	Steel
M	Stainless steel
K	Cast iron
N	Non-ferrous metal
S	Superalloy
H	Hard material

When ordering
- Please specify the designation and quantity for TungMeister heads.
  e.g. **VEE08L05.0R00-3S05** ... 2 (two heads per package)
- Please specify the designation and quantity for TungMeister shanks.
  e.g. **VSSD08L060805-S** ... 1 (one shank per package)

*Wrenches for TungMeister are sold separately.

Indexable Endmill

TUNGMEISTER

Endmills with exchangeable heads
for reduced tool change time
ø0.250" - ø1.000" (ø6 mm - ø25 mm)

I005 - I037

P M K N S H

Inch ✓ Metric ✓

TUNGMEISTER

Choose the best head-shank combination **for more efficiency!** Minimize setup time while **maximizing productivity!**

1 Wide range of cutting heads

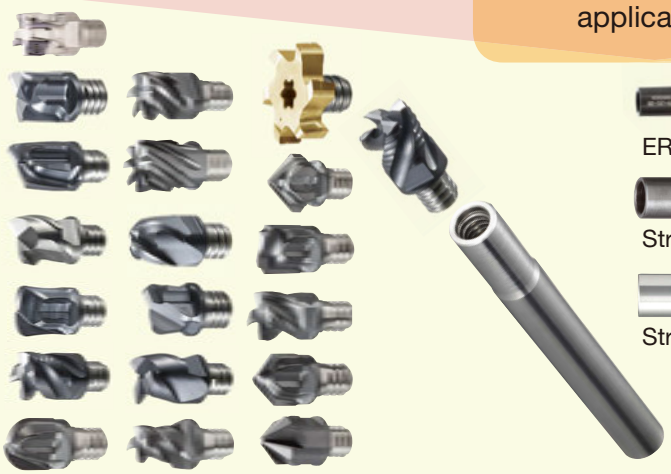
23 kinds of cutting heads are available. The head exchange is easy and highly accurate with the precision thread.

Flexible combinations

TungMeister can be applied to all kinds of endmill machining applications.

2 Three kinds of shank material

Users can choose the most suitable combination according to the machining parameters, length and rigidity required.



ER collet

Adaptor for TungFlex

Straight shank & neck

Straight shank & taper neck

Straight shank & neck (carbide)

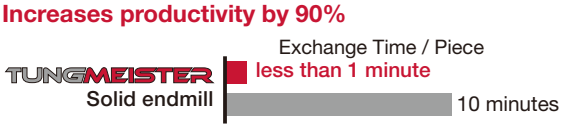
Straight (for grooving)

Steel: For general purpose
Carbide: For highly accurate machining due to excellent rigidity
Tungsten: Reduced chattering due to high vibration damping capacity

Reduces tool changeover times drastically!!

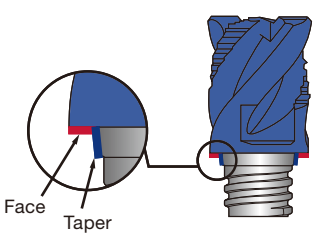
- Machine downtime is decreased considerably.
- Enables users to only change cutting head, simplifying set-ups.

Increases productivity by 90%

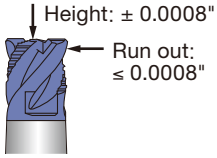


Highly accurate repeatability

- Accuracy can be maintained by touching the taper and face.
- Repeatability is guaranteed and is not a concern for machine operators.



■Head exchange accuracy



Reference pages: I006 - I037

Quick Guide TUNGMEISTER

★ : First choice
☆ : Second choice

Edge shape	Designation	Appearance	Application	Feature	Edge shape	No. of cutting edges	Tool diameter	Slot width	CRKS	Helix angle	Workpiece material						Page
											P	M	K	N	S	H	
Square	VEH***		Semi-finishing	All-around / Variable helix, Variable pitch	Corner radius	4	ø8 - ø20	-	S05 - S12	Irregular	★	★	★	☆	★	☆	I010
	VEE**-03...		Finishing	All-around	Corner radius 0	3	ø8 - ø12	-	S05 - S08	45	★	★	★	☆	★	☆	I010
	VEE**-04..., VED**-04...		Finishing	All-around	Corner radius	4	ø6 - ø20	-	S05 - S12	30/45	★	★	★	☆	★	☆	I011
	VEE**-03...		Finishing	For key way / All-around	Corner radius	3	ø7.7 - ø19.7	-	S05 - S12	38	★	★	★	☆	★	☆	I011
	VEE**I...		Finishing	All-around / Variable pitch	Corner radius / Chamfered	4	ø8 - ø25	-	S05 - S15	38	★	★	★	☆	★	☆	I012
	VEE**R...		Roughing	All-around / Serrated cutting edge	Chamfered	4, 5, 6	ø8 - ø25	-	S05 - S15	45	★	★	★	☆	★	☆	I012
	VEE**C...		Semi-finishing	All-around / Edge combination	Chamfered	4	ø8 - ø25	-	S05 - S15	45	★	★	★	☆	★	☆	I013
	VEE**A02...		Finishing	All-around	Corner radius	2	ø10 - ø12	-	S06 - S08	45			☆	★			I013
	VEE**A03...		Finishing	All-around	Corner radius	3	ø8 - ø20	-	S05 - S12	45			☆	★			I014
	VED**-06..., VEE**-06...		Finishing	All-around	Corner radius / Chamfered	6	ø8 - ø12	-	S05 - S08	30/45/50	☆	☆	☆		★	★	I014
	VED**-08/10..., VEE**-08/10...		Finishing	All-around	Corner radius / Chamfered	8, 10	ø16 - ø25	-	S10 - S15	30/50	☆	☆	☆		★	★	I015
Radius	VRB**-02...		Finishing	All-around	Corner radius	2	ø10 - ø20	-	S06 - S12	0/15	★	★	★	☆	★	☆	I015
	VRD**-06...		Finishing	All-around	Corner radius	6	ø8 - ø16	-	S05 - S10	30	★	★	★	☆	★	☆	I016
High feed	VFX**-02...		Roughing	All-around/ High feed	High feed	2	ø10 - ø20	-	S06 - S12	-	★	★	★	☆	★	★	I018
	VFX**-04...		Roughing	All-around/ High feed	High feed	4	ø12, ø16	-	S08, S10	-	★	★	★	☆	★	★	I018
Ball	VBB**-BM...		Roughing	All-around	Ball	2	ø8 - ø16	-	S05 - S10	0	★	★	★	☆	★	☆	I019
	VBB**-BG...		Semi-finishing	All-around	Ball	2	ø8 - ø16	-	S05 - S10	0	★	★	★	☆	★	☆	I019
	VBD**-BG...		Finishing	All-around	Ball	2	ø8 - ø16	-	S05 - S10	30	★	★	★	☆	★	☆	I019
	VBD**-BG.../ VBE**-BG...		Finishing	All-around	Ball	4	ø6 - ø25	-	S05 - S15	30/38	★	★	★	☆	★	☆	I020

★ : First choice
☆ : Second choice

Edge shape	Designation	Appearance	Application	Feature	Edge shape	No. of cutting edges	Tool diameter	Slot width	CRKS	Helix angle	Workpiece material P	M	K	N	S	H	Page
Ball	VBB**-SG...		Finishing	All-around / Sphere	Ball	2	ø10 - ø20	-	S05 - S15	0	★	★	★	☆	★	☆	I020
	VBE**-BGA...		Finishing	All-around	Ball	2	ø8 - ø20	-	S05 - S12	45			☆	★			I020
Spot drilling and chamfering	VCP**-02...		Finishing	For chamfering / 30°, 45°, 60°	Chamfered (with center cutting edge)	2	ø8 - ø16.5	-	S05 - S10	0	★	★	★	☆	★	☆	I022
Chamfering	VCA**-04/06...		Finishing	For chamfering / 45°	Chamfered (without center cutting edge)	4, 6	ø10 - ø20	-	S06 - S12	0	★	★	★	☆	★	☆	I026
	VCW**-02...		Finishing	For chamfering / with back chamfering edge	Chamfered (with center cutting edge)	2	ø11.8	-	S06	0	★	★	★	☆	★	☆	I026
	VCR**-02...		Finishing	For chamfering / R chamfering	Chamfered (without center cutting edge)	2	ø8 - ø20	-	S05 - S12	0	★	★	★	☆	★	☆	I026
Spot drilling	VDP**-02...		Finishing	For Spot drilling	Holemaking	2	ø3.28 - ø6.46	-	S05 - S10	0	★	★	★	☆	★	☆	I022
Counter-boring	VGC**-02...		Finishing	For Counterboring	Corner radius	2	ø7.8 - ø16	-	S05 - S10	10	★	★	★	☆	★	☆	I024
Threading	VST**-3...		Finishing	For slotting	Corner radius	3	ø15.7 - ø17.7	1.2-3.17	S06	0	★	★	★	☆	★	☆	I028
	VST**-4/6...		Finishing	For slotting	Corner radius	4, 6	ø21.7 - ø27.7	0.76-10	S08, S10	0	★	★	★	☆	☆	☆	I029
	VTB**-06...		Finishing	For slotting	Corner radius	6	ø13.5 - ø25	2-8	S05 - S10	0	★	★	★	☆	★	☆	I030
	VTB** C15-06...		Finishing	For slottingt	Chamfered	6	ø13.5	2	S05	0	★	★	★	☆	★	☆	I029
Chamfering	VST**A45...		Finishing	For chamfering / 45°	Chamfered	3, 4	ø17.7 - ø21.7	3.4-5.5	S06, S08	0	★	★	★	☆	★	☆	I029
Threading	VMT***IS / UN / W		Finishing	Threading	Full profile	3 - 6	ø10 - ø16	-	S05, S06 S08	-	★	★	★	☆	★	☆	H204 - H205
Threading	VTR***IS / W		Finishing	Threading	Partial profile	3, 4	ø15.7 - ø21.7	-	S06, S08	-	★	★	★	☆	★	☆	H205

TUNGMEISTER

DESIGNATION SYSTEM (Inch)

Shank

V	SS	037	L300	S	06	U	S
①	②	③	④	⑤	⑥	⑦	⑧

① Series	
V	TungMeister

② Shank type	
SS	Straight neck
TS	Taper neck
SC	Slotting
ST	for T-Slotting
AD	TungFlex adapter

③ Shank diameter (in)	
031	ø0.315
037	ø0.375
050	ø0.500
062	ø0.625
075	ø0.750
100	ø1.000

④ Length (in)	
L300	3.000

⑤ Shape of shank	
S	Cylindrical
W	Weldon

⑥ Connection screw size	
05	S05
06	S06
08	S08
10	S10
12	S12
15	S15

⑦ Additional feature	
U	Inch

⑧ Shank material	
S	Steel
C	Carbide
W	Tungsten

Head

● Square endmill

V	E	E	031	L20	R000	-	U	03	S05
①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩

● Ball nose endmill

V	B	D	075	L62	-	BG	-	U	04	S12
①	②	③	④	⑤		⑥	⑦	⑧	⑨	⑩

① Series	
V	TungMeister

② Cutting edge	
E	Square
B	Ball
R	Radius
FX	for high feed
CA	for chamfering
CP	Spot drilling
CW	for chamfering (front and back)
CR	for R chamfering
GC	for counter boring
DP	for center drilling
S	for slotting
T	for T-slot milling

③ Helix angle / Rake face	
B	0°
C	15°
D	30°
E	38° ~ 50°
F	60°
T	Land
H	Variable helix

④ Diameter (in)	
050	ø0.500
100	ø1.000

⑤ Cutting edge length (in)	
Length	
L37	0.375
L87	0.875

⑥ Corner shape / Angle	
Chamfer type	
C006	0.006 x 45°
C012	0.012 x 45°
C024	0.024 x 45°
Chamfering head	
A30	30°
A60	60°
Ball nose	
SG	Sphere / high precision
BM	Ball / general purpose
BG	Ball / high precision

⑦ Additional feature	
I	Irregular pitch
A	for aluminum
R	for roughing
C	Combined edge

⑧ Additional feature	
U	Inch

⑨ The number of flutes	
General	
02	2
06	6

⑩ Connection screw size	
S05	S05
S06	S06
S08	S08
S10	S10
S12	S12
S15	S15

DESIGNATION SYSTEM (Metric)

Shank

V	SS	D10	L070	S	06	-	W	-	A
①	②	③	④	⑤	⑥		⑦		⑧

① Series	
V	TungMeister

② Shank type	
SS	Straight neck
TS	Taper neck
SC	Slotting
ST	for T-Slotting
AD	TungFlex adapter

③ Shank diameter (mm)	
D08	ø8
D10	ø10
D12	ø12
D16	ø16
D20	ø20
D25	ø25
D32	ø32
VSC, VAD type	
100	ø10
120	ø12
130	ø13
180	ø18
210	ø21

④ Length (mm)	
L070	70

⑤ Shape of shank	
S	Cylindrical
W	Weldon

⑥ Connection screw size	
05	S05
06	S06
08	S08
10	S10
12	S12
15	S15

⑦ Shank material	
S	Steel
C	Carbide
W	Tungsten

⑧ Additional feature	
A	with coolant hole
M	Thread size (TungFlex adapters)

Head

Square endmill

V	E	E	080	L05.0	R00	-	03	S05
①	②	③	④	⑤	⑥	⑦	⑧	⑨

Ball nose endmill

V	B	D	200	L15.0	-	BG	-	04	S12
①	②	③	④	⑤		⑥	⑦	⑧	⑨

① Series	
V	TungMeister

② Cutting edge	
E	Square
B	Ball
R	Radius
FX	for high feed
CA	for chamfering
CP	Spot drilling
CW	for chamfering (front and back)
CR	for R chamfering
GC	for counter boring
DP	for center drilling
S	for slotting
T	for T-slot milling

③ Helix angle / Rake face	
B	0°
C	15°
D	30°
E	38° - 50°
F	60°
T	Land
H	Variable helix

④ Diameter (mm)	
060	ø6
200	ø20

⑤ Cutting edge length (mm)	
Length	
L07.0	7
L15.0	15
Groove width	
W1.50	1.5
W1.57	1.57
W10.0	10

⑥ Corner shape / Angle	
Nose radius	
R00	Sharp edge
R005	R0.05
R01	R0.1
R05	R0.5
R10	R1.0
Chamfer type	
C15	0.15 x 45°
C30	0.3 x 45°
C60	0.6 x 45°
Chamfering head	
A30	30°
A60	60°
R chamfering head	
R10	R1.0
R16	R1.6
Ball nose	
SG	Sphere / high precision
BM	Ball / general purpose
BG	Ball / high precision

⑦ Additional feature	
I	Irregular pitch
A	for aluminum
R	for roughing
C	Combined edge

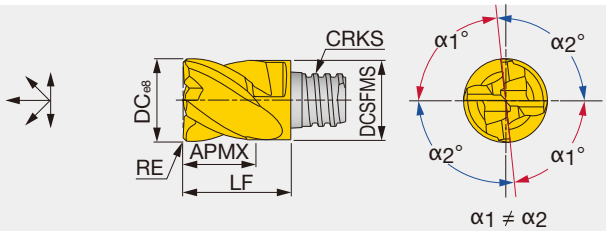
⑧ The number of flutes	
General	
02	2
06	6
Grooving head VST type	
3	3
4	4

⑨ Connection screw size	
S05	S05
S06	S06
S08	S08
S10	S10
S12	S12
S15	S15

TUNGMEISTER

VEH...

4 flute square head, for general purpose (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEH080L05.0R05I04S05	●	4	35° - 39°	8	7.7	5	0.5	S05	10	KEYV-S05	7
VEH080L05.0R10I04S05	●	4	35° - 39°	8	7.7	5	1	S05	10	KEYV-S05	7
VEH100L07.0R05I04S06	●	4	35° - 39°	10	9.7	7	0.5	S06	13	KEYV-S06	10
VEH100L07.0R10I04S06	●	4	35° - 39°	10	9.7	7	1	S06	13	KEYV-S06	10
VEH120L09.0R05I04S08	●	4	35° - 39°	12	11.7	9	0.5	S08	16.5	KEYV-S08	15
VEH120L09.0R10I04S08	●	4	35° - 39°	12	11.7	9	1	S08	16.5	KEYV-S08	15
VEH160L12.0R05I04S10	●	4	35° - 39°	16	15.3	12	0.5	S10	20.5	KEYV-S10	28
VEH160L12.0R10I04S10	●	4	35° - 39°	16	15.3	12	1	S10	20.5	KEYV-S10	28
VEH200L15.0R05I04S12	●	4	35° - 39°	20	18.3	15	0.5	S12	25.5	KEYV-S12	28
VEH200L15.0R10I04S12	●	4	35° - 39°	20	18.3	15	1	S12	25.5	KEYV-S12	28

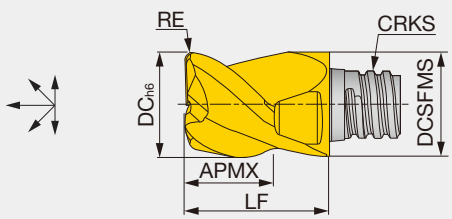
* Torque: Recommended clamping torque: N·m
2 pieces per package

●: Line up

TUNGMEISTER

VEE**-03...

3 flute square head, for general purpose (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque*
VEE031L20R000-U03S05	●	3	45°	0.312	0.300	0.200	S05	0.390	KEYV-S05	5.16
VEE037L27R000-U03S06	●	3	45°	0.375	0.370	0.275	S06	0.512	KEYV-S06	7.38
VEE050L37R000-U03S08	●	3	45°	0.500	0.488	0.374	S08	0.650	KEYV-S08	11.06

* Torque: Recommended clamping torque: lbs·ft
2 pieces per package

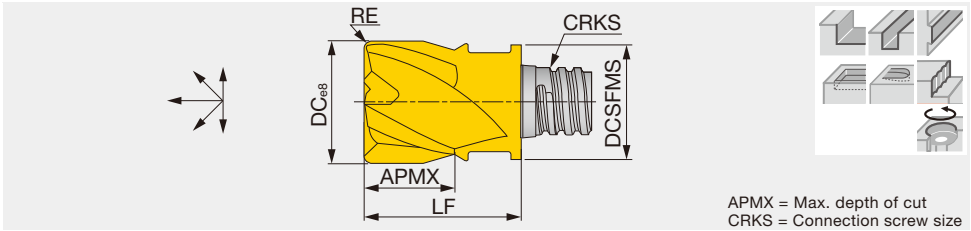
●: Line up

Reference pages: Standard cutting conditions → I016 - I017

TUNGMEISTER

VEE**-04..., VED**-04...

4 flute square head, for general purpose (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE025L20R000-U04S05	●	4	45°	0.250	0.300	0.200	-	S05	0.390	KEYV-S05	5.16
VED031L20R015-U04S05	●	4	30°	0.312	0.300	0.200	0.015	S05	0.390	KEYV-S05	5.16
VED031L20R031-U04S05	●	4	30°	0.312	0.300	0.200	0.031	S05	0.390	KEYV-S05	5.16
VED031L20R062-U04S05	●	4	30°	0.312	0.300	0.200	0.062	S05	0.390	KEYV-S05	5.16
VEE031L20R000-U04S05	●	4	45°	0.312	0.300	0.200	-	S05	0.390	KEYV-S05	5.16
VEE031L20R015-U04S05	●	4	45°	0.312	0.300	0.200	0.015	S05	0.390	KEYV-S05	5.16
VEE031L20R031-U04S05	●	4	45°	0.312	0.300	0.200	0.031	S05	0.390	KEYV-S05	5.16
VEE031L20R062-U04S05	●	4	45°	0.312	0.300	0.200	0.062	S05	0.390	KEYV-S05	5.16
VED037L27R015-U04S06	●	4	30°	0.375	0.370	0.275	0.015	S06	0.512	KEYV-S06	7.38
VED037L27R031-U04S06	●	4	30°	0.375	0.370	0.275	0.031	S06	0.512	KEYV-S06	7.38
VEE037L27R000-U04S06	●	4	45°	0.375	0.370	0.275	-	S06	0.512	KEYV-S06	7.38
VEE037L27R015-U04S06	●	4	45°	0.375	0.370	0.275	0.015	S06	0.512	KEYV-S06	7.38
VEE037L27R030-U04S06	●	4	45°	0.375	0.370	0.275	0.031	S06	0.512	KEYV-S06	7.38
VEE037L27R062-U04S06	●	4	45°	0.375	0.370	0.275	0.062	S06	0.512	KEYV-S06	7.38
VEE037L47R000-U04S06	●	4	45°	0.375	0.370	0.470	-	S06	0.748	KEYV-S06	7.38
VED050L37R015-U04S08	●	4	30°	0.500	0.488	0.374	0.015	S08	0.650	KEYV-S08	11.06
VED050L37R031-U04S08	●	4	30°	0.500	0.488	0.374	0.031	S08	0.650	KEYV-S08	11.06
VEE050L37R000-U04S08	●	4	45°	0.500	0.488	0.374	-	S08	0.650	KEYV-S08	11.06
VEE050L37R015-U04S08	●	4	45°	0.500	0.488	0.374	0.015	S08	0.650	KEYV-S08	11.06
VEE050L37R031-U04S08	●	4	45°	0.500	0.488	0.374	0.031	S08	0.650	KEYV-S08	11.06
VEE050L37R062-U04S08	●	4	45°	0.500	0.488	0.374	0.062	S08	0.650	KEYV-S08	11.06
VED062L47R015-U04S10	●	4	30°	0.625	0.600	0.470	0.015	S10	0.810	KEYV-S10	20.65
VED062L47R031-U04S10	●	4	30°	0.625	0.600	0.470	0.031	S10	0.810	KEYV-S10	20.65
VED062L47R062-U04S10	●	4	30°	0.625	0.600	0.470	0.062	S10	0.810	KEYV-S10	20.65
VEE062L47R000-U04S10	●	4	45°	0.625	0.600	0.470	-	S10	0.810	KEYV-S10	20.65
VEE062L47R031-U04S10	●	4	45°	0.625	0.600	0.470	0.031	S10	0.810	KEYV-S10	20.65
VED075L62R015-U04S12	●	4	30°	0.750	0.720	0.620	0.015	S12	1.000	KEYV-S12	20.65
VED075L62R031-U04S12	●	4	30°	0.750	0.720	0.620	0.031	S12	1.000	KEYV-S12	20.65
VED075L62R062-U04S12	●	4	30°	0.750	0.720	0.620	0.062	S12	1.000	KEYV-S12	20.65
VEE075L62R000-U04S12	●	4	45°	0.750	0.720	0.620	-	S12	1.000	KEYV-S12	20.65
VEE075L62R031-U04S12	●	4	45°	0.750	0.720	0.620	0.031	S12	1.000	KEYV-S12	20.65

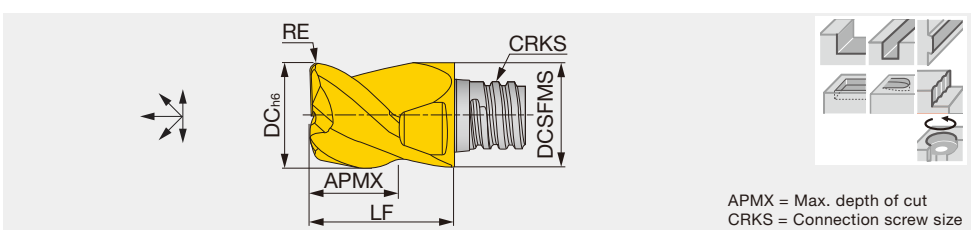
* Torque: Recommended clamping torque: lbs·ft
2 pieces per package

●: Line up

TUNGMEISTER

VEE**-03...

3 flute square head, for keyway (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE077L04.0R02-03S05	●	3	38°	7.7	7.7	4	0.2	S05	10	KEYV-S05	7
VEE097L05.0R03-03S06	●	3	38°	9.7	9.7	5	0.3	S06	13	KEYV-S06	10
VEE117L07.0R03-03S08	●	3	38°	11.7	11.7	7	0.3	S08	16.5	KEYV-S08	15
VEE157L08.0R03-03S10	●	3	38°	15.7	15.3	8	0.3	S10	20.5	KEYV-S10	28
VEE197L12.0R04-03S12	●	3	38°	19.7	18.3	12	0.4	S12	25.5	KEYV-S12	28

* Torque: Recommended clamping torque: N·m
2 pieces per package

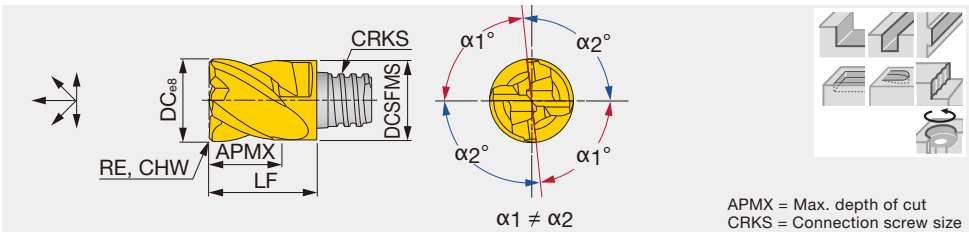
●: Line up

Reference pages: Standard cutting conditions → I016 - I017

TUNGMEISTER

VEE**I...

4 flute square head, variable pitch, for chatter dampening (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque*
VEE031L22C012IU04S05	●	4	38°	0.312	0.303	0.220	-	0.012	S05	0.393	KEYV-S05	5.16
VEE037L29C016IU04S06	●	4	38°	0.375	0.370	0.299	-	0.016	S06	0.512	KEYV-S06	7.38
VEE050L37C020IU04S08	●	4	38°	0.500	0.488	0.374	-	0.020	S08	0.650	KEYV-S08	11.06
VEE062L50C024IU04S10	●	4	38°	0.625	0.602	0.500	-	0.024	S10	0.810	KEYV-S10	20.65
VEE075L62C024IU04S12	●	4	38°	0.750	0.726	0.629	-	0.024	S12	1.004	KEYV-S12	20.65
VEE100L86C024IU04S15	●	4	38°	1.000	0.940	0.863	-	0.024	S15	1.456	KEYV-W20	29.50
VEE100L86R000IU04S15	●	4	38°	1.000	0.941	0.866	-	-	S15	1.457	KEYV-W20	29.50
VEE100L86R015IU04S15	●	4	38°	1.000	0.941	0.866	0.015	-	S15	1.457	KEYV-W20	29.50
VEE100L86R031IU04S15	●	4	38°	1.000	0.941	0.866	0.031	-	S15	1.457	KEYV-W20	29.50
VEE100L86R062IU04S15	●	4	38°	1.000	0.941	0.866	0.062	-	S15	1.457	KEYV-W20	29.50
VEE100L86R125IU04S15	●	4	38°	1.000	0.941	0.866	0.125	-	S15	1.457	KEYV-W20	29.50

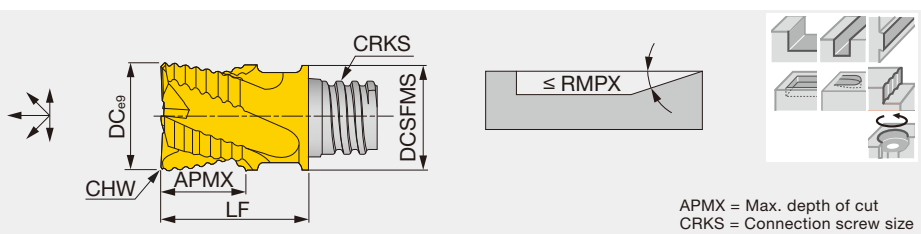
* Torque: Recommended clamping torque: lbs·ft
VEE031 ~ VEE075: 2 pieces per package
VEE100: 1 piece per package

●: Line up

TUNGMEISTER

VEE**R...

4 flute square head, for chatter dampening (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	CHW	CRKS	LF	RMPX	Wrench	Torque*
VEE031L20C012RU04S05	●	4	45°	0.312	0.300	0.200	0.010	S05	0.390	-	KEYV-S05	5.16
VEE037L27C012RU04S06	●	4	45°	0.375	0.360	0.270	0.012	S06	0.512	-	KEYV-S06	7.38
VEE050L37C016RU04S08	●	4	45°	0.500	0.488	0.374	0.014	S08	0.650	-	KEYV-S08	11.06
VEE062L47C024RU05S10	●	5	45°	0.625	0.600	0.470	0.016	S10	0.800	-	KEYV-S10	20.65
VEE075L59C024RU06S12	●	6	45°	0.750	0.720	0.590	0.016	S12	1.000	3°	KEYV-S12	20.65
VEE100L86C020RU06S15	●	6	45°	1.000	0.941	0.866	0.020	S15	1.457	3°	KEYV-W15	29.50

* Torque: Recommended clamping torque: lbs·ft
VEE031 ~ VEE075: 2 pieces per package
VEE100: 1 piece per package

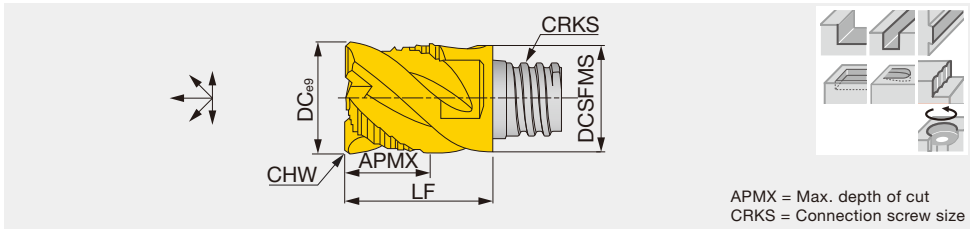
●: Line up

Reference pages: Standard cutting conditions → I016 - I017

TUNGMEISTER

VEE**C...

Square head, roughing and finishing combination type (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	CHW	CRKS	LF	Wrench	Torque*
VEE031L20C012CU04S05	●	4	45°	0.312	0.300	0.200	0.012	S05	0.390	KEYV-S05	5.16
VEE037L27C012CU04S06	●	4	45°	0.375	0.360	0.275	0.012	S06	0.510	KEYV-S06	7.38
VEE050L36C016CU04S08	●	4	45°	0.500	0.488	0.369	0.016	S08	0.650	KEYV-S08	11.06
VEE062L47C024CU04S10	●	4	45°	0.625	0.600	0.470	0.024	S10	0.800	KEYV-S10	20.65
VEE075L62C024CU04S12	●	4	45°	0.750	0.720	0.620	0.024	S12	1.000	KEYV-S12	20.65
VEE100L86C024CU04S15	●	4	45°	1.000	0.941	0.866	0.024	S15	1.457	KEYV-W15	29.50

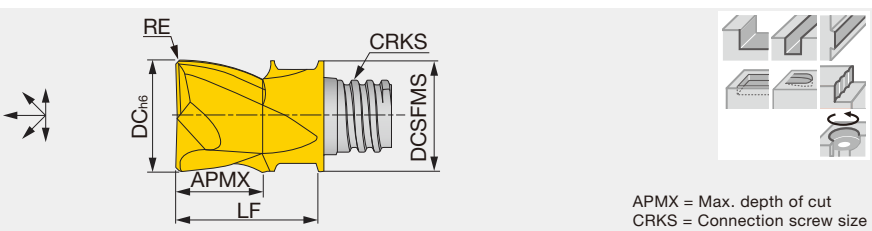
* Torque: Recommended clamping torque: lbs·ft
VEE031 ~ VEE075: 2 pieces per package
VEE100: 1 piece per package

●: Line up

TUNGMEISTER

VEE**A02...

2 flute square head, for aluminum machining (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Inch	KS15F	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE037L27R000AU02S06	●	2	45°	0.375	0.360	0.270	-	S06	0.510	KEYV-S06	7.38
VEE037L27R020AU02S06	●	2	45°	0.375	0.360	0.270	0.02	S06	0.512	KEYV-S06	7.38
VEE050L37R000AU02S08	●	2	45°	0.500	0.488	0.374	-	S08	0.650	KEYV-S08	11.06
VEE050L37R020AU02S08	●	2	45°	0.500	0.488	0.374	0.02	S08	0.650	KEYV-S08	11.06

* Torque: Recommended clamping torque: lbs·ft
2 pieces per package

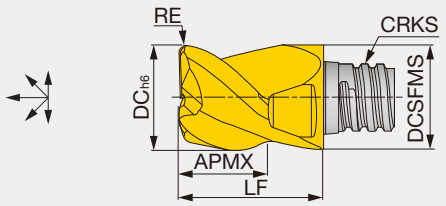
●: Line up

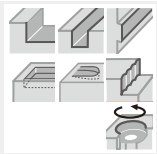
Reference pages: Standard cutting conditions → I016 - I017

TUNGMEISTER

VEE**A03...

3 flute square head, for aluminium machining (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

Inch	KS15F	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VEE031L20R020AU03S05	●	3	45°	0.312	0.300	0.200	0.020	S05	0.390	KEYV-S05	5.16
VEE037L23R031AU03S06	●	3	45°	0.375	0.360	0.230	0.031	S06	0.510	KEYV-S06	7.38
VEE037L23R062AU03S06	●	3	45°	0.375	0.360	0.230	0.062	S06	0.510	KEYV-S06	7.38
VEE050L31R031AU03S08	●	3	45°	0.500	0.488	0.315	0.031	S08	0.650	KEYV-S08	11.06
VEE050L31R062AU03S08	●	3	45°	0.500	0.488	0.315	0.062	S08	0.650	KEYV-S08	11.06
VEE050L31R094AU03S08	●	3	45°	0.500	0.488	0.315	0.094	S08	0.650	KEYV-S08	11.06
VEE050L31R125AU03S08	●	3	45°	0.500	0.488	0.315	0.125	S08	0.650	KEYV-S08	11.06
VEE062L39R000AU03S10	●	3	45°	0.625	0.600	0.390	-	S10	0.810	KEYV-S10	20.65
VEE062L39R031AU03S10	●	3	45°	0.625	0.600	0.390	0.031	S10	0.810	KEYV-S10	20.65
VEE062L39R062AU03S10	●	3	45°	0.625	0.600	0.390	0.062	S10	0.810	KEYV-S10	20.65
VEE062L39R094AU03S10	●	3	45°	0.625	0.600	0.390	0.094	S10	0.810	KEYV-S10	20.65
VEE062L39R125AU03S10	●	3	45°	0.625	0.600	0.390	0.125	S10	0.810	KEYV-S10	20.65
VEE075L47R062AU03S12	●	3	45°	0.750	0.720	0.470	0.062	S12	1.000	KEYV-S12	20.65
VEE075L47R094AU03S12	●	3	45°	0.750	0.720	0.470	0.094	S12	1.000	KEYV-S12	20.65
VEE075L47R125AU03S12	●	3	45°	0.750	0.720	0.470	0.125	S12	1.000	KEYV-S12	20.65
VEE075L50R008AU03S12	●	3	45°	0.750	0.720	0.500	0.008	S12	1.000	KEYV-S12	20.65
VEE075L50R020AU03S12	●	3	45°	0.750	0.720	0.500	0.020	S12	1.000	KEYV-S12	20.65

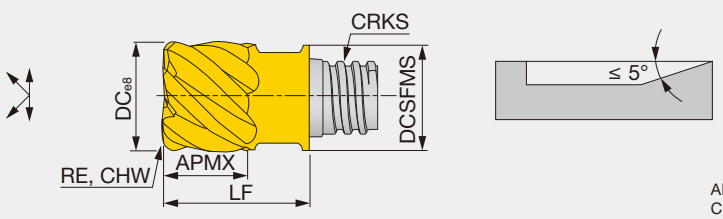
* Torque: Recommended clamping torque: lbs·ft
2 pieces per package

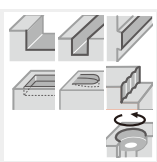
●: Line up

TUNGMEISTER

VED**-06..., VEE**-06...

6 flute square head, for difficult-to-cut material (TungMeister)





APMX = Max. depth of cut
CRKS = Connection screw size

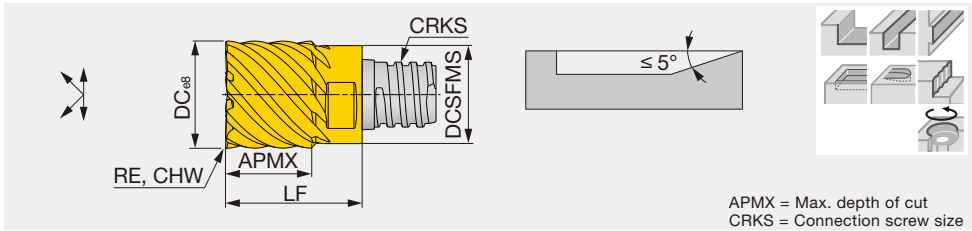
Inch	AH725	AH750	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque*
VED031L20R015-U06S05	●		6	30°	0.312	0.300	0.200	0.015	-	S05	0.390	KEYV-S05	5.16
VEE031L20R000-U06S05	●		6	45°	0.312	0.300	0.200	-	-	S05	0.390	KEYV-S05	5.16
VEE031L20R031-U06S05	●		6	45°	0.312	0.300	0.200	0.031	-	S05	0.390	KEYV-S05	5.16
VEE031L20C004-U06S05		●	6	50°	0.312	0.300	0.200	-	0.004	S05	0.390	KEYV-S05	5.16
VED037L27R015-U06S06	●		6	30°	0.375	0.370	0.275	0.015	-	S06	0.512	KEYV-S06	7.38
VED037L27R031-U06S06	●		6	30°	0.375	0.370	0.275	0.031	-	S06	0.512	KEYV-S06	7.38
VEE037L27R000-U06S06	●		6	45°	0.375	0.370	0.275	-	-	S06	0.512	KEYV-S06	7.38
VEE037L27R015-U06S06	●		6	45°	0.375	0.370	0.275	0.015	-	S06	0.512	KEYV-S06	7.38
VEE037L27R031-U06S06	●		6	45°	0.375	0.370	0.275	0.031	-	S06	0.512	KEYV-S06	7.38
VEE037L27R062-U06S06	●		6	45°	0.375	0.370	0.275	0.062	-	S06	0.512	KEYV-S06	7.38
VEE037L27C004-U06S06		●	6	50°	0.375	0.370	0.270	-	0.004	S06	0.510	KEYV-S06	7.38
VED050L37R015-U06S08	●		6	30°	0.500	0.488	0.374	0.016	-	S08	0.650	KEYV-S08	11.06
VED050L37R031-U06S08	●		6	30°	0.500	0.488	0.374	0.031	-	S08	0.650	KEYV-S08	11.06
VEE050L37R000-U06S08	●		6	45°	0.500	0.488	0.374	-	-	S08	0.650	KEYV-S08	11.06
VEE050L37R015-U06S08	●		6	45°	0.500	0.488	0.374	0.016	-	S08	0.650	KEYV-S08	11.06
VEE050L37R031-U06S08	●		6	45°	0.500	0.488	0.374	0.031	-	S08	0.650	KEYV-S08	11.06
VEE050L37R062-U06S08	●		6	45°	0.500	0.488	0.374	0.059	-	S08	0.650	KEYV-S08	11.06
VEE050L37C004-U06S08		●	6	50°	0.500	0.488	0.374	-	0.004	S08	0.650	KEYV-S08	11.06

* Torque: Recommended clamping torque: lbs·ft
2 pieces per package

●: Line up

TUNGMEISTER
VED**-08,10..., VEE**-08,10...

8 and 10 flute square head, for difficult-to-cut material (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

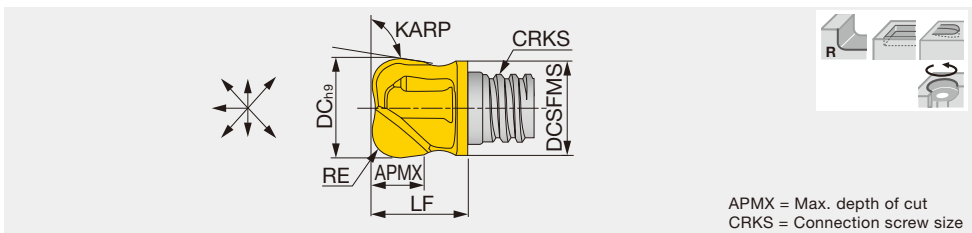
Inch	AH725	AH750	NOF	FHA	DC	DCSFMS	APMX	RE	CHW	CRKS	LF	Wrench	Torque*
VED062L47R000-U08S10	●		8	30°	0.625	0.600	0.470	-	-	S10	0.810	KEYV-S10	20.65
VED062L47R015-U08S10	●		8	30°	0.625	0.600	0.470	0.015	-	S10	0.810	KEYV-S10	20.65
VED062L47R031-U08S10	●		8	30°	0.625	0.600	0.470	0.031	-	S10	0.810	KEYV-S10	20.65
VED062L47R062-U08S10	●		8	30°	0.625	0.600	0.470	0.062	-	S10	0.810	KEYV-S10	20.65
VEE062L47C008-U08S10		●	8	50°	0.625	0.600	0.470	-	0.008	S10	0.810	KEYV-S10	20.65
VED075L62R031-U10S12	●		10	30°	0.750	0.720	0.620	0.031	-	S12	1.000	KEYV-S12	20.65
VED075L62R062-U10S12	●		10	30°	0.750	0.720	0.620	0.062	-	S12	1.000	KEYV-S12	20.65
VEE075L62C008-U10S12		●	10	50°	0.750	0.720	0.620	-	0.008	S12	1.000	KEYV-S12	20.65
VED100L86R031-U10S15	●		10	30°	1.000	0.941	0.866	0.031	-	S15	1.457	KEYV-W20	29.50
VED100L86R062-U10S15	●		10	30°	1.000	0.941	0.866	0.062	-	S15	1.457	KEYV-W20	29.50

* Torque: Recommended clamping torque: lbs·ft
VED/VEE062~ VED/VEE075: 2 pieces per package
VED100: 1 piece per package

●: Line up

TUNGMEISTER
VRB**-02...

2 flute radius head (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	KARP	CRKS	LF	Wrench	Torque*
VRB062L31R187-U02S10	●	2	-	0.625	0.600	0.310	0.190	97°	S10	0.580	KEYV-S10	20.65
VRB075L45R250-U02S12	●	2	-	0.750	0.720	0.450	0.250	97°	S12	0.680	KEYV-S12	20.65
VRB075L45R312-U02S12	●	2	-	0.750	0.720	0.450	0.312	97°	S12	0.680	KEYV-S12	20.65

Note: Suitable for contouring operation.
** The wrench size for these heads is different from the ones for the other head types.

●: Line up

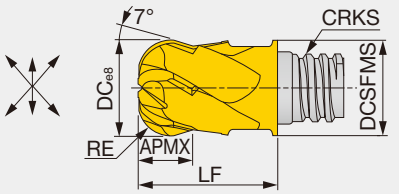
* Torque: Recommended clamping torque: lbs·ft
2 pieces per package

Reference pages: Standard cutting conditions → I016 - I017

TUNGMEISTER

VRD**-06...

Radius head with 6 ground flutes (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VRD031L16R078-U06S05	●	6	30°	0.312	0.300	0.160	0.078	S05	0.390	KEYV-S05	5.16
VRD037L19R031-U06S06	●	6	30°	0.375	0.360	0.190	0.031	S06	0.510	KEYV-S06	7.38
VRD037L19R062-U06S06	●	6	30°	0.375	0.360	0.190	0.062	S06	0.510	KEYV-S06	7.38
VRD037L19R125-U06S06	●	6	30°	0.375	0.360	0.190	0.125	S06	0.510	KEYV-S06	7.38
VRD050L27R062-U06S08	●	6	30°	0.500	0.480	0.270	0.062	S08	0.650	KEYV-S08	11.06
VRD050L27R125-U06S08	●	6	30°	0.500	0.480	0.270	0.125	S08	0.650	KEYV-S08	11.06
VRD050L27R156-U06S08	●	6	30°	0.500	0.480	0.270	0.156	S08	0.650	KEYV-S08	11.06
VRD062L35R200-U06S10	●	6	30°	0.625	0.600	0.350	0.200	S10	0.807	KEYV-S10	20.65

* Torque: Recommended clamping torque: lbs·ft
2 pieces per package

●: Line up

STANDARD CUTTING CONDITIONS

Shoulder milling (VEH, VEE: 3 flutes, VED/VEE: 4 flutes, VEE-A, VEE-I, VEE-R, VEE-C, VRB, VRC, VRD)

ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: DC (in) 0.250"	0.312"	0.375"	0.500"	0.625"	0.750"	1.000"	Depth of cut *ap* (in)	Pick feed Pf (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	260 - 590	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
	High carbon steels 4140, 5120, etc.	- 300 HB	200 - 460	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	200 - 400	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
M	Stainless steels S30400, S31600, etc.	- 200 HB	130 - 330	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
K	Gray cast irons No.250B, No.300B, etc.	150 - 250 HB	260 - 660	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
	Ductile cast irons 60-40-18, etc.	150 - 250 HB	260 - 660	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
N	Aluminum alloys Si < 13%	-	660 - 2297	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
	Aluminum alloys Si ≥13%	-	330 - 980	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.25 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	130 - 260	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.05 x DC
	Heat-resistant alloys Inconel 718, etc.	-	66 - 130	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.05 x DC
H	Hardened steel H13, etc.	40 - 50 HRC	130 - 260	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.05 x DC
	Hardened steel D2, etc.	50 - 60 HRC	66 - 200	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.05 x DC

Slot milling (VEH, VEE: 3 flutes, VED/VEE: 4 flutes, VEE-A, VEE-I, VEE-R, VEE-C, VRB, VRC, VRD)

ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: DC (in) 0.250"	0.312"	0.375"	0.500"	0.625"	0.750"	1.000"	Depth of cut *ap* (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	260 - 590	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
P	High carbon steels 4140, 5120, etc.	- 300 HB	200 - 460	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
P	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	200 - 400	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
M	Stainless steels S30400, S31600, etc.	- 200 HB	130 - 330	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
K	Gray cast irons No.250B, No.300B, etc.	150 - 250 HB	260 - 660	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
K	Ductile cast irons 60-40-18, etc.	150 - 250 HB	260 - 660	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
N	Aluminum alloys Si < 13%	-	660 - 2297	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
N	Aluminum alloys Si ≥13%	-	330 - 980	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	130 - 260	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	66 - 130	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.5 x DC
H	Hardened steel H13, etc.	40 - 50 HRC	130 - 260	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.2 x DC
H	Hardened steel D2, etc.	50 - 60 HRC	66 - 200	0.001 - 0.003	0.001 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.003 - 0.004	0.2 x DC

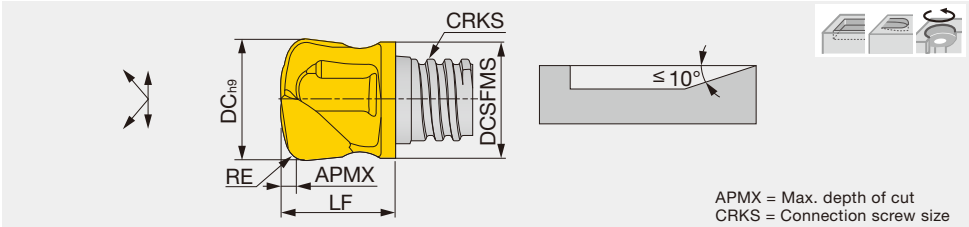
Shoulder milling (VED / VEE: 6 flutes, VED / VEE: 8, 10 flutes)

ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: DC (in) 0.312"	0.375"	0.500"	0.625"	0.750"	1.000"	Depth of cut *ap* (in)	Pick feed Pf (in)
S	Titanium alloys Ti-6Al-4V, etc.	-	200 - 400	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.02 x DC
S	Heat-resistant alloys Inconel 718, etc.	-	100 - 200	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.02 x DC
H	Hardened steel H13, H19, etc.	40 - 50 HRC	260 - 530	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.02 x DC
H	Hardened steel D2, etc.	50 - 60 HRC	130 - 300	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005	0.004 - 0.006	0.004 - 0.007	0.004 - 0.007	0.6 x DC	0.02 x DC

TUNGMEISTER

VFX**-02...

2 flute head for high feed milling (TungMeister)



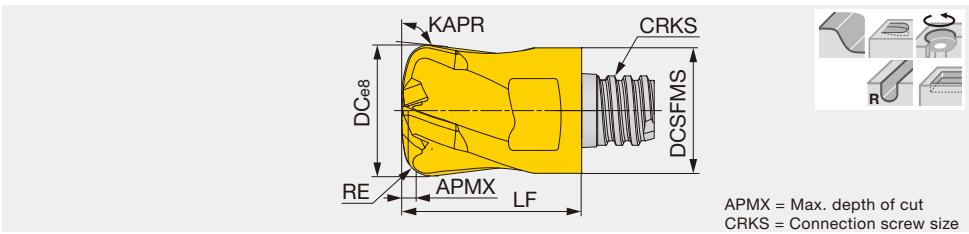
Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	RE(1)	CRKS	LF	Wrench	Torque*	fz (ipt)
VFX037L02R060-U02S06	●	2	0°	0.375	0.360	0.020	0.059	S06	0.490	KEYV-S06	7.38	0.012 - 0.024
VFX050L03R080-U02S08	●	2	0°	0.500	0.480	0.039	0.079	S08	0.590	KEYV-S08	11.06	0.020 - 0.039
VFX075L05R080-U02S12	●	2	0°	0.750	0.720	0.059	0.079	S12	0.685	KEYV-S12	20.65	0.022 - 0.043

(1) Corner radius for CAM programming
Note: Please use tapered neck shank or tungsten shank for VFX head.
* Torque: Recommended clamping torque: lbs·ft
2 pieces per package
●: Line up

TUNGMEISTER

VFX**-04...

4 flute head for high feed milling (TungMeister)



Metric	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	KAPR	CRKS	LF	Wrench	Torque*	fz (mm/t)
VFX120L0.60R18H04S08	●	4	20°	12	11.5	0.6	1.8	97°	S08	16.5	KEYV-S08	15	0.16-0.67
VFX160L0.80R22H04S10	●	4	20°	16	15.4	0.8	2.2	97°	S10	20.5	KEYV-S10	28	0.2-0.75

* Torque: Recommended clamping torque: N·m
2 pieces per package
●: Line up

STANDARD CUTTING CONDITIONS

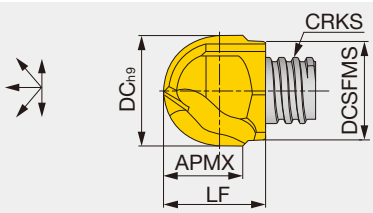
High feed milling (VFX)

ISO	Workpiece material	Hardness	Cutting speed Vc (sfm)	Feed per tooth: fz (ipt) ø0.375"	ø0.500"	ø0.630"	ø0.750"	Width of cut ae (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	330 - 660	0.012 - 0.028	0.016 - 0.031	0.020 - 0.035	0.024 - 0.040	0.6 x DC
	High carbon steels 4140, 5120, etc.	- 300 HB	260 - 590	0.008 - 0.024	0.012 - 0.028	0.016 - 0.031	0.020 - 0.035	0.6 x DC
	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	260 - 530	0.008 - 0.020	0.008 - 0.02	0.012 - 0.024	0.012 - 0.024	0.6 x DC
M	Stainless steels S30400, S31600, etc.	- 200 HB	200 - 330	0.008 - 0.024	0.008 - 0.024	0.012 - 0.028	0.012 - 0.028	0.6 x DC
K	Gray cast irons No.250B, No.300B, etc.	150 - 250 HB	330 -720	0.012 - 0.028	0.016 - 0.031	0.020 - 0.035	0.024 - 0.040	0.6 x DC
	Ductile cast irons 60-40-18, etc.	150 - 250 HB	330 - 720	0.008 - 0.024	0.012 - 0.028	0.016 - 0.031	0.020 - 0.035	0.6 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	130 - 260	0.008 - 0.020	0.008 - 0.020	0.008 - 0.024	0.008 - 0.024	0.25 x DC
	Heat-resistant alloys Inconel 718, etc.	-	66 - 130	0.004 - 0.012	0.004 - 0.012	0.004 - 0.012	0.004 - 0.012	0.25 x DC
H	Hardened steel H13, etc.	40 - 50 HRC	130 - 260	0.008 - 0.016	0.008 - 0.016	0.012 - 0.020	0.012 - 0.020	0.45 x DC
	Hardened steel D2, etc.	50 - 60 HRC	66 - 200	0.004 - 0.008	0.004 -0.008	0.004 - 0.012	0.004 - 0.012	0.25 x DC

Feed per tooth should not exceed the maximum value for each product.

TUNGMEISTER
VBB**-BM...

2 flute ball nose head for roughing (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

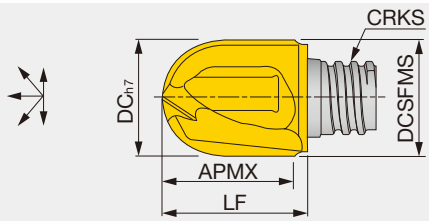
Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque*
VBB0312L31-BM-U02S05	●	2	0°	0.312	0.300	0.310	S05	0.390	KEYV-S05	5.16
VBB0375L38-BM-U02S06	●	2	0°	0.375	0.360	0.380	S06	0.478	KEYV-S06	7.38
VBB0500L50-BM-U02S08	●	2	0°	0.500	0.480	0.508	S08	0.646	KEYV-S08	11.06
VBB0625L63-BM-U02S10	●	2	0°	0.625	0.600	0.630	S10	0.750	KEYV-S10	20.65

* Torque: Recommended clamping torque: lbs·ft
2 pieces per package

●: Line up

TUNGMEISTER
VBB**-BG...

2 flute ball nose head for semi-finishing (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

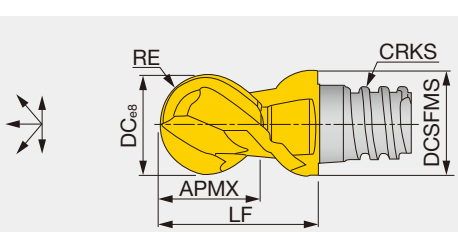
Inch	AH750	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque*
VBB0312L31-BG-U02S05	●	2	0°	0.312	0.300	0.312	S05	0.390	KEYV-S05	5.16
VBB0375L38-BG-U02S06	●	2	0°	0.375	0.360	0.380	S06	0.480	KEYV-S06	7.38
VBB0500L50-BG-U02S08	●	2	0°	0.500	0.480	0.500	S08	0.640	KEYV-S08	11.06
VBB0625L63-BG-U02S10	●	2	0°	0.625	0.598	0.630	S10	0.752	KEYV-S10	20.65

* Torque: Recommended clamping torque: lbs·ft
2 pieces per package

●: Line up

TUNGMEISTER
VBD**-BG...

Ball nose head with 2 ground flutes for finishing (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VBD0312L20-BG-U02S05	●	2	30°	0.312	0.300	0.200	0.156(1)	S05	0.350	KEYV-S05	5.16
VBD0375L27-BG-U02S06	●	2	30°	0.375	0.360	0.275	0.188(1)	S06	0.512	KEYV-S06	7.38
VBD0500L37-BG-U02S08	●	2	30°	0.500	0.488	0.374	0.249(2)	S08	0.650	KEYV-S08	11.06
VBD0625L47-BG-U02S10	●	2	30°	0.625	0.600	0.470	0.313(2)	S10	0.800	KEYV-S10	20.65

RE tolerance: (1) ± 0.0004" (2) ± 0.0005"
* Torque: Recommended clamping torque: lbs·ft
2 pieces per package

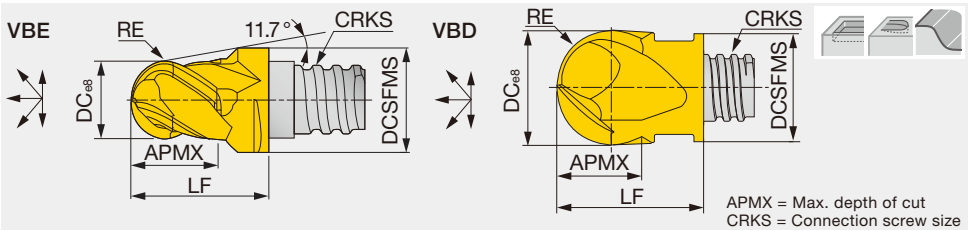
●: Line up

Reference pages: Standard cutting conditions → I021

TUNGMEISTER

VBD**-BG..., VBE**-BG...

Ball nose head with 4 ground flutes for finishing (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VBE0250L20-BG-U04S05	●	4	38°	0.250	0.300	0.200	0.124(1)	S05	0.390	KEYV-S05	5.16
VBE0312L20-BG-U04S05	●	4	30°	0.312	0.300	0.200	0.156(1)	S05	0.350	KEYV-S05	5.16
VBD0375L27-BG-U04S06	●	4	30°	0.375	0.360	0.275	0.188(1)	S06	0.512	KEYV-S06	7.38
VBD0500L37-BG-U04S08	●	4	30°	0.500	0.488	0.374	0.249(2)	S08	0.650	KEYV-S08	11.06
VBD0625L47-BG-U04S10	●	4	30°	0.625	0.600	0.470	0.313(2)	S10	0.800	KEYV-S10	20.65
VBD0750L62-BG-U04S12	●	4	30°	0.750	0.720	0.620	0.374(2)	S12	1.000	KEYV-S12	20.65
VBD100L86-BG-U04S15	●	4	30°	1.000	0.940	0.860	0.500(3)	S15	1.450	KEYV-W20	29.50

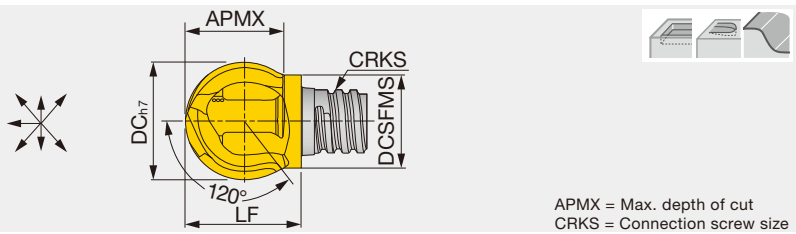
RE tolerance: (1) ± 0.0004" (2) ± 0.0005" (3) ± 0.0008"
* Torque: Recommended clamping torque: lbs·ft
VBE250, 0312 / VBD0375 ~ 0750: 2 pieces per package, VBD: 1 piece per package

●: Line up

TUNGMEISTER

VBB**-SG...

2 flute ball nose head, with spherical designed edge (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	CRKS	LF	Wrench	Torque*
VBB0375L31-SG-U02S05	●	2	0°	0.375	0.300	0.315	S05	0.389	KEYV-S05	5.16
VBB0500L37-SG-U02S06	●	2	0°	0.500	0.378	0.378	S06	0.482	KEYV-S06	7.38
VBB0625L50-SG-U02S08	●	2	0°	0.625	0.480	0.508	S08	0.606	KEYV-S08	11.06
VBB0750L63-SG-U02S10	●	2	0°	0.750	0.600	0.634	S10	0.710	KEYV-S10	20.65

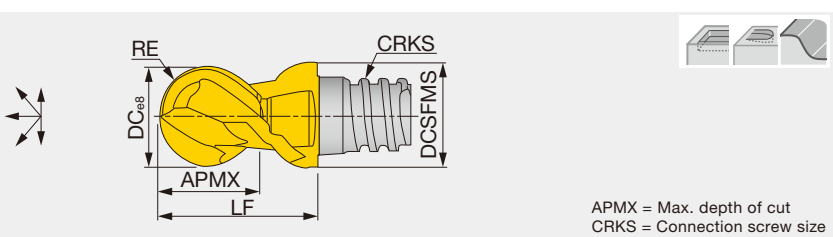
Also capable of pull cutting on the vertical wall
** The wrench size for these heads is different from the ones for the other head types.
* Torque: Recommended clamping torque: lbs·ft. 2 pieces per package

●: Line up

TUNGMEISTER

VBE**-BGA...

Ball nose head with 2 ground flutes for aluminium machining (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Inch	KS15F	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VBE0312L20-BGAU02S05	●	2	45°	0.312	0.300	0.200	0.156(1)	S05	0.390	KEYV-S05	5.16
VBE0375L27-BGAU02S06	●	2	45°	0.375	0.360	0.270	0.187(1)	S06	0.510	KEYV-S06	7.38
VBE0500L37-BGAU02S08	●	2	45°	0.500	0.488	0.374	0.250(2)	S08	0.650	KEYV-S08	11.06
VBE0625L47-BGAU02S10	●	2	45°	0.625	0.600	0.470	0.312(2)	S10	0.800	KEYV-S10	20.65
VBE0750L50-BGAU02S12	●	2	45°	0.750	0.720	0.500	0.374(2)	S12	1.000	KEYV-S12	20.65

RE tolerance: (1) ± 0.0004" (2) ± 0.0005" * Torque: Recommended clamping torque: lbs·ft. 2 pieces per package

●: Line up

Standard cutting conditions: Roughing (VBB-BM / BG / SG, VBD-BG, VBE-BGA)

ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: DC (in) 0.250"	0.312"	0.375"	0.500"	0.625"	0.750"	1.000"	Depth of cut *ap* (in)	Pick feed *Pf* (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	328 - 656	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
	High carbon steels 4140, etc.	- 300 HB	262 - 591	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	262 - 525	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
M	Stainless steels 304, 316, etc.	- 200 HB	197 - 328	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
K	Gray cast irons 250, 300, etc.	150 - 250 HB	328 - 722	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
	Ductile cast irons 400-15S, etc.	150 - 250 HB	328 - 722	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
N	Aluminum alloys Si < 13%	-	656 -2297	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
	Aluminum alloys Si ≥13%	-	328 - 984	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.4 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	131 - 262	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.2 x DC
	Heat-resistant alloys Inconel 718, etc.	50 - 60 HRC	66 - 131	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.2 x DC
H	Hardened steel SKD61, SKT4, etc. H13, etc.	-	131 - 262	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.2 x DC
	Hardened steel SKD11, SKH, etc. D2, etc.	50 - 60 HRC	66 - 197	0.001 - 0.003	0.002 - 0.003	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.003 - 0.006	0.003 - 0.006	0.3 x DC	0.2 x DC

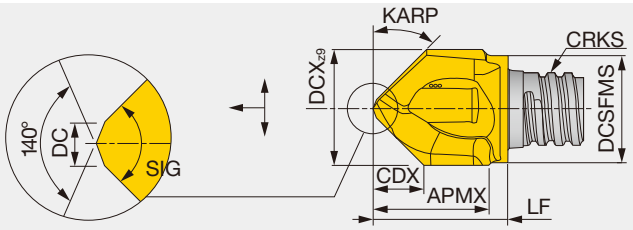
Standard cutting conditions: Profiling for semi-finishing and finishing (VBB-BM / BG / SG, VBD-BG, VBE-BGA)

ISO	Workpiece material	Hard-ness	Cutting speed *Vc* (sfm)	Feed per tooth: *fz* (ipt) Tool diameter: DC (in) 0.250"	0.312"	0.375"	0.500"	0.625"	0.750"	1.000"	Depth of cut *ap* (in)	Pick feed *Pf* (in)
P	Low carbon steels 1045, 1055, etc.	- 300 HB	394 - 820	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
	High carbon steels 4140, etc.	- 300 HB	328 - 722	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
	Prehardened steel PX5, NAK80, etc.	30 - 40 HRC	328 - 656	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
M	Stainless steels 304, 316, etc.	- 200 HB	262 - 394	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
K	Gray cast irons 250, 300, etc.	150 - 250 HB	394 - 919	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
	Ductile cast irons 400-15S, etc.	150 - 250 HB	394 -919	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
N	Aluminum alloys Si < 13%	-	984 - 3281	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
	Aluminum alloys Si ≥13%	-	492 - 1312	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.1 x DC	0.15 x DC
S	Titanium alloys Ti-6Al-4V, etc.	-	164 - 328	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.08 x DC	0.1 x DC
	Heat-resistant alloys Inconel 718, etc.	50 - 60 HRC	98 - 164	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.08 x DC	0.1 x DC
H	Hardened steel SKD61, SKT4, etc. H13, etc.	-	164 - 328	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.08 x DC	0.1 x DC
	Hardened steel SKD11, SKH, etc. D2, etc.	50 - 60 HRC	98 - 262	0.001 - 0.003	0.001 - 0.004	0.002 - 0.004	0.002 - 0.004	0.002 - 0.005	0.002 - 0.007	0.004 - 0.007	0.08 x DC	0.1 x DC

TUNGMEISTER

VCP**-02...

2 flute head, for spot drilling and chamfering (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH725	NOF	SIG	FHA	DCX	DCSFMS	APMX	CDX	CRKS	LF	DC	KARP	Wrench	Torque*
VCP100L09.5A30-02S06	●	2	60°	0°	10	9.5	8.5	7.5	S06	11.75	1.5	60°	KEYV-S06	10
VCP120L12.0A30-02S08	●	2	60°	0°	12	11.5	11	9.2	S08	15.4	1.5	60°	KEYV-S08	15
VCP160L15.0A30-02S10	●	2	60°	0°	16	15.2	16	12	S10	20.2	2.5	60°	KEYV-S10	28
VCP080L07.7A45-02S05	●	2	90°	0°	8	7.6	7.5	3.7	S05	9.75	1	45°	KEYV-S05	7
VCP083L07.9A45-02S05	●	2	90°	0°	8.3	7.6	7.5	3.8	S05	10	1	45°	KEYV-S05	7
VCP100L09.0A45-02S06	●	2	90°	0°	10	9.5	9.5	4.4	S06	11.75	1.5	45°	KEYV-S06	10
VCP104L09.0A45-02S06	●	2	90°	0°	10.4	9.5	9.5	4.6	S06	11.75	1.5	45°	KEYV-S06	10
VCP120L12.0A45-02S08	●	2	90°	0°	12	11.5	11.5	5.4	S08	15.4	1.5	45°	KEYV-S08	15
VCP124L12.0A45-02S08	●	2	90°	0°	12.4	11.5	11.5	5.6	S08	15.4	1.5	45°	KEYV-S08	15
VCP160L15.0A45-02S10	●	2	90°	0°	16	15.2	15	7.1	S10	18.8	1.5	45°	KEYV-S10	28
VCP165L15.0A45-02S10	●	2	90°	0°	16.5	15.2	15	7.1	S10	18.8	1.5	45°	KEYV-S10	28
VCP100L09.5A60-02S06	●	2	120°	0°	10	9.5	9.5	2.7	S06	12.7	1.5	30°	KEYV-S06	10
VCP120L12.0A60-02S08	●	2	120°	0°	12	11.5	11.5	3.3	S08	15.2	1.5	30°	KEYV-S08	15
VCP160L15.5A60-02S10	●	2	120°	0°	16	15.2	16	4.4	S10	19.9	1.5	30°	KEYV-S10	28

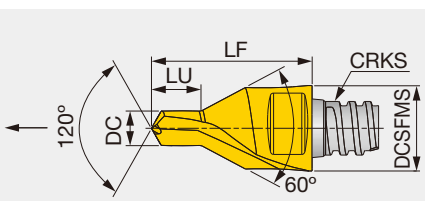
●: Line up

Minimum hole diameter ø1.5 mm
* Torque: Recommended clamping torque: N·m
2 pieces per package

TUNGMEISTER

VDP**-02...

2 flute head, with chamfered edge, for spot drilling (TungMeister)



CRKS = Connection screw size

Metric	AH725	NOF	FHA	DC± 0.02	DCSFMS	LU	CRKS	LF	Wrench	Torque*
VDP328L04.6A30-02S05	●	2	0°	3.28	8	4.6	S05	15	KEYV-S05	7
VDP412L05.9A30-02S06	●	2	0°	4.12	10	5.9	S06	19	KEYV-S06	10
VDP513L07.2A30-02S08	●	2	0°	5.13	12	7.2	S08	23	KEYV-S08	15
VDP646L08.9A30-02S10	●	2	0°	6.46	16	8.9	S10	28	KEYV-S10	28

●: Line up

* Torque: Recommended clamping torque: N·m
2 pieces per package

Reference pages: Standard cutting conditions → I023

STANDARD CUTTING CONDITIONS

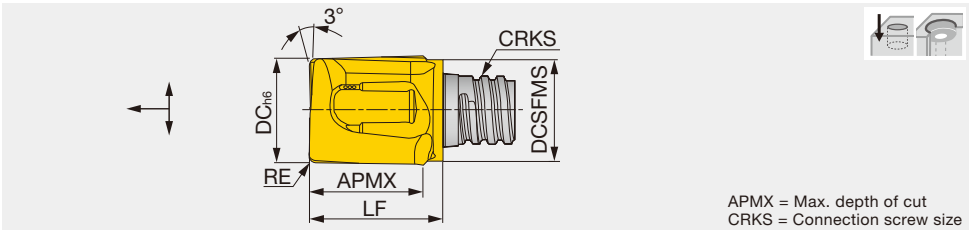
Drilling (VCP, VDP)

ISO	Workpiece material		Hardness	Cutting speed *Vc* (sfm	Feed: *f* (ipr)				
					VDP328	VDP412	VDP513	VDP646	VCP
P	Low carbon steels 1045, 1055, etc.		- 300 HB	131 - 262	0.0016 - 0.0031	0.0020 - 0.0039	0.0020 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0047
P	High carbon steels 4140,etc.		- 300 HB	98 - 164	0.0016 - 0.0031	0.0020 - 0.0039	0.0020 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0047
P	Prehardened steel PX5, NAK80, etc.		30 - 40 HRC	66 - 98	0.0016 - 0.0031	0.0020 - 0.0039	0.0020 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0047
M	Stainless steels 304, 316, etc.		- 200 HB	49 - 82	0.0016 - 0.0031	0.0020 - 0.0039	0.0020 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0047
K	Gray cast irons 250, 300, etc.		150 - 250 HB	197 - 328	0.0020 - 0.0035	0.0028 - 0.0047	0.0028 - 0.0047	0.0047 - 0.0071	0.0047 - 0.0071
K	Ductile cast irons 400-15S, etc.		150 - 250 HB	197 - 328	0.0016 - 0.0031	0.0020 - 0.0039	0.0020 - 0.0039	0.0039 - 0.0059	0.0039 - 0.0059
S	Titanium alloys Ti-6Al-4V, etc.		-	49 - 82	0.0016 - 0.0028	0.0016 - 0.0028	0.0016 - 0.0028	0.0016 - 0.0028	0.0016 - 0.0028
S	Heat-resistant alloys Inconel 718, etc.		-	33 - 66	0.0012 - 0.0024	0.0012 - 0.0024	0.0012 - 0.0024	0.0012 - 0.0024	0.0012 - 0.0024
H	Hardened steel	H13, etc.	40 - 50 HRC	49 - 82	0.0016 - 0.0028	0.0016 - 0.0028	0.0016 - 0.0028	0.0016 - 0.0028	0.0016 - 0.0028
H	Hardened steel	D2, etc.	50 - 60 HRC	33 - 66	0.0012 - 0.0024	0.0012 - 0.0024	0.0012 - 0.0024	0.0012 - 0.0024	0.0012 - 0.0024

TUNGMEISTER

VGC**-02...

2 flute head, for counterboring (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DC	DCSFMS	APMX	RE	CRKS	LF	Wrench	Torque*
VGC031L31R016-U02S05	●	2	10°	0.312	0.297	0.310	0.016	S05	0.390	KEYV-S05	5.16
VGC037L38R016-U02S06	●	2	10°	0.375	0.360	0.380	0.016	S06	0.485	KEYV-S06	7.38
VGC050L43R016-U02S08	●	2	10°	0.500	0.453	0.433	0.016	S08	0.600	KEYV-S08	11.06
VGC056L46R016-U02S08	●	2	10°	0.562	0.450	0.460	0.016	S08	0.590	KEYV-S08	11.06
VGC062L60R016-U02S10	●	2	10°	0.625	0.600	0.600	0.016	S10	0.750	KEYV-S10	20.65
VGC062L60R032-U02S10	●	2	10°	0.625	0.600	0.600	0.032	S10	0.750	KEYV-S10	20.65

Also capable of drilling with step feed (Max. depth = ap x 0.020")
* Torque: Recommended clamping torque: lbs·ft
2 pieces per package

●: Line up

Reference pages: Standard cutting conditions → I025

Counter boring (VGC)

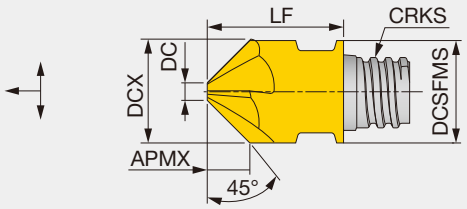
ISO	Workpiece material		Hardness	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steels 1045, 1055, etc.		- 300 HB	131 - 262	0.002 - 0.003
	High carbon steels 4140,etc.		- 300 HB	98 - 164	0.002 - 0.003
	Prehardened steel PX5, NAK80, etc.		30 - 40 HRC	66 - 98	0.002 - 0.003
M	Stainless steels 304, 316, etc.		- 200 HB	49 - 82	0.002 - 0.003
K	Gray cast irons 250, 300, etc.		150 - 250 HB	197 - 328	0.002 - 0.004
	Ductile cast irons 400-15S, etc.		150 - 250 HB	197 - 328	0.002 - 0.003
S	Titanium alloys Ti-6Al-4V, etc.		-	49 - 82	0.002 - 0.003
	Heat-resistant alloys Inconel 718, etc.		-	33 - 66	0.001 - 0.002
H	Hardened steel	H13, etc.	40 - 50 HRC	49 - 82	0.002 - 0.003
		D2, etc.	50 - 60 HRC	33 - 66	0.001 - 0.002

- When drilling, the step feed (pecking) operation should be applied with the depth of 0.011" - 0.019" per step.
- Apply the same cutting conditions as the VEE type head when conducting shoulder milling or slotting operations.

TUNGMEISTER

VCA**-04,06...

4 or 6 flute head, without center cutting edge, for countersinking and chamfering (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Inch	AH725	NOF	FHA	DCX	DCSFMS	APMX	DC	CRKS	LF	Wrench	Torque
VCA0375L16A45-U04S06	●	4	0°	0.375	0.375	0.150	0.073	S06	0.512	KEYV-S06	7.38

Metric	AH725	NOF	FHA	DCX	DCSFMS	APMX	DC	CRKS	LF	Wrench	Torque*
VCA100L04.0A45-04S06	●	4	0°	10	10	4	1.95	S06	13	KEYV-S06	10
VCA120L05.0A45-04S08	●	4	0°	12	12	5	1.95	S08	16.5	KEYV-S08	15
VCA127L05.3A45-04S08	●	4	0°	12.7	12.7	5.3	1.98	S08	16.5	KEYV-S08	15
VCA160L06.5A45-06S10	●	6	0°	16	16	6.5	3	S10	20.3	KEYV-S10	28
VCA200L07.5A45-06S12	●	6	0°	20	18.3	7.5	5	S12	25.5	KEYV-S12	28

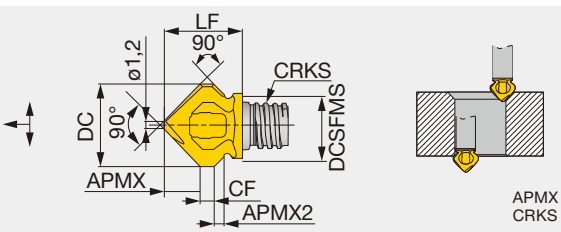
* Torque: Recommended clamping torque: lbs·ft (*N·m)
2 pieces per package

●: Line up

TUNGMEISTER

VCW**-02...

2 flute head, for front and back chamfering (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH725	NOF	FHA	DC	DCSFMS	APMX	APMX2	CF	CRKS	LF	Wrench	Torque*
VCW118L05.0A45-02S06	●	2	0°	11.8	9.3	5	1.2	2	S06	11.2	KEYV-S08	10

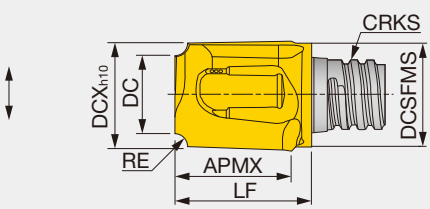
Also capable of reverse chamfering
* The wrench size for these heads is different from the ones for the other head types.
* Torque: Recommended clamping torque: N·m
2 pieces per package

●: Line up

TUNGMEISTER

VCR**-02...

2 flute head, for concave radius chamfering (TungMeister)



APMX = Max. depth of cut
CRKS = Connection screw size

Metric	AH725	NOF	FHA	DCX	DCSFMS	DC	APMX	RE	CRKS	LF	Wrench	Torque*
VCR080L07.5R10-02S05	●	2	0°	8	7.6	5.8	7.5	1	S05	10.5	KEYV-S05	7
VCR100L09.5R16-02S06	●	2	0°	10	9.5	6.8	9.5	1.6	S06	12.5	KEYV-S06	10
VCR100L09.5R25-02S06	●	2	0°	10	9.5	5.1	9.5	2.5	S06	12.5	KEYV-S06	10
VCR127L12.0R30-02S08	●	2	0°	12.7	12.2	6.5	12	3	S08	15.6	KEYV-S08	15
VCR127L12.0R40-02S08	●	2	0°	12.7	12.2	4.7	12	4	S08	15.6	KEYV-S08	15
VCR160L15.0R50-02S10	●	2	0°	16	15.2	6.2	15	5	S10	19.1	KEYV-S10	28
VCR200L07.0R60-02S12	●	2	0°	20	18.3	8	7	6	S12	17.4	KEYV-S12	28

* Torque: Recommended clamping torque: N·m
2 pieces per package

●: Line up

Reference pages: Standard cutting conditions → I027

STANDARD CUTTING CONDITIONS

Chamfering and countersinking (VCA, VCW, VCR)

ISO	Workpiece material		Hardness	Cutting speed *Vc* (sfm)	Feed *f* (ipr)
P	Low carbon steels 1045, 1055, etc.		- 300 HB	197 - 328	0.0024 - 0.0047
P	High carbon steels 4140,etc.		- 300 HB	164 - 262	0.0024 - 0.0047
P	Prehardened steel PX5, NAK80, etc.		30 - 40 HRC	131 - 230	0.0024 - 0.0047
M	Stainless steels SUS304, SUS316, etc. 304, 316, etc.		- 200 HB	98 - 164	0.0024 - 0.0047
K	Gray cast irons 250, 300, etc.		150 - 250 HB	262 - 394	0.0024 - 0.0047
K	Ductile cast irons 400-15S, etc.		150 - 250 HB	262 - 394	0.0024 - 0.0047
N	Aluminum alloys		-	328 - 656	0.0031 - 0.0059
S	Titanium alloys Ti-6Al-4V, etc.		-	98 - 164	0.0020 - 0.0039
S	Heat-resistant alloys Inconel 718, etc.		-	66 - 131	0.0016 - 0.0031
H	Hardened steel	H13, etc.	40 - 50 HRC	98 - 164	0.0020 - 0.0039
H	Hardened steel	D2, etc.	50 - 60 HRC	66 - 131	0.0016 - 0.0031

TOLERANCE OF TOOL DIAMETER

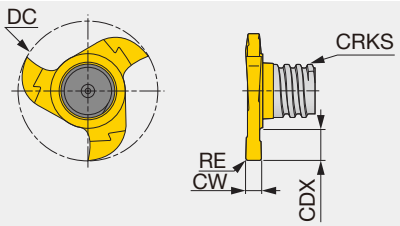
Basic dimensions (in)		Permissible dimensional deviations (μm)						
>	≤	e8	e9	h6	h7	h9	h10	z9
0.236	0.394	-25 -47	-25 -61	0 -9	0 -15	0 -36	0 -58	+78 +42
0.394	0.551	-32 -59	-32 -75	0 -11	0 -18	0 -43	0 -70	+93 +50
0.551	0.709	-32 -59	-32 -75	0 -11	0 -18	0 -43	0 -70	+103 +60
0.709	1.181	-40 -73	-40 -92	0 -13	0 -21	0 -52	0 -84	-

JISB0401-2: 1998 (ISO286-2: 1988) extract

TUNGMEISTER

VST**-3...

3 tooth slotting head, 1.2-3.17 mm slot width (TungMeister)



CRKS = Connection screw size

Metric	GH130	NOF	FHA	DC	CW±0.02	RE	CRKS	CDX	Wrench	Torque*
VST157W1.50R010-3S06	●	3	0°	15.7	1.5	0.1	S06	2.8	KEYV-177	10
VST157W1.57R020-3S06	●	3	0°	15.7	1.57	0.2	S06	2.8	KEYV-177	10
VST157W2.00R020-3S06	●	3	0°	15.7	2	0.2	S06	2.8	KEYV-177	10
VST157W2.39R020-3S06	●	3	0°	15.7	2.39	0.2	S06	2.8	KEYV-177	10
VST157W2.50R020-3S06	●	3	0°	15.7	2.5	0.2	S06	2.8	KEYV-177	10
VST157W3.00R020-3S06	●	3	0°	15.7	3	0.2	S06	2.8	KEYV-177	10
VST157W3.17R020-3S06	●	3	0°	15.7	3.17	0.2	S06	2.8	KEYV-177	10
VST177W1.20R005-3S06	●	3	0°	17.7	1.2(1)	0.05	S06	3.8	KEYV-177	10
VST177W1.40R005-3S06	●	3	0°	17.7	1.4(1)	0.05	S06	3.8	KEYV-177	10
VST177W1.50R010-3S06	●	3	0°	17.7	1.5	0.1	S06	3.8	KEYV-177	10
VST177W1.57R020-3S06	●	3	0°	17.7	1.57	0.2	S06	3.8	KEYV-177	10
VST177W1.70R005-3S06	●	3	0°	17.7	1.7(1)	0.05	S06	3.8	KEYV-177	10
VST177W2.00R020-3S06	●	3	0°	17.7	2	0.2	S06	3.8	KEYV-177	10
VST177W2.20R110-3S06	●	3	0°	17.7	2.2	1.1	S06	3.8	KEYV-177	10
VST177W2.39R020-3S06	●	3	0°	17.7	2.39	0.2	S06	3.8	KEYV-177	10
VST177W2.50R020-3S06	●	3	0°	17.7	2.5	0.2	S06	3.8	KEYV-177	10
VST177W3.00R020-3S06	●	3	0°	17.7	3	0.2	S06	3.8	KEYV-177	10
VST177W3.17R020-3S06	●	3	0°	17.7	3.17	0.2	S06	3.8	KEYV-177	10

(1) CW is based on DIN471/472.

* Torque: Recommended clamping torque: N·m

2 pieces per package

●: Line up

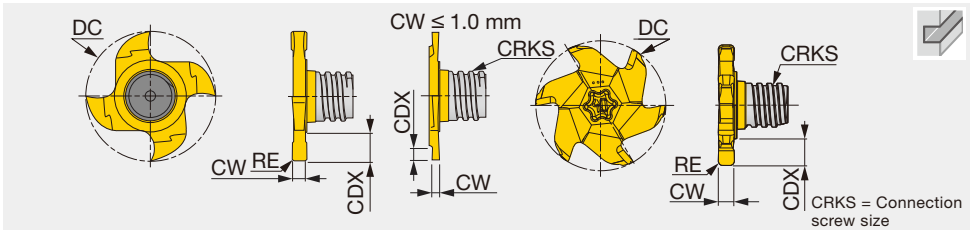
Square
Radius
High feed
Ball
Chamfering
Slotting
Others
2
3
4
5
6 or more

Reference pages: Standard cutting conditions → I031

TUNGMEISTER

VST**-4,6...

4 and 6 tooth slotting head, 0.76-10.0 mm slot width (TungMeister)



Metric	GH130	NOF	FHA	DC	CW ±0.02	RE	CRKS	CDX	Wrench	Torque*
VST217W0.76R000-4S08	●	4	0°	21.7	0.76(1)	-	S08	1.5	KEYV-217	15
VST217W0.86R000-4S08	●	4	0°	21.7	0.86(1)	-	S08	1.7	KEYV-217	15
VST217W0.96R000-4S08	●	4	0°	21.7	0.96(1)	-	S08	1.9	KEYV-217	15
VST217W1.00R005-4S08	●	4	0°	21.7	1	0.05	S08	2	KEYV-217	15
VST217W1.20R005-4S08	●	4	0°	21.7	1.2(1)	0.05	S08	4.5	KEYV-217	15
VST217W1.40R005-4S08	●	4	0°	21.7	1.4(1)	0.05	S08	4.5	KEYV-217	15
VST217W1.57R000-4S08	●	4	0°	21.7	1.57	-	S08	4.5	KEYV-217	15
VST217W1.70R010-4S08	●	4	0°	21.7	1.7(1)	0.1	S08	4.5	KEYV-217	15
VST217W1.95R020-4S08	●	4	0°	21.7	1.95(1)	0.2	S08	4.5	KEYV-217	15
VST217W2.00R020-4S08	●	4	0°	21.7	2	0.2	S08	4.5	KEYV-217	15
VST217W2.25R020-4S08	●	4	0°	21.7	2.25(1)	0.2	S08	4.5	KEYV-217	15
VST217W2.39R020-4S08	●	4	0°	21.7	2.39	0.2	S08	4.5	KEYV-217	15
VST217W2.50R020-4S08	●	4	0°	21.7	2.5	0.2	S08	4.5	KEYV-217	15
VST217W2.75R020-4S08	●	4	0°	21.7	2.75(1)	0.2	S08	4.5	KEYV-217	15
VST217W3.00R020-4S08	●	4	0°	21.7	3	0.2	S08	4.5	KEYV-217	15
VST217W3.17R020-4S08	●	4	0°	21.7	3.17	0.2	S08	4.5	KEYV-217	15
VST217W3.25R020-4S08	●	4	0°	21.7	3.25(1)	0.2	S08	4.5	KEYV-217	15
VST217W4.00R020-4S08	●	4	0°	21.7	4	0.2	S08	4.5	KEYV-217	15
VST217W4.25R020-4S08	●	4	0°	21.7	4.25(1)	0.2	S08	4.5	KEYV-217	15
VST217W4.75R020-4S08	●	4	0°	21.7	4.75	0.2	S08	4.5	KEYV-217	15
VST217W5.25R020-4S08	●	4	0°	21.7	5.25(1)	0.2	S08	4.5	KEYV-217	15
VST277W2.50R020-6S10	●	6	0°	27.7	2.5	0.2	S10	6	KEYV-T40L	28
VST277W5.25R020-6S10	●	6	0°	27.7	5.25	0.2	S10	6	KEYV-T40L	28
VST277W10.0R020-6S10	●	6	0°	27.7	10	0.2	S10	6	KEYV-T40L	28

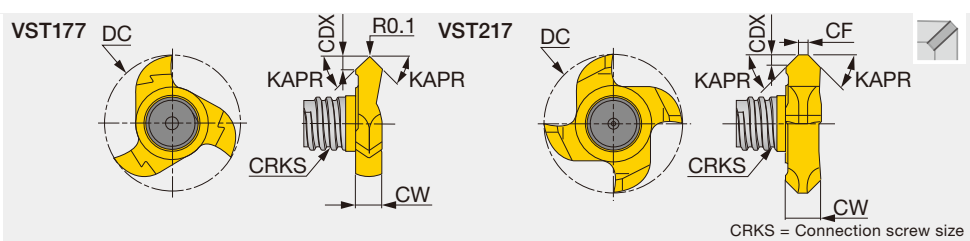
(1) CW is based on DIN471/472.
* Torque: Recommended clamping torque: N·m
2 pieces per package

●: Line up

TUNGMEISTER

VST**A45...

3 or 4 tooth slotting head, for chamfering (TungMeister)



Metric	GH130	NOF	FHA	DC	CW	KAPR	CRKS	CDX	CF	Wrench	Torque*
VST177L01.40A45-3S06	●	3	0°	17.7	3.4	45°	S06	1.4	-	KEYV-177	10
VST217L01.70A45-4S08	●	4	0°	21.7	5.5	45°	S08	1.7	1.5	KEYV-217	15

* Torque: Recommended clamping torque: N·m
2 pieces per package

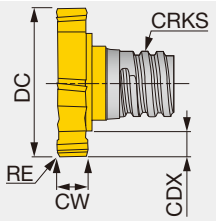
●: Line up

Reference pages: Standard cutting conditions → I031

TUNGMEISTER

VTB**-06...

6 tooth T-slotting head, 0.125" - 0.312" slot width (TungMeister)



CRKS = Connection screw size

Inch	GH130	NOF	FHA	DC $^{0}_{-0.002"}$	CW $^{\pm 0.0008"}$	CDX	CRKS	RE	Wrench	Torque*
VTB05W125R016-U06S05	●	6	0°	0.500	0.125	0.088	S05	0.016	KEYV-T20	5.16
VTB06W056R016-U06S06	●	6	0°	0.625	0.056	0.125	S06	0.016	KEYV-T20	7.38
VTB06W063R016-U06S06	●	6	0°	0.625	0.063	0.125	S06	0.016	KEYV-T20	7.38
VTB06W068R016-U06S06	●	6	0°	0.625	0.068	0.125	S06	0.016	KEYV-T20	7.38
VTB06W078R016-U06S06	●	6	0°	0.625	0.078	0.125	S06	0.016	KEYV-T20	7.38
VTB06W086R016-U06S06	●	6	0°	0.625	0.086	0.125	S06	0.016	KEYV-T25	7.38
VTB06W105R016-U06S06	●	6	0°	0.625	0.105	0.125	S06	0.016	KEYV-T25	7.38
VTB06W125R016-U06S06	●	6	0°	0.625	0.125	0.125	S06	0.016	KEYV-T25	7.38
VTB06W156R016-U06S06	●	6	0°	0.625	0.156	0.125	S06	0.016	KEYV-T25	7.38
VTB07W156R016-U06S08	●	6	0°	0.750	0.156	0.120	S08	0.016	KEYV-T30L	11.06
VTB07W187R016-U06S08	●	6	0°	0.750	0.187	0.120	S08	0.016	KEYV-T30L	11.06
VTB07W250R016-U06S08	●	6	0°	0.750	0.250	0.120	S08	0.016	KEYV-T30L	11.06
VTB08W187R016-U06S08	●	6	0°	0.875	0.187	0.190	S08	0.015	KEYV-T40L	11.06
VTB08W250R016-U06S08	●	6	0°	0.875	0.250	0.190	S08	0.015	KEYV-T40L	11.06
VTB08W312R016-U06S08	●	6	0°	0.875	0.312	0.190	S08	0.015	KEYV-T40L	11.06
VTB10W187R016-U06S10	●	6	0°	1.000	0.187	0.177	S10	0.015	KEYV-T50L	20.65
VTB10W250R016-U06S10	●	6	0°	1.000	0.250	0.177	S10	0.015	KEYV-T50L	20.65

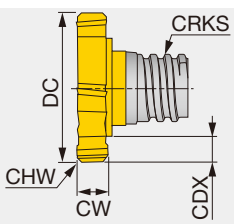
* Torque: Recommended clamping torque: lbs·ft
2 pieces per package

●: Line up

TUNGMEISTER

VTB**C006...

6 tooth T-slotting head, with chamfered edge, 0.062" - 0.078" slot width (TungMeister)



CRKS = Connection screw size

Inch	GH130	NOF	FHA	DC $^{0}_{-0.002"}$	CW $^{\pm 0.002"}$	CDX	CRKS	CHW	Wrench	Torque*
VTB05W062C006-U06S05	●	6	0°	0.500	0.062	0.089	S05	0.006	KEYV-T20	5.16
VTB05W078C006-U06S05	●	6	0°	0.500	0.078	0.089	S05	0.006	KEYV-T20	5.16

* Torque: Recommended clamping torque: lbs·ft
2 pieces per package

●: Line up

Reference pages: Standard cutting conditions → I031

STANDARD CUTTING CONDITIONS

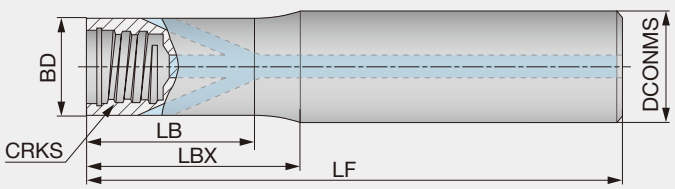
Slotting (VST, VTB)

ISO	Workpiece material	Hardness HB	VST type		VTB type	
			Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)	Cutting speed *Vc* (sfm)	Feed per tooth *fz* (ipt)
P	Low carbon steels 1045, 1055, etc.	- 300	262 - 591	0.002 - 0.006	262 - 591	0.003 - 0.007
	High carbon steels 4140,etc.	- 300	197 - 394	0.002 - 0.005	197 - 394	0.002 - 0.006
M	Stainless steels 304, 316, etc.	- 200	164 - 394	0.002 - 0.005	164 - 394	0.002 - 0.006
K	Gray cast irons 250, 300, etc.	150 - 250	328 - 656	0.002 - 0.006	328 - 656	0.003 - 0.007
	Ductile cast irons 400-15S, etc.	150 - 250	328 - 656	0.002 - 0.005	328 - 656	0.002 - 0.006
N	Aluminum alloys Si < 13%	-	656 - 1969	0.002 - 0.006	656 - 1969	0.003 - 0.007
	Aluminium alloys Si ≥13%	-	328 - 984	0.001 - 0.005	328 - 984	0.002 - 0.006
S	Titanium alloys Ti-6Al-4V, etc.	-	131 - 197	0.002 - 0.003	131 - 197	0.002 - 0.006
	Heat-resistant alloys Inconel 718, etc.	-	49 - 115	0.001 - 0.004	49 - 115	0.001 - 0.004

TUNGMEISTER

VSSD**-W-A

Cylindrical shank + straight neck, with coolant hole (TungMeister)



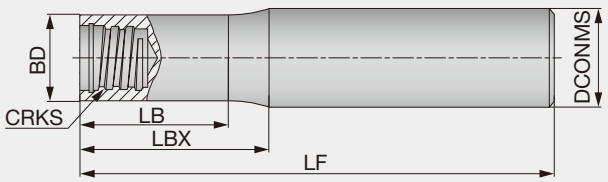
CRKS = Connection screw size

Metric	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VSSD10L070S06-W-A	10	9.6	70	20	19	S06	Cylindrical	Tungsten
VSSD10L090S06-W-A	10	9.6	90	40	39	S06	Cylindrical	Tungsten
VSSD10L110S06-W-A	10	9.6	110	60	59	S06	Cylindrical	Tungsten
VSSD12L070S08-W-A	12	11.5	70	20	19	S08	Cylindrical	Tungsten
VSSD12L090S08-W-A	12	11.5	90	40	39	S08	Cylindrical	Tungsten
VSSD12L110S08-W-A	12	11.5	110	60	59	S08	Cylindrical	Tungsten
VSSD12L130S08-W-A	12	11.5	130	80	79	S08	Cylindrical	Tungsten
VSSD16L070S10-W-A	16	15.2	70	20	18.5	S10	Cylindrical	Tungsten
VSSD16L090S10-W-A	16	15.2	90	40	36.5	S10	Cylindrical	Tungsten
VSSD16L110S10-W-A	16	15.2	110	60	58.5	S10	Cylindrical	Tungsten
VSSD16L130S10-W-A	16	15.2	130	80	78.5	S10	Cylindrical	Tungsten
VSSD20L090S12-W-A	20	18.3	90	40	37	S12	Cylindrical	Tungsten
VSSD20L130S12-W-A	20	18.3	130	80	77	S12	Cylindrical	Tungsten

TUNGMEISTER

VSS...

Cylindrical shank + straight neck (TungMeister)



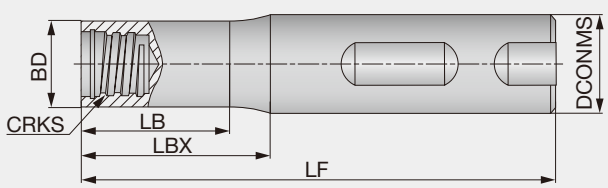
CRKS = Connection screw size

Inch	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VSS031L250S05US	0.312	0.300	2.500	0.590	0.510	S05	Cylindrical	Steel
VSS031L300S05UC	0.312	0.300	3.000	1.000	0.950	S05	Cylindrical	Carbide
VSS031L350S05UC	0.312	0.300	3.500	1.500	1.450	S05	Cylindrical	Carbide
VSS031L400S05UC	0.312	0.300	4.000	2.000	1.950	S05	Cylindrical	Carbide
VSS031L300S05UW	0.312	0.299	3.000	1.000	0.978	S05	Cylindrical	Tungsten
VSS031L450S05UW	0.312	0.299	4.500	2.000	1.978	S05	Cylindrical	Tungsten
VSS037L300S06US	0.375	0.364	3.000	0.787	0.768	S06	Cylindrical	Steel
VSS037L400S06UC	0.375	0.364	4.000	1.250	1.200	S06	Cylindrical	Carbide
VSS037L475S06UC	0.375	0.364	4.750	2.000	1.950	S06	Cylindrical	Carbide
VSS037L355S06UW	0.375	0.364	3.550	0.750	0.680	S06	Cylindrical	Tungsten
VSS050L350S08US	0.500	0.480	3.540	0.630	0.530	S08	Cylindrical	Steel
VSS050L400S08UC	0.500	0.480	4.000	1.500	1.400	S08	Cylindrical	Carbide
VSS050L550S08UC	0.500	0.480	5.500	2.500	2.450	S08	Cylindrical	Carbide
VSS050L425S08UW	0.500	0.480	4.250	0.630	0.530	S08	Cylindrical	Tungsten
VSS062L400S10US	0.625	0.598	4.000	0.780	0.680	S10	Cylindrical	Steel
VSS062L325S10UC	0.625	0.600	3.250	1.250	1.180	S10	Cylindrical	Carbide
VSS062L450S10UC	0.625	0.600	4.500	2.500	2.430	S10	Cylindrical	Carbide
VSS062L550S10UC	0.625	0.600	5.500	3.500	3.430	S10	Cylindrical	Carbide
VSS062L700S10UC	0.625	0.600	7.000	5.000	4.930	S10	Cylindrical	Carbide
VSS075L500S12US	0.750	0.720	5.000	1.000	0.880	S12	Cylindrical	Steel
VSS075L400S12UC	0.750	0.720	4.000	1.500	1.430	S12	Cylindrical	Carbide
VSS075L550S12UC	0.750	0.720	5.500	3.000	2.930	S12	Cylindrical	Carbide
VSS075L800S12UC	0.750	0.720	8.000	4.500	4.430	S12	Cylindrical	Carbide
VSS100L537S15US	1.000	0.957	5.375	1.375	1.313	S15	Cylindrical	Steel
VSS100L475S15UC	1.000	0.957	4.750	2.375	2.313	S15	Cylindrical	Carbide
VSS100L675S15UC	1.000	0.957	6.750	4.000	3.938	S15	Cylindrical	Carbide
VSS100L1000S15UC	1.000	0.957	10.000	6.000	5.938	S15	Cylindrical	Carbide

TUNGMEISTER

VSS**-W..., VSSD**-W...

Weldon shank + straight neck (TungMeister)



CRKS = Connection screw size

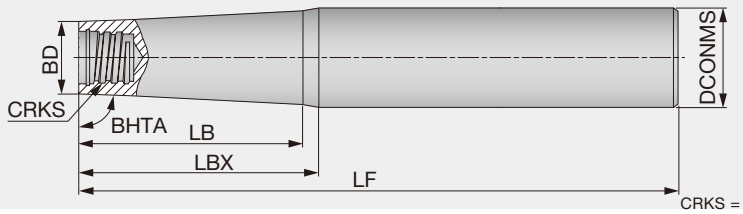
Inch	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VSS050L218W05US	0.500	0.299	2.185	0.150	-	S05	Weldon	Steel
VSS062L258W06US	0.625	0.366	2.580	0.236	-	S06	Weldon	Steel
VSS062L258W08US	0.625	0.480	2.580	0.157	-	S08	Weldon	Steel
VSS075L275W10US	0.750	0.598	2.750	0.157	-	S10	Weldon	Steel
VSS100L300W12US	1.000	0.720	3.000	0.283	-	S12	Weldon	Steel

Metric	DCONMS	BD	LF	LBX	LB	CRKS	Shank	Material
VSSD12L055W05-S	12	7.6	55	3.8	-	S05	Weldon	Steel
VSSD16L065W06-S	16	9.6	65	6	-	S06	Weldon	Steel
VSSD16L065W08-S	16	11.5	65	4	-	S08	Weldon	Steel
VSSD20L070W10-S	20	15.2	70	4	-	S10	Weldon	Steel
VSSD25L075W12-S	25	18.3	75	6	-	S12	Weldon	Steel

TUNGMEISTER

VTS...

Cylindrical shank + tapered neck (TungMeister)



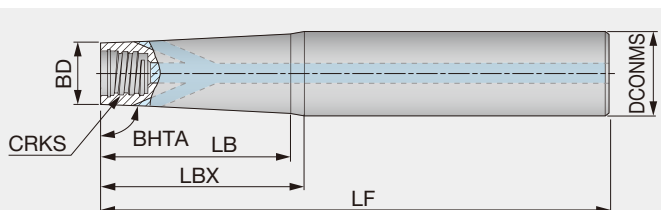
CRKS = Connection screw size

Inch	BHTA	DCONMS	BD	LF	LBX	LB	CRKS	Material
VTS050L300S05US	85°	0.500	0.300	3.000	1.000	0.930	S05	Steel
VTS050L400S05US	89°	0.500	0.300	4.000	1.500	1.300	S05	Steel
VTS062L500S06US	85°	0.625	0.370	5.000	1.380	1.283	S06	Steel
VTS062L630S06US	89°	0.625	0.364	6.300	2.170	1.750	S06	Steel
VTS062L550S08US	85°	0.625	0.480	5.500	0.870	0.770	S08	Steel
VTS075L650S08US	89°	0.750	0.480	6.500	3.150	2.770	S08	Steel
VTS075L550S10US	85°	0.750	0.598	5.500	0.880	-	S10	Steel
VTS100L670S10US	89°	1.000	0.598	6.700	2.295	-	S10	Steel
VTS075L750S10US	89°	0.750	0.600	7.500	3.150	2.950	S10	Steel
VTS100L630S12US	89°	1.000	0.720	6.300	1.600	-	S12	Steel
VTS100L800S12US	89°	1.000	0.720	8.000	3.750	3.400	S12	Steel
VTS125L600S15US	85°	1.250	0.957	6.000	1.750	1.594	S15	Steel
VTS125L750S12US	89°	1.250	0.720	7.500	3.150	-	S12	Steel
VTS037L350S05UC	89°	0.375	0.300	3.500	1.500	-	S05	Carbide
VTS050L450S05UC	89°	0.500	0.300	4.500	2.500	2.354	S05	Carbide
VTS062L600S05UC	89°	0.625	0.300	6.000	4.000	3.900	S05	Carbide
VTS050L550S06UC	89°	0.500	0.364	5.500	2.500	2.470	S06	Carbide
VTS062L650S06UC	89°	0.625	0.364	6.500	3.500	3.380	S06	Carbide
VTS062L650S08UC	89°	0.625	0.480	6.500	3.500	3.440	S08	Carbide
VTS075L700S08UC	89°	0.750	0.480	7.000	4.000	3.900	S08	Carbide
VTS075L650S10UC	89°	0.750	0.600	6.500	4.000	-	S10	Carbide
VTS075L880S10UC	89°	0.750	0.600	8.800	6.300	6.240	S10	Carbide
VTS100L1000S12UC	89°	1.000	0.720	10.000	5.500	-	S12	Carbide
VTS125L1000S15UC	89°	1.250	0.957	10.000	6.000	-	S15	Carbide
VTS125L1200S15UC	89°	1.250	0.941	12.000	8.000	-	S15	Carbide
VTS075L550S06UW	85°	0.750	0.370	5.500	2.240	-	S06	Tungsten
VTS062L670S06UW	89°	0.625	0.364	6.700	2.180	1.770	S06	Tungsten
VTS075L670S08UW	89°	0.750	0.480	6.700	3.150	2.770	S08	Tungsten

TUNGMEISTER

VTSD**-W-A

Cylindrical shank + tapered neck, with coolant hole (TungMeister)



CRKS = Connection screw size

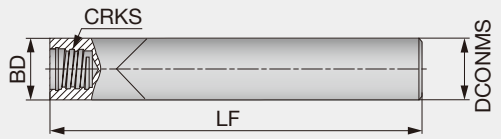
Metric	BHTA	DCONMS	BD	LF	LBX	LB	CRKS	Shank shape	Shank material
VTSD12L110S06-W-A	89°	12	9.6	110	60	59	S06	Cylindrical	Tungsten
VTSD16L170S06-W-A	89°	16	9.6	170	120	116	S06	Cylindrical	Tungsten

TUNGMEISTER

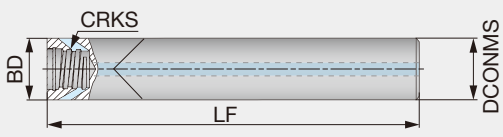
VSC...

Cylindrical shank for VST slotting heads (TungMeister)

VSC type



VSC-A type



CRKS = Connection screw size

Inch	DCONMS	BD	LF	CRKS	Coolant hole	Shank shape	Shank material
VSC095L080S06-C	0.375	0.375	3.150	S06	Without	Cylindrical	Carbide
VSC127L120S08-C-A	0.500	0.500	4.724	S08	With	Cylindrical	Carbide

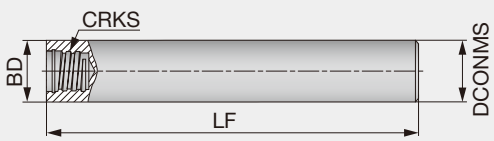
Metric	DCONMS	BD	LF	CRKS	Coolant hole	Shank shape	Shank material
VSC100L100S06-C	10	10	100	S06	Without	Cylindrical	Carbide
VSC120L100S08-C-A	12	12	100	S08	With	Cylindrical	Carbide

VSC shank should be used with VST slotting head.
If other types of heads are used, please be sure not to exceed the maximum depth of cut for each head (See ap for each head).
VSC shank does not have external clearance, and it may interfere with the workpiece during machining.

TUNGMEISTER

VSTD...

Cylindrical shank for VTB slotting head (TungMeister)



CRKS = Connection screw size

Inch	DCONMS	BD	LF	CRKS	Shank shape	Shank material
VST031L275S05US	0.312	0.312	2.750	S05	Cylindrical	Steel
VST037L325S06US	0.375	0.375	3.250	S06	Cylindrical	Steel
VST050L375S08US	0.500	0.500	3.750	S08	Cylindrical	Steel
VST062L400S10US	0.625	0.625	4.000	S10	Cylindrical	Steel

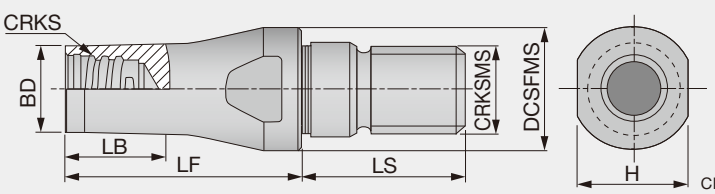
Metric	DCONMS	BD	LF	CRKS	Shank shape	Shank material
VSTD08L070S05-S	8	8	70	S05	Cylindrical	Steel
VSTD10L080S06-S	10	10	80	S06	Cylindrical	Steel
VSTD12L090S08-S	12	12	90	S08	Cylindrical	Steel
VSTD16L100S10-S	16	16	100	S10	Cylindrical	Steel

VSTD shank should be used with VTB slotting head.
If other types of heads are used, please be sure not to exceed the maximum depth of cut for each head (See ap for each head).
VSTD shank does not have external clearance, and it may interfere with the workpiece during machining.

TUNGMEISTER TUNGFLEX

VAD**-M...

Adapter for TungFlex conversion



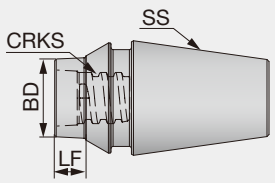
CRKS = Connection screw size

Metric	BD	DCSFMS	LF	LS	LB	CRKS	CRKSMS	H
VAD130L016S08-S-M8	11.7	13	16	17.5	6	S08	M8	11
VAD130L025S08-S-M8	11.7	13	25	17.5	20	S08	M8	11
VAD180L020S08-S-M10	11.7	18	20	20	12	S08	M10	13
VAD180L025S08-S-M10	11.7	18	25	20	15	S08	M10	11
VAD210L020S08-S-M12	11.7	21	20	22	10	S08	M12	12.75
VAD210L025S08-S-M12	11.7	21	25	22	13	S08	M12	12.75

TUNGMEISTER

VER...

Adapter for ER collect chucks



CRKS = Connection screw size

Inch	SS	BD	LF	CRKS
VER11CL006S05-S	ER11	0.312	0.236	S05
VER11CL020S05-S	ER11	0.312	0.787	S05
VER16CL012S05-S	ER16	0.312	0.472	S05
VER16CL020S05-S	ER16	0.312	0.787	S05
VER16CL010S06-S	ER16	0.391	0.394	S06
VER16CL020S06-S	ER16	0.391	0.787	S06
VER16CL006S08-S	ER16	0.457	0.236	S08
VER16CL020S08-S	ER16	0.457	0.787	S08

TORQUE WRENCHES

Appearance		Designation	Stock	Connection screw size	TM Head description	Torque (lbf·ft)
Handle		TORQUEWRENCH5-50NM9x12	●	-	-	-
Open wrenches for cylindrical heads		TM-WRENCH-6-05	●	S05	VED, VEE VEE-I, VEE-R VEE-C, VEE-A VRD, VBD-BG VBE-BGA VDP, VCA	5.16
		TM-WRENCH-8-06	●	S06		7.38
		TM-WRENCH-10-08	●	S08		11.06
		TM-WRENCH-13-10	●	S10		20.65
		TM-WRENCH-16-12	●	S12		20.65
		TM-WRENCH-20-15	●	S15		29.50
Open wrenches for 2 flute heads		TM-WRENCH-4E-05	●	S05	VRB, VRC VFX, VBB-BM VBB-BG VCP, VGC VCW, VCR	5.16
		TM-WRENCH-5E-06	●	S06		7.38
		TM-WRENCH-7E-08	●	S08		11.06
		TM-WRENCH-8E-10	●	S10		20.65
		TM-WRENCH-9E-12	●	S12		20.65
90° adaptor for Torx bits		INSERT-TOOL-9X12MM	●	-	-	-
Torx bits sockets		BIT-SOCKET-T20-DRIVE	●	S05, S06	VTB135 VTB160W2.00 VTB165W2.00	5.16, 7.38
		BIT-SOCKET-T25-DRIVE	●	S06	VTB160W3.00 VTB160W4.00	7.38
		BIT-SOCKET-T30-DRIVE	●	S08	VTB165W3.00	11.06
		BIT-SOCKET-T40-DRIVE	●	S08, S10	VTB165W4.00 VTB195	11.06, 20.65
		BIT-SOCKET-T50-DRIVE	●	S08, S10	VST277 VTB225 VTB250	11.06, 20.65

WRENCH

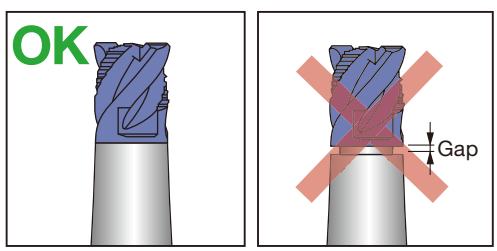
KEYV-..., KEYV-S..., KEYV-T..., KEYV-T**L, KEYV-W20

Appearance	Designation	Connection screw size	Torque (lbf·ft)	Applicable head
	KEYV-S05	S05	5.16	Square Ball Radius Drilling Chamfering Counter boring
	KEYV-S06	S06	7.38	
	KEYV-S08	S08	11.06	
	KEYV-S10	S10	20.65	
	KEYV-S12	S12	20.65	
	KEYV-W20	S15	29.50	
	KEYV-177	S06	7.38	Slotting VST type
	KEYV-217	S08	11.06	
	KEYV-T40L	S08	11.06	Slotting VST, VTB type
		S10	20.65	
	KEYV-T20	S05	5.16	Slotting VTB type
		S06	7.38	
	KEYV-T25	S06	7.38	
	KEYV-T30L	S08	11.06	
	KEYV-T50L	S08	11.06	
		S10	20.65	

Note: Wrenches are sold separately.

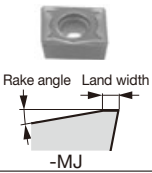
CAUTIONARY POINTS IN USE

- The cutting heads specified by Tungaloy must be used. Avoid using alternate heads that are not Tungaloy products as this will damage the shank and can cause severe accident or injury.
- Before setting the head, clean the connection screw with an air blast or a wiping cloth to remove chips and other foreign matter that may remain.
- Do not apply the lubricant to the connection screw.
- Please use the correct “Wrench” with the correct cutting head. Tighten the head slowly until the face of the head contacts the shank. (Please refer to the picture shown on the right.) Do not re-tighten or over-tighten.SW Excessive tightening may cause the cutting head to break.
- Do not apply excessive force or a hammer when tightening or exchanging the cutting heads.

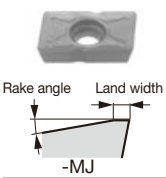


Milling Insert

● ACMT**PR-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH140	GH330	T3130	
	ACMT060308PR-MJ	●	●	●	●	ELP07/09/12... (old item)
	ACMT07T308PR-MJ	●	●	●	●	
	ACMT100408PR-MJ	●	●	●	●	

● ADMT**PR-MJ

Shape	Designation	Coated			Applicable mill
		AH120	AH140	T3130	
	ADMT130308PR-MJ	●	●	●	ELP13/17/21... (old item)
	ADMT17T308PR-MJ	●	●	●	
	ADMT210408PR-MJ	●	●	●	

● AECW**PEFR, AECW**PESR, AEMW**PEFR, AEMW**PETR

Shape	Designation	Coated		Cermet	Uncoated		Applicable mill
		AH120	GH330	NS740	UX30	TH10	
	AECW1403PEFR					●	EPE4000/5000/ 6000... (old item)
	AECW1403PESR	●	●	●	●		
	AECW16T3PEFR					●	
	AECW16T3PESR	●	●	●	●		
	AECW1804PEFR					●	
	AECW1804PESR	●	●	●	●		
	AEMW1403PEFR					●	
	AEMW1403PETR		●	●	●		
	AEMW16T3PEFR					●	
	AEMW16T3PETR		●	●	●		
	AEMW1804PEFR					●	
	AEMW1804PETR		●	●	●		

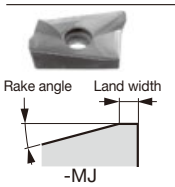
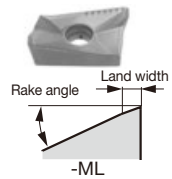
● ANEA542TN, ANEA642TN

Shape	Designation	Uncoated	Applicable mill
		UX30	
	ANEA542TN	●	VSN... (old item)
	ANEA642TN	●	

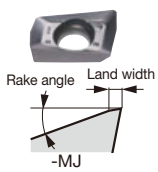
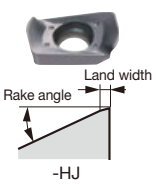
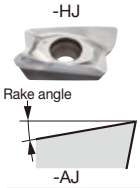
● : Line up

Milling Insert

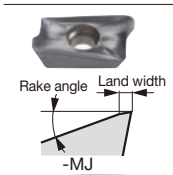
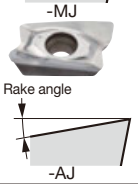
● ANMT**PPPR-MJ, ANMT**PPPR-ML

Shape	Designation	Coated			Applicable mill
		AH120	GH330	T3130	
	ANMT09T3PPPR-MJ	●	●	●	EPN09 EPN14... TPN14... (old item)
	ANMT09T3PPPR-ML	●			
	ANMT1404PPPR-MJ	●	●	●	
	ANMT1404PPPR-ML	●			
					

● AOMT**PDPR-MJ, AOGT**PDFR-AJ, AOMT070208PDPR-HJ

Shape	Designation	Coated		Uncoated	Applicable mill
		AH140	AH725	KS15F	
	AOMT070202PDPR-MJ	●	●		TUNGREC TPO07... Page H116 EPO07... Page H116 HPO07... Page H117
	AOMT070204PDPR-MJ	●	●		
	AOMT070208PDPR-MJ	●	●		
	AOMT070216PDPR-MJ	●	●		
	AOMT070208PDPR-HJ	●	●		
	AOGT070204PDFR-AJ			●	
					
					

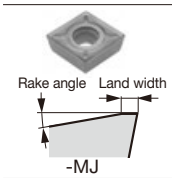
● AOMT**PDPR-MJ, AOGT**PDFR-AJ

Shape	Designation	Coated		Uncoated	Applicable mill
		AH140	AH725	KS15F	
	AOMT180508PDPR-MJ	●	●		TUNGREC TPO18... Page H126 EPO18... Page H126
	AOMT180516PDPR-MJ	●	●		
	AOMT180524PDPR-MJ	●	●		
	AOMT180532PDPR-MJ	●	●		
	AOGT180504PDFR-AJ			●	
	AOGT180508PDFR-AJ			●	
					

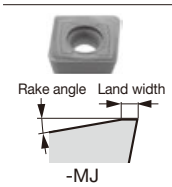
● : Line up

Milling Insert

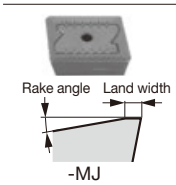
● APMT**PN-MJ

Shape	Designation	Coated					Applicable mill
		AH120	AH140	GH330	T3130		
 Rake angle Land width -MJ	APMT070308PN-MJ	●	●	●	●		ELP07/09/12... (old item)
	APMT09T308PN-MJ	●	●	●	●		
	APMT120408PN-MJ	●	●	●	●		

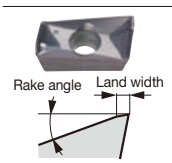
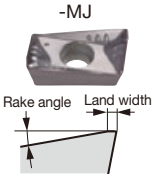
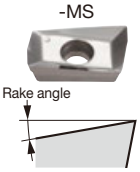
● APMT120416PR-MJ

Shape	Designation	Coated			Applicable mill
		AH120	T3130		
 Rake angle Land width -MJ	APMT120416PR-MJ	●	●		TZP12... HZP12... (old item)

● APMR190616PR-MJ

Shape	Designation	Coated			Applicable mill
		AH120	T3130		
 Rake angle Land width -MJ	APMR190616PR-MJ	●	●		TZP19... (old item)

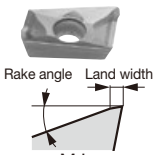
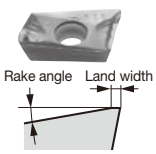
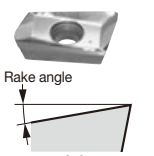
● ASMT**PDPR-MJ, ASGT11**PDFR-AJ, ASMT304PDPR-MS

Shape	Designation	Coated							Cermet	Uncoated		Applicable mill
		AH120	AH130	AH140	AH725	T1115	T1215	T3130	DS1100	NS740	KS05F	
 Rake angle Land width -MJ	ASMT11T304PDPR-MJ	●	●		●	●		●		●		TUNGREC TPS11... Page H119
	ASMT11T308PDPR-MJ	●	●	●	●	●	●	●		●		
	ASMT11T312PDPR-MJ	●			●			●		●		TPO11... Page H119
	ASMT11T316PDPR-MJ	●			●			●		●		
	ASMT11T320PDPR-MJ	●										TLS11... Page H120
	ASMT11T330PDPR-MJ	●	●									
 Rake angle Land width -MS	ASMT304PDPR-MS		●	●								EPS11... Page H120
	ASGT11T304PDFR-AJ								●		●	
	ASGT11T308PDFR-AJ								●		●	EPO11... Page H121
 Rake angle -AJ												HPO11... Page H122 ELS11... Page H122

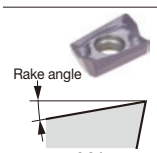
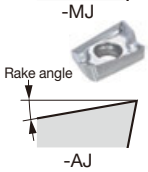
● : Line up

Milling Insert

● ASMT17**PDPR-MJ, ASGT17**PDFR-AJ, ASMT170508PDPR-MS

Shape	Designation	Coated						Cermet		Uncoated				Applicable mill
		AH120	AH130	AH140	T1115	T3130	DS1100	NS740		KS05F				
 Rake angle Land width -MJ	ASMT170504PDPR-MJ	●	●		●	●		●						TPS17... EPS17... (old item)
	ASMT170508PDPR-MJ	●	●	●	●	●		●						
	ASMT170512PDPR-MJ	●	●			●								
	ASMT170516PDPR-MJ	●				●		●						
	ASMT170520PDPR-MJ	●												
	ASMT170530PDPR-MJ	●												
 Rake angle Land width -MS	ASMT170532PDPR-MJ	●				●		●						
	ASMT170508PDPR-MS		●	●										
	ASGT170504PDFR-AJ						●			●				
	ASGT170508PDFR-AJ						●			●				
 Rake angle -AJ														

● AVGT**PBER-MJ, AVGT**PBFR-AJ

Shape	Designation	Coated			Uncoated									Applicable mill
		AH120	AH130	AH3135	KS05F									
 Rake angle -MJ	AVGT060300PBER-MJ			●										TUNGFREC EPAV... Page H111 HPAV06-M Page H112 HPAV06-S Page H113
	AVGT060302PBER-MJ	●	●	●										
	AVGT060304PBER-MJ	●	●	●										
	AVGT060308PBER-MJ	●	●	●										
 Rake angle -AJ	AVGT060300PBFR-AJ				●									
	AVGT060302PBFR-AJ				●									
	AVGT060304PBFR-AJ				●									
	AVGT060308PBFR-AJ				●									

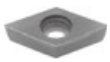
● CPMW**-EN, CPMT**-EN

Shape	Designation	Coated			Uncoated									Applicable mill
		GH330			UX30									
	CPMW050208EN	●			●									EVP1000 (old item)
	CPMW06T208EN	●			●									
	CPMT080308EN	●			●									

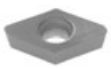
● : Line up

Milling Insert

● DCMW**TN

Shape	Designation	Coated										Applicable mill
		AH120	AH330									
	DCMW070204TN	●	●									EBP... Page H184
	DCMW11T304TN	●	●									HBP... (old item)

● DPCW11T3ZFR

Shape	Designation	Coated			Cermet							Applicable mill
		AH740			NS740							
	DPCW11T3ZFR	●			●							TZF11... HZF11... (old item)

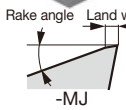
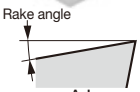
● EDKW53ZTR

Shape	Designation	Coated			Uncoated							Applicable mill
		GH330			UX30							
	EDKW53ZTR	●			●							ESD5000 (old item)

● ENEQ**TN-T

Shape	Designation	Coated										Applicable mill
		AH120										
	ENEQ090508TN-T	●										VSNE09...
	ENEQ100508TN-T	●										VSNE10...
	ENEQ130608TN-T	●										VSNE13...
	ENEQ160608TN-T	●										VSNE16... (old item)

● GDMT**PDPR-MJ, GDGT**PDFR-AJ

Shape	Designation	Coated					Uncoated					Applicable mill
		AH120	AH140	AH330	T3130	DS1100	UX30	TH10				
	GDMT10H3PDPR-MJ	●	●	●	●		●					TSD10/17...
	GDMT17X6PDPR-MJ	●	●	●	●		●					ESD10/17...
	GDGT10H3PDFR-AJ					●		●				HSD10/17...
 -MJ	GDGT17X6PDFR-AJ					●		●				(old item)
  -AJ												

● : Line up

Milling Insert

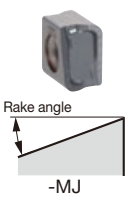
● HEHN532FN

Shape	Designation	Uncoated	Applicable mill
		TH10	
	HEHN532FN	●	QYE5300 (old item)

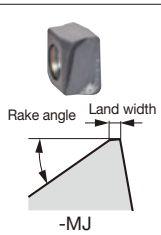
● HPKN532FN

Shape	Designation	Uncoated	Applicable mill
		TH10	
	HPKN532FN	●	QYP5300 (old item)

● LMEU**ZNEN-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH140	AH725	AH3135	
	LMEU100808ZNEN-MJ	●	●	●	●	TECTSLOT ASN 10/12/15... Page H159 TSN 10/12/15... Page H159
	LMEU100810ZNEN-MJ	●			●	
	LMEU100816ZNEN-MJ	●	●	●	●	
	LMEU100820ZNEN-MJ	●			●	
	LMEU100824ZNEN-MJ	●	●	●	●	
	LMEU100830ZNEN-MJ	●			●	
	LMEU100832ZNEN-MJ	●	●	●	●	
	LMEU120808ZNEN-MJ	●	●	●	●	
	LMEU120816ZNEN-MJ	●	●	●	●	
	LMEU120820ZNEN-MJ	●			●	
	LMEU120824ZNEN-MJ	●	●	●	●	
	LMEU120830ZNEN-MJ	●			●	
	LMEU120832ZNEN-MJ	●	●	●	●	
	LMEU150908ZNEN-MJ	●	●	●	●	
	LMEU150916ZNEN-MJ	●	●	●	●	
	LMEU150920ZNEN-MJ	●			●	
	LMEU150924ZNEN-MJ	●	●	●	●	
	LMEU150930ZNEN-MJ	●			●	
	LMEU150932ZNEN-MJ	●	●	●	●	
	LMEU150940ZNEN-MJ	●			●	
	LMEU150950ZNEN-MJ	●			●	

● LMMU**PNER-MJ

Shape	Designation	Coated						Applicable mill
		AH3135	AH120	AH140	AH725	T1215	T3225	
	LMMU110708PNER-MJ	●	●	●	●	●	●	TECMILL TPM11/16... Page H140 TLM11... Page H140 EPM11... Page H141
	LMMU110716PNER-MJ	●	●	●	●	●	●	
	LMMU110724PNER-MJ		●	●	●			
	LMMU110732PNER-MJ		●	●	●			
	LMMU160908PNER-MJ	●	●	●	●	●	●	
	LMMU160916PNER-MJ	●	●	●	●			
	LMMU160924PNER-MJ		●	●	●			
	LMMU160932PNER-MJ		●	●	●			

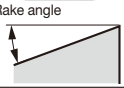
● : Line up

Milling Insert

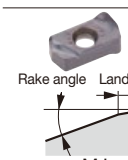
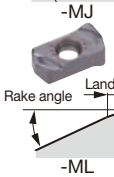
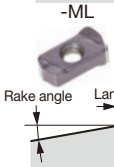
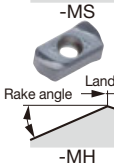
● LNCA64ZTR

Shape	Designation	Coated			Uncoated								Applicable mill
		T3130			UX30								
	LNCA64ZTR	●			●								VSN6000I (old item)

● LNCQ0906N-**L, LNCQ0906R-50S

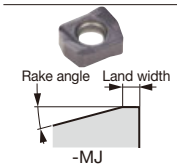
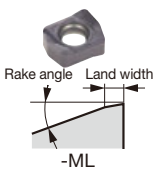
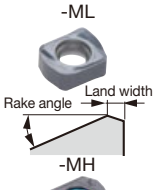
Shape	Designation	Coated			Cermet								Applicable mill
		AH120	GH110		NS740								
 Rake angle 	LNCQ0906N-100L	●	●		●								NMS09... EMS09... (old item)
	LNCQ0906N-50L	●	●		●								
	LNCQ0906R-50S	●	●		●								

● LNMU0303ZER-MJ, LNMU0303ZER-ML, LNMU0303ZER-MS, LNGU0303ZER-MH

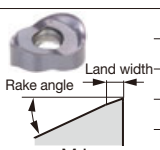
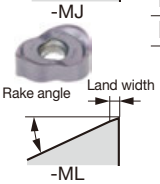
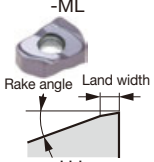
Shape	Designation	Coated											Applicable mill
		AH130	AH3225	AH3035	AH725	AH8015	AH8005						
 Rake angle Land width -MJ	LNMU0303ZER-MJ	●	●	●	●	●							DOFEED TXN03... Page H026 EXN03... Page H026, H027 HXN03... Page H028
 Rake angle Land width -ML	LNMU0303ZER-ML	●	●	●	●	●							
 Rake angle Land width -MS	LNMU0303ZER-MS	●	●										
 Rake angle Land width -MH	LNGU0303ZER-MH					●	●						

● : Line up

● LNMU06X5ZER-MJ, LNMU06X5ZER-ML, LNGU06X5ZER-MH, LNGU06X5ZER-W

Shape	Designation	Coated							Applicable mill
		AH130	AH3225	AH3035	AH725	AH120	AH8015	AH8005	
 -MJ	LNMU06X5ZER-MJ	●	●	●	●	●	●		DOFEED TXN06... Page H032 EXN06... Page H032
 -ML	LNMU06X5ZER-ML	●	●	●	●	●	●		
 -MH	LNGU06X5ZER-MH						●	●	
 -W	LNGU06X5ZER-W				●				

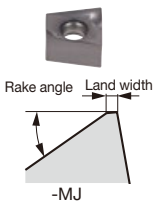
● LNMX040*R*-MJ, LNMX0405R4-ML, LNMX0405R4-HJ, LNMX0607ZER-HJ

Shape	Designation	Coated			Applicable mill
		AH120	AH3135		
 -MJ	LNMX0405R4-MJ	●	●		DOTWISTBALL TXLN... Page H036 EXLN... Page H037 HXLN... Page H038
 -ML	LNMX0405R4-ML	●	●		
 -HJ	LNMX0405ZER-HJ	●	●		
	LNMX0506R5-MJ	●	●		
	LNMX0607R6-MJ	●	●		
	LNMX0607ZER-HJ	●	●		

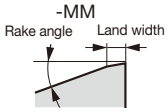
● : Line up

Milling Insert

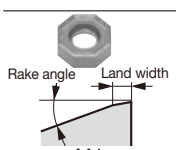
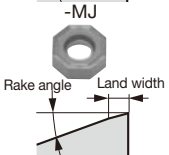
● LQMU**PNER-MJ, LQMU110708PXER-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH140	AH725	AH3135	
	LQMU110704PNER-MJ	●	●	●		DOREC TPQ11/18... Page H136 EPQ11... Page H137
	LQMU110708PNER-MJ	●	●	●		
	LQMU110708PXER-MJ	●			●	
	LQMU110716PNER-MJ	●	●	●		
	LQMU110720PNER-MJ	●				
	LQMU180804PNER-MJ	●	●	●		
	LQMU180808PNER-MJ	●	●	●		
	LQMU180816PNER-MJ	●	●	●		
	LQMU180824PNER-MJ	●	●	●		

● LSMT0202ZER-HM, LSMT0202R2-MM

Shape	Designation	Coated		Applicable mill
		AH3225	AH8015	
 -HM  -MM 	LSMT0202ZER-HM	●	●	TUNGFEED EXLS... Page H022 HXLS... Page H022
	LSMT0202R2-MM	●	●	

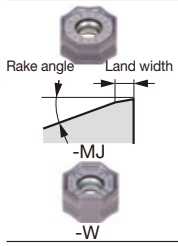
● ONMU0705ANPN-MJ, ONHU0705ANPN-MJ, ONMU0705ANPN-ML, ONHU0705ANTN-ML, ONHU0705ANPR-W

Shape	Designation	Coated							Applicable mill
		AH120	AH140	AH725	AH3135	T1115	T1215	T3225	
   -W	ONMU0705ANPN-MJ		●	●	●	●	●	●	DOOCTO TAN07... Page H063, H064
	ONHU0705ANPN-MJ		●	●					
	ONMU0705ANPN-ML	●			●				
	ONHU0705ANTN-ML	●	●	●					
	ONHU0705ANPR-W	●							

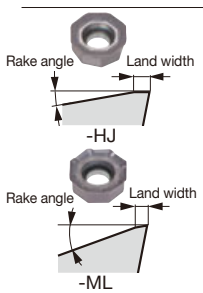
● : Line up

Milling Insert

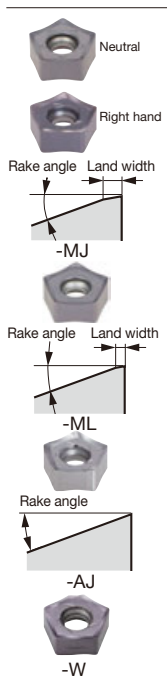
● ONGU0507ANEN-MJ, ONGU0507ANEN-W, ONMU0507ANEN-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH3135	T3225	T1215	
	ONGU0507ANEN-MJ	●	●	●	●	DOTMILL TASN13... Page H060
	ONGU0507ANEN-W	●	●			
	ONMU0507ANEN-MJ	●	●	●	●	

● OWMT0807ZNER-HJ, OWMT0807AAER-ML

Shape	Designation	Coated		Applicable mill
		AH130	AH3135	
	OWMT0807ZNER-HJ		●	DOOCTO TAN07... Page H063, H064
	OWMT0807AAER-ML	●	●	

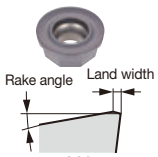
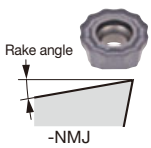
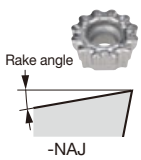
● PNMU0905GNEN-MJ, PNCU0905GNEN-MJ, PNCU0905GNER-MJ, PNCU0905GNEN-ML, PNCU0905GNFR-AJ, PNCU0905GNER-W

Shape	Designation	Coated								Cermet	Uncoated		Applicable mill
		AH120	AH140	AH725	AH3135	T1115	T1215	T3130	T3225	NS740	TH10		
	PNMU0905GNEN-MJ	●			●		●		●				DOPENT TEN09R... Page H069 EEN09... Page H070
	PNCU0905GNEN-MJ	●			●		●		●				
	PNCU0905GNER-MJ	●	●	●		●		●		●			
	PNCU0905GNEN-ML				●								
	PNCU0905GNFR-AJ										●		
	PNCU0905GNER-W			●									

● : Line up

Milling Insert

● RCMT**EN-MJ, RCMT**EN-NMJ, RCMT**FN-NAJ

Shape	Designation	Coated			Uncoated		Applicable mill
		AH120	AH140	AH725	KS15F		
	RCMT1204EN-MJ	●	●	●			ROUNDSPLIT TRC12/16... Page H177 ERC12/16... Page H178
	RCMT1204EN-NMJ	●	●	●			
	RCMT1204FN-NAJ				●		
	RCMT1606EN-MJ	●	●	●			
	RCMT1606EN-NMJ	●	●	●			
	RCMT1606FN-NAJ				●		
							
							

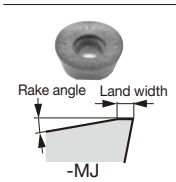
● RDCA2004TN, RDCN2004TN, RDKN2004...

Shape	Designation	Coated	Uncoated		Applicable mill
		AH120	UX30	TH10	
	RDCA2004TN		●		TRD6000 ERD6000 (old item)
	RDCN2004TN		●		
	RDKN2004FN			●	
	RDKN2004TN	●	●		

● RDCM1203TN, RDMA1203TN

Shape	Designation	Uncoated	Applicable mill
		UX30	
	RDCM1203TN	●	ERD4000 (old item)
	RDMA1203TN	●	

● RDMT**ZDPN-MJ, RDMW**ZDSN

Shape	Designation	Coated					Uncoated	Applicable mill
		AH120	AH130	AH140	AH330	T3130	UX30	
	RDMT1204ZDPN-MJ	●		●	●	●	●	TRD12/16... ERD12/16... (old item)
	RDMW1204ZDSN	●		●		●		
	RDMT1606ZDPN-MJ	●	●	●	●	●	●	
	RDMW1606ZDSN	●		●		●		
								

● : Line up

Milling Insert

● RDMW**M0

Shape	Designation	Coated										Applicable mill
		AH120										
	RDMW0501M0	●										EWD05/07/10... Page H182
	RDMW0702M0	●										
	RDMW1003M0	●										HWD07... Page H182

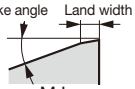
● RFEN2004ZFTN, RFEN2004M0TN

Shape	Designation	Coated			Uncoated							Applicable mill
		AH120	GH330		UX30	KS20						
	RFEN2004ZFTN	●	●		●	●						TRF6000 ERF6000 (old item)
	RFEN2004M0TN		●		●	●						

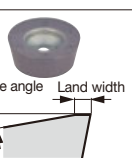
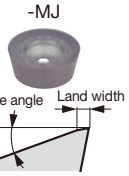
● RNGN**-E/T1

Shape	Designation	Ceramic										Applicable mill
		TS200	TS300									
	RNGN120700-E	●	●									CERAMIC SMILL TFMRN... Page H072
	RNGN120700-T1	●	●									

● RNMU1307ZNER-MJ

Shape	Designation	Coated										Applicable mill
		AH120	AH3135	T1215	T3225							
  -MJ	RNMU1307ZNER-MJ	●	●	●	●							DOT TRIPLE MILL TASN13... Page H060

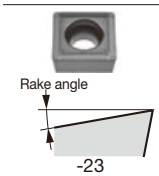
● RPMT**EN-MJ, RPMT**EN-ML

Shape	Designation	Coated										Applicable mill
		AH130	AH725	AH4035								
 -MJ  -ML	RPMT10T3EN-MJ	●	●	●								FIXR MILL TRP12/16... Page H172 ERP10/12/16... Page H172 HRP10/12... Page H173
	RPMT10T3EN-ML	●	●	●								
	RPMT1204EN-MJ	●	●	●								
	RPMT1204EN-ML	●	●	●								
	RPMT1606EN-MJ	●	●	●								
	RPMT1606EN-ML	●	●	●								

● : Line up

Milling Insert

● SCMT**-23

Shape	Designation	Coated	Applicable mill
		AH120	
	SCMT09T308-23	●	EBD... Page H186
	SCMT120408-23	●	HBD... (old item)

● SDCN1504ZDSR, SDEN1504ZDSR, SDNN1504ZDSR

Shape	Designation	Coated				Applicable mill
		AH120	AH140	T1115	T3130	
	SDCN1504ZDSR	●	●		●	MILLFEED TXD15... (old item)
	SDEN1504ZDSR	●	●	●	●	
	SDNN1504ZDSR	●	●	●	●	

● SDCN42HTR, SDKN42HTR

Shape	Designation	Coated	Applicable mill
		GH330	
	SDCN42HTR	●	EUD4600 (old item)
	SDKN42HTR	●	

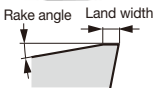
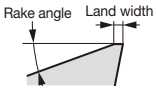
● SDKN42EF..., SDEN42EFTR24

Shape	Designation	Coated	Cermet	Uncoated		Applicable mill
		T3130	NS740	TH10	UX30	
	SDKN42EFTR	●	●			TMD4100I (old item)
	SDKN42EFFR			●		
	SDEN42EFTR24		●		●	

● : Line up

Milling Insert

● SDCN42Z..., SDEN42Z..., SDKN42Z..., SDCN42ZFN-DIA, SDKR42ZSR-MJ, SDMR1203AETN-MJ, SDKR1203AETN-MJ, SDKR42ZPN-MS

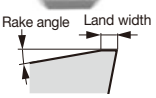
Shape	Designation	Coated										Cermet		Uncoated		PCD	Applicable mill
		AH3135	AH120	AH130	AH140	AH330	GH330	T1115	T1215	T3130	T3225	NS740	N308	UX30	TH10	DX140	
	SDCN42ZFN														●		TMD4400RI-U Page H087
	SDCN42ZTN											●	●	●			
	SDCN42ZTN20											●					EMD4400RI
	SDEN42ZFN														●		TGD4400-A
	SDEN42ZTN	●	●		●		●	●	●			●	●	●			EGD4400
	SDEN42ZTNCR	●	●		●	●						●					TFD4400-A (old item)
	SDEN42ZTN20									●	●						
	SDKN42ZFN														●		
	SDKN42ZTN	●	●	●	●	●	●	●	●			●	●	●			
	SDKN42ZTNCR											●					
	SDKN42ZTN16									●	●						
	SDCN42ZFN-DIA															●	
	SDKR42ZSR-MJ	●	●			●	●			●	●						
	SDMR1203AETN-MJ											●					
	SDKR1203AETN-MJ											●					
	SDKR42ZPN-MS	●		●	●												

DX140: Packing quantity = 1pc.

● SDCN53HTR, SDKN53HTR

Shape	Designation	Coated														Applicable mill
		GH330														
	SDCN53HTR	●														TUD5600 (old item)
	SDKN53HTR	●														

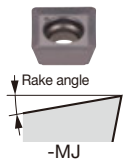
● SDCN53ZTN, SDEN53Z..., SDKN53Z..., SDKR53ZSR-MJ

Shape	Designation	Coated					Cermet		Uncoated							Applicable mill
		AH120	AH130	AH140	GH330	T3130	NS740	N308	UX30	TH10						
	SDCN53ZTN						●	●								TMD5400RI Page H090
	SDEN53ZFN									●						
	SDEN53ZTN				●		●		●							
	SDEN53ZTNCR						●									
	SDEN53ZTN20					●										
	SDKN53ZFN									●						
	SDKN53ZTN	●	●	●	●		●	●	●							
	SDKN53ZTNCR						●									
	SDKN53ZTN16					●										
	SDKR53ZSR-MJ				●	●										

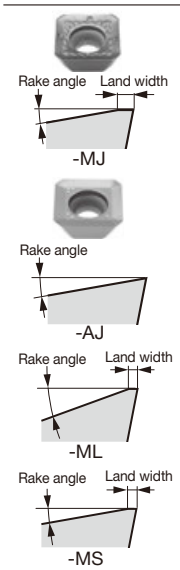
● : Line up

Milling Insert

● SDMT050204PN-MJ, SDHT050204FN-AJ

Shape	Designation	Coated			Uncoated							Applicable mill
		AH140	AH725		TH10							
	SDMT050204PN-MJ	●	●									TUNGQUAD TPD05... Page H129 EPD05... Page H129 ELD05... Page H130 EASD05... Page H221
	SDHT050204FN-AJ				●							

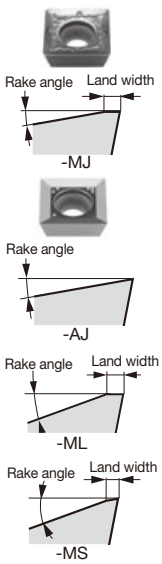
● SDMT1204AFPN-MJ, SDMT1204AFTN-MJ, SDMT1204AFPN-ML, SDMT1204AFPN-MS, SDGT1204AFTN-MJ, SDGT1204AFFN-AJ

Shape	Designation	Coated					Cermet		Uncoated			Applicable mill
		AH120	AH140	AH330	GH330	T3130	NS740		TH10			
	SDMT1204AFPN-MJ	●	●	●	●	●						TAD12... EAD12... (old item)
	SDMT1204AFTN-MJ						●					
	SDMT1204AFPN-ML	●		●								
	SDMT1204AFPN-MS		●									
	SDGT1204AFTN-MJ	●		●			●					
	SDGT1204AFFN-AJ								●			

● : Line up

Milling Insert

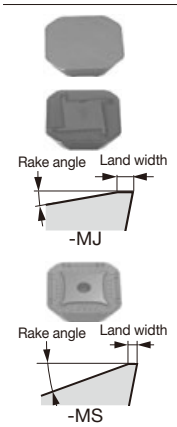
● SDMT1204PDSR-MJ, SDMT1204PDTR-MJ, SDMT1204PDPR-ML, SDMT1204PDPR-MS SDGT1204PDTR-MJ, SDGT1204PDFR-AJ

Shape	Designation	Coated					Cermet		Uncoated			Applicable mill
		AH120	AH140	AH330	GH330	T3130	NS740		TH10			
	SDMT1204PDSR-MJ	●	●	●	●	●						TPD12... EPD12... (old item)
	SDMT1204PDTR-MJ						●					
	SDMT1204PDPR-ML	●		●								
	SDMT1204PDPR-MS		●									
	SDGT1204PDTR-MJ	●		●			●					
	SDGT1204PDFR-AJ								●			

● SDMW090308TN, SDMW120408TN

Shape	Designation	Uncoated			Applicable mill
		UX30			
	SDMW090308TN	●			ELD3000 ELD4000 (old item)
	SDMW120408TN	●			

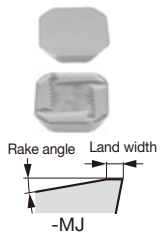
● SECN1203AGFN, SEEN1203AG..., SEKN1203AG..., SEKR1203AGSR-MJ, SEKR1203AGPN-MS

Shape	Designation	Coated							Cermet		Uncoated			Applicable mill
		AH120	AH130	AH140	AH330	GH330	T1115	T3130	NS740		UX30	TH10		
	SECN1203AGFN											●		TME4400R/LI TME4400RB EME4400 (old item)
	SEEN1203AGFN											●		
	SEEN1203AGTN	●	●	●		●	●		●		●			
	SEEN1203AGTN-T							●	●		●			
	SEEN1203AGTNCR	●	●	●	●			●						
	SEEN1203AGTNCR-14								●					
	SEKN1203AGFN-T											●		
	SEKN1203AGTN	●	●	●	●	●		●	●		●			
	SEKN1203AGTN-T					●	●	●	●		●			
	SEKR1203AGTNCR								●					
	SEKR1203AGSR-MJ	●			●	●		●						
	SEKR1203AGPN-MS		●	●										

● : Line up

Milling Insert

● SE*N1504AG..., SEKR1504AGSR-MJ

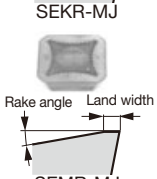
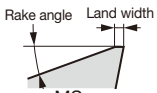
Shape	Designation	Coated				Cermet		Uncoated			Applicable mill
		AH120	AH140	GH330	T3130	NS740		TH10	UX30		
	SEEN1504AGTN					●			●		TME5400RI (old item)
	SEKN1504AGFN							●			
	SEKN1504AGTN	●	●	●	●	●			●		
	SEKN1504AGTN-T				●	●					
	SEKR1504AGSR-MJ			●	●						

● SECN422TN, SECN422FN, SEEN422TN, SEEN422FN, SECN422FN-DIA

Shape	Designation	ISO Designation (Metric)	Cermet		Uncoated		PCD		Applicable mill
			NS740	N308	UX30	TH10	DX140		
	SECN422TN	SECN120308TN	●	●	●				EGE4000 QHE4000 (old item)
	SECN422FN	SECN120308FN				●			
	SEEN422TN	SEEN120308TN	●	●	●				
	SEEN422FN	SEEN120308FN				●			
	SECN422FN-DIA	SECN120308FN-D					●		

DX140: Packing quantity = 1pc.

● SEEN1203AFTNCR-14, SEKN42AFTN, SEKN42AFFN, SEKN42AFTN16, SEKR42AFSR-MJ, SEKR1203AFPN-MS, SEKR1203AFTN-MJ, SEMR1203AFTN-MJ

Shape	Designation	ISO Designation (Metric)	Coated					Cermet	Uncoated		Applicable mill
			AH120	AH130	AH140	GH330	T3130	NS740	TH10	UX30	
	SEEN1203AFTNCR-14							●			TGE4400I
	SEKN42AFTN	SEKN1203AFTN	●	●	●	●				●	EGE4400 (old item)
	SEKN42AFFN	SEKN1203AFFN							●		
	SEKN42AFTN16	SEKN1203AFTN-16					●	●			
	SEKR42AFSR-MJ	SEKR1203AFSR-MJ				●	●				
	SEKR1203AFPN-MS				●						
	SEKR1203AFTN-MJ							●			
	SEMR1203AFTN-MJ							●			
											
											

● : Line up

Milling Insert

● SECN42EFTRCR, SEEN42EFTRCR, SEKN42EFTR, SEKN42EFFR

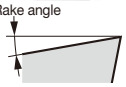
Shape	Designation	ISO Designation (Metric)	Coated			Cermet			Uncoated				Applicable mill
			GH330	T3130		NS740			UX30	TH10			
	SECN42EFTRCR	SECN1203EFTR				●							EGE4100 (old item)
	SEEN42EFTRCR	SEEN1203EFTR				●							
	SEKN42EFTR	SEKN1203EFTR	●	●		●							
	SEKN42EFFR	SEKN1203EFFR								●			

● SE*N42ZFR, SECN42ZFR-DIA

Shape	Designation	Uncoated			PCD								Applicable mill
		TH10			DX140								
	SECN42ZFR-DIA				●								THE4000RIA (old item)
	SECN42ZFR	●											
 -DIA	SEEN42ZFR	●											

DX140: Packing quantity = 1pc.

● SEGW12X4ZE*R, SEGT12X4ZEFR-AJ, SEGW12X4ZEFR-*, 2QP-SECW12X412ZETR, 1QP-SECW12X4ZETR-*

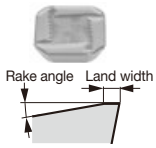
Shape	Designation	Coated			Cermet		Uncoated		PCD		CBN			Applicable mill
		AH120	AH140	DS1100	NS740		KS05F		DX140		BX480			
	SEGW12X4ZEFR						●							TFE12R...-...A Page H082
	SEGW12X4ZEPR	●	●		●									
 Rake angle  -AJ	SEGT12X4ZEFR-AJ			●			●							TFE12R... Page H081
	SEGW12X4ZEFR-D								●					EFE12R... Page H081
	SEGW12X4ZEFR-WD								●					
	SEGW12X4ZEFR-BD								●					
	2QP-SECW12X412ZETR										●			
	1QP-SECW12X4ZETR-W										●			
	1QP-SECW12X4ZETR-B										●			
 -D Regular edge														
 -WD Wiper edge														
 -BD Wiper for burr removal														

DX140: Packing quantity = 1pc.

● : Line up

Milling Insert

● SEKR1504AFSR-MJ

Shape	Designation	Coated										Applicable mill
		T3130										
 -MJ	SEKR1504AFSR-MJ	●										(old item)

● SF*N42ZFN, SFCN42ZFN-DIA

Shape	Designation	Uncoated		PCD								Applicable mill
		TH10		DX140								
 -DIA	SFCN42ZFN	●										THF4400RIA (old item)
	SFEN42ZFN	●										
	SFCN42ZFN-DIA			●								

DX140: Packing quantity = 1pc.

● SF*N53ZFN, SFCN53ZFN-DIA

Shape	Designation	Uncoated		PCD								Applicable mill
		TH10		DX140								
 -DIA	SFCN53ZFN	●										THF5400RIA (old item)
	SFEN53ZFN	●										
	SFCN53ZFN-DIA			●								

DX140: Packing quantity = 1pc.

● SN**56FTR

Shape	Designation	Cermet										Applicable mill
		X407										
	SNAA56FTR	●										MS... (old item)
	SNAG56FTR											
	SNCC56FTR											
	SNCJ56FTR											

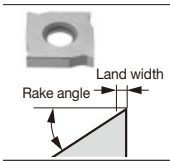
● SNCN43Z..., SNKF43Z..., SNKN43ZTN

Shape	Designation	Coated		Cermet		Ceramic	Uncoated					Applicable mill
		T1115	T3130	NS740	N308	FX105	UX30	TH10				
	SNCN43ZFN							●				TGN4200R-A (old item)
	SNCN43ZTN			●	●		●					
	SNKF43ZFN							●				
	SNKF43ZTN	●					●					
	SNKN43ZTN	●	●	●		●	●					

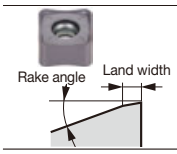
● : Line up

Milling Insert

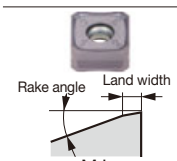
● SNEN12**Z...

Shape	Designation	Uncoated												Applicable mill
		UX30	TH10											
	SNEN12T2ZFN		●											SVN4000 (old item)
	SNEN12T2ZTN	●												
	SNEN1233ZFN		●											
	SNEN1233ZTN	●												

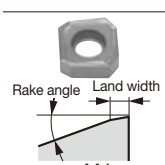
● SNMU120608HNEN-MM, SNMU1206**EN-MM

Shape	Designation	Coated												Applicable mill
		AH120	AH3135	T1215	T3225									
	SNMU120608HNEN-MM	●	●	●	●									DOQMILL THSN12... Page H067
	SNMU120612EN-MM		●	●										
	SNMU120620EN-MM		●	●										

● SNGU1307ANEN-MJ, SNGU1307ANEN-W, SNGU1307ANEN-MH, SNMU1307ANEN-MJ

Shape	Designation	Coated												Applicable mill
		AH120	AH3135	T3225	T1215									
 -MJ  -W  -MH	SNGU1307ANEN-MJ	●	●	●	●									DOTMILL TASN13... Page H060
	SNGU1307ANEN-W	●	●											
	SNGU1307ANEN-MH			●										
	SNMU1307ANEN-MJ	●	●	●	●									

● SNMU1706ANPR-MJ, SNHU1706ANPR-MJ, SNMU1706ANTR-ML, SNHU1706ANTR-ML, SNHU1706ANFN-W

Shape	Designation	Coated												Applicable mill
		AH120	AH140	AH725	AH3135	T1215	T3225							
 -MJ  -ML	SNMU1706ANPR-MJ		●	●	●	●	●							DOOCTO TAN07... Page H063, H064
	SNMU1706ANTR-ML	●			●									
	SNHU1706ANPR-MJ		●	●										
	SNHU1706ANTR-ML	●												
	SNHU1706ANFN-W	●												

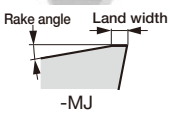
● : Line up

Milling Insert

● SNMN1204**TN

Shape	Designation	Coated			Cermic			Uncoated						Applicable mill
		AH120	T1115	T3130	FX105			UX30						
	SNMN120408TN				●									TGN4200R-A (Old item)
	SNMN120412TN	●	●	●	●			●						
	SNMN120416TN				●									
	SNMN120420TN				●									
	SNMN120424TN				●									

● SPCN42..., SPEN42..., SPKN42..., SPKR42SSR-MJ, SPGN120312TN

Shape	Designation	Coated					Cermet		Ceramic	Uncoated				Applicable mill
		AH120	AH140	GH330	T1115	T3130	NS740	N308	FX105	UX30	TH10			
	SPCN42STR						●	●		●				TGP4100RIA/ RBA/RBAE (Old item)
	SPCN42SFR										●			
	SPEN42STR						●							
	SPKN42STR	●	●	●	●	●	●	●	●	●				
	SPKN42STL						●			●				
	SPKN42SFR										●			
	SPKN42SFL										●			
	SPKR42SSR-MJ			●	●	●								
	SPGN120312TN								●					
	SPEN423TN					●	●			●				
	SPEN423FN										●			

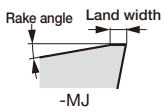
● SP*N42...

Shape	Designation	Coated			Cermet			Uncoated						Applicable mill
		T1115	T3130		NS740	X407	N308	UX30	TH10					
	SPAN42ZFR								●					TGP4200R-A (Old item)
	SPCN42ZFL								●					
	SPCN42ZFR								●					
	SPCN42ZTR				●	●	●							
	SPEN423TN		●		●			●						
	SPEN423FN								●					
	SPEN42ZTR				●									
	SPKN42ZFL								●					
	SPKN42ZFR								●					
	SPKN42ZTR	●	●		●	●	●	●						

● : Line up

Milling Insert

● SP*N53S..., SPKR53SSR-MJ

Shape	Designation	Coated			Cermet		Uncoated						Applicable mill
		GH330	T1115	T3130	NS740	N308	UX30	TH10					
	SPCN53SFR							●					TGP5100RIA (Old item)
	SPCN53STR					●	●						
	SPKN53SFR							●					
	SPKN53STL						●						
	SPKN53STR	●	●		●		●						
	SPKN53STR20			●									
	SPKR53SSR-MJ	●		●									

● SPGN120412TN

Shape	Designation	Coated			Ceramic								Applicable mill
		T1115			FX105								
	SPGN120412TN	●			●								QFP4000 (Old item)

● SPHA**FNW

Shape	Designation	Cermet			Uncoated								Applicable mill
		N308			TH10								
	SPHA431FNW	●			●								TSP4000RIA-U Page H148 TFP4000IA TFD4400-A SFP4000R EFP4000R (Old item)
	SPHA435FNW	●			●								

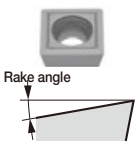
● SPMA422...

Shape	Designation	Cermet			Uncoated								Applicable mill
		NS740	N308		UX30	TH10							
	SPMA422TN	●	●		●								ECP4400R Page H220
	SPMA422FN					●							

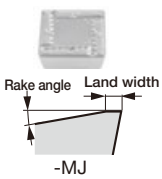
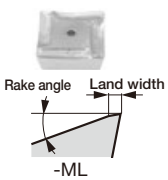
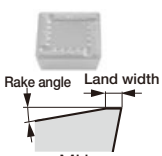
● : Line up

Milling Insert

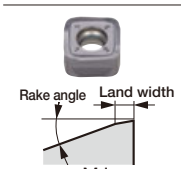
● SPMP..., SPMM**ERD

Shape	Designation	Coated										Applicable mill
		T313W	AH6030									
	SPMP771-CG		●									TCB... Page H223
	SPMP831-CG		●									
	SPMP042ER-CG		●									
	SPMP322ER-CG		●									
	SPMP432ER-CG		●									
	SPMP831DS	●										
	SPMP042ERD	●										
	SPMM322ERD	●										
	SPMM432ERD	●										

● SPMR1605PPTR-MJ, SPMR1605PPPR-ML, SPMR1605PPTR-MH

Shape	Designation	Coated				Uncoated						Applicable mill
		GH330	T1115	T3130		UX30						
 -MJ	SPMR1605PPTR-MJ	●	●	●		●						TPP16... (Old item)
	SPMR1605PPPR-ML	●										
	SPMR1605PPTR-MH	●		●		●						
 -ML												
 -MH												

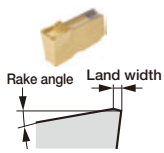
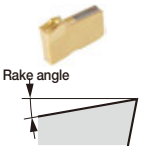
● SQMU1206ZSR-MJ

Shape	Designation	Coated										Applicable mill
		AH120	AH130	AH725	T3130							
 -MJ	SQMU1206ZSR-MJ	●	●	●	●							DOFEEDQUAD TXQ... Page H043

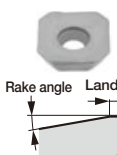
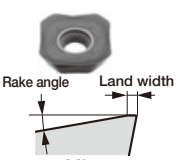
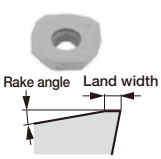
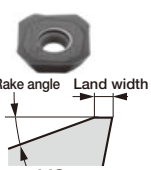
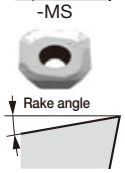
● : Line up

Milling Insert

● SSM..., SSS...

Shape	Designation	Coated										Cermet	Uncoated	Applicable mill
		GH130												
 SSM	SSM22N	●												TUNGMILL S/ASG... Page H151
	SSM31N	●												
	SSM41N	●												
	SSS16N	●												
	SSS22N	●												
	SSS31N	●												
 SSS	SSS41N	●												

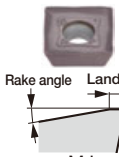
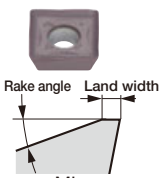
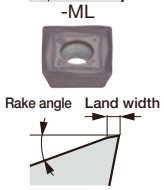
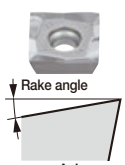
● SWMT13T3AFPR-MJ, SWMT13T3AFER-ML, SWMW13T3AFTR, SWMT13T3AFPR-HJ, SWMT13T3AFPR-MS, SWGT13T3AFPR-MJ, SWGT13T3AFFR-AJ

Shape	Designation	Coated								Cermet	Uncoated	Applicable mill
		AH120	AH130	AH140	AH3135	T1115	T1215	T3130	T3225	DS1100	NS740	KS05F	
 -MJ	SWMT13T3AFPR-MJ	●	●	●	●	●	●	●	●		●		TUNGMILL TAW13... Page H074 EAW13... Page H075
	SWMT13T3AFER-ML	●			●								
	SWMW13T3AFTR	●			●	●	●	●	●		●		
	SWMT13T3AFPR-HJ	●	●	●	●	●	●	●	●				
	SWMT13T3AFPR-MS		●	●	●								
	SWGT13T3AFPR-MJ	●			●						●		
	SWGT13T3AFFR-AJ									●		●	
 -ML													
 -FL													
 -HJ													
 -MS													
 -AJ													

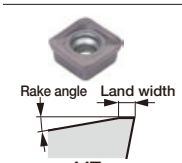
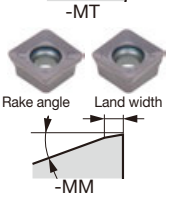
● : Line up

Milling Insert

● SWMT1304PDPR-MJ, SWMT1304PDER-ML, SWMT1304PDPR-MS, SWGT1304PDPR-MJ, SWGT1304PDFR-AJ

Shape	Designation	Coated								Cermet		Uncoated		Applicable mill
		AH120	AH130	AH140	AH3135	T1115	T1215	T3130	T3225	DS1100	NS740		KS05F	
 -MJ	SWMT1304PDPR-MJ	●	●	●	●	●	●	●	●		●			TUNGMILL TPW13... Page H132 EPW13... Page H133
	SWMT1304PDER-ML	●			●									
	SWMT1304PDPR-MS		●	●										
	SWGT1304PDPR-MJ	●	●								●			
	SWGT1304PDFR-AJ	●	●							●			●	
 -ML														
 -MS														
 -AJ														

● SWMT0904ZER-MM, SWMT0904UER-MM, SWMT1506ZER-MM, SWMT1506UER-MM, SWMT1506ZER-MT

Shape	Designation	Coated		Applicable mill
		AH120	AH3135	
 -MT	SWMT0904ZER-MM		●	MILLQFEED TXSW09... Page H046 EXSW09... Page H046 TXSW15... Page H047
	SWMT0904UER-MM		●	
	SWMT1506ZER-MM	●	●	
	SWMT1506UER-MM		●	
	SWMT1506ZER-MT	●	●	
 -MM				

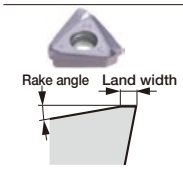
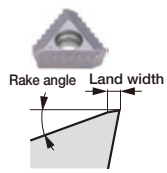
● T*-R...

Shape	Designation	Coated	Applicable mill
		GH330	
	T1-R14	●	Thread milling cutter Page H214
	T1-R28	●	
	T2-R14	●	
	T2-R28	●	

● : Line up

Milling Insert

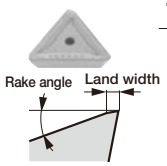
● TCGT160608PDER-MJ, TCMT160620PDER-NMJ

Shape	Designation	Coated												Applicable mill
		AH120	AH3135	T1215	T3225									
 -MJ	TCGT160608PDER-MJ	●	●											TUNG-TRISHRED LPTC16... Page H108 TPTC16... Page H108 EPTC16... Page H109
	TCMT160620PDER-NMJ	●	●	●	●									
 -NMJ														

● TDMN**N

Shape	Designation	Cermet			Uncoated									Applicable mill
		NS740			TH10	UX30								
	TDMN110304TN	●				●								ESD2000 (Old item)
	TDMN110304FN				●									
	TDMN110308TN	●				●								

● TECN32...,TEEN32..., TECN32ZFR-DIA, TEKR1603PEPR-MS

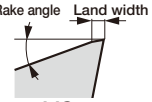
Shape	Designation	Coated										Cermet		Uncoated		PCD	Applicable mill
		AH120	AH130	AH140	AH330	AH3135	GH330	T1115	T3130	T1215	T3225	NS740	N308	UX30	TH10	DX140	
	TECN32ZFR														●		TSE3000R ESE3000R (Old item)
 -DIA	TECN32ZTR											●	●	●			
	TEEN32ZFR														●		
	TEEN32ZTR	●	●	●	●	●	●	●	●	●	●	●	●	●			
	TECN32ZFR-DIA															●	
	TEKR1603PEPR-MS			●													
 -MS																	

DX140: Packing quantity = 1pc.

● : Line up

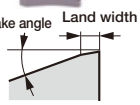
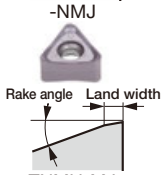
Milling Insert

● TECN43..., TEEN43..., TECN43ZFR-DIA, TEKR2204PEPR-MS

Shape	Designation	Coated										Cermet		Uncoated		PCD	Applicable mill
		AH120	AH130	AH140	AH330	AH3135	GH330	T1115	T3130	T1215	T3225	NS740	N308	UX30	TH10	DX140	
	TECN43ZFR														●		TSE4000RIAU Page H146
	TECN43ZTR											●	●	●			
	TEEN43ZFR														●		ESE4000R (Old item)
-DIA	TEEN43ZTR	●	●	●	●	●	●	●	●	●	●	●	●	●			
	TECN43ZFR-DIA															●	
	TEKR2204PEPR-MS			●													
Rake angle Land width  -MS																	

DX140: Packing quantity = 1pc.

● TNGU120708PER-MJ, TNMU1207R16PER-MJ, TNMU120708PER-MJ, TNMU120708PER-NMJ

Shape	Designation	Coated					Applicable mill
		AH120	AH3135	T1215	T3225		
	TNMU070304PER-MJ	●	●				DOFTRI TPTN12... Page H094
	TNMU070308PER-MJ	●	●				
Rake angle Land width  TNGU-MJ	TNGU120708PER-MJ	●	●	●			EPTN12... Page H095
	TNMU1207R16PER-MJ	●	●				
	TNMU120708PER-MJ	●	●	●	●		
	TNMU120708PER-NMJ	●	●				
Rake angle Land width  -NMJ							
Rake angle Land width  TNMU-MJ							

● TNKF64ZTR

Shape	Designation	Uncoated	Applicable mill
		UX30	
	TNKF64ZTR	●	TPN6400I (Old item)
Rake angle Land width			

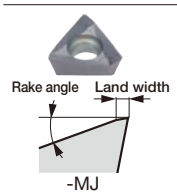
● : Line up

Milling Insert

● TNMN43ZENS

Shape	Designation	Uncoated												Applicable mill
		UX30												
	TNMN43ZENS	●												TSN4000 ESN4000 (Old item)

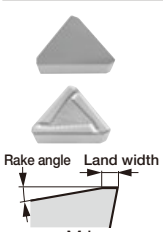
● TOMT**PDER-MJ, TOMT150608PDER-NMJ, TOGT**PDFR-AJ

Shape	Designation	Coated				Uncoated								Applicable mill
		AH120	AH3135	T1215	T3225	KS05F								
	TOMT060302PDER-MJ	●	●											TUNG-TRI TPA06... Page H097 EPA06... Page H097 HPA06... Page H098 TPA10... Page H098 TLA10... Page H099 EPA10... Page H099 HPA10... Page H100 TPA15... Page H100 TLA15... Page H101 EPA15... Page H103
	TOMT060304PDER-MJ	●	●		●									
	TOMT060308PDER-MJ	●	●	●	●									
	TOMT100404PDER-MJ	●	●		●									
	TOMT100408PDER-MJ	●	●	●	●									
	TOMT100416PDER-MJ	●	●											
	TOMT150604PDER-MJ	●	●		●									
	TOMT150608PDER-MJ	●	●	●	●									
	TOMT150616PDER-MJ	●	●											
	TOMT150620PDER-MJ	●	●											
	TOMT150608PDER-NMJ	●	●		●									
	TOGT100404PDFR-AJ					●								
	TOGT100408PDFR-AJ					●								
	TOGT150604PDFR-AJ					●								
	TOGT150608PDFR-AJ					●								

● TPCA43ZTRW1, TPMA432TNW1

Shape	Designation	Cermet			Uncoated									Applicable mill
		NS740			UX30	TH10								
	TPCA43ZTRW1					●								PES1500... (Old item)
	TPMA432TNW1	●			●	●								

● TP*N43Z..., TPKR43ZSR-MJ, TPMR2204PDSR-MJ

Shape	Designation	Coated						Cermet		Uncoated				Applicable mill
		AH120	AH130	AH140	GH330	T1115	T3130	NS740	N308	UX30	TH10			
	TPCN43ZFR										●			TSP4000RIA-U Page H148 TFP4000IA (Old item)
	TPCN43ZTR							●	●	●				
	TPEN43ZTR							●						
	TPEN43ZTRCR						●							
	TPKN43ZFR										●			
	TPKN43ZFL										●			
	TPKN43ZTR	●	●	●	●	●	●	●	●	●				
	TPKR43ZSR-MJ				●		●							
	TPMR2204PDSR-MJ				●		●							

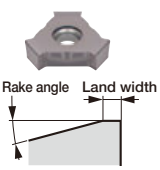
● : Line up

Milling Insert

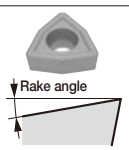
● TPMN**TN

Shape	Designation	Cermet										Applicable mill
		NS740										
	TPMN110304TN	●										(Old item)
	TPMN110308TN	●										
	TPMN160308TN	●										
	TPMN160312TN	●										
	TPMN220408TN	●										
	TPMN220412TN	●										

● TVKX**TN-MJ

Shape	Designation	Coated										Applicable mill
		AH120	AH130	AH725								
 -MJ	TVKX020202TN-MJ	●		●								TUNGTRIM SLIT ASV 02/03/04/05... Page H155
	TVKX020204TN-MJ	●		●								
	TVKX03X302TN-MJ	●		●								
	TVKX03X304TN-MJ	●		●								
	TVKX04H304TN-MJ	●	●	●								
	TVKX04H308TN-MJ	●	●	●								
	TVKX050404TN-MJ	●	●	●								
	TVKX050408TN-MJ	●	●	●								

● WCMT**-D4

Shape	Designation	Coated										Applicable mill
		AH120	AH140									
	WCMT050308-D4	●	●									EVX... HVX... (Old item)
	WCMT06T308-D4	●	●									

● WDCN42ZFR-DIA

Shape	Designation	PCD										Applicable mill
		DX140										
 Wiper edge -DIA	WDCN42ZFR-DIA	●										TMD4400RI-U Page H087 EMD4400RI TGD4400-A EGD4400 (Old item)

DX140: Packing quantity = 1pc.

● : Line up

Milling Insert

● WECN42ZFR-DIA

Shape	Designation	PCD	Applicable mill
		DX140	
 Wiper edge -DIA	WECN42ZFR-DIA	●	THE4000RIA (Old item)

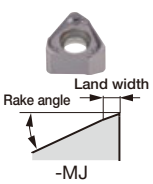
DX140: Packing quantity = 1pc.

● WFCN**ZFR-DIA

Shape	Designation	PCD	Applicable mill
		DX140	
 Wiper edge -DIA	WFCN42ZFR-DIA	●	THF4400RIA THF5400RIA (Old item)
	WFCN53ZFR-DIA	●	

DX140: Packing quantity = 1pc.

● WNGU**TN-MJ

Shape	Designation	Coated				Applicable mill
		AH120	AH130	AH725	AH3135	
 -MJ	WNGU060304TN-MJ	●			●	TUNGUSLOT UNIVERSAL ASW 06/07/09... Page H157 TSW 06/07/09... Page H157
	WNGU060308TN-MJ	●	●	●	●	
	WNGU060310TN-MJ	●			●	
	WNGU060316TN-MJ	●	●	●		
	WNGU060320TN-MJ	●			●	
	WNGU07T304TN-MJ	●			●	
	WNGU07T308TN-MJ	●	●	●		
	WNGU07T310TN-MJ	●			●	
	WNGU07T316TN-MJ	●	●	●		
	WNGU07T320TN-MJ	●			●	
	WNGU090404TN-MJ	●			●	
	WNGU090408TN-MJ	●	●	●		
	WNGU090410TN-MJ	●			●	
	WNGU090416TN-MJ	●	●	●		
	WNGU090420TN-MJ	●			●	

● WPAN42SFR

Shape	Designation	Cermet	Uncoated	Applicable mill
		N308	TH10	
 Wiper edge (2-corner type)	WPAN42SFR	●	●	TGP4100RIA/ RBA/RBAE (Old item)

● : Line up

Milling Insert

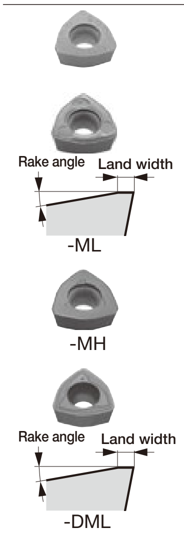
● WPAN42SFRS

Shape	Designation	Uncoated: TH10	Applicable mill
 Wiper edge (1-corner type)	WPAN42SFRS	●	TGP4100RIA/ RBA/RBAE (Old item)

● WPAN42ZFR

Shape	Designation	Uncoated: TH10	Applicable mill
 Wiper edge (2-corner type)	WPAN42ZFR	●	TGP4200R-A (Old item)

● WPMT**ZPR..., WPMT**ZPR-ML, WPMT**-MH, WPMT**-DML, WPMW**ZSR

Shape	Designation	Coated						Applicable mill
		AH120	AH130	AH140	AH730	T3130	AH3135	
	WPMW05H315ZPR	●		●		●	●	MILLFEED TXP05/06/08/09... Page H051
	WPMT05H315ZPR-ML	●		●		●	●	
	WPMT05H315ZPR-MH	●		●			●	EXP05/06/08/09... Page H052
	WPMT05H315ZPR-DML				●			
	WPMW06X415ZPR	●		●		●	●	HXP... (Old item)
	WPMT06X415ZPR-ML	●	●	●		●	●	
	WPMT06X415ZPR-MH	●		●			●	
	WPMT06X415ZPR-DML				●			
	WPMT080615ZSR	●	●	●		●	●	
	WPMT080615ZPR-ML	●	●	●		●	●	
	WPMT080615ZSR-MH	●		●			●	
	WPMT080615ZPR-DML				●			
	WPMT090725ZSR	●		●		●	●	
	WPMT090725ZPR-ML	●	●	●		●	●	
	WPMT090725ZSR-MH	●	●	●			●	
	WPMT090725ZPR-DML				●			

● WWCW13T3AFER-WS, WWCW13T3AFFR-WS, WWCW13T3AFFR-WD

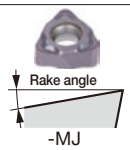
Shape	Designation	Coated		Cermet	Uncoated	PCD	Applicable mill
		GH110	DS1100	NS740	KS05F	DX140	
	WWCW13T3AFER-WS	●		●			TUNGMILL TAW13... Page H074
	WWCW13T3AFFR-WS		●		●		EAW13... Page H075
	WWCW13T3AFFR-WD					●	

DX140: Packing quantity = 1pc.

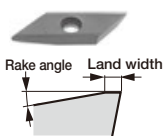
● : Line up

Milling Insert

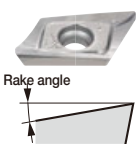
● WXHU**R-MJ

Shape	Designation	Coated										Applicable mill
		AH110										
 Rake angle -MJ	WXHU040305R-MJ	●										DOMMILL HFWX04... Page H171
	WXHU040310R-MJ	●										

● XCET310404ER

Shape	Designation	Coated			Cermet	Uncoated						Applicable mill
		AH330	AH120	AH3135	NS740	UX30						
 Rake angle Land width	XCET310404ER	●	●	●	●	●						ECC31... Page H218

● XVCT16**R-AJ

Shape	Designation	Uncoated										Applicable mill
		TH10										
 Rake angle -AJ	XVCT160504R-AJ	●										TUNG-ALUMILL TPV16... Page H143 EPV16... Page H143
	XVCT160508R-AJ	●										
	XVCT160512R-AJ	●										
	XVCT160516R-AJ	●										
	XVCT160520R-AJ	●										
	XVCT160524R-AJ	●										
	XVCT160525R-AJ	●										
	XVCT160530R-AJ	●										
	XVCT160532R-AJ	●										
	XVCT160540R-AJ	●										
	XVCT160550R-AJ	●										

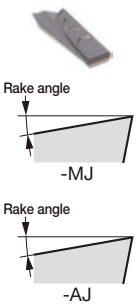
● XVGT**EC-MJ, XVGT**EP-MJ, XVGT**FC-AJ, XVGT**FP-AJ

Shape	Designation	Coated										Applicable mill
		AH730	DS1200									
 Center edge insert	XVGT06H205EC-MJ	●										HYBRIDTACMILL EVH... (Old item)
	XVGT07X305EC-MJ	●										
	XVGT09X405EC-MJ	●										
	XVGT06H205EP-MJ	●										
	XVGT07X305EP-MJ	●										
	XVGT09X405EP-MJ	●										
 Peripheral edge insert Rake angle -MJ	XVGT06H205FC-AJ		●									
	XVGT07X305FC-AJ		●									
	XVGT09X405FC-AJ		●									
	XVGT06H205FP-AJ		●									
	XVGT07X305FP-AJ		●									
Rake angle -AJ	XVGT09X405FP-AJ		●									

● : Line up

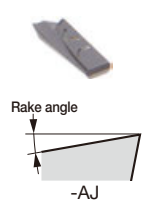
Milling Insert

● XHGR**ER-MJ, XHGR**FR-AJ

Shape	Designation	Coated		Applicable mill
		AH730	DS1200	
	XHGR110202ER-MJ	●		HYBRIDTACMILL EPH11/13/18... (Old item)
	XHGR110204ER-MJ	●		
	XHGR110205ER-MJ	●		
	XHGR110208ER-MJ	●		
	XHGR110210ER-MJ	●		
	XHGR110212ER-MJ	●		
	XHGR110215ER-MJ	●		
	XHGR110216ER-MJ	●		
	XHGR110220ER-MJ	●		
	XHGR130202ER-MJ	●		
	XHGR130204ER-MJ	●		
	XHGR130205ER-MJ	●		
	XHGR130208ER-MJ	●		
	XHGR130210ER-MJ	●		
	XHGR130212ER-MJ	●		
	XHGR130215ER-MJ	●		
	XHGR130216ER-MJ	●		
	XHGR130220ER-MJ	●		
	XHGR18T202ER-MJ	●		
	XHGR18T204ER-MJ	●		
	XHGR18T205ER-MJ	●		
	XHGR18T208ER-MJ	●		
	XHGR18T210ER-MJ	●		
	XHGR18T212ER-MJ	●		
	XHGR18T215ER-MJ	●		
	XHGR18T216ER-MJ	●		
	XHGR18T220ER-MJ	●		
	XHGR110200FR-AJ		●	
	XHGR110202FR-AJ		●	
	XHGR110204FR-AJ		●	
	XHGR110205FR-AJ		●	
	XHGR110208FR-AJ		●	
	XHGR110210FR-AJ		●	

Rake angle
-MJ
Rake angle
-AJ

● XHGR**ER-MJ, XHGR**FR-AJ

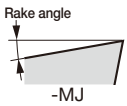
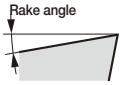
Shape	Designation	Coated		Applicable mill
		AH730	DS1200	
	XHGR130212FR-AJ		●	HYBRIDTACMILL EPH11/13/18... (Old item)
	XHGR130215FR-AJ		●	
	XHGR130216FR-AJ		●	
	XHGR130220FR-AJ		●	
	XHGR18T200FR-AJ		●	
	XHGR18T202FR-AJ		●	
	XHGR18T204FR-AJ		●	
	XHGR18T205FR-AJ		●	
	XHGR18T208FR-AJ		●	
	XHGR18T210FR-AJ		●	
	XHGR18T212FR-AJ		●	
	XHGR18T215FR-AJ		●	
	XHGR18T216FR-AJ		●	
	XHGR18T220FR-AJ		●	

Rake angle
-AJ

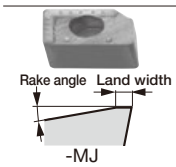
● : Line up

Milling Insert

● XXGT**EC-MJ, XXGT**FC-AJ, XXGT**EP-MJ, XXGT**FP-AJ

Shape	Designation	Coated		Applicable mill
		AH730	DS1200	
 Center edge insert	XXGT06H205EC-MJ	●		HYBRIDTACMILL EXH... (Old item)
	XXGT07X305EC-MJ	●		
	XXGT09X408EC-MJ	●		
 Peripheral edge insert	XXGT06H205FC-AJ		●	
	XXGT07X305FC-AJ		●	
	XXGT09X408FC-AJ		●	
 Rake angle -MJ	XXGT06H205EP-MJ	●		
	XXGT07X305EP-MJ	●		
	XXGT09X408EP-MJ	●		
 Rake angle -AJ	XXGT06H205FP-AJ		●	
	XXGT07X305FP-AJ		●	
	XXGT09X408FP-AJ		●	

● XXMU**PR-MJ

Shape	Designation	Coated			Applicable mill
		AH120	AH140	AH3135	
 Rake angle Land width -MJ	XXMU08T204PR-MJ	●	●	●	EVX... Page H216 HVX... (Old item)
	XXMU10H308PR-MJ	●	●	●	
	XXMU12X408PR-MJ	●	●	●	
	XXMU16X508PR-MJ	●	●	●	

● YDEN0905PDFR-D, YDEN0905PDFR-WD, YDEN0905PDFR-BD

Shape	Designation	PCD	Applicable mill
		DX140	
 Regular edge	YDEN0905PDFR-D	●	DPD09... Page H085 EDPD09... Page H085
 Wiper edge	YDEN0905PDFR-WD	●	
 Wiper for burr removal	YDEN0905PDFR-BD	●	

DX140: Packing quantity = 1pc.

● YDEN1505ADFR-D, YDEN1505ADFR-WD

Shape	Designation	PCD	Applicable mill
		DX140	
 Regular edge	YDEN1505ADFR-D	●	DAD15... (Old item)
 Wiper edge	YDEN1505ADFR-WD	●	

DX140: Packing quantity = 1pc.

● : Line up

Milling Insert

● YDEN1505PDFR-D, YDEN1505PDFR-WD

Shape	Designation	PCD DX140	Applicable mill
 Regular edge	YDEN1505PDFR-D	●	DPD15... EDPD15... (Old item)
	YDEN1505PDFR-WD	●	
 Wiper edge			

DX140: Packing quantity = 1pc.

● YDEN0603PDF/SR-D, YDEN0603PDFR-WD, YDEN0603PDFR-BD

Shape	Designation	PCD DX110	Applicable mill
 _D	YDEN0603PDFR-D	●	TUNGSMILL TPYD06... Page H079 EPYD06... Page H079
	YDEN0603PDSR-D	●	
 _WD	YDEN0603PDFR-WD	●	
	YDEN0603PDFR-BD	●	
 _BD			

● YDEN2405PDFR-D, YDEN2405PDFR-WD, YDEN2405PDFR-BD

Shape	Designation	PCD DX140	Applicable mill
 Regular edge	YDEN2405PDFR-D	●	DPD24... (Old item)
	YDEN2405PDFR-WD	●	
 Wiper edge	YDEN2405PDFR-BD	●	
 Wiper for burr removal			

DX140: Packing quantity = 1pc.

● YPEB12X3-1A**-D, YPEB12X3-1P**-D, YPEB12X3-2A**-D, YPEB12X3-FP**-D, YPEB12X3-2P07R-D

Shape	Designation	PCD DX160	Applicable mill
 -1A/P	YPEB12X3-1A01R-D	●	TUNGSMILL TPYP12... EPYP12...
	YPEB12X3-1A02R-D	●	
	YPEB12X3-1A07R-D	●	
	YPEB12X3-1P02R-D	●	
	YPEB12X3-1P07R-D	●	
 -FP	YPEB12X3-FP02R-D	●	
	YPEB12X3-FP07R-D	●	
 -2A/P	YPEB12X3-2A01R-D	●	
	YPEB12X3-2A02R-D	●	
	YPEB12X3-2A07R-D	●	
	YPEB12X3-2P07R-D	●	

DX160: Packing quantity = 2pcs.

● : Line up

Milling Insert

● YPEN1505PPTR-Q

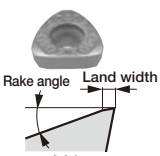
Shape	Designation	T-CBN	Applicable mill
		BX950	
	YPEN1505PPTR-Q	●	QPP15... (Old item)

BX950: Packing quantity = 1pc.

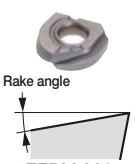
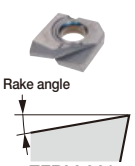
● ZDCA**TN

Shape	Designation	Uncoated	Applicable mill
		UX30	
	ZDCA0804TN	●	TBF1000 (Old item)
	ZDCA1105TN	●	

● ZDMT**-MJ

Shape	Designation	Coated	Applicable mill
		AH120	
	ZDMT4005-MJ	●	EBD... Page H186 HBD... (Old item)
	ZDMT5006-MJ	●	

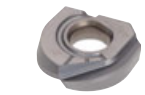
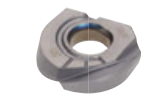
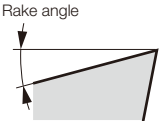
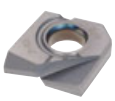
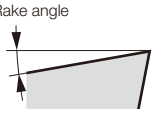
● ZFBM**-MJ, ZFRM**-MJ

Shape	Designation	Coated		Applicable mill
		AH710	AH725	
	ZFBM080R00-MJ	●	●	BALL FINISH NOSE EBFU... Page H166 HBFM... Page H167
	ZFBM100R00-MJ	●	●	
	ZFBM120R00-MJ	●	●	
	ZFBM160R00-MJ	●	●	
	ZFBM200R00-MJ	●	●	
	ZFBM250R00-MJ	●	●	
	ZFBM300R00-MJ	●	●	
	ZFBM320R00-MJ	●	●	
	ZFRM120R05-MJ	●	●	
	ZFRM120R10-MJ	●	●	
	ZFRM160R05-MJ	●	●	
	ZFRM160R10-MJ	●	●	
	ZFRM160R15-MJ	●	●	
	ZFRM200R10-MJ	●	●	
	ZFRM200R15-MJ	●	●	

● : Line up

Milling Insert

● ZFBU**-MJ, ZFBU**-ML, ZFRU**-MJ

Shape	Designation	Coated		Applicable mills
		AH725		
 Rake angle  ZFBU-MJ	ZFBU037R00-MJ	●		BALL FINISH NOSE EBFU... Page H166
	ZFBU050R00-MJ	●		
	ZFBU062R00-MJ	●		
	ZFBU075R00-MJ	●		
	ZFBU062R00-MJ	●		
	ZFBU100R00-MJ	●		
	ZFBU075R00-MJ	●		
	ZFBU125R00-MJ	●		
	ZFBU037R00-ML	●		
	ZFBU050R00-ML	●		
 Rake angle  ZFBU-ML	ZFBU062R00-ML	●		
	ZFBU075R00-ML	●		
	ZFBU100R00-ML	●		
	ZFBU125R00-ML	●		
	ZFRU037R003-MJ	●		
	ZFRU050R003-MJ	●		
	ZFRU050R006-MJ	●		
	ZFRU050R012-MJ	●		
 Rake angle  ZFRU-MJ	ZFRU062R003-MJ	●		
	ZFRU062R006-MJ	●		
	ZFRU062R012-MJ	●		
	ZFRU075R003-MJ	●		
	ZFRU075R006-MJ	●		
	ZFRU075R012-MJ	●		
	ZFRU100R003-MJ	●		
	ZFRU100R006-MJ	●		
	ZFRU100R012-MJ	●		
	ZFRU125R003-MJ	●		
	ZFRU125R006-MJ	●		
	ZFRU125R012-MJ	●		

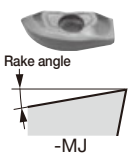
● : Line up

Milling Insert

● ZNCA**FN, ZNMM**EN

Shape	Designation	Uncoated		Applicable mill
		UX30	TH10	
	ZNCA1002FN2	●	●	TBN1000 (Old item)
	ZNCA1203FN	●	●	
	ZNCA1603FN	●	●	
	ZNCA2004FN	●	●	
	ZNCA2505FN	●	●	
	ZNCA3005FN	●	●	
	ZNMM2004EN	●		
	ZNMM2505EN	●		
	ZNMM3005EN	●		

● ZPET**-MJ

Shape	Designation	Coated		Applicable mill
		AH120	AH330	
	ZPET2004-MJ	●	●	EBP... Page H184 HBP... (Old item)
	ZPET2505-MJ	●	●	
	ZPET3006-MJ	●	●	
	ZPET3206-MJ	●	●	

● ZPCW**-QBN

Shape	Designation	T-CBN	Applicable mill
		BX950	
	ZPCW2003-QBN	●	EBB... (Old item)
	ZPCW25H3-QBN	●	
	ZPCW30T3-QBN	●	
	ZPCW4004-QBN	●	
	ZPCW5004-QBN	●	

BX950: Packing quantity = 1pc.

● ZRBM**-MM

Shape	Designation	Coated	Applicable mill
		APH730	
	ZRBM160-MM	●	BALL R NOSE EBRU... Page H164 HBRM... Page H164
	ZRBM200-MM	●	
	ZRBM250-MM	●	
	ZRBU062-MM	●	
	ZRBU075-MM	●	
	ZRBU100-MM	●	

● : Line up

Milling Insert

● 2QP-SNGN..

Shape	Designation	CBN								Applicable mill
		BX910								
	2QP-SNGN090308	●								
	2QP-SNGN090312	●								

● 2QP-SPGW..., 2QP-SPGN...

Shape	Designation	CBN								Applicable mill
		BX910								
 2QP-SPGW	2QP-SPGW09T308	●								
	2QP-SPGW09T312	●								
	2QP-SPGW120408	●								
	2QP-SPGW120412	●								
 2QP-SPGN	2QP-SPGW120416	●								
	2QP-SPGN090308	●								
	2QP-SPGN090312	●								

● 3QP-TPGW..., 3QP-TPGN...

Shape	Designation	CBN								Applicable mill
		BX910								
 3QP-TPGW	3QP-TPGW110308	●								
	3QP-TPGN110308	●								
	3QP-TPGN110312	●								
 3QP-TPGN										

● S-CNGN..., S-RNGN..., S-SNGN..., S-TNGN...

Shape	Designation	CBN								Applicable mill
		BXC90								
 S-CNGN	S-CNGN090308	●								
	S-CNGN090312	●								
	S-CNGN120408	●								
	S-CNGN120412	●								
 S-RNGN	S-RNGN090300	●								
	S-RNGN120400	●								
	S-SNGN090308	●								
	S-SNGN090312	●								
 S-SNGN	S-SNGN120308	●								
	S-SNGN120312	●								
	S-SNGN120408	●								
	S-SNGN120412	●								
 S-TNGN	S-TNGN110308	●								
	S-TNGN110312	●								
	S-TNGN160408	●								
	S-TNGN160412	●								

● : Line up

Drilling Tool

Drilling Tool - Content structure

- Products are listed in the order of 2 effective drill, indexable drill, then deep hole drill.
- The lists for each item start from the smallest tool diameter.

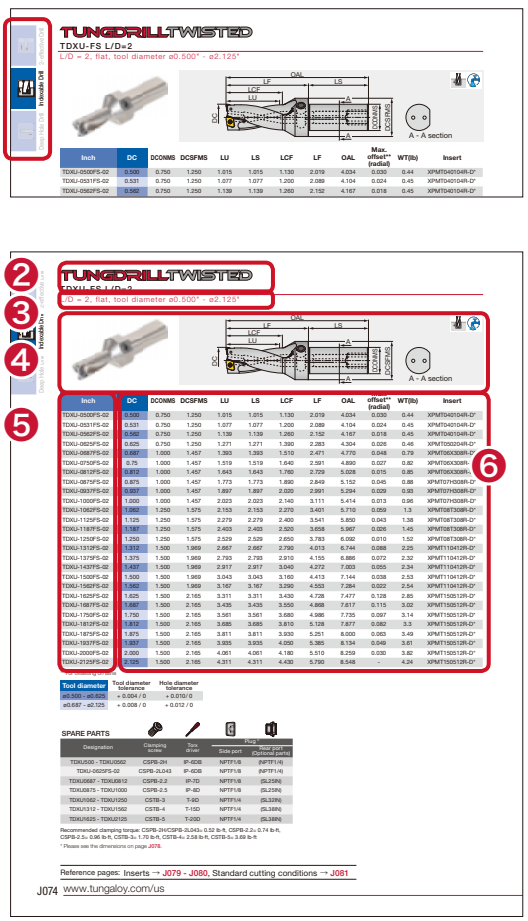
How to use the page

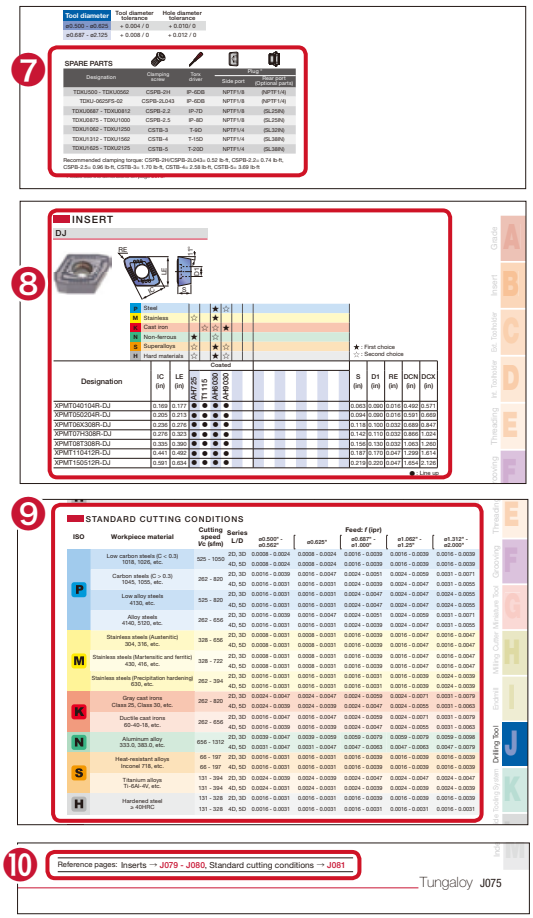
Method ① Select the drill shape described at the left end of each page, jump to the page on the left index, and choose a designation you need (❹) in the dimension table (❸). Applicable inserts are shown in (❻) and (❽).

Method ② Select the drill shape on J003 and check the details on the produt page.

Method ③ Select the drill series name on J004 - J005 and check the details on each page.

Method ④ Select an item from Quick Guide on J006 - J007.



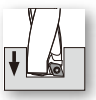


❶ : Drill Shape
❷ : Name of the series
❸ : Feature
❹ : Appearance and dimensions
❺ : Designation
❻ : Dimension

❼ : Spare parts
❽ : Applicable drill diameter
❾ : Standard cutting conditions
❿ : Reference page

When ordering
- Please specify the designation and quantity for Indexable drills.
  e.g. **TDXU-0625FS-02 ...** 1 (one Indexable drill per package)
- Please specify the designation, grade, and quantity for inserts.
  e.g. **XPMT050204R-DJ AH725 ...** 10 (10 inserts per package)
  *You will find a note if the number per package is not 10.
- Please specify the designation and quantity for solid/brazed drills.
  e.g. **DSXU2031F03 ...** 1 (one solid/brazed drill per package)

Drilling Tool

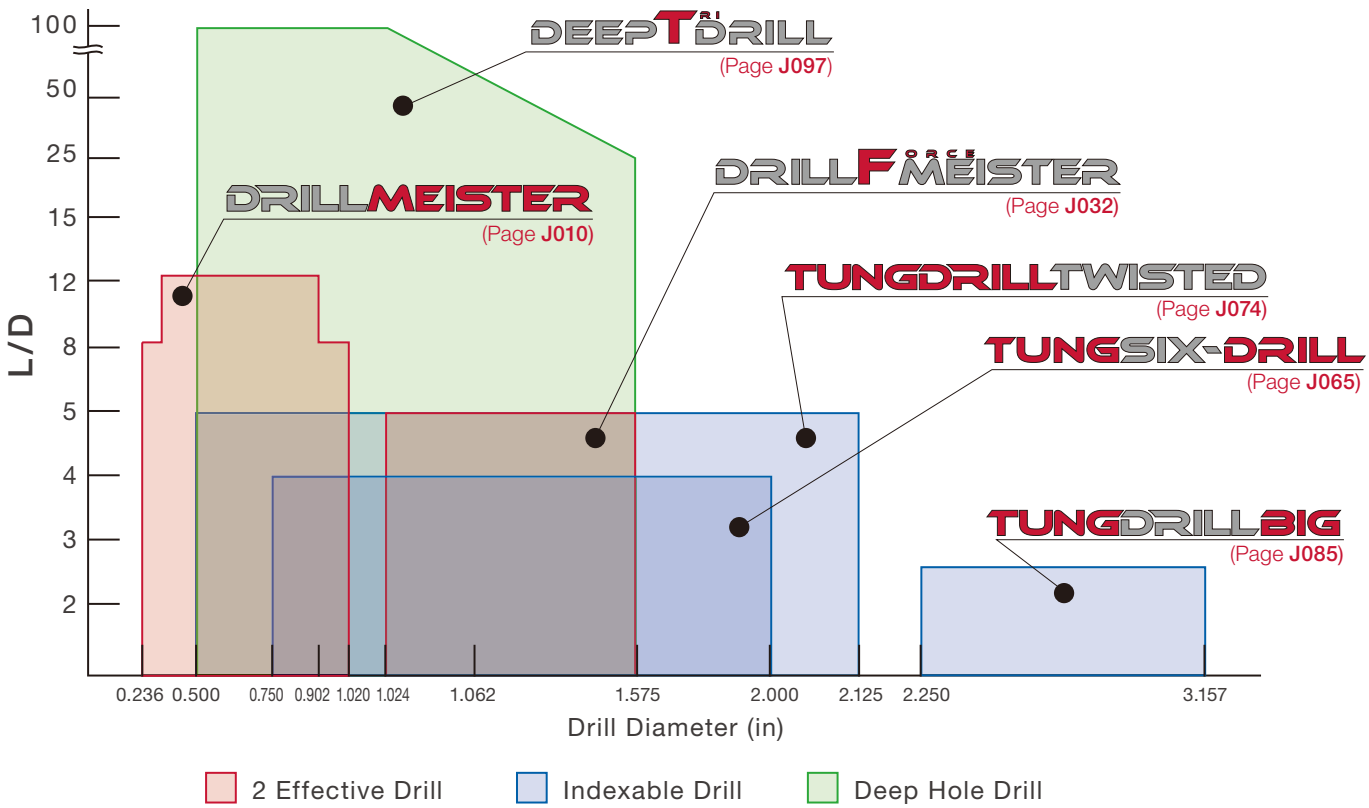
	Inch	Metric
 2 Effective Drill J006, J009 J010 - J061	✓	✓
 Indexable Drill J006 J063 - J092	✓	
 Deep Hole Drill J007 J094 - J158	✓	✓

Basic Selection of Drilling Tools

Application ranges of drilling tools

Indexable & Head-Changeable Drills

Inch



Hole diameter tolerance*

Inch

TUNGSIX-DRILL

L/D	Tool diameter	Hole diameter tolerance*
2	ø0.750 - ø1.062	+ 0.014 / 0
3	ø0.750 - ø1.062	+ 0.014 / 0
4	ø0.750 - ø2.000	+ 0.014 / 0

TUNGDRILLTWISTED

L/D	Tool diameter	Hole diameter tolerance*
2	ø0.500 - ø0.625	+ 0.010 / 0
	ø0.687 - ø2.125	+ 0.012 / 0
3	ø0.500 - ø0.625	+ 0.010 / 0
	ø0.687 - ø2.125	+ 0.012 / 0
4	ø0.500 - ø0.625	+ 0.016 / 0
	ø0.687 - ø2.125	+ 0.018 / 0
5	ø0.500 - ø0.625	+ 0.016 / 0
	ø0.687 - ø2.125	+ 0.018 / 0

DRILLMEISTER

L/D	Tool diameter	Hole diameter tolerance*
1.5	ø0.236 - ø1.020	+ 0.0020 / 0
3	ø0.236 - ø1.020	+ 0.0020 / 0
5	ø0.236 - ø0.783	+ 0.0024 / 0
	ø0.787 - ø1.020	+ 0.0026 / 0
8	ø0.276 - ø0.783	+ 0.0030 / 0
	ø0.787 - ø1.020	+ 0.0033 / 0
12	ø0.315 - ø0.705	+ 0.0031 / 0
	ø0.709 - ø0.902	+ 0.0037 / 0

DRILLFORCE MEISTER

L/D	Tool diameter	Hole diameter tolerance*
3	ø1.024 - ø1.142	+ 0.0020 / 0
	ø1.181 - ø1.575	+ 0.0024 / 0
5	ø1.024 - ø1.142	+ 0.0020 / 0
	ø1.181 - ø1.575	+ 0.0024 / 0

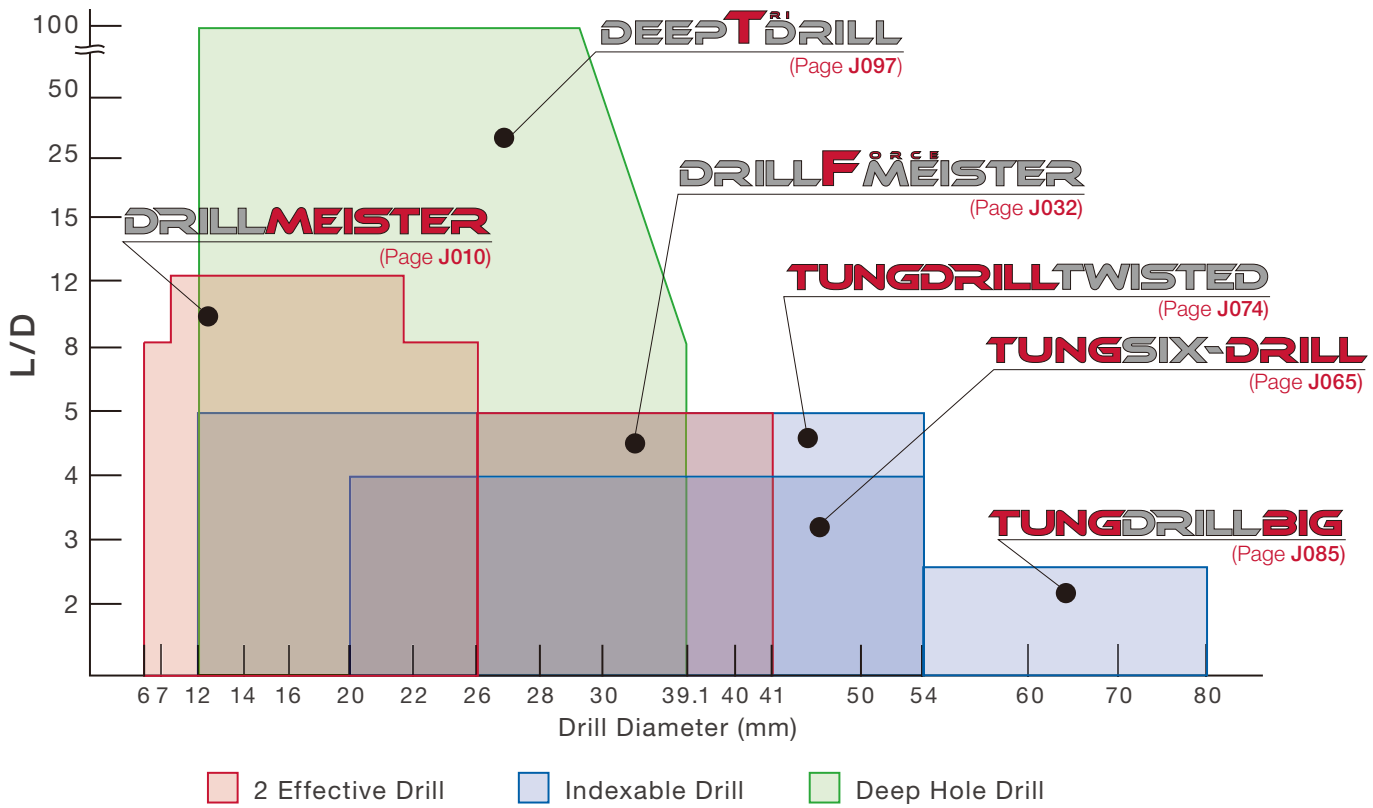
DEEP T-DRILL

L/D	Tool diameter	Hole diameter tolerance*
10	ø0.630 - ø1.500	+ 0.002 / - 0.004
15	ø0.500 - ø1.500	+ 0.002 / - 0.004
25	ø0.500 - ø1.500	+ 0.002 / - 0.004

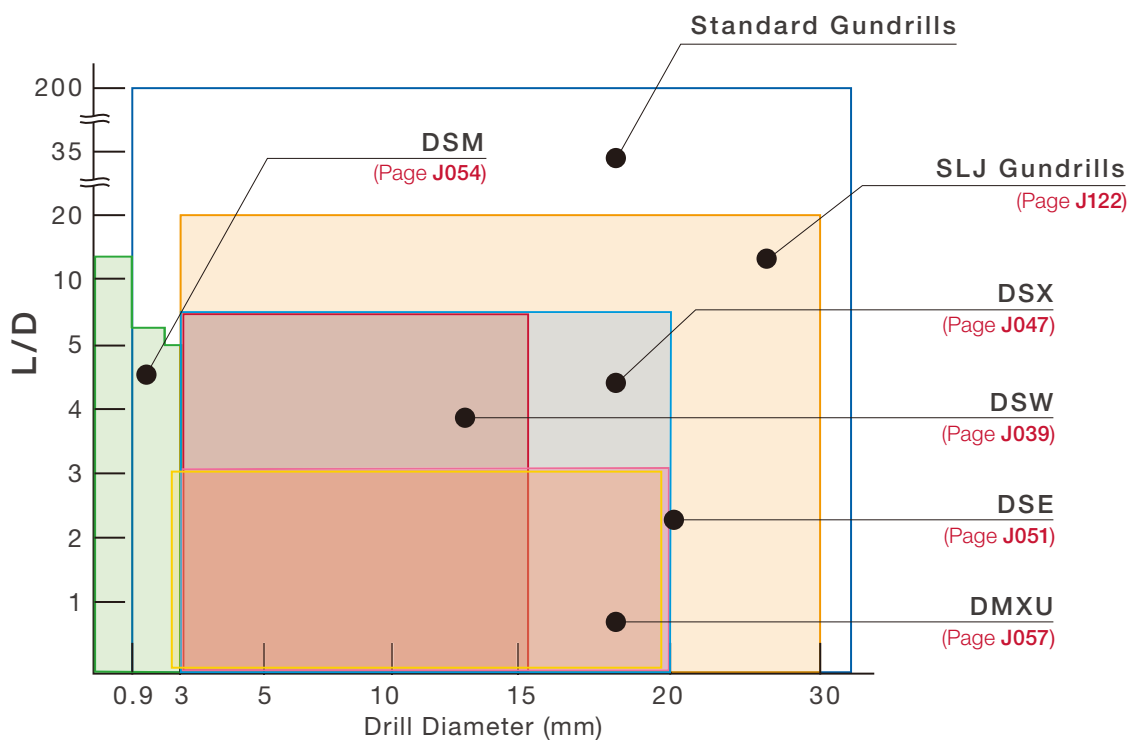
*Just for reference

Indexable & Head-Changeable Drills

Metric



Solid Drills, Brazed Carbide Drills



General drilling - Quick Guide

★ : First choice
☆ : Second choice

Application	Tool diameter	L/D	Tool series	Appearance	IT class	Effective Cutting edge	Coolant supply	Workpiece material P	M	K	N	S	H	Page
General drilling	ø0.394" - ø1.020" (ø6 mm - ø25.9 mm)	1.5 3 5 8 12	DRILLMEISTER Head changeable drill TIDU / TIDC / TIDCF		9 - 10	2	Int.	★	★	★	☆	★	★	J010 - J031
	ø1.024" - ø1.614" (ø26 mm - ø41 mm)	3 5	DRILLFMEISTER Head changeable drill TISU		9 - 10	2	Int.	★	★	★	☆	★	★	J032 - J037
	ø3 mm - ø12 mm	3 5 8	SOLIDDRILL DSW		9 - 10	2	Int. / Ext.	★	★	★	☆	★	☆	J039 - J045
	ø0.1 mm - ø3 mm	5 10 15	SOLIDDRILL GIGAMINIDRILL DSM/DSM-CP		9 -10	2	Ext.	★	★	★	☆	☆	☆	J054 - J056
	13/64" - 21/32" (ø3 mm - ø10 mm)	3 5 8	SOLIDDRILL GIGAJETDRILL DSXU / DSX		9 - 10	2	Int.	★	★	★	☆	☆	☆	J046 - J050
	ø3 mm - ø10 mm	2 3	SOLIDDRILL GIGAPOWERDRILL DSE		9 - 10	2	Ext.	★	☆	☆	☆	★	☆	J051 - J053
	#34" - 25/32"	2 3	SOLIDDRILL DMXU		9 - 10	2	Ext.	★	☆			★	☆	J057 - J059
	ø0.203" - ø0.625" (ø5 mm - ø16 mm)	5 8	SOLIDDRILL FDCU / FDC		9 - 10	2	Int.			★	★			J060 - J061
	ø0.750" - ø2.000"	2 3 4	TUNGSIX-DRILL Indexable Drill TDSU		11 -	1	Int.	★	★	★	☆	★	★	J064 - J073
	ø0.500" - ø2.125"	2 3 4 5	TUNGDRILLTWISTED Indexable Drill TDXU		11 -	1	Int.	★	★	★	☆	★	★	J074 - J084
	ø2.250" - ø3.157"	2.5	TUNGDRILLBIG Indexable Drill TDB - TDSU / TDXU		11 -	1	Int.	★	★	★	☆	★	★	J085 - J091

Deep drilling - Quick Guide

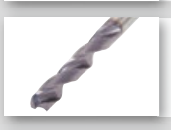
★ : First choice
☆ : Second choice

Application	Tool diameter	L/D	Tool series	Appearance	IT class	Effective Cutting edge	Coolant supply	Workpiece material P	M	K	N	S	H	Page
Deep drilling	ø0.500" - ø1.500" (ø12 mm - ø39.1 mm)	8 10 15 20 25 (for machining centers) Length ≤ 64.961" / 1650 mm (for gundrill machines)	DEEP T DRILL Head changeable deep drill MCTR/MCTRCH TRLG/TRLGCH		10	1	Int.	★	★	★	☆	★	★	J096 - J121
	ø3 mm - ø12.2 mm	Length ≤ 1650 mm (for gundrill machines)	GUNDRILL Brazed gundrill SLJ		7 - 8	1	Int.	★	★	★	☆	☆	☆	J122
	ø16 mm - ø28 mm	-	TRI-FINE Indexable BTA drill FNTR		10	1	Int.	★	★	★	☆	★	☆	J128 - J131
	ø25 mm - ø65 mm	-	FINE-BEAM Indexable BTA drill FNBM		10	1	Int.	★	★	★	☆	★	★	J132 - J137
	ø38 mm - ø106.99 mm	-	UNIDEX Indexable BTA drill KUSTS/KUDTS		10	1	Int.	★	★	★	☆	★	☆	J138 - J143
	ø8 mm - ø65 mm	-	Brazed BTA drill MBU/UTE/BTU		9	1	Int.	★	★	★	☆	★	☆	J144 - J156
	ø30 mm - ø63 mm	6 - 14	**HF** drill Head changeable deep drill HF		10	1	Int.	★	★	★	☆	★	★	J157 - J158

Head changeable drill

		Inch	Metric
	**DRILLMEISTER** Head changeable drill series ø0.236" - ø1.020" (ø6 mm - ø25.9 mm) / L/D = 1.5, 3, 5, 8, 12 ※L/D = 12 : ø0.472" - ø0.488" (ø8 mm - ø22.9 mm)	J009 - J031	✓	✓
	**DRILLFORCE MEISTER** Two cutting edges for productivity in large diameter drilling ø1.024" - ø1.614" (ø26 mm - ø41 mm) / L/D = 3, 5	J032 - J037	✓	

Solid Drill

		Inch	Metric
	**SOLIDDRILL** High performance solid carbide drill	J038 - J061	✓	✓
	**DSW** ø3 mm - ø12 mm / L/D = 3, 5, 8	J039 - J045		✓
	**DSXU / DSX** 13/64" - 21/32" (ø3 mm - ø10 mm) / L/D = 3, 5, 8	J046 - J050	✓	✓
	**DSE** ø3 mm - ø10 mm / L/D = 2, 3	J051 - J053		✓
	**DSM / DSM-CP** ø0.1 mm - ø3 mm / L/D = 5, 10, 15	J054 - J056		✓
	**DMXU** #34" - 25/32" / L/D = 2, 3	J057 - J059	✓	
	**FDCU / FDC** ø0.203" - ø0.625" (ø5 mm - ø16 mm) / L/D = 5, 8	J060 - J061	✓	✓

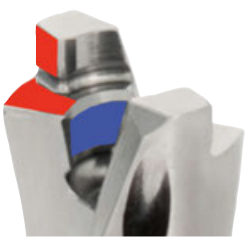
Changeable head system for easy operation

High accuracy, rigidity, and productivity

- Unique clamping structure provides high repeatability and reliability
- One-action head changing reduces tool set up time
- No re-grinding cost and reduced tool inventory requirements

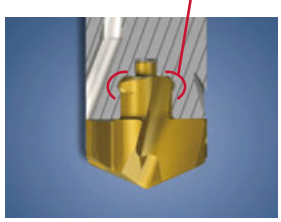
Drill head

Drill body



- Contact area that supports the drill head against cutting force
- Contact area that maintains the accurate drill position

Groove to prevent the head from falling off



Increased body durability

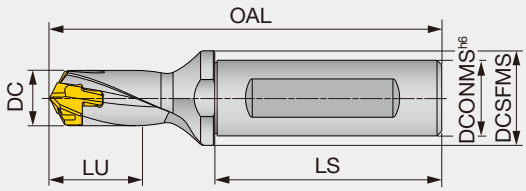
- The new clamping mechanism greatly reduces the damage on cutting edges due to less holding power as seen with the competitors, which leads to long tool life.
- The unique clamping design prevents the head from falling off.

Reference pages: J010 - J031, Technical reference → L073 - L074

DRILLMEISTER

TIDU L/D=1.5

Head changeable drill



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TIDU0394F0625-1.5	0.394 - 0.429	0.625	0.787	0.591	1.890	3.118	3.142	10	DM*100 - DM*109
TIDU0433F0625-1.5	0.433 - 0.468	0.625	0.787	0.669	1.890	3.193	3.217	11	DM*110 - DM*119
TIDU0472F0625-1.5	0.472 - 0.508	0.625	0.787	0.709	1.890	3.268	3.292	12	DM*120 - DM*129
TIDU0512F0625-1.5	0.512 - 0.547	0.625	0.787	0.787	1.890	3.350	3.381	13	DM*130 - DM*139
TIDU0551F0625-1.5	0.551 - 0.587	0.625	0.787	0.827	1.890	3.508	3.539	14	DM*140 - DM*149
TIDU0591F0750-1.5	0.591 - 0.625	0.750	0.984	0.906	1.969	3.787	3.822	15	DM*150 - DM*159
TIDU0630F0750-1.5	0.630 - 0.665	0.750	0.984	0.945	1.969	3.909	3.948	16	DM*160 - DM*169
TIDU0669F0750-1.5	0.669 - 0.705	0.750	0.984	1.024	1.969	4.031	4.07	17	DM*170 - DM*179
TIDU0709F1000-1.5	0.709 - 0.744	1.000	1.260	1.063	2.205	4.390	4.433	18	DM*180 - DM*189
TIDU0748F1000-1.5	0.748 - 0.783	1.000	1.260	1.142	2.205	4.508	4.551	19	DM*190 - DM*199
TIDU0787F1000-1.5	0.787- 0.823	1.000	1.260	1.181	2.205	4.630	-	20	DMP200 - DMP209
TIDU0827F1000-1.5	0.827- 0.862	1.000	1.260	1.240	2.205	4.752	-	21	DMP210 - DMP219
TIDU0866F1000-1.5	0.866 - 0.902	1.000	1.260	1.299	2.205	4.874	-	22	DMP220 - DMP229
TIDU0906F1250-1.5	0.906 - 0.941	1.250	1.654	1.358	2.362	5.150	-	23	DMP230 - DMP239
TIDU0945F1250-1.5	0.945 - 0.980	1.250	1.654	1.417	2.362	5.272	-	24	DMP240 - DMP249
TIDU0984F1250-1.5	0.984 - 1.020	1.250	1.654	1.476	2.362	5.394	-	25	DMP250 - DMP259

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

Tool diameter	Hole diameter tolerance*
ø0.394 - ø1.020	+0.0020 / 0

*Just for reference

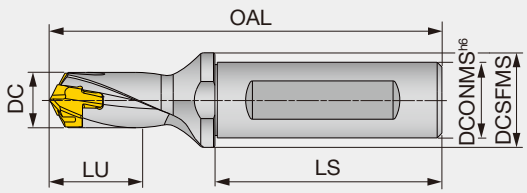
SPARE PARTS

Designation	Clamping key
TIDU0394 - TIDU0748	K-TID10-19.99
TIDU0787 - TIDU0984	K-TID20-26.99

Reference pages: Head → J024 - J029
Standard cutting conditions → J030

TID L/D=1.5

Head changeable drill



Metric	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TID060F12-1.5	6 - 6.4	12	16	10.1	45	68	-	6	DMP060 - DMP064
TID065F12-1.5	6.5 - 6.9	12	16	11.2	45	69.1	-	6	DMP065 - DMP069
TID070F12-1.5	7 - 7.4	12	16	12.3	45	70.1	-	7	DMP070 - DMP074
TID075F12-1.5	7.5 - 7.9	12	16	12.7	45	70.9	-	7	DMP075 - DMP079
TID080F12-1.5	8 - 8.9	12	16	13.5	45	72.4	-	8	DMP080 - DMP089
TID090F12-1.5	9 - 9.9	12	16	15.6	45	74.3	-	9	DMP090 - DMP099
TID100F16-1.5	10 - 10.9	16	20	16.8	48	79.2	79.8	10	DM*100 - DM*109
TID110F16-1.5	11 - 11.9	16	20	19	48	81.1	81.7	11	DM*110 - DM*119
TID120F16-1.5	12 - 12.9	16	20	20.2	48	83	83.6	12	DM*120 - DM*129
TID130F16-1.5	13 - 13.9	16	20	22.4	48	85.1	85.9	13	DM*130 - DM*139
TID140F16-1.5	14 - 14.9	16	20	23.5	48	89.1	89.9	14	DM*140 - DM*149
TID150F20-1.5	15 - 15.9	20	25	25.7	50	96.2	97.1	15	DM*150 - DM*159
TID160F20-1.5	16 - 16.9	20	25	26.9	50	99.3	100.3	16	DM*160 - DM*169
TID170F20-1.5	17 - 17.9	20	25	29.1	50	102.4	103.4	17	DM*170 - DM*179
TID180F25-1.5	18 - 18.9	25	32	30.3	56	111.5	112.6	18	DM*180 - DM*189
TID190F25-1.5	19 - 19.9	25	32	32.5	56	114.5	115.6	19	DM*190 - DM*199
TID200F25-1.5	20 - 20.9	25	32	33.6	56	117.6	-	20	DMP200 - DMP209
TID210F25-1.5	21 - 21.9	25	32	35.8	56	120.7	-	21	DMP210 - DMP219
TID220F25-1.5	22 - 22.9	25	32	37	56	123.8	-	22	DMP220 - DMP229
TID230F32-1.5	23 - 23.9	32	42	39.2	60	130.8	-	23	DMP230 - DMP239
TID240F32-1.5	24 - 24.9	32	42	40.4	60	133.9	-	24	DMP240 - DMP249
TID250F32-1.5	25 - 25.9	32	42	42.5	60	137	-	25	DMP250 - DMP259

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

Tool diameter	Hole diameter tolerance*
ø6 - ø25.9	+0.05 / 0

*Just for reference

SPARE PARTS

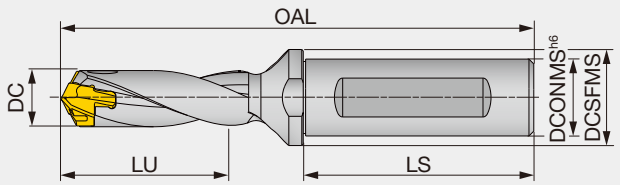
Designation	Clamping key
TID060-090	K-TID6-9.99
TID100-190	K-TID10-19.99
TID200-250	K-TID20-26.99

Reference pages: Head → J024 - J029
Standard cutting conditions → J030

DRILLMEISTER

TIDU L/D=3

Head changeable drill



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TIDU0394F0625-3	0.394 - 0.409	0.625	0.787	1.181	1.890	3.709	3.733	10	DM*100 - DM*104
TIDU0413F0625-3	0.413 - 0.429	0.625	0.787	1.260	1.890	3.768	3.792	10	DM*105 - DM*109
TIDU0433F0625-3	0.433 - 0.449	0.625	0.787	1.299	1.890	3.843	3.867	11	DM*110 - DM*114
TIDU0453F0625-3	0.453 - 0.469	0.625	0.787	1.378	1.890	3.902	3.926	11	DM*115 - DM*119
TIDU0472F0625-3	0.472 - 0.488	0.625	0.787	1.417	1.890	3.976	4.000	12	DM*120 - DM*124
TIDU0492F0625-3	0.492 - 0.508	0.625	0.787	1.457	1.890	4.035	4.059	12	DM*125 - DM*129
TIDU0512F0625-3	0.512 - 0.528	0.625	0.787	1.535	1.890	4.118	4.149	13	DM*130 - DM*134
TIDU0532F0625-3	0.532 - 0.547	0.625	0.787	1.614	1.890	4.177	4.208	13	DM*135 - DM*139
TIDU0551F0625-3	0.551 - 0.567	0.625	0.787	1.654	1.890	4.335	4.366	14	DM*140 - DM*144
TIDU0571F0625-3	0.571 - 0.587	0.625	0.787	1.732	1.890	4.394	4.425	14	DM*145 - DM*149
TIDU0591F0750-3	0.591 - 0.626	0.750	0.984	1.772	1.969	4.673	4.708	15	DM*150 - DM*159
TIDU0630F0750-3	0.630 - 0.665	0.750	0.984	1.890	1.969	4.854	4.893	16	DM*160 - DM*169
TIDU0669F0750-3	0.669 - 0.705	0.750	0.984	2.008	1.969	5.035	5.074	17	DM*170 - DM*179
TIDU0709F1000-3	0.709 - 0.744	1.000	1.260	2.126	2.205	5.453	5.496	18	DM*180 - DM*189
TIDU0748F1000-3	0.748 - 0.783	1.000	1.260	2.244	2.205	5.630	5.673	19	DM*190 - DM*199
TIDU0787F1000-3	0.787 - 0.823	1.000	1.260	2.362	2.205	5.811	-	20	DMP200 - DMP209
TIDU0827F1000-3	0.827 - 0.862	1.000	1.260	2.480	2.205	5.992	-	21	DMP210 - DMP219
TIDU0866F1000-3	0.866 - 0.902	1.000	1.260	2.598	2.205	6.173	-	22	DMP220 - DMP229
TIDU0906F1250-3	0.906 - 0.941	1.250	1.654	2.718	2.362	6.508	-	23	DMP230 - DMP239
TIDU0945F1250-3	0.945 - 0.980	1.250	1.654	2.835	2.362	6.689	-	24	DMP240 - DMP249
TIDU0984F1250-3	0.984 - 1.020	1.250	1.654	2.953	2.362	6.870	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø0.394 - ø1.020	+0.0020 / 0

*Just for reference

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

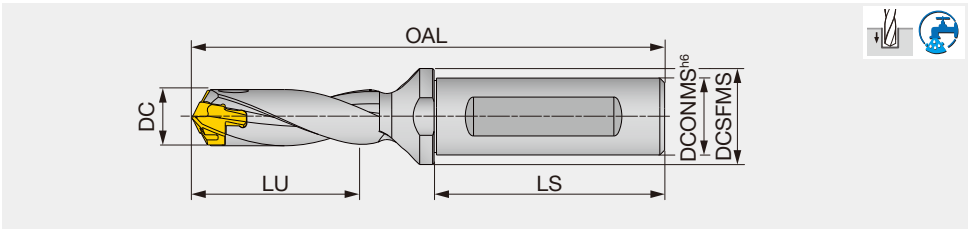
SPARE PARTS

Designation	Clamping key
TIDU0394 - TIDU0748	K-TID10-19.99
TIDU0787 - TIDU0984	K-TID20-26.99

Reference pages: Head → J024 - J029
Standard cutting conditions → J030

TID L/D=3

Head changeable drill



Metric	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TID060F12-3	6 - 6.4	12	16	19.1	45	77	-	6	DMP060 - DMP064
TID065F12-3	6.5 - 6.9	12	16	21.2	45	78.8	-	6	DMP065 - DMP069
TID070F12-3	7 - 7.4	12	16	22.3	45	80.6	-	7	DMP070 - DMP074
TID075F12-3	7.5 - 7.9	12	16	24.4	45	82.1	-	7	DMP075 - DMP079
TID080F12-3	8 - 8.4	12	16	25.5	45	84.4	-	8	DMP080 - DMP084
TID085F12-3	8.5 - 8.9	12	16	27.5	45	85.9	-	8	DMP085 - DMP089
TID090F12-3	9 - 9.4	12	16	28.6	45	87.8	-	9	DMP090 - DMP094
TID095F12-3	9.5 - 9.9	12	16	30.7	45	89.3	-	9	DMP095 - DMP099
TID100F16-3	10 - 10.4	16	20	31.8	48	94.2	94.8	10	DM*100 - DM*104
TID105F16-3	10.5 - 10.9	16	20	33.9	48	95.7	96.3	10	DM*105 - DM*109
TID110F16-3	11 - 11.4	16	20	35	48	97.6	98.2	11	DM*110 - DM*114
TID115F16-3	11.5 - 11.9	16	20	37.1	48	99.1	99.7	11	DM*115 - DM*119
TID120F16-3	12 - 12.4	16	20	38.2	48	101	101.6	12	DM*120 - DM*124
TID125F16-3	12.5 - 12.9	16	20	39.3	48	102.5	103.1	12	DM*125 - DM*129
TID130F16-3	13 - 13.4	16	20	41.4	48	104.6	105.4	13	DM*130 - DM*134
TID135F16-3	13.5 - 13.9	16	20	43.5	48	106.1	106.9	13	DM*135 - DM*139
TID140F16-3	14 - 14.4	16	20	44.5	48	110.1	110.9	14	DM*140 - DM*144
TID145F16-3	14.5 - 14.9	16	20	46.6	48	111.6	112.4	14	DM*145 - DM*149
TID150F20-3	15 - 15.9	20	25	47.7	50	118.7	119.6	15	DM*150 - DM*159
TID160F20-3	16 - 16.9	20	25	50.9	50	123.3	124.3	16	DM*160 - DM*169
TID170F20-3	17 - 17.9	20	25	54.1	50	127.9	128.9	17	DM*170 - DM*179
TID180F25-3	18 - 18.9	25	32	57.3	56	138.5	139.6	18	DM*180 - DM*189
TID190F25-3	19 - 19.9	25	32	60.5	56	143	144.1	19	DM*190 - DM*199
TID200F25-3	20 - 20.9	25	32	63.6	56	147.6	-	20	DMP200 - DMP209
TID210F25-3	21 - 21.9	25	32	66.8	56	152.2	-	21	DMP210 - DMP219
TID220F25-3	22 - 22.9	25	32	70	56	156.8	-	22	DMP220 - DMP229
TID230F32-3	23 - 23.9	32	42	73.2	60	165.3	-	23	DMP230 - DMP239
TID240F32-3	24 - 24.9	32	42	76.4	60	169.9	-	24	DMP240 - DMP249
TID250F32-3	25 - 25.9	32	42	79.5	60	174.5	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø6 - ø25.9	+0.05 / 0

*Just for reference

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

SPARE PARTS

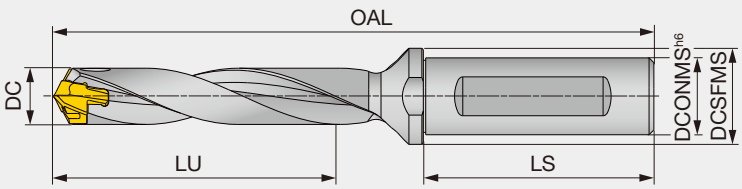
Designation	Clamping key
TID060-095	K-TID6-9.99
TID100-190	K-TID10-19.99
TID200-250	K-TID20-26.99

Reference pages: Head → J024 - J029
Standard cutting conditions → J030

DRILLMEISTER

TIDU L/D=5

Head changeable drill



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TIDU0394F0625-5	0.394 - 0.409	0.625	0.787	1.969	1.890	4.575	4.599	10	DM*100 - DM*104
TIDU0413F0625-5	0.413 - 0.429	0.625	0.787	2.087	1.890	4.791	4.815	10	DM*105 - DM*109
TIDU0433F0625-5	0.433 - 0.449	0.625	0.787	2.165	1.890	4.984	5.008	11	DM*110 - DM*114
TIDU0453F0625-5	0.453 - 0.469	0.625	0.787	2.283	1.890	5.201	5.225	11	DM*115 - DM*119
TIDU0472F0625-5	0.472 - 0.488	0.625	0.787	2.362	1.890	5.394	5.418	12	DM*120 - DM*124
TIDU0492F0625-5	0.492 - 0.508	0.625	0.787	2.441	1.890	5.571	5.595	12	DM*125 - DM*129
TIDU0512F0625-5	0.512 - 0.528	0.625	0.787	2.559	1.890	5.811	5.842	13	DM*130 - DM*134
TIDU0532F0625-5	0.532 - 0.547	0.625	0.787	2.677	1.890	6.028	6.059	13	DM*135 - DM*139
TIDU0551F0625-5	0.551 - 0.567	0.625	0.787	2.756	1.890	6.307	6.338	14	DM*140 - DM*144
TIDU0571F0625-5	0.571 - 0.587	0.625	0.787	2.874	1.890	6.524	6.555	14	DM*145 - DM*149
TIDU0591F0750-5	0.591 - 0.626	0.750	0.984	2.953	1.969	6.839	6.874	15	DM*150 - DM*159
TIDU0630F0750-5	0.630 - 0.665	0.750	0.984	3.150	1.969	7.295	7.334	16	DM*160 - DM*169
TIDU0669F0750-5	0.669 - 0.705	0.750	0.984	3.346	1.969	7.752	7.791	17	DM*170 - DM*179
TIDU0709F1000-5	0.709 - 0.744	1.000	1.260	3.543	2.205	8.209	8.252	18	DM*180 - DM*189
TIDU0748F1000-5	0.748 - 0.783	1.000	1.260	3.740	2.205	8.661	8.704	19	DM*190 - DM*199
TIDU0787F1000-5	0.787 - 0.823	1.000	1.260	3.937	2.205	2.723	-	20	DMP200 - DMP209
TIDU0827F1000-5	0.827 - 0.862	1.000	1.260	4.134	2.205	7.646	-	21	DMP210 - DMP219
TIDU0866F1000-5	0.866 - 0.902	1.000	1.260	4.331	2.205	7.906	-	22	DMP220 - DMP229
TIDU0906F1250-5	0.906 - 0.941	1.250	1.654	4.528	2.362	8.319	-	23	DMP230 - DMP239
TIDU0945F1250-5	0.945 - 0.980	1.250	1.654	4.724	2.362	8.579	-	24	DMP240 - DMP249
TIDU0984F1250-5	0.984 - 1.020	1.250	1.654	4.921	2.362	8.839	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø0.394 - ø0.705	+0.0024 / 0
ø0.709 - ø1.020	+0.0026 / 0

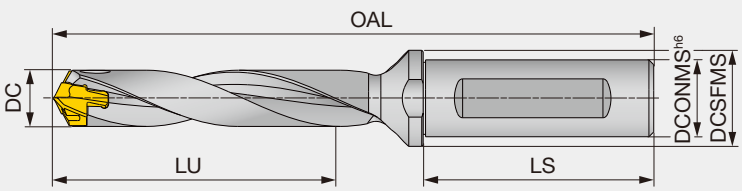
*Just for reference

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

SPARE PARTS

Designation	Clamping key
TIDU0394 - TIDU0748	K-TID10-19.99
TIDU0787 - TIDU0984	K-TID20-26.99

Reference pages: Head → J024 - J029
Standard cutting conditions → J030



Metric	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TID060F12-5	6 - 6.4	12	16	31.1	45	89	-	6	DMP060 - DMP064
TID065F12-5	6.5 - 6.9	12	16	34.2	45	91.8	-	6	DMP065 - DMP069
TID070F12-5	7 - 7.4	12	16	36.3	45	94.6	-	7	DMP070 - DMP074
TID075F12-5	7.5 - 7.9	12	16	39.4	45	97.1	-	7	DMP075 - DMP079
TID080F12-5	8 - 8.4	12	16	41.5	45	100.4	-	8	DMP080 - DMP084
TID085F12-5	8.5 - 8.9	12	16	44.5	45	102.9	-	8	DMP085 - DMP089
TID090F12-5	9 - 9.4	12	16	46.6	45	105.8	-	9	DMP090 - DMP094
TID095F12-5	9.5 - 9.9	12	16	49.7	45	108.3	-	9	DMP095 - DMP099
TID100F16-5	10 - 10.4	16	20	51.8	48	114.2	114.8	10	DM*100 - DM*104
TID105F16-5	10.5 - 10.9	16	20	54.9	48	116.7	117.3	10	DM*105 - DM*109
TID110F16-5	11 - 11.4	16	20	57	48	119.6	120.2	11	DM*110 - DM*114
TID115F16-5	11.5 - 11.9	16	20	60.1	48	122.1	122.7	11	DM*115 - DM*119
TID120F16-5	12 - 12.4	16	20	62.2	48	125	125.6	12	DM*120 - DM*124
TID125F16-5	12.5 - 12.9	16	20	64.3	48	127.5	128.1	12	DM*125 - DM*129
TID130F16-5	13 - 13.4	16	20	67.4	48	130.6	131.4	13	DM*130 - DM*134
TID135F16-5	13.5 - 13.9	16	20	70.5	48	133.1	133.9	13	DM*135 - DM*139
TID140F16-5	14 - 14.4	16	20	72.5	48	138.2	139	14	DM*140 - DM*144
TID145F16-5	14.5 - 14.9	16	20	75.6	48	140.7	141.5	14	DM*145 - DM*149
TID150F20-5	15 - 15.9	20	25	77.7	50	148.7	149.6	15	DM*150 - DM*159
TID160F20-5	16 - 16.9	20	25	82.9	50	155.3	156.3	16	DM*160 - DM*169
TID170F20-5	17 - 17.9	20	25	88.1	50	161.9	162.9	17	DM*170 - DM*179
TID180F25-5	18 - 18.9	25	32	93.3	56	174.5	175.6	18	DM*180 - DM*189
TID190F25-5	19 - 19.9	25	32	98.5	56	181	182.1	19	DM*190 - DM*199
TID200F25-5	20 - 20.9	25	32	103.6	56	187.6	-	20	DMP200 - DMP209
TID210F25-5	21 - 21.9	25	32	108.8	56	194.2	-	21	DMP210 - DMP219
TID220F25-5	22 - 22.9	25	32	114	56	200.8	-	22	DMP220 - DMP229
TID230F32-5	23 - 23.9	32	42	119.2	60	211.3	-	23	DMP230 - DMP239
TID240F32-5	24 - 24.9	32	42	124.4	60	217.9	-	24	DMP240 - DMP249
TID250F32-5	25 - 25.9	32	42	129.5	60	224.5	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø6 - ø17.9	+0.06 / 0
ø18 - ø25.9	+0.065 / 0

*Just for reference

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

SPARE PARTS

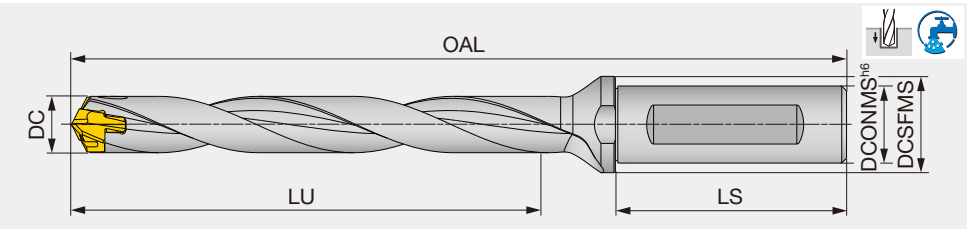
Designation	Clamping key
TID060-095	K-TID6-9.99
TID100-190	K-TID10-19.99
TID200-250	K-TID20-26.99

Reference pages: Head → J024 - J029
Standard cutting conditions → J030

DRILLMEISTER

TIDU L/D=8

Head changeable drill



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TIDU0394F0625-8	0.394 - 0.409	0.625	0.787	3.150	1.890	5.677	5.701	10	DM*100 - DM*104
TIDU0413F0625-8	0.413 - 0.429	0.625	0.787	3.307	1.890	5.835	5.859	10	DM*105 - DM*109
TIDU0433F0625-8	0.433 - 0.449	0.625	0.787	3.465	1.890	6.008	6.032	11	DM*110 - DM*114
TIDU0453F0625-8	0.453 - 0.469	0.625	0.787	3.622	1.890	6.165	6.189	11	DM*115 - DM*119
TIDU0472F0625-8	0.472 - 0.488	0.625	0.787	3.780	1.890	6.339	6.363	12	DM*120 - DM*124
TIDU0492F0625-8	0.492 - 0.508	0.625	0.787	3.937	1.890	6.496	6.52	12	DM*125 - DM*129
TIDU0512F0625-8	0.512 - 0.528	0.625	0.787	4.094	1.890	6.677	6.708	13	DM*130 - DM*134
TIDU0532F0625-8	0.532 - 0.547	0.625	0.787	4.252	1.890	6.835	6.866	13	DM*135 - DM*139
TIDU0551F0625-8	0.551 - 0.567	0.625	0.787	4.409	1.890	7.091	7.122	14	DM*140 - DM*144
TIDU0571F0625-8	0.571 - 0.587	0.625	0.787	4.567	1.890	7.252	7.283	14	DM*145 - DM*149
TIDU0591F0750-8	0.591 - 0.626	0.750	0.984	4.724	1.969	7.626	7.661	15	DM*150 - DM*159
TIDU0630F0750-8	0.630 - 0.665	0.750	0.984	5.039	1.969	8.004	8.043	16	DM*160 - DM*169
TIDU0669F0750-8	0.669 - 0.705	0.750	0.984	5.354	1.969	8.382	8.421	17	DM*170 - DM*179
TIDU0709F1000-8	0.709 - 0.744	1.000	1.260	5.669	2.205	8.996	9.039	18	DM*180 - DM*189
TIDU0748F1000-8	0.748 - 0.783	1.000	1.260	5.984	2.205	9.370	9.413	19	DM*190 - DM*199
TIDU0787F1000-8	0.787 - 0.823	1.000	1.260	6.299	2.205	9.748	-	20	DMP200 - DMP209
TIDU0827F1000-8	0.827 - 0.862	1.000	1.260	6.614	2.205	10.126	-	21	DMP210 - DMP219
TIDU0866F1000-8	0.866 - 0.902	1.000	1.260	6.929	2.205	10.504	-	22	DMP220 - DMP229
TIDU0906F1250-8	0.906 - 0.941	1.250	1.654	7.244	2.362	11.035	-	23	DMP230 - DMP239
TIDU0945F1250-8	0.945 - 0.980	1.250	1.654	7.559	2.362	11.413	-	24	DMP240 - DMP249
TIDU0984F1250-8	0.984 - 1.020	1.250	1.654	7.874	2.362	11.791	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø0.394 - ø0.705	+0.0030 / 0
ø0.709 - ø1.020	+0.0033 / 0

*Just for reference

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

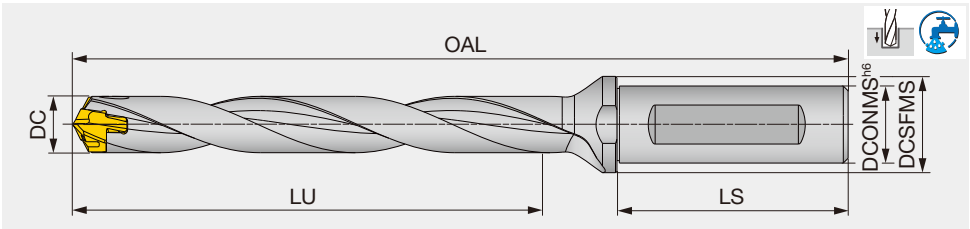
SPARE PARTS

Designation	Clamping key
TIDU0394 - TIDU0748	K-TID10-19.99
TIDU0787 - TIDU0984	K-TID20-26.99

Reference pages: Head → J024 - J029
Standard cutting conditions → J030

TID L/D=8

Head changeable drill



Metric	DC	DCONMS	DCSFMS	LU	LS	OAL		Pocket size	Head
						DMP	DMC		
TID070F12-8	7 - 7.4	12	16	57.3	45	115.6	-	7	DMP070 - DMP074
TID075F12-8	7.5 - 7.9	12	16	61.4	45	119.6	-	7	DMP075 - DMP079
TID080F12-8	8 - 8.4	12	16	65.5	45	124.4	-	8	DMP080 - DMP084
TID085F12-8	8.5 - 8.9	12	16	69.5	45	128.4	-	8	DMP085 - DMP089
TID090F12-8	9 - 9.4	12	16	73.6	45	132.8	-	9	DMP090 - DMP094
TID095F12-8	9.5 - 9.9	12	16	77.7	45	136.8	-	9	DMP095 - DMP099
TID100F16-8	10 - 10.4	16	20	81.8	48	144.2	144.8	10	DM*100 - DM*104
TID105F16-8	10.5 - 10.9	16	20	85.9	48	148.2	148.8	10	DM*105 - DM*109
TID110F16-8	11 - 11.4	16	20	90	48	152.6	153.2	11	DM*110 - DM*114
TID115F16-8	11.5 - 11.9	16	20	94.1	48	156.6	157.2	11	DM*115 - DM*119
TID120F16-8	12 - 12.4	16	20	98.2	48	161	161.6	12	DM*120 - DM*124
TID125F16-8	12.5 - 12.9	16	20	102.3	48	165	165.6	12	DM*125 - DM*129
TID130F16-8	13 - 13.4	16	20	106.4	48	169.6	170.4	13	DM*130 - DM*134
TID135F16-8	13.5 - 13.9	16	20	110.5	48	173.6	174.4	13	DM*135 - DM*139
TID140F16-8	14 - 14.4	16	20	114.5	48	180.1	180.9	14	DM*140 - DM*144
TID145F16-8	14.5 - 14.9	16	20	118.6	48	184.2	185	14	DM*145 - DM*149
TID150F20-8	15 - 15.9	20	25	122.7	50	193.7	194.6	15	DM*150 - DM*159
TID160F20-8	16 - 16.9	20	25	130.9	50	203.3	204.3	16	DM*160 - DM*169
TID170F20-8	17 - 17.9	20	25	139.1	50	212.9	213.9	17	DM*170 - DM*179
TID180F25-8	18 - 18.9	25	32	147.3	56	228.5	229.6	18	DM*180 - DM*189
TID190F25-8	19 - 19.9	25	32	155.5	56	238	239.1	19	DM*190 - DM*199
TID200F25-8	20 - 20.9	25	32	163.6	56	247.6	-	20	DMP200 - DMP209
TID210F25-8	21 - 21.9	25	32	171.8	56	257.2	-	21	DMP210 - DMP219
TID220F25-8	22 - 22.9	25	32	180	56	266.8	-	22	DMP220 - DMP229
TID230F32-8	23 - 23.9	32	42	188.2	60	280.3	-	23	DMP230 - DMP239
TID240F32-8	24 - 24.9	32	42	196.4	60	289.9	-	24	DMP240 - DMP249
TID250F32-8	25 - 25.9	32	42	204.5	60	299.5	-	25	DMP250 - DMP259

Tool diameter	Hole diameter tolerance*
ø7 - ø17.9	+0.07 / 0
ø18 - ø25.9	+0.085 / 0

*Just for reference

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

SPARE PARTS

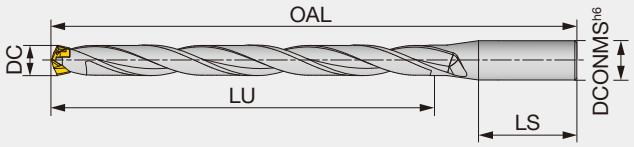
Designation	Clamping key
TID060-095	K-TID6-9.99
TID100-190	K-TID10-19.99
TID200-250	K-TID20-26.99

Reference pages: Head → J024 - J029
Standard cutting conditions → J030

DRILLMEISTER

TIDU L/D=12

Head changeable drill



* Cylindrical shank

Inch	DC	DCONMS	LU	LS	OAL		Pocket size	Head
					DMP	DMC		
TIDU0472R0625-12	0.472 - 0.488	0.625	5.669	1.890	8.228	8.252	12	DM*120 - DM*124
TIDU0492R0625-12	0.492 - 0.508	0.625	5.906	1.890	8.465	8.489	12	DM*125 - DM*129
TIDU0512R0625-12	0.512 - 0.528	0.625	6.142	1.890	8.701	8.732	13	DM*130 - DM*134
TIDU0532R0625-12	0.531 - 0.547	0.625	6.378	1.890	8.937	8.968	13	DM*135 - DM*139
TIDU0551R0625-12	0.551 - 0.567	0.625	6.614	1.890	9.291	9.322	14	DM*140 - DM*144
TIDU0571R0625-12	0.571 - 0.587	0.625	6.850	1.890	9.528	9.559	14	DM*145 - DM*149
TIDU0591R0750-12	0.591 - 0.626	0.750	7.087	1.969	10.000	10.035	15	DM*150 - DM*159
TIDU0630R0750-12	0.630 - 0.665	0.750	7.559	1.969	10.512	10.551	16	DM*160 - DM*169
TIDU0669R0750-12	0.669 - 0.705	0.750	8.031	1.969	11.063	11.102	17	DM*170 - DM*179
TIDU0709R1000-12	0.709 - 0.744	1.000	8.504	2.205	11.811	11.854	18	DM*180 - DM*189
TIDU0748R1000-12	0.748 - 0.783	1.000	8.976	2.205	12.362	12.405	19	DM*190 - DM*199
TIDU0787R1000-12	0.787 - 0.823	1.000	9.449	2.205	12.874	-	20	DMP200 - DM*209
TIDU0827R1000-12	0.827 - 0.862	1.000	9.921	2.205	13.425	-	21	DMP210 - DM*219
TIDU0866R1000-12	0.866 - 0.902	1.000	10.394	2.205	13.976	-	22	DMP220 - DM*229

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

Tool diameter	Hole diameter tolerance*
ø0.472 - ø0.705	+0.0031 / 0
ø0.709 - ø0.902	+0.0037 / 0

*Just for reference

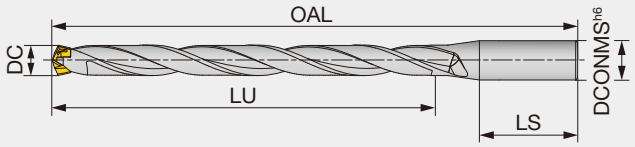
SPARE PARTS

Designation	Clamping key
TIDU472-0748, TID120-190	K-TID10-19.99
TIDU0787-0866,TID200-220	K-TID20-26.99

Reference pages: Head → J024 - J029
Standard cutting conditions → J030

TID L/D=12

Head changeable drill



* Cylindrical shank

Metric	DC	DCONMS	LU	LS	OAL		Pocket size	Head
					DMP	DMC		
TID080R12-12	8 - 8.4	12	97.5	45	156.4	-	8	DM*080-DM*084
TID085R12-12	8.5 - 8.9	12	103.5	45	162.4	-	8	DM*085-DM*089
TID090R12-12	9 - 9.4	12	109.6	45	168.8	-	9	DM*090-DM*094
TID095R12-12	9.5 - 9.9	12	115.7	45	174.8	-	9	DM*095-DM*099
TID100R16-12	10 - 10.4	16	121.8	48	184.2	184.8	10	DM*100-DM*104
TID105R16-12	10.5 - 10.9	16	127.9	48	190.2	190.8	10	DM*105-DM*109
TID110R16-12	11 - 11.4	16	134.0	48	196.6	197.2	11	DM*110-DM*114
TID115R16-12	11.5 - 11.9	16	140.1	48	202.6	203.2	11	DM*115-DM*119
TID120R16-12	12 - 12.4	16	146.2	48	209	209.6	12	DM*120 - DM*124
TID125R16-12	12.5 - 12.9	16	152.3	48	215	215.6	12	DM*125 - DM*129
TID130R16-12	13 - 13.4	16	158.4	48	221.6	222.4	13	DM*130 - DM*134
TID135R16-12	13.5 - 13.9	16	164.5	48	227.6	228.4	13	DM*135 - DM*139
TID140R16-12	14 - 14.4	16	170.5	48	236.2	237	14	DM*140 - DM*144
TID145R16-12	14.5 - 14.9	16	176.6	48	242.2	243	14	DM*145 - DM*149
TID150R20-12	15 - 15.9	20	182.7	50	253.7	254.6	15	DM*150 - DM*159
TID160R20-12	16 - 16.9	20	194.9	50	267.3	268.3	16	DM*160 - DM*169
TID170R20-12	17 - 17.9	20	207.1	50	280.9	281.9	17	DM*170 - DM*179
TID180R25-12	18 - 18.9	25	219.3	56	300.5	301.6	18	DM*180 - DM*189
TID190R25-12	19 - 19.9	25	231.5	56	314	315.1	19	DM*190 - DM*199
TID200R25-12	20 - 20.9	25	243.6	56	327.6	-	20	DM*200 - DM*209
TID210R25-12	21 - 21.9	25	255.8	56	341.2	-	21	DM*210 - DM*219
TID220R25-12	22 - 22.9	25	268	56	354.8	-	22	DM*220 - DM*229

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

Tool diameter	Hole diameter tolerance*
ø8 - ø17.9	+0.08 / 0
ø18 - ø22.9	+0.095 / 0

*Just for reference

SPARE PARTS

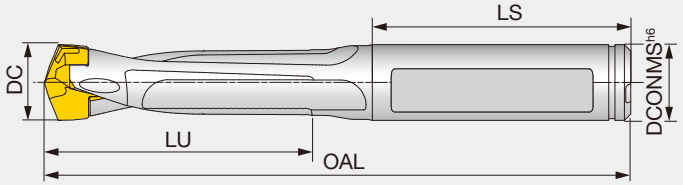
Designation	Clamping key
TID100-190	K-TID10-19.99
TID200-220	K-TID20-26.99

Reference pages: Head → J024 - J029
Standard cutting conditions → J030

DRILLMEISTER

TIDC L/D=3

Head changeable drill



Metric	DC	DCONMS	LU	LS	OAL		Pocket size	Head
					DMP	DMC		
TIDC100C10-3	10 - 10.4	10	31.8	41	86.1	86.7	10	DM*100 - DM*104
TIDC105C11-3	10.5 - 10.9	11	33.4	41	87.6	88.2	10	DM*105 - DM*109
TIDC110C11-3	11 - 11.4	11	35	41	89.5	90.1	11	DM*110 - DM*114
TIDC115C12-3	11.5 - 11.9	12	36.6	41	91	91.6	11	DM*115 - DM*119
TIDC120C12-3	12 - 12.4	12	38.2	41	92.8	93.4	12	DM*120 - DM*124
TIDC125C13-3	12.5 - 12.9	13	39.8	46	98.3	98.9	12	DM*125 - DM*129
TIDC130C13-3	13 - 13.4	13	41.4	47	102.4	103.2	13	DM*130 - DM*134
TIDC135C14-3	13.5 - 13.9	14	43	43	99.9	100.7	13	DM*135 - DM*139
TIDC140C14-3	14 - 14.4	14	44.5	44	103	103.8	14	DM*140 - DM*144
TIDC145C15-3	14.5 - 14.9	15	46.1	45	105.5	106.3	14	DM*145 - DM*149
TIDC150C15-3	15 - 15.9	15	47.7	45	107.5	108.4	15	DM*150 - DM*159
TIDC160C16-3	16 - 16.9	16	50.9	48	117.5	118.5	16	DM*160 - DM*169
TIDC170C17-3	17 - 17.9	17	54.1	48	119.7	120.7	17	DM*170 - DM*179
TIDC180C18-3	18 - 18.9	18	57.3	48	123.3	124.4	18	DM*180 - DM*189
TIDC190C19-3	19 - 19.9	19	60.5	54	132.4	133.5	19	DM*190 - DM*199

Tool diameter	Hole diameter tolerance*
ø10 - ø19.9	+0.05 / 0

*Just for reference

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

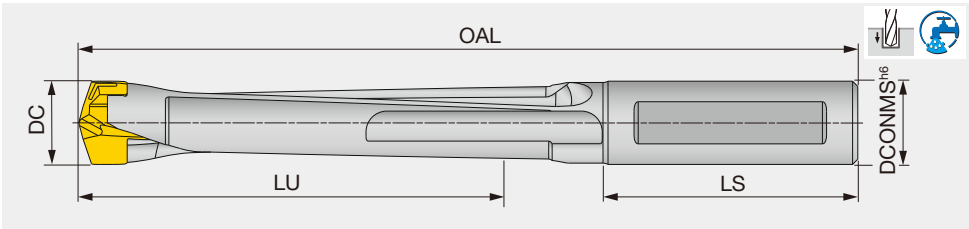
SPARE PARTS

Designation	Clamping key
TIDC100-190	K-TID10-19.99

Reference pages: Head → J024 - J029
Standard cutting conditions → J030

TIDC L/D=5

Head changeable drill



Metric	DC	DCONMS	LU	LS	OAL		Pocket size	Head
					DMP	DMC		
TIDC100C10-5	10 - 10.4	10	51.8	41	106.1	106.7	10	DM*100 - DM*104
TIDC105C11-5	10.5 - 10.9	11	54.4	41	108.6	109.2	10	DM*105 - DM*109
TIDC110C11-5	11 - 11.4	11	57	41	111.5	112.1	11	DM*110 - DM*114
TIDC115C12-5	11.5 - 11.9	12	59.6	41	114	114.6	11	DM*115 - DM*119
TIDC120C12-5	12 - 12.4	12	62.2	41	116.8	117.4	12	DM*120 - DM*124
TIDC125C13-5	12.5 - 12.9	13	64.8	46	124.3	124.9	12	DM*125 - DM*129
TIDC130C13-5	13 - 13.4	13	67.4	47	128.4	129.2	13	DM*130 - DM*134
TIDC135C14-5	13.5 - 13.9	14	70	43	126.9	127.7	13	DM*135 - DM*139
TIDC140C14-5	14 - 14.4	14	72.5	44	131	131.8	14	DM*140 - DM*144
TIDC145C15-5	14.5 - 14.9	15	75.1	45	134.5	135.3	14	DM*145 - DM*149
TIDC150C15-5	15 - 15.9	15	77.7	45	137.5	138.4	15	DM*150 - DM*159
TIDC160C16-5	16 - 16.9	16	82.9	48	149.5	150.5	16	DM*160 - DM*169
TIDC170C17-5	17 - 17.9	17	88.1	48	153.7	154.7	17	DM*170 - DM*179
TIDC180C18-5	18 - 18.9	18	93.3	48	159.3	160.4	18	DM*180 - DM*189
TIDC190C19-5	19 - 19.9	19	98.5	54	170.4	171.5	19	DM*190 - DM*199

An overall length (OAL) differs for when the DMP insert is mounted and when the DMC is mounted. (No difference for the drill shoulder)

Tool diameter	Hole diameter tolerance*
ø10 - ø19.9	+0.05 / 0

*Just for reference

SPARE PARTS

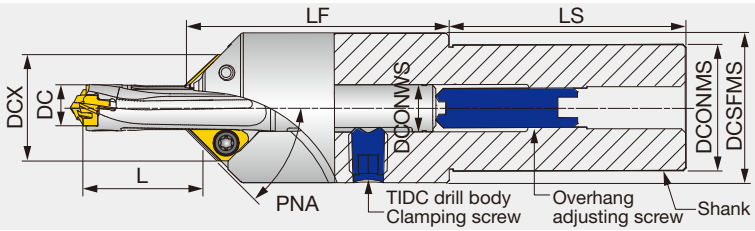
Designation	Clamping key
TIDC100-190	K-TID10-19.99

Reference pages: Head → J024 - J029
Standard cutting conditions → J030

DRILLMEISTER

TIDCF

Chamfering adapter



Inch	DC	DCONMS	DCSFMS	DCX	LF	LS	L* L/D = 3	L* L/D = 5	Drill body	DCONWS
TIDCF100-WU1.00-.394-.409	0.374 - 0.409	1.000	0.984	0.980	2.650	2.560	0.571 - 1.252	1.248 - 2.039	TIDC100C10-...	0.394
TIDCF110-WU1.00-.413-.449	0.413 - 0.449	1.000	0.984	1.020	2.650	2.560	0.618 -1.311	1.228 - 2.134	TIDC105C11-..., TIDC110C11-...	0.433
TIDCF120-WU1.00-.453-.488	0.453 - 0.488	1.000	1.496	1.060	2.650	2.210	0.638 - 1.390	1.343 - 2.256	TIDC115C12-..., TIDC120C12-...	0.472
TIDCF130-WU1.00-.492-.528	0.492 - 0.528	1.000	1.496	1.100	2.650	2.560	0.594 - 1.447	1.331 - 2.339	TIDC125C13-..., TIDC130C13-...	0.512
TIDCF140-WU1.25-.531-.567	0.531 - 0.567	1.250	1.496	1.120	2.650	2.560	0.650 - 1.484	1.441 - 2.425	TIDC135C14-..., TIDC140C14-...	0.551
TIDCF150-WU1.25-.571-.626	0.571 - 0.626	1.250	1.496	1.160	2.650	2.560	0.634 - 1.559	1.563 - 2.551	TIDC145C15-..., TIDC150C15-...	0.591
TIDCF160-WU1.25-.630-.665	0.630 - 0.665	1.250	1.496	1.200	2.650	2.560	0.689 - 1.634	1.681 - 2.677	TIDC160C16-...	0.630
TIDCF170-WU1.25-.669-.705	0.669 - 0.705	1.250	1.496	1.240	2.650	2.560	0.697 - 1.689	1.630 - 2.768	TIDC170C17-...	0.669
TIDCF180-WU1.25-.709-.744	0.709 - 0.744	1.250	1.496	1.280	2.650	2.560	0.713 - 1.772	1.764 - 2.878	TIDC180C18-...	0.709
TIDCF190-WU1.25-.748-.783	0.748 - 0.783	1.250	1.496	1.320	2.950	2.560	0.756 - 1.756	1.732 - 2.909	TIDC190C19-...	0.748

Metric	DC	DCONMS	DCSFMS	DCX	LF	LS	L* L/D = 3	L* L/D = 5	Drill body	DCONWS
TIDCF100-W32	10 - 10.4	32	38	24.9	67.3	60	14.5 - 31.8	31.7 - 51.8	TIDC100C10-...	10
TIDCF110-W32	10.5 - 10.9	32	38	25.9	67.3	60	15.7 - 33.3	31.2 - 54.2	TIDC105C11-...	11
TIDCF110-W32	11 - 11.4	32	38	25.9	67.3	60	16.2 - 35.3	34.1 - 57.3	TIDC110C11-...	11
TIDCF120-W32	11.5 - 11.9	32	38	26.9	67.3	60	15.1 - 36.7	33.8 - 59.4	TIDC115C12-...	12
TIDCF120-W32	12 - 12.4	32	38	26.9	67.3	60	16.5 - 37.7	36.6 - 61.6	TIDC120C12-...	12
TIDCF130-W32	12.5 - 12.9	32	38	27.9	67.3	60	16.1 - 39.6	39.7 - 64.8	TIDC125C13-...	13
TIDCF130-W32	13 - 13.4	32	38	27.9	67.3	60	17.5 - 41.5	42.7 - 68	TIDC130C13-...	13
TIDCF140-W32	13.5 - 13.9	32	38	28.4	67.3	60	17.7 - 42.9	41.4 - 70.3	TIDC135C14-...	14
TIDCF140-W32	14 - 14.4	32	38	28.4	67.3	60	18.1 - 45	44.8 - 73.1	TIDC140C14-...	14
TIDCF150-W32	14.5 - 14.9	32	38	29.4	67.3	60	19.2 - 44.6	44 - 73.9	TIDC145C15-...	15
TIDCF150-W32	15 - 15.9	32	38	29.4	67.3	60	19.7 - 47.4	47.6 - 80.7	TIDC150C15-...	15
TIDCF160-W32	16 - 16.9	32	38	30.4	67.3	60	19.5 - 55.3	57 - 87.5	TIDC160C16-...	16
TIDCF170-W32	17 - 17.9	32	38	31.4	67.3	60	21.4 - 54.9	55.9 - 88.5	TIDC170C17-...	17
TIDCF180-W32	18 - 18.9	32	38	32.4	67.3	60	24.2 - 65.2	60 - 93	TIDC180C18-...	18
TIDCF190-W32	19 - 19.9	32	38	33.4	75	60	28.5 - 62.3	67 - 100	TIDC190C19-...	19

L* is the dimension when using 45° chamfering insert.

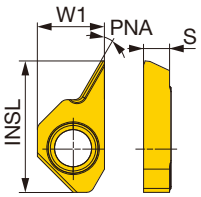
SPARE PARTS

Designation	Clamping screw	Grip	Overhang adjusting screw	Clamping screw of TIDC drill body	Torx bit	Wrench
TIDCF	SR14-544/S	SW6-SD	SRM10X10DIN916	SRM10X1.5S	BT15S	HW5.0

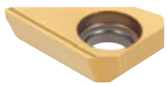
Recommended clamping torque: SR14-544/S = 3.54 lbf·ft, 4.8 N·m

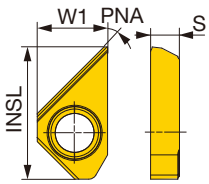
CHAMFERING INSERT

XHGT-30A

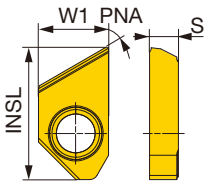


XHGR-45A





XHGR-60A



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	INSL (mm)	W1 (mm)	S (mm)	Coated GH730	Chamfering angle PNA	Maximum width of chamfer ** (mm)
XHGT090300-30A	16.00	8.5	3.3	●	30°	1.5
XHGR090300-45A	16.00	8.5	3.3	●	45°	6
XHGR090300-60A	16.00	8.5	3.3	●	60°	3.5

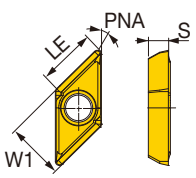
**Please reduce the feed rate to half when chamfering over 60% of maximum width of chamfer.

● : Line up
2 pieces per package

INSERT FOR SPECIAL CHAMFERING ADAPTERS

AOMT...

AOMT**-C45



AOMT**-N-**DT

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

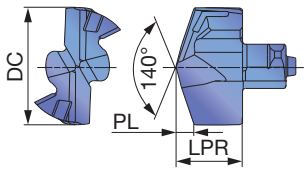
★ : First choice
☆ : Second choice

Designation	W1 (mm)	S (mm)	Coated GH730	LE (mm)	Chamfering angle PNA
AOMT060204-C45	0.223	0.077	●	0.177	45°
AOMT030204-N-30DT	0.157	0.063	●	0.157	30°
AOMT030204-N-45DT	0.110	0.063	●	0.157	45°

● : Line up

DRILL HEAD

DMP General purpose



Tool diameter (Inch)	ø0.236" - ø0.705"	ø0.709" - ø1.020"
Head diameter tolerance	+0.0007" / 0	+0.0008" / 0

Tool diameter (mm)	ø6 - ø17.9	ø18 - ø25.9
Head diameter tolerance	+0.018 / 0	+0.021 / 0

P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	★
N	Non-ferrous	☆	☆
S	Superalloys	★	★
H	Hard materials	★	★

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated AH725	Coated AH9130	PL (mm)	SSC	Pocket Size	Body
DMP060	0.236	6	4	●		1.09	6	6	TID*060...
DMP061	0.240	6.1	4	●		1.11	6	6	TID*060...
DMP062	0.244	6.2	4	●		1.13	6	6	TID*060...
DMP063	0.248	6.3	4	●		1.14	6	6	TID*060...
DMP064	0.252	6.4	4	●		1.16	6	6	TID*060...
DMP065	0.256	6.5	4.3	●		1.27	6	6	TID*065...
DMP066	0.260	6.6	4.3	●		1.29	6	6	TID*065...
DMP067	0.264	6.7	4.3	●		1.31	6	6	TID*065...
DMP068	0.268	6.8	4.3	●		1.33	6	6	TID*065...
DMP069	0.272	6.9	4.3	●		1.34	6	6	TID*065...
DMP070	0.276	7	4.6	●		1.03	7	7	TID*070...
DMP071	0.280	7.1	4.6	●		1.05	7	7	TID*070...
DMP072	0.283	7.2	4.6	●		1.07	7	7	TID*070...
DMP073	0.287	7.3	4.6	●		1.08	7	7	TID*070...
DMP074	0.291	7.4	4.6	●		1.1	7	7	TID*070...
DMP075	0.295	7.5	4.6	●		1.12	7	7	TID*075...
DMP076	0.299	7.6	4.6	●		1.14	7	7	TID*075...
DMP077	0.303	7.7	4.6	●		1.16	7	7	TID*075...
DMP078	0.307	7.8	4.6	●		1.18	7	7	TID*075...
DMP079	0.311	7.9	4.6	●		1.19	7	7	TID*075...
DMP080	0.315	8	5.4	●		1.2	8	8	TID*080...
DMP081	0.319	8.1	5.4	●		1.22	8	8	TID*080...
DMP082	0.323	8.2	5.4	●		1.24	8	8	TID*080...
DMP083	0.327	8.3	5.4	●		1.25	8	8	TID*080...
DMP084	0.331	8.4	5.4	●		1.27	8	8	TID*080...
DMP085	0.335	8.5	5.4	●		1.29	8	8	TID*085...
DMP086	0.339	8.6	5.4	●		1.31	8	8	TID*085...
DMP087	0.343	8.7	5.4	●		1.33	8	8	TID*085...
DMP088	0.346	8.80	5.4	●		1.35	8	8	TID*085...
DMP089	0.350	8.9	5.4	●		1.36	8	8	TID*085...
DMP090	0.354	9	5.8	●		1.37	9	9	TID*090...
DMP091	0.358	9.1	5.8	●		1.39	9	9	TID*090...
DMP092	0.362	9.2	5.8	●		1.41	9	9	TID*090...
DMP093	0.366	9.3	5.8	●		1.42	9	9	TID*090...
DMP094	0.370	9.4	5.8	●		1.44	9	9	TID*090...
DMP095	0.374	9.5	5.8	●		1.46	9	9	TID*095...
DMP096	0.378	9.6	5.8	●		1.48	9	9	TID*095...
DMP097	0.382	9.7	5.8	●		1.5	9	9	TID*095...
DMP098	0.386	9.8	5.8	●		1.52	9	9	TID*095...
DMP099	0.390	9.9	5.8	●		1.53	9	9	TID*095...
DMP100	0.394	10	6.05	●	●	1.47	10	10	TID*100...
DMP101	0.398	10.1	6.05	●		1.49	10	10	TID*100...
DMP102	0.402	10.2	6.05	●		1.51	10	10	TID*100...
DMP103	0.406	10.3	6.05	●		1.52	10	10	TID*100...
DMP104	0.409	10.4	6.05	●		1.54	10	10	TID*100...

● : Line up

P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	★
N	Non-ferrous	☆	☆
S	Superalloys	★	★
H	Hard materials	★	★

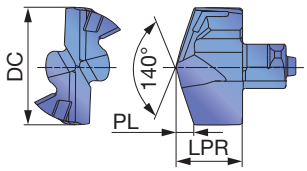
★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated		PL (mm)	SSC	Pocket Size	Body
				AH725	AH9130				
DMP105	0.413	10.5	6.05	●	●	1.56	10	10	TID*105...
DMP106	0.417	10.6	6.05	●		1.58	10	10	TID*105...
DMP107	0.421	10.7	6.05	●		1.6	10	10	TID*105...
DMP108	0.425	10.8	6.05	●	●	1.62	10	10	TID*105...
DMP109	0.429	10.9	6.05	●		1.63	10	10	TID*105...
DMP110	0.433	11	6.45	●	●	1.67	11	11	TID*110...
DMP111	0.437	11.1	6.45	●		1.69	11	11	TID*110...
DMP112	0.441	11.2	6.45	●		1.71	11	11	TID*110...
DMP113	0.445	11.3	6.45	●		1.72	11	11	TID*110...
DMP114	0.449	11.4	6.45	●		1.74	11	11	TID*110...
DMP115	0.453	11.5	6.45	●	●	1.76	11	11	TID*115...
DMP116	0.457	11.6	6.45	●		1.78	11	11	TID*115...
DMP117	0.461	11.7	6.45	●		1.8	11	11	TID*115...
DMP118	0.465	11.8	6.45	●		1.82	11	11	TID*115...
DMP119	0.469	11.9	6.45	●		1.83	11	11	TID*115...
DMP120	0.472	12	6.8	●	●	1.82	12	12	TID*120...
DMP121	0.476	12.1	6.8	●		1.84	12	12	TID*120...
DMP122	0.480	12.2	6.8	●		1.86	12	12	TID*120...
DMP123	0.484	12.3	6.8	●		1.87	12	12	TID*120...
DMP124	0.488	12.4	6.8	●		1.89	12	12	TID*120...
DMP125	0.492	12.5	6.8	●	●	1.91	12	12	TID*125..
DMP126	0.496	12.6	6.8	●	●	1.93	12	12	TID*125..
DMP127	0.500	12.7	6.8	●		1.95	12	12	TID*125..
DMP128	0.504	12.8	6.8	●		1.97	12	12	TID*125..
DMP129	0.508	12.9	6.8	●		1.98	12	12	TID*125..
DMP130	0.512	13	7.4	●	●	1.96	13	13	TID*130...
DMP131	0.516	13.1	7.4	●		1.98	13	13	TID*130...
DMP132	0.520	13.2	7.4	●		2	13	13	TID*130...
DMP133	0.524	13.3	7.4	●		2.01	13	13	TID*130...
DMP134	0.528	13.4	7.4	●		2.03	13	13	TID*130...
DMP135	0.531	13.5	7.4	●	●	2.05	13	13	TID*135...
DMP136	0.535	13.6	7.4	●		2.07	13	13	TID*135...
DMP137	0.539	13.7	7.4	●		2.09	13	13	TID*135...
DMP138	0.543	13.8	7.4	●	●	2.11	13	13	TID*135...
DMP139	0.547	13.90	7.4	●		2.12	13	13	TID*135...
DMP140	0.551	14	7.95	●	●	2.12	14	14	TID*140...
DMP141	0.555	14.1	7.95	●		2.14	14	14	TID*140...
DMP142	0.559	14.2	7.95	●	●	2.16	14	14	TID*140...
DMP143	0.563	14.3	7.95	●		2.17	14	14	TID*140...
DMP144	0.567	14.4	7.95	●		2.19	14	14	TID*140...
DMP145	0.571	14.5	7.95	●	●	2.21	14	14	TID*145...
DMP146	0.575	14.6	7.95	●		2.23	14	14	TID*145...
DMP147	0.579	14.7	7.95	●		2.25	14	14	TID*145...
DMP148	0.583	14.8	7.95	●		2.27	14	14	TID*145...
DMP149	0.587	14.9	7.95	●		2.28	14	14	TID*145...
DMP150	0.591	15	8.53	●	●	2.27	15	15	TID*150...
DMP151	0.594	15.1	8.53	●		2.29	15	15	TID*150...
DMP152	0.598	15.2	8.53	●	●	2.31	15	15	TID*150...
DMP153	0.602	15.3	8.53	●		2.32	15	15	TID*150...
DMP154	0.606	15.4	8.53	●		2.34	15	15	TID*150...
DMP155	0.610	15.5	8.53	●	●	2.36	15	15	TID*150...
DMP156	0.614	15.6	8.53	●		2.38	15	15	TID*150...
DMP157	0.618	15.7	8.53	●		2.4	15	15	TID*150...
DMP158	0.622	15.8	8.53	●	●	2.42	15	15	TID*150...
DMP159	0.626	15.9	8.53	●		2.43	15	15	TID*150...
DMP160	0.630	16	9.1	●	●	2.42	16	16	TID*160...
DMP161	0.634	16.1	9.1	●		2.44	16	16	TID*160...

ø6 - ø19.9 = 2 pieces per package
ø20 - ø25.9 = 1 piece per package

● : Line up

DMP General purpose



Tool diameter (Inch)	ø0.236" - ø0.705"	ø0.709" - ø1.020"
Head diameter tolerance	+0.0007" / 0	+0.0008" / 0
Tool diameter (mm)	**ø6 - ø17.9**	**ø18 - ø25.9**
Head diameter tolerance	+0.018 / 0	+0.021 / 0

		AH725	AH9130
P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	★
N	Non-ferrous	☆	☆
S	Superalloys	★	★
H	Hard materials	★	★

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated AH725	Coated AH9130	PL (mm)	SSC	Pocket Size	Body
DMP162	0.638	16.2	9.1	●		2.46	16	16	TID*160...
DMP163	0.642	16.3	9.1	●		2.47	16	16	TID*160...
DMP164	0.646	16.4	9.1	●		2.49	16	16	TID*160...
DMP165	0.650	16.5	9.1	●	●	2.51	16	16	TID*160...
DMP166	0.654	16.6	9.1	●		2.53	16	16	TID*160...
DMP1666	0.656	16.66	9.1	●		2.54	16	16	TID*160...
DMP167	0.657	16.7	9.1	●		2.55	16	16	TID*160...
DMP168	0.661	16.8	9.1	●		2.57	16	16	TID*160...
DMP169	0.665	16.9	9.1	●		2.58	16	16	TID*160...
DMP170	0.669	17	9.7	●	●	2.59	17	17	TID*170...
DMP171	0.673	17.1	9.7	●		2.61	17	17	TID*170...
DMP172	0.677	17.2	9.7	●		2.63	17	17	TID*170...
DMP173	0.681	17.3	9.7	●		2.64	17	17	TID*170...
DMP174	0.685	17.4	9.7	●		2.66	17	17	TID*170...
DMP175	0.689	17.5	9.7	●	●	2.68	17	17	TID*170...
DMP176	0.693	17.6	9.7	●		2.7	17	17	TID*170...
DMP177	0.697	17.7	9.7	●		2.72	17	17	TID*170...
DMP178	0.701	17.8	9.7	●		2.74	17	17	TID*170...
DMP179	0.705	17.9	9.7	●		2.75	17	17	TID*170...
DMP180	0.709	18	10.3	●	●	2.73	18	18	TID*180...
DMP181	0.713	18.1	10.3	●		2.75	18	18	TID*180...
DMP182	0.717	18.2	10.3	●		2.77	18	18	TID*180...
DMP183	0.720	18.3	10.3	●		2.78	18	18	TID*180...
DMP184	0.724	18.4	10.3	●		2.8	18	18	TID*180...
DMP185	0.728	18.5	10.3	●	●	2.82	18	18	TID*180...
DMP186	0.732	18.6	10.3	●		2.84	18	18	TID*180...
DMP187	0.736	18.7	10.3	●		2.86	18	18	TID*180...
DMP188	0.740	18.8	10.3	●		2.88	18	18	TID*180...
DMP189	0.744	18.9	10.3	●		2.89	18	18	TID*180...
DMP190	0.748	19	10.8	●	●	2.88	19	19	TID*190...
DMP1905	0.750	19.05	10.8	●		2.89	19	19	TID*190...
DMP191	0.752	19.1	10.8	●		2.9	19	19	TID*190...
DMP192	0.756	19.2	10.8	●		2.92	19	19	TID*190...
DMP193	0.760	19.3	10.8	●		2.93	19	19	TID*190...
DMP194	0.764	19.4	10.8	●		2.93	19	19	TID*190...
DMP1946	0.766	19.46	10.8	●		2.96	19	19	TID*190...
DMP195	0.768	19.5	10.8	●	●	2.97	19	19	TID*190...
DMP196	0.772	19.6	10.8	●		2.99	19	19	TID*190...
DMP197	0.776	19.7	10.8	●		3.01	19	19	TID*190...
DMP198	0.780	19.8	10.8	●		3.03	19	19	TID*190...
DMP1984	0.781	19.84	10.8	●		3.03	19	19	TID*190...
DMP199	0.783	19.9	10.8	●		3.04	19	19	TID*190...
DMP200	0.787	20	11.4	●		3.02	20	20	TID*200...
DMP201	0.791	20.1	11.4	●		3.04	20	20	TID*200...
DMP202	0.795	20.2	11.4	●		3.06	20	20	TID*200...
DMP203	0.799	20.3	11.4	●		3.07	20	20	TID*200...
DMP204	0.803	20.4	11.4	●		3.09	20	20	TID*200...

● : Line up

P	Steel	★	★
M	Stainless	★	★
K	Cast iron	★	★
N	Non-ferrous	☆	☆
S	Superalloys	★	★
H	Hard materials	★	★

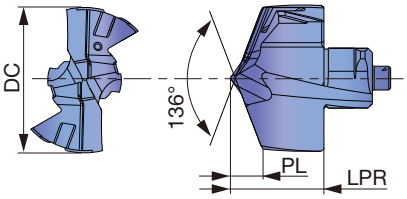
★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated		PL (mm)	SSC	Pocket Size	Body
				AH725	AH9130				
DMP205	0.807	20.5	11.4	●		3.11	20	20	TID*200...
DMP206	0.811	20.6	11.4	●		3.13	20	20	TID*200...
DMP207	0.815	20.7	11.4	●		3.15	20	20	TID*200...
DMP208	0.819	20.8	11.4	●		3.17	20	20	TID*200...
DMP209	0.823	20.9	11.4	●		3.18	20	20	TID*200...
DMP210	0.827	21	11.98	●		3.18	21	21	TID*210...
DMP211	0.831	21.1	11.98	●		3.2	21	21	TID*210...
DMP212	0.835	21.2	11.98	●		3.22	21	21	TID*210...
DMP213	0.839	21.3	11.98	●		3.23	21	21	TID*210...
DMP214	0.843	21.4	11.98	●		3.25	21	21	TID*210...
DMP215	0.846	21.5	11.98	●		3.27	21	21	TID*210...
DMP216	0.850	21.6	11.98	●		3.29	21	21	TID*210...
DMP217	0.854	21.7	11.98	●		3.31	21	21	TID*210...
DMP218	0.858	21.8	11.98	●		3.33	21	21	TID*210...
DMP219	0.862	21.9	11.98	●		3.34	21	21	TID*210...
DMP220	0.866	22	12.56	●		3.32	22	22	TID*220...
DMP221	0.870	22.1	12.56	●		3.34	22	22	TID*220...
DMP222	0.874	22.2	12.56	●		3.36	22	22	TID*220...
DMP223	0.878	22.3	12.56	●		3.37	22	22	TID*220...
DMP224	0.882	22.4	12.56	●		3.39	22	22	TID*220...
DMP225	0.886	22.5	12.56	●		3.41	22	22	TID*220...
DMP226	0.890	22.6	12.56	●		3.43	22	22	TID*220...
DMP227	0.894	22.7	12.56	●		3.45	22	22	TID*220...
DMP228	0.898	22.8	12.56	●		3.47	22	22	TID*220...
DMP229	0.902	22.9	12.56	●		3.48	22	22	TID*220...
DMP230	0.906	23	13.13	●		3.46	23	23	TID*230...
DMP231	0.909	23.1	13.13	●		3.48	23	23	TID*230...
DMP232	0.913	23.2	13.13	●		3.5	23	23	TID*230...
DMP233	0.917	23.3	13.13	●		3.51	23	23	TID*230...
DMP234	0.921	23.4	13.13	●		3.53	23	23	TID*230...
DMP235	0.925	23.5	13.13	●		3.55	23	23	TID*230...
DMP236	0.929	23.6	13.13	●		3.57	23	23	TID*230...
DMP237	0.933	23.7	13.13	●		3.59	23	23	TID*230...
DMP238	0.937	23.8	13.13	●		3.61	23	23	TID*230...
DMP239	0.941	23.9	13.13	●		3.62	23	23	TID*230...
DMP240	0.945	24	13.7	●		3.62	24	24	TID*240...
DMP241	0.949	24.1	13.7	●		3.64	24	24	TID*240...
DMP242	0.953	24.2	13.7	●		3.66	24	24	TID*240...
DMP243	0.957	24.3	13.7	●		3.67	24	24	TID*240...
DMP244	0.961	24.4	13.7	●		3.69	24	24	TID*240...
DMP245	0.965	24.5	13.7	●		3.71	24	24	TID*240...
DMP246	0.969	24.6	13.7	●		3.73	24	24	TID*240...
DMP247	0.972	24.7	13.7	●		3.75	24	24	TID*240...
DMP248	0.976	24.8	13.7	●		3.77	24	24	TID*240...
DMP249	0.980	24.9	13.7	●		3.78	24	24	TID*240...
DMP250	0.984	25	14.3	●		3.8	25	25	TID*250...
DMP251	0.988	25.1	14.3	●		3.82	25	25	TID*250...
DMP252	0.992	25.2	14.3	●		3.84	25	25	TID*250...
DMP253	0.996	25.3	14.3	●		3.85	25	25	TID*250...
DMP254	1.000	25.4	14.3	●		3.87	25	25	TID*250...
DMP255	1.004	25.5	14.3	●		3.89	25	25	TID*250...
DMP256	1.008	25.6	14.3	●		3.91	25	25	TID*250...
DMP257	1.012	25.7	14.3	●		3.92	25	25	TID*250...
DMP258	1.016	25.8	14.3	●		3.95	25	25	TID*250...
DMP259	1.020	25.9	14.3	●		3.96	25	25	TID*250...

ø10 - ø19.9 = 2 pieces per package

● : Line up

DMC High precision machining



Tool diameter (Inch)	ø0.394" - ø0.705"	ø0.709" - ø0.783 "
Head diameter tolerance	+0.0007" / 0	+0.0008" / 0

Tool diameter (mm)	ø10 - ø17.9	ø18 - ø19.9
Head diameter tolerance	+0.018 / 0	+0.021 / 0

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated AH9130	PL (mm)	SSC	Pocket Size	Body
DMC100	0.394	10	6.67	●	2.09	10	10	TID*100...
DMC101	0.398	10.1	6.67	●	2.11	10	10	TID*100...
DMC102	0.402	10.2	6.67	●	2.13	10	10	TID*100...
DMC103	0.406	10.3	6.67	●	2.15	10	10	TID*100...
DMC104	0.409	10.4	6.67	●	2.17	10	10	TID*100...
DMC105	0.413	10.5	6.67	●	2.19	10	10	TID*105...
DMC106	0.417	10.6	6.67	●	2.21	10	10	TID*105...
DMC107	0.421	10.7	6.67	●	2.23	10	10	TID*105...
DMC108	0.425	10.8	6.67	●	2.25	10	10	TID*105...
DMC109	0.429	10.9	6.67	●	2.27	10	10	TID*105...
DMC110	0.433	11	7.1	●	2.32	11	11	TID*110...
DMC111	0.437	11.1	7.1	●	2.34	11	11	TID*110...
DMC112	0.441	11.2	7.1	●	2.36	11	11	TID*110...
DMC113	0.445	11.3	7.1	●	2.38	11	11	TID*110...
DMC114	0.449	11.4	7.1	●	2.4	11	11	TID*110...
DMC115	0.453	11.5	7.1	●	2.42	11	11	TID*115...
DMC116	0.457	11.6	7.1	●	2.44	11	11	TID*115...
DMC117	0.461	11.7	7.1	●	2.46	11	11	TID*115...
DMC118	0.465	11.8	7.1	●	2.48	11	11	TID*115...
DMC119	0.469	11.9	7.1	●	2.5	11	11	TID*115...
DMC120	0.472	12	7.43	●	2.45	12	12	TID*120...
DMC121	0.476	12.1	7.43	●	2.47	12	12	TID*120...
DMC122	0.480	12.2	7.43	●	2.49	12	12	TID*120...
DMC123	0.484	12.3	7.43	●	2.51	12	12	TID*120...
DMC124	0.488	12.4	7.43	●	2.53	12	12	TID*120...
DMC125	0.492	12.5	7.43	●	2.55	12	12	TID*125...
DMC126	0.496	12.6	7.43	●	2.57	12	12	TID*125...
DMC127	0.500	12.7	7.43	●	2.59	12	12	TID*125...
DMC128	0.504	12.8	7.43	●	2.61	12	12	TID*125...
DMC129	0.508	12.9	7.43	●	2.63	12	12	TID*125...
DMC130	0.512	13	8.15	●	2.71	13	13	TID*130...
DMC131	0.516	13.1	8.15	●	2.73	13	13	TID*130...
DMC132	0.520	13.2	8.15	●	2.75	13	13	TID*130...
DMC133	0.524	13.3	8.15	●	2.77	13	13	TID*130...
DMC134	0.528	13.4	8.15	●	2.79	13	13	TID*130...
DMC135	0.531	13.5	8.15	●	2.81	13	13	TID*135...
DMC136	0.535	13.6	8.15	●	2.83	13	13	TID*135...
DMC137	0.539	13.7	8.15	●	2.85	13	13	TID*135...
DMC138	0.543	13.8	8.15	●	2.87	13	13	TID*135...
DMC139	0.547	13.9	8.15	●	2.89	13	13	TID*135...
DMC140	0.551	14	8.76	●	2.93	14	14	TID*140...
DMC141	0.555	14.1	8.76	●	2.95	14	14	TID*140...
DMC142	0.559	14.2	8.76	●	2.97	14	14	TID*140...
DMC143	0.563	14.3	8.76	●	2.99	14	14	TID*140...
DMC144	0.567	14.4	8.76	●	3.01	14	14	TID*140...
DMC145	0.571	14.5	8.76	●	3.03	14	14	TID*145...
DMC146	0.575	14.6	8.76	●	3.05	14	14	TID*145...

● : Line up

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	LPR (mm)	Coated	PL (mm)	SSC	Pocket Size	Body
				AH9130				
DMC147	0.579	14.7	8.76	●	3.07	14	14	TID*145...
DMC148	0.583	14.8	8.76	●	3.09	14	14	TID*145...
DMC149	0.587	14.9	8.76	●	3.11	14	14	TID*145...
DMC150	0.591	15	9.44	●	3.18	15	15	TID*150...
DMC151	0.594	15.1	9.44	●	3.2	15	15	TID*150...
DMC152	0.598	15.2	9.44	●	3.22	15	15	TID*150...
DMC153	0.602	15.3	9.44	●	3.24	15	15	TID*150...
DMC154	0.606	15.4	9.44	●	3.26	15	15	TID*150...
DMC155	0.610	15.5	9.44	●	3.28	15	15	TID*150...
DMC156	0.614	15.6	9.44	●	3.3	15	15	TID*150...
DMC157	0.618	15.7	9.44	●	3.32	15	15	TID*150...
DMC158	0.622	15.8	9.44	●	3.34	15	15	TID*150...
DMC159	0.626	15.9	9.44	●	3.36	15	15	TID*150...
DMC160	0.630	16	10.07	●	3.39	16	16	TID*160...
DMC161	0.634	16.1	10.07	●	3.41	16	16	TID*160...
DMC162	0.638	16.2	10.07	●	3.43	16	16	TID*160...
DMC163	0.642	16.3	10.07	●	3.45	16	16	TID*160...
DMC164	0.646	16.4	10.07	●	3.47	16	16	TID*160...
DMC165	0.650	16.5	10.07	●	3.49	16	16	TID*160...
DMC166	0.654	16.6	10.07	●	3.51	16	16	TID*160...
DMC167	0.657	16.7	10.07	●	3.53	16	16	TID*160...
DMC168	0.661	16.8	10.07	●	3.55	16	16	TID*160...
DMC169	0.665	16.9	10.07	●	3.57	16	16	TID*160...
DMC170	0.669	17	10.68	●	3.57	17	17	TID*170...
DMC171	0.673	17.1	10.68	●	3.59	17	17	TID*170...
DMC172	0.677	17.2	10.68	●	3.61	17	17	TID*170...
DMC173	0.681	17.3	10.68	●	3.63	17	17	TID*170...
DMC174	0.685	17.4	10.68	●	3.65	17	17	TID*170...
DMC175	0.689	17.5	10.68	●	3.67	17	17	TID*170...
DMC176	0.693	17.6	10.68	●	3.69	17	17	TID*170...
DMC177	0.697	17.7	10.68	●	3.71	17	17	TID*170...
DMC178	0.701	17.8	10.68	●	3.73	17	17	TID*170...
DMC179	0.705	17.9	10.68	●	3.75	17	17	TID*170...
DMC180	0.709	18	11.35	●	3.78	18	18	TID*180...
DMC181	0.713	18.1	11.35	●	3.8	18	18	TID*180...
DMC182	0.717	18.2	11.35	●	3.82	18	18	TID*180...
DMC183	0.720	18.3	11.35	●	3.84	18	18	TID*180...
DMC184	0.724	18.4	11.35	●	3.86	18	18	TID*180...
DMC185	0.728	18.5	11.35	●	3.88	18	18	TID*180...
DMC186	0.732	18.6	11.35	●	3.9	18	18	TID*180...
DMC187	0.736	18.7	11.35	●	3.92	18	18	TID*180...
DMC188	0.740	18.8	11.35	●	3.94	18	18	TID*180...
DMC189	0.744	18.9	11.35	●	3.96	18	18	TID*180...
DMC190	0.748	19	11.91	●	3.99	19	19	TID*190...
DMC191	0.752	19.1	11.91	●	4.01	19	19	TID*190...
DMC192	0.756	19.2	11.91	●	4.03	19	19	TID*190...
DMC193	0.760	19.3	11.91	●	4.05	19	19	TID*190...
DMC194	0.764	19.4	11.91	●	4.07	19	19	TID*190...
DMC195	0.768	19.5	11.91	●	4.09	19	19	TID*190...
DMC196	0.772	19.6	11.91	●	4.11	19	19	TID*190...
DMC197	0.776	19.7	11.91	●	4.13	19	19	TID*190...
DMC198	0.780	19.8	11.91	●	4.15	19	19	TID*190...
DMC199	0.783	19.9	11.91	●	4.17	19	19	TID*190...

● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) DC (in) ø0.236 - ø0.311	ø0.315 - 0.390	ø0.394 - ø0.469	ø0.472 - ø0.547	ø0.551 - ø0.626	ø0.630 - ø0.783	ø0.787 - ø1.020
P	Low carbon steel (C < 0.3) 1018, 1020, 1026, etc.	262 - 459	0.004 - 0.005	0.005 - 0.010	0.006 - 0.011	0.007 - 0.012	0.008 - 0.014	0.010 - 0.018	0.010 - 0.018
P	High carbon steel (C > 0.3) 1045, 1055, etc.	230 - 394	0.004 - 0.005	0.005 - 0.010	0.006 - 0.011	0.007 - 0.012	0.008 - 0.014	0.010 - 0.018	0.010 - 0.018
P	Low alloy steel 5120, etc.	230 - 394	0.003 - 0.005	0.004 - 0.010	0.006 - 0.011	0.006 - 0.013	0.007 - 0.014	0.009 - 0.016	0.010 - 0.018
P	Alloy steel 4140, 8620, etc.	131 - 295	0.003 - 0.005	0.004 - 0.010	0.006 - 0.011	0.006 - 0.013	0.007 - 0.014	0.009 - 0.016	0.010 - 0.018
M	Stainless steel 304SS, 316SS, 17-4PH, etc.	98 - 230	0.003 - 0.004	0.004 - 0.006	0.005 - 0.007	0.006 - 0.008	0.006 - 0.009	0.006 - 0.010	0.007 - 0.012
K	Gray cast iron Class 25, Class 30, etc.	262 - 591	0.005 - 0.007	0.006 - 0.012	0.008 - 0.014	0.010 - 0.016	0.012 - 0.018	0.014 - 0.022	0.014 - 0.024
K	Ductile cast iron 60-40-18, 60-55-06, etc.	262 - 459	0.005 - 0.007	0.006 - 0.012	0.008 - 0.014	0.010 - 0.016	0.012 - 0.018	0.014 - 0.022	0.014 - 0.024
N	Aluminum alloys 6061, 7075, etc.	262 - 722	0.004 - 0.008	0.008 - 0.014	0.010 - 0.016	0.012 - 0.018	0.014 - 0.020	0.016 - 0.024	0.020 - 0.030
S	Titanium alloys Ti-6Al-4V, etc.	66 - 164	0.002 - 0.003	0.002 - 0.005	0.003 - 0.006	0.004 - 0.011	0.005 - 0.008	0.006 - 0.009	0.007 - 0.011
S	Nickel-based alloys	66 - 164	0.002 - 0.003	0.002 - 0.004	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.005 - 0.009	0.006 - 0.009
H	Hardened steel	66 - 164	0.002 - 0.003	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.009	0.006 - 0.010

Cutting conditions in the above table show standard cutting conditions.
Cutting conditions may change due to the rigidity and power of the machine and the workpiece material.
Machined hole diameter may change depending upon the rigidity of the machine tool or cutting conditions.
In case of L/D = 8,12 drill, the recommended range of cutting speeds and feeds is between the minimum and median values listed above.

CLAMPING KEY FOR MEASURING UN-CLAMPING TORQUE

To check drill body duration, measure un-clamping torque by using a torque-driver
Recommended value of un-clamping torque that means usable limit of a drill body shown in below table.

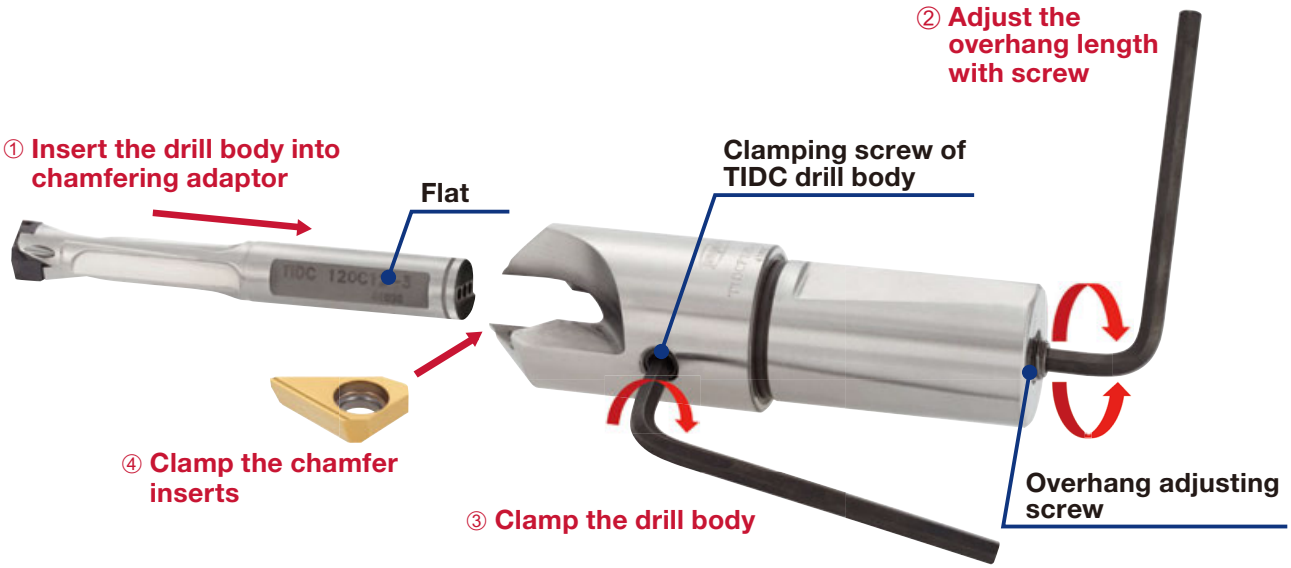
Clamping key for measuring un-clamping torque:
KHS-TID10-19.99

* The clamping key can be used with general torque drivers.

Head Designation	Recommended value of un-clamping torque that means usable limit of a drill body (N·m)	(cN·m)
DM*100-109	0.2	20
DM*110-119	0.2	20
DM*120-129	0.25	25
DM*130-139	0.25	25
DM*140-149	0.3	30
DM*150-159	0.3	30
DM*160-169	0.35	35
DM*170-179	0.35	35
DM*180-189	0.4	40
DM*190-199	0.4	40

HOW TO MOUNT THE TIDC DRILL BODY INTO THE CHAMFER ADAPTOR

The overhang length of the drill can be changed by the adjusting screw at the bottom of the adaptor.
The rear end of the drill body must be in contact with the adjusting screw as the screw supports the drill against thrust force when drilling.



Procedure

① Place the TIDC drill body into the chamfer adaptor without chamfer inserts.
② Adjust the overhang length of the drill body with the adjusting screw at the bottom of the adaptor.
③ Adjust the position of the drill body so that the drill body is fixed at the flat and tighten the clamping screw of the drill body. This aligns the flutes of the TIDC drill body with the chamfer inserts.
④ To clamp the chamfer inserts, tighten the clamping screw of the insert while pushing the insert into the insert pocket.

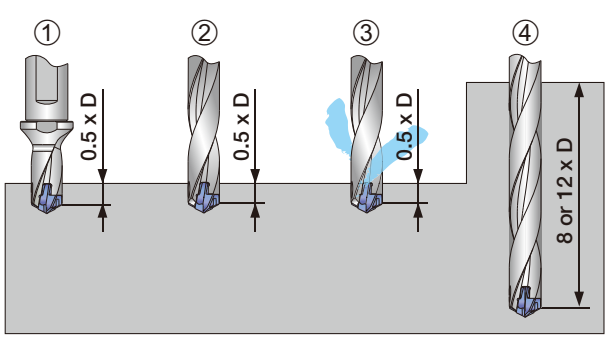
Notice
Before removing the drill body from the adaptor, chamfer inserts must be unclamped. The overhang adjusting screw can be handled from the top of the adaptor with flat blade screwdriver. In this way, the overhang length of the drill body can be adjusted after the adaptor is positioned on the drill shank.

PARTS

Clamping screw of TIDC drill body	Overhang adjusting screw	Wrench	Chamfering Insert screw	Wrench	
				Torx bit	Grip
SRM10x10DIN916	SRM10x1.5S	HW5.0	SR14-544/S ***	BT15S	SW6-SD

*** **SR14-544/S :** 5 pieces per package

CAUTION FOR USING DRILLS WITH L/D = 8 & 12



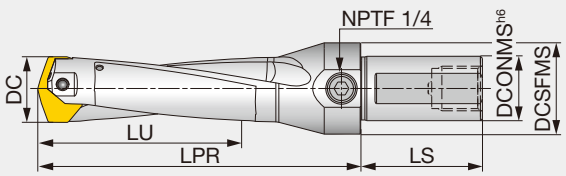
① Drill a pilot hole in the depth of 0.5 x D.
The same head diameter should be used for a pilot hole and a deep hole.
② Rotate the drill at a low speed, such as 100 min^{-1}, and feed it slowly into the pilot hole until the drill reaches several millimeters from the bottom.
③ Supply the coolant and rotate the drill at the recommended speed.
④ Drill the required depth under the recommended cutting conditions.

Note: In case of making L/D= 8 & 12 depth hole without a pilot hole, DMC type head should be used.

DRILL FORCE MEISTER

TISU L/D=3

Head indexable drill



Inch	DCN	DCX	DCONMS	DCSFMS	LU	LPR	LS	Pocket size	Head
TISU1024F1250-3	1.024	1.059	1.250	1.772	3.257	5.315	2.362	26	SMP26*
TISU1063F1250-3	1.063	1.098	1.250	1.772	3.382	5.453	2.362	27	SMP27*
TISU1102F1250-3	1.102	1.138	1.250	1.772	3.508	5.606	2.362	28	SMP28*
TISU1142F1250-3	1.142	1.177	1.250	1.772	3.633	5.744	2.362	29	SMP29*
TISU1181F1250-3	1.181	1.217	1.250	1.772	3.758	5.894	2.362	30	SMP30*
TISU1220F1250-3	1.220	1.256	1.250	1.772	3.883	6.031	2.362	31	SMP31*
TISU1260F1500-3	1.260	1.295	1.500	2.165	4.009	6.378	2.677	32	SMP32*
TISU1299F1500-3	1.299	1.335	1.500	2.165	4.134	6.516	2.677	33	SMP33*
TISU1339F1500-3	1.339	1.374	1.500	2.165	4.260	6.654	2.677	34	SMP34*
TISU1378F1500-3	1.378	1.413	1.500	2.165	4.385	6.807	2.677	35	SMP35*
TISU1417F1500-3	1.417	1.453	1.500	2.165	4.510	6.945	2.677	36	SMP36*
TISU1457F1500-3	1.457	1.492	1.500	2.165	4.635	7.083	2.677	37	SMP37*
TISU1496F1500-3	1.496	1.531	1.500	2.165	4.760	7.240	2.677	38	SMP38*
TISU1535F1500-3	1.535	1.571	1.500	2.165	4.885	7.378	2.677	39	SMP39*
TISU1575F1500-3	1.575	1.614	1.500	2.165	5.011	7.516	2.677	40	SMP40*

Tool diameter	Hole diameter tolerance*
ø1.024 - ø1.177	+0.0020 / 0
ø1.181 - ø1.614	+0.0024 / 0

*Just for reference

SPARE PARTS





Designation	Clamping screw	Wrench		Screw for side port	Plug*
		Torx bit	Grip		
TISU1024F1250-3	TS50230D3	BLDT20/S7	H-TB2W	NPTF1/4	SL32IN
TISU1063F1250-3	TS50230D3	BLDT20/S7	H-TB2W	NPTF1/4	SL32IN
TISU1102F1250-3	TS50250D35	BLDT25/S7	H-TB2W	NPTF1/4	SL32IN
TISU1142F1250-3	TS50250D35	BLDT25/S7	H-TB2W	NPTF1/4	SL32IN
TISU1181F1250-3	TS60265D4	BLDT25/S7	H-TB2W	NPTF1/4	SL32IN
TISU1220F1250-3	TS60265D4	BLDT25/S7	H-TB2W	NPTF1/4	SL32IN
TISU1260F1500-3	TS60285D42	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1299F1500-3	TS60285D42	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1339F1500-3	TS60285D42	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1378F1500-3	TS60320D5	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1417F1500-3	TS60320D5	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1457F1500-3	TS60320D5	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1496F1500-3	TS80340D6	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1535F1500-3	TS80340D6	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1575F1500-3	TS80340D6	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN

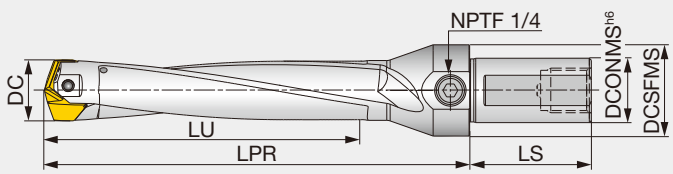
*Optional part
Inner thread size: NPTF1/4

Recommended clamping torque : TS50230D3= 3.69 lb·ft, 5 N·m, TS50250D35= 4.06 lb·ft, 5.5N·m, TS60265D4= 4.43 lb·ft, 6N·m, TS60285D42= 4.43 lb·ft, 6N·m, TS60320D5= 4.43 lb·ft, 6N·m, TS80340D6= 5.16 lb·ft, 7N·m

Reference pages: Head → J034 - J035
Standard cutting conditions → J035

TISU L/D=5

Head indexable drill



Inch	DCN	DCX	DCONMS	DCSFMS	LU	LPR	LS	Pocket size	Head
TISU1024F1250-5	1.024	1.059	1.250	1.772	5.304	7.362	2.362	26	SMP26*
TISU1063F1250-5	1.063	1.098	1.250	1.772	5.508	7.579	2.362	27	SMP27*
TISU1102F1250-5	1.102	1.138	1.250	1.772	5.713	7.811	2.362	28	SMP28*
TISU1142F1250-5	1.142	1.177	1.250	1.772	5.917	8.028	2.362	29	SMP29*
TISU1181F1250-5	1.181	1.217	1.250	1.772	6.121	8.256	2.362	30	SMP30*
TISU1220F1250-5	1.220	1.256	1.250	1.772	6.324	8.472	2.362	31	SMP31*
TISU1260F1500-5	1.260	1.295	1.500	2.165	6.528	8.898	2.677	32	SMP32*
TISU1299F1500-5	1.299	1.335	1.500	2.165	6.732	9.114	2.677	33	SMP33*
TISU1339F1500-5	1.339	1.374	1.500	2.165	6.937	9.331	2.677	34	SMP34*
TISU1378F1500-5	1.378	1.413	1.500	2.165	7.141	9.563	2.677	35	SMP35*
TISU1417F1500-5	1.417	1.453	1.500	2.165	7.345	9.780	2.677	36	SMP36*
TISU1457F1500-5	1.457	1.492	1.500	2.165	7.548	9.996	2.677	37	SMP37*
TISU1496F1500-5	1.496	1.531	1.500	2.165	7.752	10.232	2.677	38	SMP38*
TISU1535F1500-5	1.535	1.571	1.500	2.165	7.956	10.449	2.677	39	SMP39*
TISU1575F1500-5	1.575	1.614	1.500	2.165	8.161	10.665	2.677	40	SMP40*

Tool diameter	Hole diameter tolerance*
ø1.024 - ø1.177	+0.0030 / 0
ø1.181 - ø1.614	+0.0035 / 0

*Just for reference

SPARE PARTS





Designation	Clamping screw	Wrench		Screw for side port	Plug*
		Torx bit	Grip		
TISU1024F1250-5	TS50230D3	BLDT20/S7	H-TB2W	NPTF1/4	SL32IN
TISU1063F1250-5	TS50230D3	BLDT20/S7	H-TB2W	NPTF1/4	SL32IN
TISU1102F1250-5	TS50250D35	BLDT25/S7	H-TB2W	NPTF1/4	SL32IN
TISU1142F1250-5	TS50250D35	BLDT25/S7	H-TB2W	NPTF1/4	SL32IN
TISU1181F1250-5	TS60265D4	BLDT25/S7	H-TB2W	NPTF1/4	SL32IN
TISU1220F1250-5	TS60265D4	BLDT25/S7	H-TB2W	NPTF1/4	SL32IN
TISU1260F1500-5	TS60285D42	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1299F1500-5	TS60285D42	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1339F1500-5	TS60285D42	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1378F1500-5	TS60320D5	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1417F1500-5	TS60320D5	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1457F1500-5	TS60320D5	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1496F1500-5	TS80340D6	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1535F1500-5	TS80340D6	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN
TISU1575F1500-5	TS80340D6	BLDT25/S7	H-TB2W	NPTF1/4	SL38IN

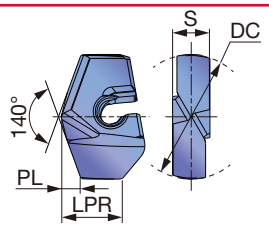
*Optional part
Inner thread size: NPTF1/4

Recommended clamping torque : TS50230D3= 3.69 lb·ft, 5 N·m, TS50250D35= 4.06 lb·ft, 5.5N·m, TS60265D4= 4.43 lb·ft, 6N·m, TS60285D42= 4.43 lb·ft, 6N·m, TS60320D5= 4.43 lb·ft, 6N·m, TS80340D6= 5.16 lb·ft, 7N·m

Reference pages: Head → J034 - J035
Standard cutting conditions → J035

DRILL HEAD

SMP



Tool diameter	Head diameter tolerance
ø1.024 - ø1.142	+0.0006" / -0.0006"
ø1.181 - ø1.575	+0.0006" / -0.0008"

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	DC (in)	DC (mm)	S (in)	Coated	LPR (in)	PL (in)	Pocket Size	Body
				AH725				
SMP260	1.024	26	0.295	●	0.457	0.186	26	TIS260F32-*
SMP261	1.028	26.1	0.295	●	0.457	0.187	26	TIS260F32-*
SMP265	1.043	26.5	0.295	●	0.457	0.190	26	TIS260F32-*
SMP267	1.051	26.7	0.295	●	0.457	0.191	26	TIS260F32-*
SMP270	1.063	27	0.295	●	0.437	0.193	27	TIS270F32-*
SMP271	1.067	27.1	0.295	●	0.437	0.194	27	TIS270F32-*
SMP272	1.071	27.2	0.295	●	0.437	0.195	27	TIS270F32-*
SMP275	1.083	27.5	0.295	●	0.437	0.197	27	TIS270F32-*
SMP280	1.102	28	0.315	●	0.461	0.201	28	TIS280F32-*
SMP281	1.106	28.1	0.315	●	0.461	0.201	28	TIS280F32-*
SMP285	1.122	28.5	0.315	●	0.461	0.204	28	TIS280F32-*
SMP286	1.126	28.6	0.315	●	0.461	0.205	28	TIS280F32-*
SMP290	1.142	29	0.315	●	0.445	0.208	29	TIS290F32-*
SMP291	1.146	29.1	0.315	●	0.445	0.209	29	TIS290F32-*
SMP295	1.161	29.5	0.315	●	0.445	0.211	29	TIS290F32-*
SMP296	1.165	29.6	0.315	●	0.445	0.212	29	TIS290F32-*
SMP300	1.181	30	0.335	●	0.555	0.215	30	TIS300F32-*
SMP301	1.185	30.1	0.335	●	0.555	0.216	30	TIS300F32-*
SMP302	1.189	30.2	0.335	●	0.555	0.217	30	TIS300F32-*
SMP303	1.193	30.3	0.335	●	0.555	0.217	30	TIS300F32-*
SMP305	1.201	30.5	0.335	●	0.555	0.219	30	TIS300F32-*
SMP308	1.213	30.8	0.335	●	0.555	0.221	30	TIS300F32-*
SMP310	1.220	31	0.335	●	0.539	0.222	31	TIS310F32-*
SMP311	1.224	31.1	0.335	●	0.539	0.223	31	TIS310F32-*
SMP315	1.240	31.5	0.335	●	0.539	0.226	31	TIS310F32-*
SMP318	1.252	31.8	0.335	●	0.539	0.228	31	TIS310F32-*
SMP320	1.260	32	0.354	●	0.571	0.229	32	TIS320F40-*
SMP321	1.264	32.1	0.354	●	0.571	0.230	32	TIS320F40-*
SMP325	1.280	32.5	0.354	●	0.571	0.233	32	TIS320F40-*
SMP328	1.291	32.8	0.354	●	0.571	0.235	32	TIS320F40-*
SMP330	1.299	33	0.354	●	0.555	0.237	33	TIS330F40-*
SMP331	1.303	33.1	0.354	●	0.555	0.237	33	TIS330F40-*
SMP333	1.311	33.3	0.354	●	0.555	0.239	33	TIS330F40-*
SMP335	1.319	33.5	0.354	●	0.555	0.240	33	TIS330F40-*
SMP340	1.339	34	0.354	●	0.539	0.244	34	TIS340F40-*
SMP341	1.343	34.1	0.354	●	0.539	0.244	34	TIS340F40-*
SMP345	1.358	34.5	0.354	●	0.539	0.247	34	TIS340F40-*
SMP349	1.374	34.9	0.354	●	0.539	0.250	34	TIS340F40-*
SMP350	1.378	35	0.394	●	0.654	0.251	35	TIS350F40-*
SMP351	1.382	35.1	0.394	●	0.654	0.252	35	TIS350F40-*
SMP355	1.398	35.5	0.394	●	0.654	0.254	35	TIS350F40-*
SMP360	1.417	36	0.394	●	0.394	0.258	36	TIS360F40-*
SMP361	1.421	36.1	0.394	●	0.394	0.259	36	TIS360F40-*
SMP365	1.437	36.5	0.394	●	0.394	0.261	36	TIS360F40-*
SMP366	1.441	36.6	0.394	●	0.394	0.262	36	TIS360F40-*
SMP370	1.457	37	0.394	●	0.394	0.265	37	TIS370F40-*

● : Line up

P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous	☆	
S	Superalloys	★	
H	Hard materials	★	

★ : First choice
☆ : Second choice

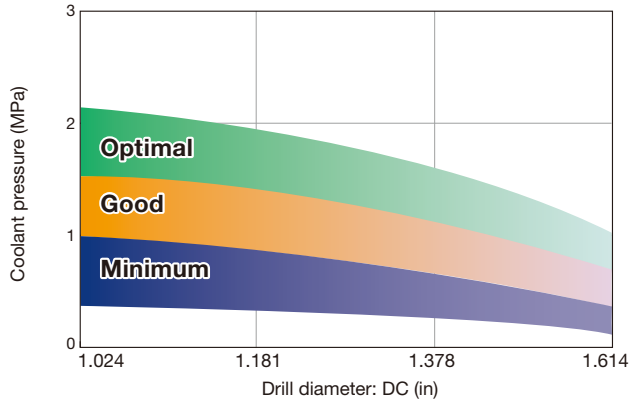
Designation	DC (in)	DC (mm)	S (in)	Coated	LPR (in)	PL (in)	Pocket Size	Body
				AH725				
SMP371	1.461	37.1	0.394	●	0.394	0.266	37	TIS370F40-*
SMP375	1.476	37.5	0.394	●	0.394	0.269	37	TIS370F40-*
SMP380	1.496	38	0.413	●	0.413	0.272	38	TIS380F40-*
SMP381	1.500	38.1	0.413	●	0.413	0.273	38	TIS380F40-*
SMP385	1.516	38.5	0.413	●	0.413	0.276	38	TIS380F40-*
SMP388	1.528	38.8	0.413	●	0.413	0.278	38	TIS380F40-*
SMP390	1.535	39	0.413	●	0.413	0.280	39	TIS390F40-*
SMP391	1.539	39.1	0.413	●	0.413	0.280	39	TIS390F40-*
SMP395	1.555	39.5	0.413	●	0.413	0.283	39	TIS390F40-*
SMP397	1.563	39.7	0.413	●	0.413	0.284	39	TIS390F40-*
SMP398	1.567	39.8	0.413	●	0.413	0.285	39	TIS390F40-*
SMP400	1.575	40	0.413	●	0.413	0.287	40	TIS400F40-*
SMP401	1.579	40.1	0.413	●	0.413	0.287	40	TIS400F40-*
SMP405	1.594	40.5	0.413	●	0.413	0.290	40	TIS400F40-*
SMP410	1.614	41	0.413	●	0.413	0.294	40	TIS380F40-*

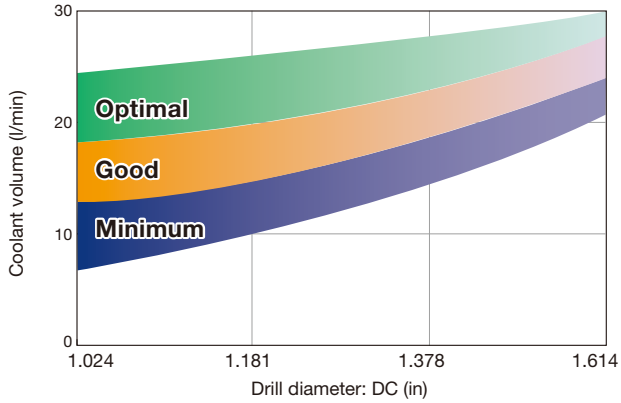
● : Line up

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) DC (in) 1.024" - 1.177"	Feed: *f* (ipr) DC (in) 1.181" - 1.403"	Feed: *f* (ipr) DC (in) 1.417" - 1.614"
P	Low carbon steels 1015, etc.	262 - 459	0.008 - 0.020	0.008 - 0.020	0.010 - 0.022
	Carbon steels, Alloy steels 1055, 4140, etc.	262 - 427	0.008 - 0.020	0.008 - 0.020	0.010 - 0.022
	Prehardened steels NAK80, PX5, etc.	164 - 328	0.008 - 0.020	0.008 - 0.020	0.010 - 0.022
M	Stainless steels S30400, etc.	131 - 262	0.006 - 0.012	0.006 - 0.012	0.008 - 0.014
K	Gray cast irons No.250B, No.300B, etc.	262 - 591	0.010 - 0.022	0.010 - 0.022	0.012 - 0.024
	Ductile cast irons 60-40-15, 80-55-06, etc.	262 - 459	0.010 - 0.022	0.010 - 0.022	0.012 - 0.024
N	Non ferrous materials	328 - 656	0.016 - 0.024	0.016 - 0.024	0.020 - 0.028
S	Heat-resistant alloy Inconel718, etc.	66 - 164	0.004 - 0.008	0.004 - 0.008	0.004 - 0.010
	Titanium alloys Ti-6Al-4V, etc.	66 - 164	0.004 - 0.008	0.004 - 0.008	0.004 - 0.010
H	Hardened materials	66 - 197	0.004 - 0.008	0.004 - 0.008	0.004 - 0.010

RECOMMENDED COOLANT PRESSURE AND VOLUME

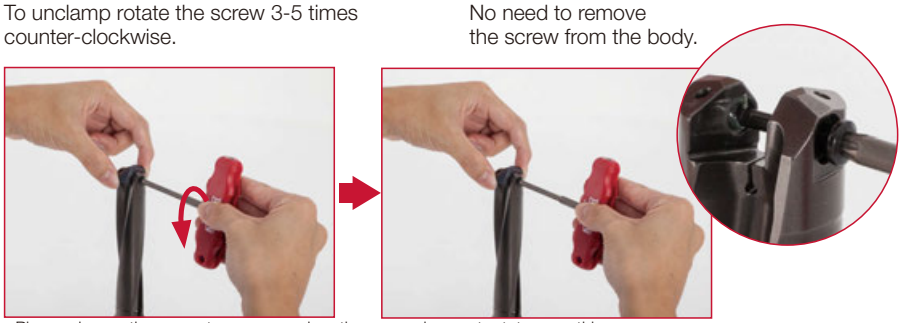




HOW TO CHANGE DRILL HEAD

To unclamp rotate the screw 3-5 times counter-clockwise.

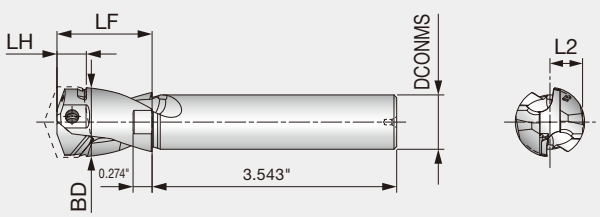
No need to remove the screw from the body.



- Please change the screw to new one when the screw does not rotate smoothly

DRILLFORCE MEISTER

Regrinding holder



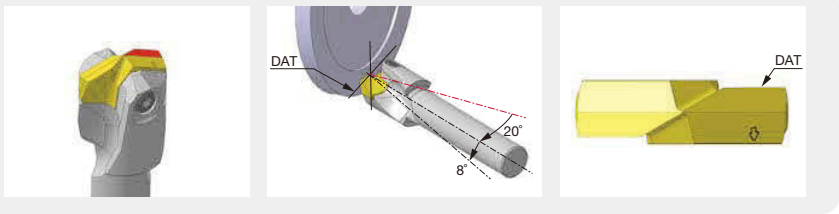
Inch	DCONMS	BD	LF	LH	L2	Head
SMP260-279-GH	0.787	1.004	1.378	0.425	0.472	SMP260 - SMP279
SMP280-299-GH	0.787	1.083	1.378	0.425	0.512	SMP280 - SMP299
SMP300-319-GH	0.787	1.161	1.378	0.512	0.551	SMP300 - SMP319
SMP320-349-GH	0.787	1.240	1.378	0.512	0.591	SMP320 - SMP349
SMP350-379-GH	0.787	1.358	1.575	0.579	0.650	SMP350 - SMP379
SMP380-410-GH	0.787	1.476	1.575	0.594	0.709	SMP380 - SMP410

① Clamping

- Assemble the drill head on the regrinding holder or shortest standard holder (3xD)
- Set-up the drill head in the machine : Total run-out must be less than 0.0008"

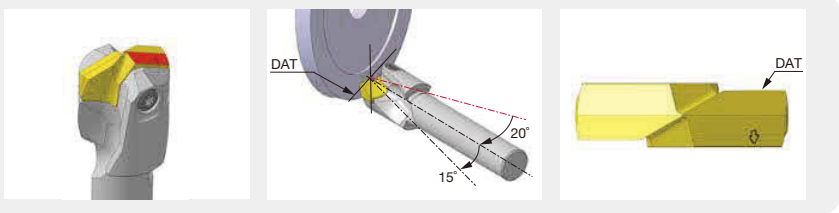
② Grinding the 1st clearance angle

- Set the drill for point angle (140°) and 1st clearance angle (8°)



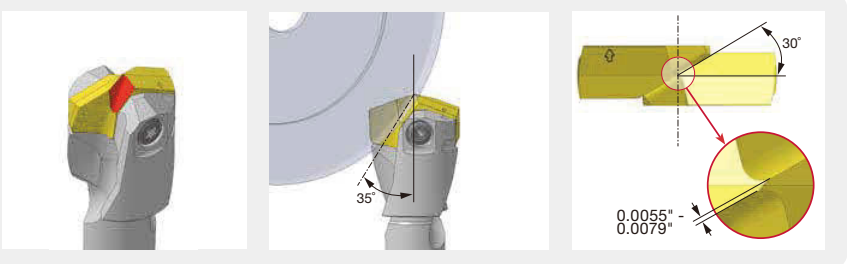
③ Grinding the 2nd clearance angle

- Set the drill for 2nd clearance angle (15°)



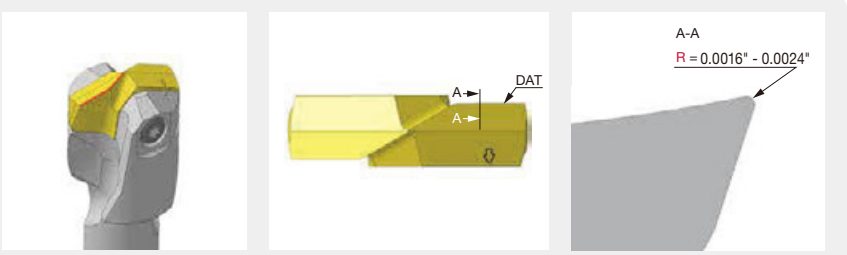
④ Grinding the chisel (Thinning)

- Set the drill for thinning angle (35°) with reference to drill axis and angle (30°) with reference to radial axis
- Keep the chisel thickness (0.0055" - 0.0079") and the thinning point must be over the center line



⑤ Edge preparation (Honing)

- Cutting edges should have honing by sand or brush (0.0016" - 0.0024")
- You can also use a diamond hand lapper for edge preparation



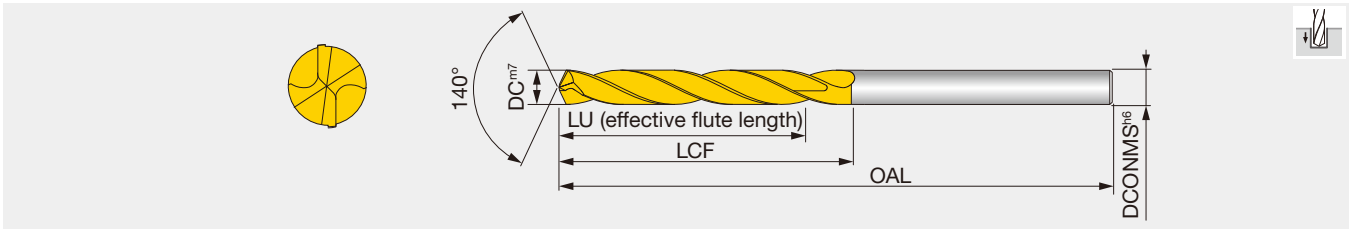
SOLIDDRILL Quick Guide

Series	DC	L/D	Point angle	Oil hole	Coated	Coated without	Description	P Steel	M Stainless	K Cast iron	N Non-ferrous	S Superalloys	H Hard materials	See page
DSW	ø3 mm - ø12 mm	3, 5, 8	140	With Without	●		Shank size: DIN Standard	●	●	●	●	●	●	J039 - J045
DSXU DSX	13/64" - 21/32" (ø3 mm - ø10 mm)	3, 5, 8	130	With	●		Shank size: 1 mm increments	●	●	●	●	●	●	J046 - J050
DSE	ø3 mm - ø10 mm	2, 3	140	Without	●		For drilling thin plates with low cutting force Shank size: Same as the drill diameter	●	●	●	●	●	●	J051 - J053
DSM DSM-CP	ø0.1 mm - ø3 mm	5, 10, 15	140 90 & 140	Without	●		Micro solid drill with ø3 mm shanks DSM-CP: Centering drill for DSM	●	●	●	●	●	●	J054 - J056
DMXU	#34" - 25/32"	2, 3	130	Without	●		Shank size: Same as the drill diameter	●	●	●	●	●	●	J057 - J059
FDCU FDC	ø0.203" - ø0.625" (ø5 mm - ø16 mm)	5, 8	135	With		●	Drills for reaming at high feed with straight flute			●	●			J060 - J061

SOLIDDRILL

DSW-DE3

Solid drill, 140° point angle, without coolant hole, DIN shank, L/D = 3, ø3 - ø12 mm



Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-014-06DE3	3	●	6	14	20	62
DSW031-014-06DE3	3.1	●	6	14	20	62
DSW032-014-06DE3	3.2	●	6	14	20	62
DSW033-014-06DE3	3.3	●	6	14	20	62
DSW034-014-06DE3	3.4	●	6	14	20	62
DSW035-014-06DE3	3.5	●	6	14	20	62
DSW036-014-06DE3	3.6	●	6	14	20	62
DSW037-014-06DE3	3.7	●	6	14	20	62
DSW038-017-06DE3	3.8	●	6	17	24	66
DSW039-017-06DE3	3.9	●	6	17	24	66
DSW040-017-06DE3	4	●	6	17	24	66
DSW041-017-06DE3	4.1	●	6	17	24	66
DSW042-017-06DE3	4.2	●	6	17	24	66
DSW043-017-06DE3	4.3	●	6	17	24	66
DSW044-017-06DE3	4.4	●	6	17	24	66
DSW045-017-06DE3	4.5	●	6	17	24	66
DSW046-017-06DE3	4.6	●	6	17	24	66
DSW047-017-06DE3	4.7	●	6	17	24	66
DSW048-020-06DE3	4.8	●	6	20	28	66
DSW049-020-06DE3	4.9	●	6	20	28	66
DSW050-020-06DE3	5	●	6	20	28	66
DSW051-020-06DE3	5.1	●	6	20	28	66
DSW052-020-06DE3	5.2	●	6	20	28	66
DSW053-020-06DE3	5.3	●	6	20	28	66
DSW054-020-06DE3	5.4	●	6	20	28	66
DSW055-020-06DE3	5.5	●	6	20	28	66
DSW056-020-06DE3	5.6	●	6	20	28	66
DSW057-020-06DE3	5.7	●	6	20	28	66
DSW058-020-06DE3	5.8	●	6	20	28	66
DSW059-020-06DE3	5.9	●	6	20	28	66
DSW060-020-06DE3	6	●	6	20	28	66
DSW061-024-08DE3	6.1	●	8	24	34	79
DSW062-024-08DE3	6.2	●	8	24	34	79
DSW063-024-08DE3	6.3	●	8	24	34	79
DSW064-024-08DE3	6.4	●	8	24	34	79
DSW065-024-08DE3	6.5	●	8	24	34	79
DSW066-024-08DE3	6.6	●	8	24	34	79
DSW067-024-08DE3	6.7	●	8	24	34	79
DSW068-024-08DE3	6.8	●	8	24	34	79
DSW069-024-08DE3	6.9	●	8	24	34	79
DSW070-024-08DE3	7	●	8	24	34	79
DSW071-029-08DE3	7.1	●	8	29	41	79
DSW072-029-08DE3	7.2	●	8	29	41	79
DSW073-029-08DE3	7.3	●	8	29	41	79
DSW074-029-08DE3	7.4	●	8	29	41	79
DSW075-029-08DE3	7.5	●	8	29	41	79
DSW076-029-08DE3	7.6	●	8	29	41	79
DSW077-029-08DE3	7.7	●	8	29	41	79
DSW078-029-08DE3	7.8	●	8	29	41	79
DSW079-029-08DE3	7.9	●	8	29	41	79
DSW080-029-08DE3	8	●	8	29	41	79
DSW081-035-10DE3	8.1	●	10	35	47	89
DSW082-035-10DE3	8.2	●	10	35	47	89
DSW083-035-10DE3	8.3	●	10	35	47	89
DSW084-035-10DE3	8.4	●	10	35	47	89
DSW085-035-10DE3	8.5	●	10	35	47	89
DSW086-035-10DE3	8.6	●	10	35	47	89
DSW087-035-10DE3	8.7	●	10	35	47	89
DSW088-035-10DE3	8.8	●	10	35	47	89
DSW089-035-10DE3	8.9	●	10	35	47	89
DSW090-035-10DE3	9	●	10	35	47	89
DSW091-035-10DE3	9.1	●	10	35	47	89
DSW092-035-10DE3	9.2	●	10	35	47	89
DSW093-035-10DE3	9.3	●	10	35	47	89
DSW094-035-10DE3	9.4	●	10	35	47	89
DSW095-035-10DE3	9.5	●	10	35	47	89
DSW096-035-10DE3	9.6	●	10	35	47	89
DSW097-035-10DE3	9.7	●	10	35	47	89
DSW098-035-10DE3	9.8	●	10	35	47	89
DSW099-035-10DE3	9.9	●	10	35	47	89
DSW100-035-10DE3	10	●	10	35	47	89
DSW101-040-12DE3	10.1	●	12	40	55	102
DSW102-040-12DE3	10.2	●	12	40	55	102
DSW103-040-12DE3	10.3	●	12	40	55	102
DSW104-040-12DE3	10.4	●	12	40	55	102
DSW105-040-12DE3	10.5	●	12	40	55	102
DSW106-040-12DE3	10.6	●	12	40	55	102
DSW107-040-12DE3	10.7	●	12	40	55	102
DSW108-040-12DE3	10.8	●	12	40	55	102
DSW109-040-12DE3	10.9	●	12	40	55	102
DSW110-040-12DE3	11	●	12	40	55	102
DSW111-040-12DE3	11.1	●	12	40	55	102
DSW112-040-12DE3	11.2	●	12	40	55	102
DSW113-040-12DE3	11.3	●	12	40	55	102
DSW114-040-12DE3	11.4	●	12	40	55	102
DSW115-040-12DE3	11.5	●	12	40	55	102
DSW116-040-12DE3	11.6	●	12	40	55	102
DSW117-040-12DE3	11.7	●	12	40	55	102
DSW118-040-12DE3	11.8	●	12	40	55	102
DSW119-040-12DE3	11.9	●	12	40	55	102
DSW120-040-12DE3	12	●	12	40	55	102

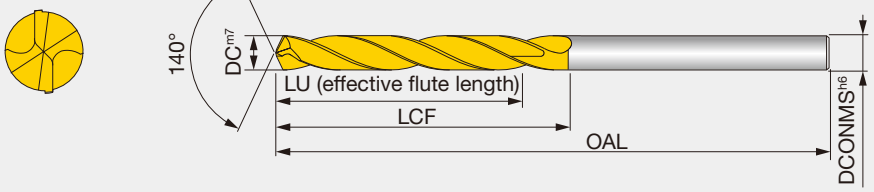
● : Line up

Reference pages: Standard cutting conditions → J044

SOLIDDRILL

DSW-DE5

Solid drill, 140° point angle, without coolant hole, DIN shank, L/D = 5, ø3 - ø12 mm



Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-023-06DE5	3	●	6	23	28	66
DSW031-023-06DE5	3.1	●	6	23	28	66
DSW032-023-06DE5	3.2	●	6	23	28	66
DSW033-023-06DE5	3.3	●	6	23	28	66
DSW034-023-06DE5	3.4	●	6	23	28	66
DSW035-023-06DE5	3.5	●	6	23	28	66
DSW036-023-06DE5	3.6	●	6	23	28	66
DSW037-023-06DE5	3.7	●	6	23	28	66
DSW038-029-06DE5	3.8	●	6	29	36	74
DSW039-029-06DE5	3.9	●	6	29	36	74
DSW040-029-06DE5	4	●	6	29	36	74
DSW041-029-06DE5	4.1	●	6	29	36	74
DSW042-029-06DE5	4.2	●	6	29	36	74
DSW043-029-06DE5	4.3	●	6	29	36	74
DSW044-029-06DE5	4.4	●	6	29	36	74
DSW045-029-06DE5	4.5	●	6	29	36	74
DSW046-029-06DE5	4.6	●	6	29	36	74
DSW047-029-06DE5	4.7	●	6	29	36	74
DSW048-035-06DE5	4.8	●	6	35	44	82
DSW049-035-06DE5	4.9	●	6	35	44	82
DSW050-035-06DE5	5	●	6	35	44	82
DSW051-035-06DE5	5.1	●	6	35	44	82
DSW052-035-06DE5	5.2	●	6	35	44	82
DSW053-035-06DE5	5.3	●	6	35	44	82
DSW054-035-06DE5	5.4	●	6	35	44	82
DSW055-035-06DE5	5.5	●	6	35	44	82
DSW056-035-06DE5	5.6	●	6	35	44	82
DSW057-035-06DE5	5.7	●	6	35	44	82
DSW058-035-06DE5	5.8	●	6	35	44	82
DSW059-035-06DE5	5.9	●	6	35	44	82
DSW060-035-06DE5	6	●	6	35	44	82
DSW061-043-08DE5	6.1	●	8	43	53	91
DSW062-043-08DE5	6.2	●	8	43	53	91
DSW063-043-08DE5	6.3	●	8	43	53	91
DSW064-043-08DE5	6.4	●	8	43	53	91
DSW065-043-08DE5	6.5	●	8	43	53	91
DSW066-043-08DE5	6.6	●	8	43	53	91
DSW067-043-08DE5	6.7	●	8	43	53	91
DSW068-043-08DE5	6.8	●	8	43	53	91
DSW069-043-08DE5	6.9	●	8	43	53	91
DSW070-043-08DE5	7	●	8	43	53	91
DSW071-043-08DE5	7.1	●	8	43	53	91
DSW072-043-08DE5	7.2	●	8	43	53	91
DSW073-043-08DE5	7.3	●	8	43	53	91
DSW074-043-08DE5	7.4	●	8	43	53	91
DSW075-043-08DE5	7.5	●	8	43	53	91

Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW076-043-08DE5	7.6	●	8	43	53	91
DSW077-043-08DE5	7.7	●	8	43	53	91
DSW078-043-08DE5	7.8	●	8	43	53	91
DSW079-043-08DE5	7.9	●	8	43	53	91
DSW080-043-08DE5	8	●	8	43	53	91
DSW081-049-10DE5	8.1	●	10	49	61	103
DSW082-049-10DE5	8.2	●	10	49	61	103
DSW083-049-10DE5	8.3	●	10	49	61	103
DSW084-049-10DE5	8.4	●	10	49	61	103
DSW085-049-10DE5	8.5	●	10	49	61	103
DSW086-049-10DE5	8.6	●	10	49	61	103
DSW087-049-10DE5	8.7	●	10	49	61	103
DSW088-049-10DE5	8.8	●	10	49	61	103
DSW089-049-10DE5	8.9	●	10	49	61	103
DSW090-049-10DE5	9	●	10	49	61	103
DSW091-049-10DE5	9.1	●	10	49	61	103
DSW092-049-10DE5	9.2	●	10	49	61	103
DSW093-049-10DE5	9.3	●	10	49	61	103
DSW094-049-10DE5	9.4	●	10	49	61	103
DSW095-049-10DE5	9.5	●	10	49	61	103
DSW096-049-10DE5	9.6	●	10	49	61	103
DSW097-049-10DE5	9.7	●	10	49	61	103
DSW098-049-10DE5	9.8	●	10	49	61	103
DSW099-049-10DE5	9.9	●	10	49	61	103
DSW100-049-10DE5	10	●	10	49	61	103
DSW101-056-12DE5	10.1	●	12	56	71	118
DSW102-056-12DE5	10.2	●	12	56	71	118
DSW103-056-12DE5	10.3	●	12	56	71	118
DSW104-056-12DE5	10.4	●	12	56	71	118
DSW105-056-12DE5	10.5	●	12	56	71	118
DSW106-056-12DE5	10.6	●	12	56	71	118
DSW107-056-12DE5	10.7	●	12	56	71	118
DSW108-056-12DE5	10.8	●	12	56	71	118
DSW109-056-12DE5	10.9	●	12	56	71	118
DSW110-056-12DE5	11	●	12	56	71	118
DSW111-056-12DE5	11.1	●	12	56	71	118
DSW112-056-12DE5	11.2	●	12	56	71	118
DSW113-056-12DE5	11.3	●	12	56	71	118
DSW114-056-12DE5	11.4	●	12	56	71	118
DSW115-056-12DE5	11.5	●	12	56	71	118
DSW116-056-12DE5	11.6	●	12	56	71	118
DSW117-056-12DE5	11.7	●	12	56	71	118
DSW118-056-12DE5	11.8	●	12	56	71	118
DSW119-056-12DE5	11.9	●	12	56	71	118
DSW120-056-12DE5	12	●	12	56	71	118

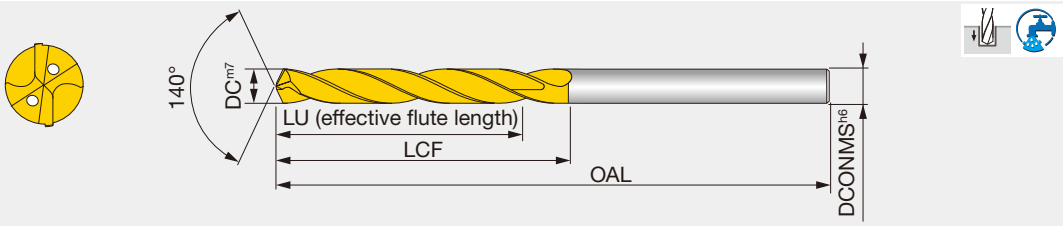
● : Line up

Reference pages: Standard cutting conditions → J044

SOLIDDRILL

DSW-DI5

Solid drill, 140° point angle, with coolant hole, DIN shank, L/D = 5, ø3 - ø12 mm



Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-023-06DI5	3	●	6	23	28	66
DSW031-023-06DI5	3.1	●	6	23	28	66
DSW032-023-06DI5	3.2	●	6	23	28	66
DSW033-023-06DI5	3.3	●	6	23	28	66
DSW034-023-06DI5	3.4	●	6	23	28	66
DSW035-023-06DI5	3.5	●	6	23	28	66
DSW036-023-06DI5	3.6	●	6	23	28	66
DSW037-023-06DI5	3.7	●	6	23	28	66
DSW038-029-06DI5	3.8	●	6	29	36	74
DSW039-029-06DI5	3.9	●	6	29	36	74
DSW040-029-06DI5	4	●	6	29	36	74
DSW041-029-06DI5	4.1	●	6	29	36	74
DSW042-029-06DI5	4.2	●	6	29	36	74
DSW043-029-06DI5	4.3	●	6	29	36	74
DSW044-029-06DI5	4.4	●	6	29	36	74
DSW045-029-06DI5	4.5	●	6	29	36	74
DSW046-029-06DI5	4.6	●	6	29	36	74
DSW047-029-06DI5	4.7	●	6	29	36	74
DSW048-035-06DI5	4.8	●	6	35	44	82
DSW049-035-06DI5	4.9	●	6	35	44	82
DSW050-035-06DI5	5	●	6	35	44	82
DSW051-035-06DI5	5.1	●	6	35	44	82
DSW052-035-06DI5	5.2	●	6	35	44	82
DSW053-035-06DI5	5.3	●	6	35	44	82
DSW054-035-06DI5	5.4	●	6	35	44	82
DSW055-035-06DI5	5.5	●	6	35	44	82
DSW056-035-06DI5	5.6	●	6	35	44	82
DSW057-035-06DI5	5.7	●	6	35	44	82
DSW058-035-06DI5	5.8	●	6	35	44	82
DSW059-035-06DI5	5.9	●	6	35	44	82
DSW060-035-06DI5	6	●	6	35	44	82
DSW061-043-08DI5	6.1	●	8	43	53	91
DSW062-043-08DI5	6.2	●	8	43	53	91
DSW063-043-08DI5	6.3	●	8	43	53	91
DSW064-043-08DI5	6.4	●	8	43	53	91
DSW065-043-08DI5	6.5	●	8	43	53	91
DSW066-043-08DI5	6.6	●	8	43	53	91
DSW067-043-08DI5	6.7	●	8	43	53	91
DSW068-043-08DI5	6.8	●	8	43	53	91
DSW069-043-08DI5	6.9	●	8	43	53	91
DSW070-043-08DI5	7	●	8	43	53	91
DSW071-043-08DI5	7.1	●	8	43	53	91
DSW072-043-08DI5	7.2	●	8	43	53	91
DSW073-043-08DI5	7.3	●	8	43	53	91
DSW074-043-08DI5	7.4	●	8	43	53	91
DSW075-043-08DI5	7.5	●	8	43	53	91

Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW076-043-08DI5	7.6	●	8	43	53	91
DSW077-043-08DI5	7.7	●	8	43	53	91
DSW078-043-08DI5	7.8	●	8	43	53	91
DSW079-043-08DI5	7.9	●	8	43	53	91
DSW080-043-08DI5	8	●	8	43	53	91
DSW081-049-10DI5	8.1	●	10	49	61	103
DSW082-049-10DI5	8.2	●	10	49	61	103
DSW083-049-10DI5	8.3	●	10	49	61	103
DSW084-049-10DI5	8.4	●	10	49	61	103
DSW085-049-10DI5	8.5	●	10	49	61	103
DSW086-049-10DI5	8.6	●	10	49	61	103
DSW087-049-10DI5	8.7	●	10	49	61	103
DSW088-049-10DI5	8.8	●	10	49	61	103
DSW089-049-10DI5	8.9	●	10	49	61	103
DSW090-049-10DI5	9	●	10	49	61	103
DSW091-049-10DI5	9.1	●	10	49	61	103
DSW092-049-10DI5	9.2	●	10	49	61	103
DSW093-049-10DI5	9.3	●	10	49	61	103
DSW094-049-10DI5	9.4	●	10	49	61	103
DSW095-049-10DI5	9.5	●	10	49	61	103
DSW096-049-10DI5	9.6	●	10	49	61	103
DSW097-049-10DI5	9.7	●	10	49	61	103
DSW098-049-10DI5	9.8	●	10	49	61	103
DSW099-049-10DI5	9.9	●	10	49	61	103
DSW100-049-10DI5	10	●	10	49	61	103
DSW101-056-12DI5	10.1	●	12	56	71	118
DSW102-056-12DI5	10.2	●	12	56	71	118
DSW103-056-12DI5	10.3	●	12	56	71	118
DSW104-056-12DI5	10.4	●	12	56	71	118
DSW105-056-12DI5	10.5	●	12	56	71	118
DSW106-056-12DI5	10.6	●	12	56	71	118
DSW107-056-12DI5	10.7	●	12	56	71	118
DSW108-056-12DI5	10.8	●	12	56	71	118
DSW109-056-12DI5	10.9	●	12	56	71	118
DSW110-056-12DI5	11	●	12	56	71	118
DSW111-056-12DI5	11.1	●	12	56	71	118
DSW112-056-12DI5	11.2	●	12	56	71	118
DSW113-056-12DI5	11.3	●	12	56	71	118
DSW114-056-12DI5	11.4	●	12	56	71	118
DSW115-056-12DI5	11.5	●	12	56	71	118
DSW116-056-12DI5	11.6	●	12	56	71	118
DSW117-056-12DI5	11.7	●	12	56	71	118
DSW118-056-12DI5	11.8	●	12	56	71	118
DSW119-056-12DI5	11.9	●	12	56	71	118
DSW120-056-12DI5	12	●	12	56	71	118

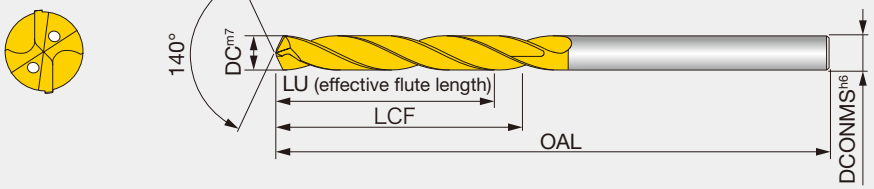
● : Line up

Reference pages: Standard cutting conditions → J045

SOLIDDRILL

DSW-DI8

Solid drill, 140° point angle, with coolant hole, DIN shank, L/D = 8, ø3 - ø10 mm



Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW030-029-06DI8	3	●	6	29	34	72
DSW031-029-06DI8	3.1	●	6	29	34	72
DSW032-029-06DI8	3.2	●	6	29	34	72
DSW033-029-06DI8	3.3	●	6	29	34	72
DSW034-029-06DI8	3.4	●	6	29	34	72
DSW035-029-06DI8	3.5	●	6	29	34	72
DSW036-029-06DI8	3.6	●	6	29	34	72
DSW037-029-06DI8	3.7	●	6	29	34	72
DSW038-036-06DI8	3.8	●	6	36	43	81
DSW039-036-06DI8	3.9	●	6	36	43	81
DSW040-036-06DI8	4	●	6	36	43	81
DSW041-036-06DI8	4.1	●	6	36	43	81
DSW042-036-06DI8	4.2	●	6	36	43	81
DSW043-036-06DI8	4.3	●	6	36	43	81
DSW044-036-06DI8	4.4	●	6	36	43	81
DSW045-036-06DI8	4.5	●	6	36	43	81
DSW046-036-06DI8	4.6	●	6	36	43	81
DSW047-036-06DI8	4.7	●	6	36	43	81
DSW048-048-06DI8	4.8	●	6	48	57	95
DSW049-048-06DI8	4.9	●	6	48	57	95
DSW050-048-06DI8	5	●	6	48	57	95
DSW051-048-06DI8	5.1	●	6	48	57	95
DSW052-048-06DI8	5.2	●	6	48	57	95
DSW053-048-06DI8	5.3	●	6	48	57	95
DSW054-048-06DI8	5.4	●	6	48	57	95
DSW055-048-06DI8	5.5	●	6	48	57	95
DSW056-048-06DI8	5.6	●	6	48	57	95
DSW057-048-06DI8	5.7	●	6	48	57	95
DSW058-048-06DI8	5.8	●	6	48	57	95
DSW059-048-06DI8	5.9	●	6	48	57	95
DSW060-048-06DI8	6	●	6	48	57	95
DSW061-064-08DI8	6.1	●	8	64	76	114
DSW062-064-08DI8	6.2	●	8	64	76	114
DSW063-064-08DI8	6.3	●	8	64	76	114
DSW064-064-08DI8	6.4	●	8	64	76	114
DSW065-064-08DI8	6.5	●	8	64	76	114
DSW066-064-08DI8	6.6	●	8	64	76	114
DSW067-064-08DI8	6.7	●	8	64	76	114
DSW068-064-08DI8	6.8	●	8	64	76	114
DSW069-064-08DI8	6.9	●	8	64	76	114
DSW070-064-08DI8	7	●	8	64	76	114
DSW071-064-08DI8	7.1	●	8	64	76	114
DSW072-064-08DI8	7.2	●	8	64	76	114
DSW073-064-08DI8	7.3	●	8	64	76	114
DSW074-064-08DI8	7.4	●	8	64	76	114
DSW075-064-08DI8	7.5	●	8	64	76	114

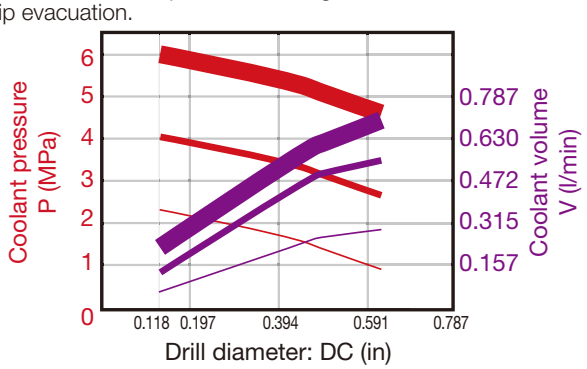
Metric	DC	AH725	DCONMS	LU	LCF	OAL
DSW076-064-08DI8	7.6	●	8	64	76	114
DSW077-064-08DI8	7.7	●	8	64	76	114
DSW078-064-08DI8	7.8	●	8	64	76	114
DSW079-064-08DI8	7.9	●	8	64	76	114
DSW080-064-08DI8	8	●	8	64	76	114
DSW081-080-10DI8	8.1	●	10	80	95	142
DSW082-080-10DI8	8.2	●	10	80	95	142
DSW083-080-10DI8	8.3	●	10	80	95	142
DSW084-080-10DI8	8.4	●	10	80	95	142
DSW085-080-10DI8	8.5	●	10	80	95	142
DSW086-080-10DI8	8.6	●	10	80	95	142
DSW087-080-10DI8	8.7	●	10	80	95	142
DSW088-080-10DI8	8.8	●	10	80	95	142
DSW089-080-10DI8	8.9	●	10	80	95	142
DSW090-080-10DI8	9	●	10	80	95	142
DSW091-080-10DI8	9.1	●	10	80	95	142
DSW092-080-10DI8	9.2	●	10	80	95	142
DSW093-080-10DI8	9.3	●	10	80	95	142
DSW094-080-10DI8	9.4	●	10	80	95	142
DSW095-080-10DI8	9.5	●	10	80	95	142
DSW096-080-10DI8	9.6	●	10	80	95	142
DSW097-080-10DI8	9.7	●	10	80	95	142
DSW098-080-10DI8	9.8	●	10	80	95	142
DSW099-080-10DI8	9.9	●	10	80	95	142
DSW100-080-10DI8	10	●	10	80	95	142

● : Line up

Reference pages: Standard cutting conditions → J045

Recommended coolant pressure and volume for internal coolant supply:

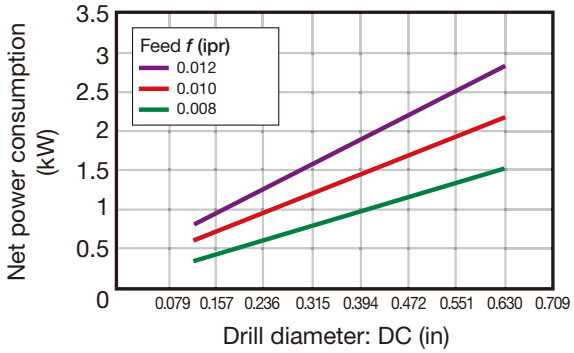
The following graph is a reference guide for pressure and volume. Values should be adjusted according to work material and actual chip evacuation.



: Ideal pressure
: Enough pressure
: Minimum pressure
: Ideal volume
: Enough volume
: Minimum volume

Reference for required spindle power:

The required spindle power may vary depending on the type of work material or hardness. A spindle with sufficient power should be used when referring to the below graph.



Work material : Alloy steel (SNCM439)
Cutting speed : *Vc* = 328 sfm

Designation system

DSW 088 - 035 - 10 - D E 3

① ② ③ ④ ⑤ ⑥ ⑦

① Series	
DSW	Series name of solid drill

② Drill diameter DC (mm)	
088	ø8.8

③ Effective flute length LU (mm)	
035	35

④ Shank diameter DCONMS (mm)	
10	ø10

⑤ DIN 6535 - Form HA

⑥ Coolant Supply	
E	External (without coolant hole)
I	Internal (with coolant hole)

⑦ Drilling depth

Approximate value of L/D ratio.
Caution: Code may be different from the actual length. This is dependent upon the tool diameter.

Caution: "Effective flute length" shows the maximum flute length for effective chip evacuation. The actual drilling depth may be shorter than described depending on the work material or cutting conditions.

STANDARD CUTTING CONDITIONS

DSW-DE (External supply)

ISO	Workpiece material	Brinell hardness (HB)	Cutting speed: *Vc* (sfm)			Feed: *f* (ipr)		
			ø0.118 ~ ø0.236	ø0.236 ~ ø0.394	ø0.394 ~ ø0.630	ø0.118 ~ ø0.236	ø0.236 ~ ø0.394	ø0.394 ~ ø0.630
P	Low carbon steels (C < 0.3) 1018, 1020, 1026, etc.	~ 180	131 - 328	197 - 394	197 - 427	0.006 - 0.012	0.006 - 0.014	0.008 - 0.020
	Carbon steels (C > 0.3) 1045, 1055, etc.	180 ~ 300	131 - 295	164 - 394	197 - 427	0.006 - 0.012	0.006 - 0.014	0.008 - 0.016
	High alloy steels 4140, 8620, etc.	250 ~ 350	131 - 262	164 - 328	164 - 328	0.004 - 0.008	0.006 - 0.012	0.006 - 0.014
M	Stainless steels 304SS, 316SS, 17-4 PH, etc.	~ 200	66 - 131	98 - 164	98 - 197	0.002 - 0.008	0.004 - 0.010	0.004 - 0.012
K	Gray cast irons Class 25, Class 30, etc.	~ 200	131 - 295	164 - 312	164 - 328	0.006 - 0.012	0.008 - 0.016	0.008 - 0.020
	Ductile cast irons 65-40-18, 60-55-06, etc.	~ 300	98 - 262	131 - 295	148 - 295	0.004 - 0.012	0.008 - 0.016	0.008 - 0.016
N	Aluminum alloys 6061, 7075, etc.	-	131 - 295	164 - 328	164 - 328	0.006 - 0.012	0.008 - 0.016	0.008 - 0.020
S	Titanium alloys Ti-6Al-4V, etc	-	66 - 131	66 - 131	66 - 131	0.004 - 0.008	0.006 - 0.010	0.006 - 0.016
	Heat-resistant alloys, Inconel Inconel 718, etc.	250 ~	33 - 98	33 - 98	33 - 98	0.001 -0.003	0.002 - 0.004	0.003 - 0.005
H	High hardened steels	~ 40HRC	66 - 131	66 - 131	66 - 131	0.002 - 0.006	0.002 - 0.006	0.002 - 0.008

The cutting parameters shown in the table are merely a starting guideline for general machining. Values should be varied depending on the power or rigidity of the machine to be used. Optimum conditions should be selected depending on the actual chip control or damage on edges.
When using the smaller diameter tools in each range, set the feed "*f*" to the lower recommended values.

The coolant supply is critical for the provision of stable machining conditions and enhanced tool life. A large coolant volume should be supplied, especially when drilling difficult-to-cut materials.
When drilling stainless steel with low machinability such as austenitic stainless steel with a depth deeper than L/D = 3, a pecking cycle or internal coolant supply is recommended.

DSW-DI (Internal supply)

ISO	Workpiece material	Brinell hardness (HB)	Cutting speed: *Vc* (sfm)			Feed: *f* (ipr)		
			ø0.118 ~ ø0.236	ø0.236 ~ ø0.394	ø0.394 ~ ø0.630	ø0.118 ~ ø0.236	ø0.236 ~ ø0.394	ø0.394 ~ ø0.630
P	Low carbon steels (C < 0.3) 1018, 1020, 1026, etc.	~ 180	230 - 459	262 - 525	295 - 623	0.006 - 0.012	0.006 - 0.014	0.008 - 0.020
	Carbon steels (C > 0.3) 1045, 1055, etc.	180 ~ 300	164 - 427	230 - 525	262 - 558	0.006 - 0.012	0.006 - 0.014	0.008 - 0.016
	High alloy steels 4140, 8620, etc.	250 ~ 350	131 - 328	197 - 459	197 - 525	0.004 - 0.008	0.006 - 0.012	0.006 - 0.014
M	Stainless steels 304SS, 316SS, 17-4 PH, etc.	~ 200	82 - 246	164 - 328	164 - 394	0.002 - 0.008	0.004 - 0.010	0.004 - 0.012
K	Gray cast irons Class 25, Class 30, etc.	~ 200	262 - 459	328 - 525	328 - 591	0.006 - 0.012	0.008 - 0.016	0.008 - 0.020
	Ductile cast irons 65-40-18, 60-55-06, etc.	~ 300	230 - 459	262 - 492	262 - 558	0.004 - 0.012	0.008 - 0.016	0.008 - 0.018
N	Aluminum alloys 6061, 7075, etc.	-	197 - 656	197 - 656	197 - 656	0.006 - 0.012	0.008 - 0.016	0.008 - 0.020
S	Titanium alloys Ti-6Al-4V, etc	-	66 - 197	98 - 262	98 - 262	0.004 - 0.008	0.004 - 0.010	0.006 - 0.016
	Heat-resistant alloys, Inconel Inconel 718, etc.	250 ~	33 - 98	33 - 131	33 - 131	0.001 - 0.003	0.002 - 0.004	0.003 - 0.006
H	High hardened steels	~ 40HRC	66 - 164	98 - 197	98 - 197	0.002 - 0.006	0.002 - 0.006	0.002 - 0.008

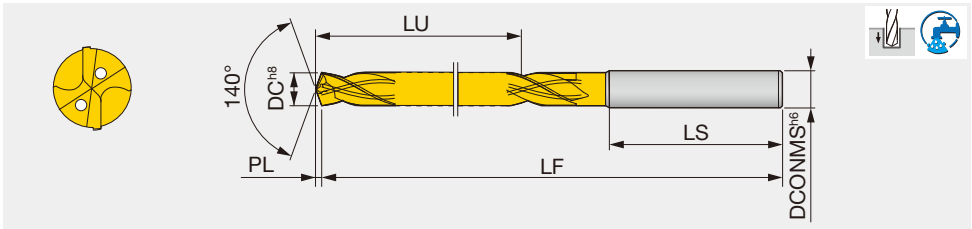
The cutting parameters shown in the table are merely a starting guideline for general machining. Values should be varied depending on the power or rigidity of the machine to be used. Optimum conditions should be selected depending on the actual chip control or damage on edges.

When using the smaller diameter tools in each range, set the feed "*f*" to the lower recommended values.
Oil holes that become blocked may cause drill breakages. A filter to prevent the circulation of chips must be used on the coolant supply system.

GIGAJETDRILL

DSXU-F03, F05

Solid drill, 140° point angle, with coolant hole, L/D = 3, 5, 8, ø0.125" - ø0.781"



L/D = 3

Inch	DC	AH180	DCONMS	LU	LS	LF	PL
DSXU2031F03	13/64	●	0.203	1.137	2.050	3.230	0.037
DSXU2344F03	15/64	●	0.234	1.223	2.050	3.230	0.043
DSXU2500F03	1/4	●	0.25	1.345	2.090	3.390	0.045
DSXU2656F03	17/64	●	0.266	1.428	2.090	3.460	0.048
DSXU2813F03	9/32	●	0.281	1.551	2.130	3.620	0.051
DSXU3125F03	5/16	●	0.313	1.627	2.130	3.700	0.057
DSXU3438F03	11/32	●	0.344	1.833	2.170	3.940	0.063
DSXU3750F03	3/8	●	0.375	2.038	2.200	4.170	0.068
DSXU3906F03	25/64	●	0.391	2.041	2.200	4.170	0.071
DSXU4063F03	13/32	●	0.406	2.164	2.400	4.570	0.074
DSXU4219F03	27/64	●	0.422	2.247	2.400	4.570	0.077
DSXU4375F03	7/16	●	0.438	2.360	2.440	4.800	0.080
DSXU4531F03	29/64	●	0.453	2.442	2.440	4.800	0.082
DSXU4688F03	15/32	●	0.469	2.445	2.440	4.800	0.085
DSXU4844F03	31/64	●	0.484	2.648	2.480	5.040	0.088
DSXU5000F03	1/2	●	0.500	2.651	2.480	5.040	0.091
DSXU5156F03	33/64	●	0.516	2.854	2.520	5.280	0.094
DSXU5313F03	17/32	●	0.531	2.857	2.520	5.280	0.097
DSXU5469F03	35/64	●	0.547	2.86	2.520	5.280	0.100
DSXU5625F03	9/16	●	0.563	3.052	2.560	5.510	0.102
DSXU5938F03	19/32	●	0.594	3.258	2.600	5.750	0.108
DSXU6250F03	5/8	●	0.625	3.264	2.600	5.750	0.114
DSXU6562F03	21/32	●	0.656	3.469	2.640	5.980	0.119
DSXU6875F03	11/16	●	0.688	3.665	2.680	6.220	0.125

L/D = 5

Inch	DC	AH180	DCONMS	LU	LS	LF	PL
DSXU2031F05	13/64	●	0.203	1.767	2.050	3.780	0.037
DSXU2188F05	7/32	●	0.219	1.93	2.050	3.940	0.040
DSXU2344F05	15/64	●	0.234	1.933	2.050	3.940	0.043
DSXU2500F05	1/4	●	0.25	2.095	2.090	4.130	0.045
DSXU2656F05	17/64	●	0.266	2.248	2.090	4.290	0.048
DSXU2813F05	9/32	●	0.281	2.411	2.130	4.490	0.051
DSXU2969F05	19/64	●	0.297	2.574	2.130	4.650	0.054
DSXU3125F05	5/16	●	0.313	2.577	2.130	4.650	0.057
DSXU3281F05	21/64	●	0.328	2.74	2.170	5.000	0.060
DSXU3438F05	11/32	●	0.344	2.893	2.170	5.000	0.063
DSXU3594F05	23/64	●	0.359	3.055	2.200	5.350	0.065
DSXU3750F05	3/8	●	0.375	3.218	2.200	5.350	0.068
DSXU3906F05	25/64	●	0.391	3.221	2.200	5.350	0.071
DSXU4063F05	13/32	●	0.406	3.384	2.400	5.870	0.074
DSXU4219F05	27/64	●	0.422	3.537	2.400	5.870	0.077
DSXU4375F05	7/16	●	0.438	3.700	2.440	6.220	0.080
DSXU4531F05	29/64	●	0.453	3.862	2.440	6.220	0.082
DSXU4844F05	31/64	●	0.484	4.178	2.480	6.570	0.088
DSXU5000F05	1/2	●	0.500	4.181	2.480	6.570	0.091
DSXU5156F05	33/64	●	0.516	4.504	2.520	6.930	0.094
DSXU5313F05	17/32	●	0.531	4.507	2.520	6.930	0.097
DSXU5625F05	9/16	●	0.563	4.822	2.560	7.280	0.102
DSXU6250F05	5/8	●	0.625	5.154	2.600	7.640	0.114
DSXU6562F05	21/32	●	0.656	5.469	2.640	7.990	0.119

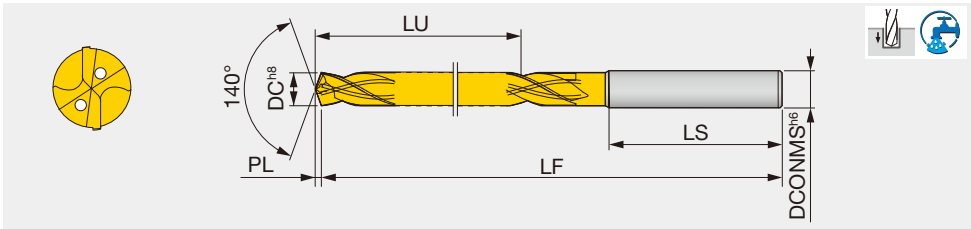
● : Line up

Reference pages: Standard cutting conditions → J050

GIGA JETDRILL

DSX-F03

Solid drill, 140° point angle, with coolant hole, L/D = 3, ø3 - ø10 mm



Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0300F03	3	●	3	15.6	48	68	0.55
DSX0310F03	3.1	●	4	18.6	48	71	0.56
DSX0320F03	3.2	●	4	18.6	48	71	0.58
DSX0330F03	3.3	●	4	18.6	48	71	0.60
DSX0340F03	3.4	●	4	18.6	48	71	0.62
DSX0350F03	3.5	●	4	18.6	48	71	0.64
DSX0360F03	3.6	●	4	20.7	48	73	0.66
DSX0370F03	3.7	●	4	20.7	48	73	0.67
DSX0380F03	3.8	●	4	20.7	48	73	0.69
DSX0390F03	3.9	●	4	20.7	48	73	0.71
DSX0400F03	4	●	4	20.7	48	73	0.73
DSX0410F03	4.1	●	5	23.8	50	78	0.75
DSX0420F03	4.2	●	5	23.8	50	78	0.76
DSX0430F03	4.3	●	5	23.8	50	78	0.78
DSX0440F03	4.4	●	5	23.8	50	78	0.80
DSX0450F03	4.5	●	5	23.8	50	78	0.82
DSX0460F03	4.6	●	5	25.8	50	80	0.84
DSX0470F03	4.7	●	5	25.9	50	80	0.86
DSX0480F03	4.8	●	5	25.9	50	80	0.87
DSX0490F03	4.9	●	5	25.9	50	80	0.89
DSX0500F03	5	●	5	25.9	50	80	0.91
DSX0510F03	5.1	●	6	28.9	52	82	0.93
DSX0520F03	5.2	●	6	29	52	82	0.95
DSX0530F03	5.3	●	6	29	52	82	0.96
DSX0540F03	5.4	●	6	29	52	82	0.98
DSX0550F03	5.5	●	6	29	52	82	1.00
DSX0560F03	5.6	●	6	31	52	82	1.02
DSX0570F03	5.7	●	6	31	52	82	1.04
DSX0580F03	5.8	●	6	31.1	52	82	1.06
DSX0590F03	5.9	●	6	31.1	52	82	1.07
DSX0600F03	6	●	6	31.1	52	82	1.09
DSX0610F03	6.1	●	7	34.1	53	86	1.11
DSX0620F03	6.2	●	7	34.1	53	86	1.13
DSX0630F03	6.3	●	7	34.2	53	86	1.15
DSX0640F03	6.4	●	7	34.2	53	86	1.16
DSX0650F03	6.5	●	7	34.2	53	86	1.18
DSX0660F03	6.6	●	7	36.2	53	88	1.20
DSX0670F03	6.7	●	7	36.2	53	88	1.22
DSX0680F03	6.8	●	7	36.2	53	88	1.24
DSX0690F03	6.9	●	7	36.3	53	88	1.26
DSX0700F03	7	●	7	36.3	53	88	1.27
DSX0710F03	7.1	●	8	39.3	54	92	1.29
DSX0720F03	7.2	●	8	39.3	54	92	1.31
DSX0730F03	7.3	●	8	39.3	54	92	1.33
DSX0740F03	7.4	●	8	39.4	54	92	1.35
DSX0750F03	7.5	●	8	39.4	54	92	1.36

Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0760F03	7.6	●	8	41.4	54	94	1.38
DSX0770F03	7.7	●	8	41.4	54	94	1.40
DSX0780F03	7.8	●	8	41.4	54	94	1.42
DSX0790F03	7.9	●	8	41.4	54	94	1.44
DSX0800F03	8	●	8	41.5	54	94	1.46
DSX0810F03	8.1	●	9	44.5	55	100	1.47
DSX0820F03	8.2	●	9	44.5	55	100	1.49
DSX0830F03	8.3	●	9	44.5	55	100	1.51
DSX0840F03	8.4	●	9	44.5	55	100	1.53
DSX0850F03	8.5	●	9	44.6	55	100	1.55
DSX0860F03	8.6	●	9	46.6	55	100	1.57
DSX0870F03	8.7	●	9	46.6	55	100	1.58
DSX0880F03	8.8	●	9	46.6	55	100	1.60
DSX0890F03	8.9	●	9	46.6	55	100	1.62
DSX0900F03	9	●	9	46.6	55	100	1.64
DSX0910F03	9.1	●	10	49.7	56	106	1.66
DSX0920F03	9.2	●	10	49.7	56	106	1.67
DSX0930F03	9.3	●	10	49.7	56	106	1.69
DSX0940F03	9.4	●	10	49.7	56	106	1.71
DSX0950F03	9.5	●	10	49.7	56	106	1.73
DSX0960F03	9.6	●	10	51.8	56	106	1.75
DSX0970F03	9.7	●	10	51.8	56	106	1.77
DSX0980F03	9.8	●	10	51.8	56	106	1.78
DSX0990F03	9.9	●	10	51.8	56	106	1.80
DSX1000F03	10	●	10	51.8	56	106	1.82

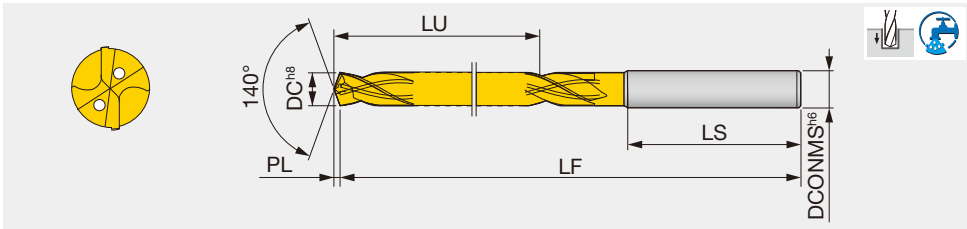
● : Line up

Reference pages: Standard cutting conditions → J050

GIGAJETDRILL

DSX-F05

Solid drill, 140° point angle, with coolant hole, L/D = 5, ø3 - ø10 mm



Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0300F05	3	●	3	24.6	48	77	0.55
DSX0310F05	3.1	●	4	28.6	48	81	0.56
DSX0320F05	3.2	●	4	28.6	48	81	0.58
DSX0330F05	3.3	●	4	28.6	48	81	0.6
DSX0340F05	3.4	●	4	28.6	48	81	0.62
DSX0350F05	3.5	●	4	28.6	48	81	0.64
DSX0360F05	3.6	●	4	32.7	48	85	0.66
DSX0370F05	3.7	●	4	32.7	48	85	0.67
DSX0380F05	3.8	●	4	32.7	48	85	0.69
DSX0390F05	3.9	●	4	32.7	48	85	0.71
DSX0400F05	4	●	4	32.7	48	85	0.73
DSX0410F05	4.1	●	5	36.8	50	91	0.75
DSX0420F05	4.2	●	5	36.8	50	91	0.76
DSX0430F05	4.3	●	5	36.8	50	91	0.78
DSX0440F05	4.4	●	5	36.8	50	91	0.8
DSX0450F05	4.5	●	5	36.8	50	91	0.82
DSX0460F05	4.6	●	5	40.8	50	94	0.84
DSX0470F05	4.7	●	5	40.9	50	94	0.86
DSX0480F05	4.8	●	5	40.9	50	94	0.87
DSX0490F05	4.9	●	5	40.9	50	94	0.89
DSX0500F05	5	●	5	40.9	50	94	0.91
DSX0510F05	5.1	●	6	44.9	52	96	0.93
DSX0520F05	5.2	●	6	45	52	96	0.95
DSX0530F05	5.3	●	6	45	52	96	0.96
DSX0540F05	5.4	●	6	45	52	96	0.98
DSX0550F05	5.5	●	6	45	52	96	1
DSX0560F05	5.6	●	6	49	52	100	1.02
DSX0570F05	5.7	●	6	49	52	100	1.04
DSX0580F05	5.8	●	6	49.1	52	100	1.06
DSX0590F05	5.9	●	6	49.1	52	100	1.07
DSX0600F05	6	●	6	49.1	52	100	1.09
DSX0610F05	6.1	●	7	53.1	53	105	1.11
DSX0620F05	6.2	●	7	53.1	53	105	1.13
DSX0630F05	6.3	●	7	53.2	53	105	1.15
DSX0640F05	6.4	●	7	53.2	53	105	1.16
DSX0650F05	6.5	●	7	53.2	53	105	1.18
DSX0660F05	6.6	●	7	57.2	53	109	1.2
DSX0670F05	6.7	●	7	57.2	53	109	1.22
DSX0680F05	6.8	●	7	57.2	53	109	1.24
DSX0690F05	6.9	●	7	57.3	53	109	1.26
DSX0700F05	7	●	7	57.3	53	109	1.27
DSX0710F05	7.1	●	8	61.3	54	114	1.29
DSX0720F05	7.2	●	8	61.3	54	114	1.31
DSX0730F05	7.3	●	8	61.3	54	114	1.33
DSX0740F05	7.4	●	8	61.4	54	114	1.35
DSX0750F05	7.5	●	8	61.4	54	114	1.36

Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0760F05	7.6	●	8	65.4	54	118	1.38
DSX0770F05	7.7	●	8	65.4	54	118	1.4
DSX0780F05	7.8	●	8	65.4	54	118	1.42
DSX0790F05	7.9	●	8	65.4	54	118	1.44
DSX0800F05	8	●	8	65.5	54	118	1.46
DSX0810F05	8.1	●	9	69.5	55	127	1.47
DSX0820F05	8.2	●	9	69.5	55	127	1.49
DSX0830F05	8.3	●	9	69.5	55	127	1.51
DSX0840F05	8.4	●	9	69.5	55	127	1.53
DSX0850F05	8.5	●	9	69.6	55	127	1.55
DSX0860F05	8.6	●	9	73.6	55	127	1.57
DSX0870F05	8.7	●	9	73.6	55	127	1.58
DSX0880F05	8.8	●	9	73.6	55	127	1.6
DSX0890F05	8.9	●	9	73.6	55	127	1.62
DSX0900F05	9	●	9	73.6	55	127	1.64
DSX0910F05	9.1	●	10	77.7	56	136	1.66
DSX0920F05	9.2	●	10	77.7	56	136	1.67
DSX0930F05	9.3	●	10	77.7	56	136	1.69
DSX0940F05	9.4	●	10	77.7	56	136	1.71
DSX0950F05	9.5	●	10	77.7	56	136	1.73
DSX0960F05	9.6	●	10	81.8	56	136	1.75
DSX0970F05	9.7	●	10	81.8	56	136	1.77
DSX0980F05	9.8	●	10	81.8	56	136	1.78
DSX0990F05	9.9	●	10	81.8	56	136	1.8
DSX1000F05	10	●	10	81.8	56	136	1.82

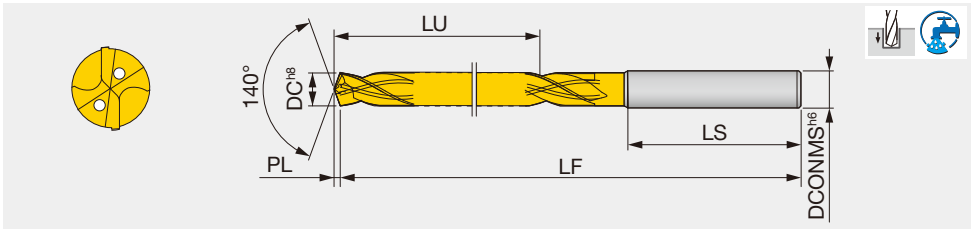
● : Line up

Reference pages: Standard cutting conditions → J050

GIGA JETDRILL

DSX-F08

Solid drill, 140° point angle, with coolant hole, L/D = 8, ø3 - ø10 mm



Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0300F08	3	●	3	33.6	48	86	0.55
DSX0310F08	3.1		4	39.6	48	92	0.56
DSX0320F08	3.2		4	39.6	48	92	0.58
DSX0330F08	3.3		4	39.6	48	92	0.6
DSX0340F08	3.4		4	39.6	48	92	0.62
DSX0350F08	3.5	●	4	39.6	48	92	0.64
DSX0360F08	3.6		4	44.7	48	97	0.66
DSX0370F08	3.7		4	44.7	48	97	0.67
DSX0380F08	3.8		4	44.7	48	97	0.69
DSX0390F08	3.9		4	44.7	48	97	0.71
DSX0400F08	4	●	4	44.7	48	97	0.73
DSX0410F08	4.1		5	50.8	50	105	0.75
DSX0420F08	4.2		5	50.8	50	105	0.76
DSX0430F08	4.3		5	50.8	50	105	0.78
DSX0440F08	4.4		5	50.8	50	105	0.8
DSX0450F08	4.5	●	5	50.8	50	105	0.82
DSX0460F08	4.6		5	55.8	50	110	0.84
DSX0470F08	4.7		5	55.9	50	110	0.86
DSX0480F08	4.8		5	55.9	50	110	0.87
DSX0490F08	4.9		5	55.9	50	110	0.89
DSX0500F08	5	●	5	55.9	50	110	0.91
DSX0510F08	5.1	●	6	61.9	52	113	0.93
DSX0520F08	5.2		6	62	52	113	0.95
DSX0530F08	5.3		6	62	52	113	0.96
DSX0540F08	5.4		6	62	52	113	0.98
DSX0550F08	5.5	●	6	62	52	113	1
DSX0560F08	5.6		6	67	52	118	1.02
DSX0570F08	5.7		6	67	52	118	1.04
DSX0580F08	5.8		6	67.1	52	118	1.06
DSX0590F08	5.9		6	67.1	52	118	1.07
DSX0600F08	6	●	6	67.1	52	118	1.09
DSX0610F08	6.1		7	73.1	53	125	1.11
DSX0620F08	6.2		7	73.1	53	125	1.13
DSX0630F08	6.3		7	73.2	53	125	1.15
DSX0640F08	6.4		7	73.2	53	125	1.16
DSX0650F08	6.5	●	7	73.2	53	125	1.18
DSX0660F08	6.6		7	78.2	53	130	1.2
DSX0670F08	6.7		7	78.2	53	130	1.22
DSX0680F08	6.8		7	78.2	53	130	1.24
DSX0690F08	6.9		7	78.3	53	130	1.26
DSX0700F08	7	●	7	78.3	53	130	1.27
DSX0710F08	7.1		8	84.3	54	137	1.29
DSX0720F08	7.2		8	84.3	54	137	1.31
DSX0730F08	7.3		8	84.3	54	137	1.33
DSX0740F08	7.4		8	84.4	54	137	1.35
DSX0750F08	7.5	●	8	84.4	54	137	1.36

Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSX0760F08	7.6		8	89.4	54	142	1.38
DSX0770F08	7.7		8	89.4	54	142	1.4
DSX0780F08	7.8		8	89.4	54	142	1.42
DSX0790F08	7.9		8	89.4	54	142	1.44
DSX0800F08	8	●	8	89.5	54	142	1.46
DSX0810F08	8.1		9	95.5	55	154	1.47
DSX0820F08	8.2		9	95.5	55	154	1.49
DSX0830F08	8.3	●	9	95.5	55	154	1.51
DSX0840F08	8.4		9	95.5	55	154	1.53
DSX0850F08	8.5	●	9	95.6	55	154	1.55
DSX0860F08	8.6		9	100.6	55	154	1.57
DSX0870F08	8.7		9	100.6	55	154	1.58
DSX0880F08	8.8		9	100.6	55	154	1.6
DSX0890F08	8.9		9	100.6	55	154	1.62
DSX0900F08	9	●	9	100.6	55	154	1.64
DSX0910F08	9.1		10	106.7	56	166	1.66
DSX0920F08	9.2		10	106.7	56	166	1.67
DSX0930F08	9.3		10	106.7	56	166	1.69
DSX0940F08	9.4		10	106.7	56	166	1.71
DSX0950F08	9.5	●	10	106.7	56	166	1.73
DSX0960F08	9.6		10	111.8	56	166	1.75
DSX0970F08	9.7		10	111.8	56	166	1.77
DSX0980F08	9.8		10	111.8	56	166	1.78
DSX0990F08	9.9		10	111.8	56	166	1.8
DSX1000F08	10	●	10	111.8	56	166	1.82

● : Line up

Reference pages: Standard cutting conditions → J050

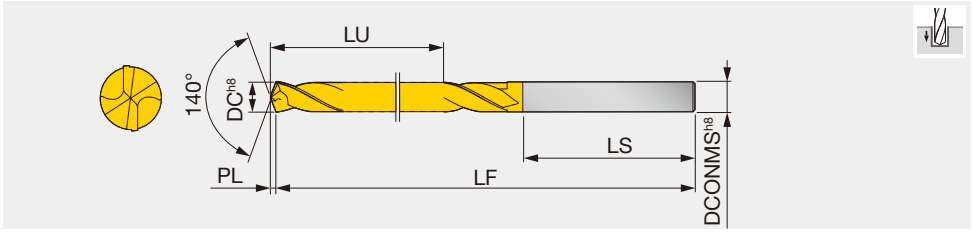
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Hardness	Cutting speed: *Vc* (sfm)			Feed: *f* (ipr)		
			ø0.118 ~ ø0.236	ø0.236 ~ ø0.394	ø0.394 ~ ø0.787	ø0.118 ~ ø0.236	ø0.236 ~ ø0.394	ø0.394 ~ ø0.787
P	Mild steels, Low carbon steels 1018, 1020, 1026, etc.	< 180HB	230 - 459	262 - 525	295 - 623	0.006 - 0.010	0.008 - 0.014	0.010 - 0.016
P	Carbon steels, Alloy steels 1045, 1055, etc.	180 ~ 300HB	164 - 427	230 - 525	262 - 558	0.006 - 0.010	0.008 - 0.014	0.010 - 0.016
P	High alloy steels, etc. 4140, 8620, etc.	250 ~ 350HB	131 - 328	197 - 459	197 - 525	0.004 - 0.008	0.006 - 0.012	0.006 - 0.012
M	Stainless steels 304SS, 316SS, 17-4 PH, etc.	< 200HB	98 - 230	164 - 328	164 - 394	0.004 - 0.008	0.004 - 0.010	0.006 - 0.014
K	Gray cast irons Class 25, Class 30, etc.	< 200HB	262 - 459	328 - 525	328 - 591	0.006 - 0.014	0.008 - 0.016	0.010 - 0.020
K	Ductile cast irons 60-40-18, 60-55-06, etc.	< 300HB	230 - 459	262 - 492	262 - 558	0.006 - 0.014	0.008 - 0.016	0.010 - 0.018
N	Aluminum alloys 6061, 7075, etc.	-	262 - 525	328 - 591	328 - 623	0.006 - 0.014	0.008 - 0.018	0.010 - 0.024
S	Titanium alloys Ti-6Al-4V, etc.	-	82 - 197	98 - 262	98 - 262	0.004 - 0.008	0.004 - 0.010	0.006 - 0.014
S	Heat-resistant alloys Inconel, etc.	250HB <	33 - 98	33 - 131	33 - 131	0.001 - 0.004	0.002 - 0.006	0.004 - 0.010
H	High hardened steels	< 40HRC	66 - 164	98 - 197	98 - 197	0.003 - 0.004	0.004 - 0.006	0.005 - 0.008

Cutting conditions in the above table show standard cutting conditions.
Cutting conditions may change due to the rigidity and power of the machine and the workpiece material.
Especially in deep hole drilling (L/D is over 5), the lower cutting speed is better for longer tool life.
The coolant pressure must be 0.5 MPa - 1MPa. Especially for small diameter drill, the higher pressure is recommended.
Oil holes that become blocked may cause drill breakages. A filter to prevent the circulation of chips must be used on the coolant supply system.

DSE-F02

Solid drill, 140° point angle, without coolant hole, shank diameter = tool diameter, L/D = 2, ø3 - ø10 mm



Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSE0300F02	3	●	3	16.6	30	46	0.55
DSE0310F02	3.1		3.1	18.6	31	49	0.56
DSE0320F02	3.2	●	3.2	18.6	31	49	0.58
DSE0330F02	3.3		3.3	18.6	31	49	0.6
DSE0340F02	3.4	●	3.4	20.6	32	52	0.62
DSE0350F02	3.5	●	3.5	20.6	32	52	0.64
DSE0360F02	3.6		3.6	20.7	32	52	0.66
DSE0370F02	3.7		3.7	20.7	32	52	0.67
DSE0380F02	3.8		3.8	22.7	33	55	0.69
DSE0390F02	3.9		3.9	22.7	33	55	0.71
DSE0400F02	4	●	4	22.7	33	55	0.73
DSE0410F02	4.1		4.1	22.8	33	55	0.75
DSE0420F02	4.2		4.2	22.8	33	55	0.76
DSE0430F02	4.3	●	4.3	24.8	34	58	0.78
DSE0440F02	4.4		4.4	24.8	34	58	0.8
DSE0450F02	4.5	●	4.5	24.8	34	58	0.82
DSE0460F02	4.6		4.6	24.8	34	58	0.84
DSE0470F02	4.7		4.7	24.9	34	58	0.86
DSE0480F02	4.8		4.8	26.9	36	62	0.87
DSE0490F02	4.9		4.9	26.9	36	62	0.89
DSE0500F02	5	●	5	26.9	36	62	0.91
DSE0510F02	5.1	●	5.1	26.9	36	62	0.93
DSE0520F02	5.2		5.2	27	36	62	0.95
DSE0530F02	5.3		5.3	27	36	62	0.96
DSE0540F02	5.4		5.4	29	38	66	0.98
DSE0550F02	5.5	●	5.5	29	38	66	1
DSE0560F02	5.6	●	5.6	29	38	66	1.02
DSE0570F02	5.7		5.7	29	38	66	1.04
DSE0580F02	5.8		5.8	29.1	38	66	1.06
DSE0590F02	5.9		5.9	29.1	38	66	1.07
DSE0600F02	6	●	6	29.1	38	66	1.09
DSE0610F02	6.1		6.1	32.1	39	70	1.11
DSE0620F02	6.2		6.2	32.1	39	70	1.13
DSE0630F02	6.3		6.3	32.2	39	70	1.15
DSE0640F02	6.4	●	6.4	32.2	39	70	1.16
DSE0650F02	6.5	●	6.5	32.2	39	70	1.18
DSE0660F02	6.6		6.6	32.2	39	70	1.2
DSE0670F02	6.7		6.7	32.2	39	70	1.22
DSE0680F02	6.8	●	6.8	35.2	40	74	1.24
DSE0690F02	6.9		6.9	35.3	40	74	1.26
DSE0700F02	7	●	7	35.3	40	74	1.27
DSE0710F02	7.1		7.1	35.3	40	74	1.29
DSE0720F02	7.2		7.2	35.3	40	74	1.31
DSE0730F02	7.3		7.3	35.3	40	74	1.33
DSE0740F02	7.4		7.4	35.4	40	74	1.35
DSE0750F02	7.5	●	7.5	35.4	40	74	1.36
DSE0760F02	7.6		7.6	38.4	42	79	1.38
DSE0770F02	7.7		7.7	38.4	42	79	1.4
DSE0780F02	7.8		7.8	38.4	42	79	1.42
DSE0790F02	7.9		7.9	38.4	42	79	1.44

Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSE0800F02	8	●	8	38.5	42	79	1.46
DSE0810F02	8.1		8.1	38.5	42	79	1.47
DSE0820F02	8.2		8.2	38.5	42	79	1.49
DSE0830F02	8.3		8.3	38.5	42	79	1.51
DSE0840F02	8.4		8.4	38.5	42	79	1.53
DSE0850F02	8.5	●	8.5	38.6	42	79	1.55
DSE0860F02	8.6		8.6	41.6	44	84	1.57
DSE0870F02	8.7		8.7	41.6	44	84	1.58
DSE0880F02	8.8		8.8	41.6	44	84	1.6
DSE0890F02	8.9		8.9	41.6	44	84	1.62
DSE0900F02	9	●	9	41.6	44	84	1.64
DSE0910F02	9.1		9.1	41.7	44	84	1.66
DSE0920F02	9.2		9.2	41.7	44	84	1.67
DSE0930F02	9.3		9.3	41.7	44	84	1.69
DSE0940F02	9.4		9.4	41.7	44	84	1.71
DSE0950F02	9.5	●	9.5	41.7	44	84	1.73
DSE0960F02	9.6		9.6	44.8	46	89	1.75
DSE0970F02	9.7		9.7	44.8	46	89	1.77
DSE0980F02	9.8		9.8	44.8	46	89	1.78
DSE0990F02	9.9		9.9	44.8	46	89	1.8
DSE1000F02	10	●	10	44.8	46	89	1.82

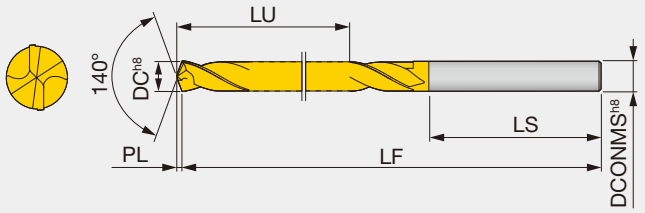
● : Line up

Reference pages: Standard cutting conditions → J053

GIGAPOWERDRILL

DSE-F03

Solid drill, 140° point angle, without coolant hole, shank diameter = tool diameter, L/D = 3, ø3 - ø10 mm



Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSE0300F03	3	●	3	21.6	39	60	0.55
DSE0310F03	3.1		3.1	24.6	36	60	0.56
DSE0320F03	3.2	●	3.2	24.6	36	60	0.58
DSE0330F03	3.3		3.3	24.6	36	60	0.6
DSE0340F03	3.4	●	3.4	24.6	36	60	0.62
DSE0350F03	3.5	●	3.5	24.6	36	60	0.64
DSE0360F03	3.6		3.6	27.7	33	60	0.66
DSE0370F03	3.7		3.7	27.7	33	60	0.67
DSE0380F03	3.8		3.8	27.7	33	60	0.69
DSE0390F03	3.9		3.9	27.7	33	60	0.71
DSE0400F03	4	●	4	27.7	33	60	0.73
DSE0410F03	4.1		4.1	29.8	34	63	0.75
DSE0420F03	4.2		4.2	29.8	34	63	0.76
DSE0430F03	4.3	●	4.3	29.8	34	63	0.78
DSE0440F03	4.4		4.4	29.8	34	63	0.8
DSE0450F03	4.5	●	4.5	29.8	34	63	0.82
DSE0460F03	4.6		4.6	32.8	36	68	0.84
DSE0470F03	4.7		4.7	32.9	36	68	0.86
DSE0480F03	4.8		4.8	32.9	36	68	0.87
DSE0490F03	4.9		4.9	32.9	36	68	0.89
DSE0500F03	5	●	5	32.9	36	68	0.91
DSE0510F03	5.1	●	5.1	34.9	38	72	0.93
DSE0520F03	5.2		5.2	35	38	72	0.95
DSE0530F03	5.3		5.3	35	38	72	0.96
DSE0540F03	5.4		5.4	35	38	72	0.98
DSE0550F03	5.5	●	5.5	35	38	72	1
DSE0560F03	5.6		5.6	37	38	74	1.02
DSE0570F03	5.7		5.7	37	38	74	1.04
DSE0580F03	5.8		5.8	37.1	38	74	1.06
DSE0590F03	5.9		5.9	37.1	38	74	1.07
DSE0600F03	6	●	6	42.1	40	81	1.09
DSE0610F03	6.1		6.1	42.1	40	81	1.11
DSE0620F03	6.2		6.2	42.1	40	81	1.13
DSE0630F03	6.3		6.3	42.2	40	81	1.15
DSE0640F03	6.4		6.4	42.2	40	81	1.16
DSE0650F03	6.5	●	6.5	42.2	40	81	1.18
DSE0660F03	6.6		6.6	44.2	40	83	1.2
DSE0670F03	6.7		6.7	44.2	40	83	1.22
DSE0680F03	6.8	●	6.8	44.2	40	83	1.24
DSE0690F03	6.9		6.9	44.3	40	83	1.26
DSE0700F03	7	●	7	44.3	40	83	1.27
DSE0710F03	7.1		7.1	46.3	42	87	1.29
DSE0720F03	7.2		7.2	46.3	42	87	1.31
DSE0730F03	7.3		7.3	46.3	42	87	1.33
DSE0740F03	7.4	●	7.4	46.4	42	87	1.35
DSE0750F03	7.5	●	7.5	46.4	42	87	1.36
DSE0760F03	7.6		7.6	49.4	42	90	1.38
DSE0770F03	7.7		7.7	49.4	42	90	1.4
DSE0780F03	7.8		7.8	49.4	42	90	1.42
DSE0790F03	7.9		7.9	49.4	42	90	1.44

Metric	DC	AH180	DCONMS	LU	LS	LF	PL
DSE0800F03	8	●	8	49.5	42	90	1.46
DSE0810F03	8.1		8.1	54.5	43	96	1.47
DSE0820F03	8.2		8.2	54.5	43	96	1.49
DSE0830F03	8.3		8.3	54.5	43	96	1.51
DSE0840F03	8.4		8.4	54.5	43	96	1.53
DSE0850F03	8.5	●	8.5	54.6	43	96	1.55
DSE0860F03	8.6	●	8.6	56.6	43	98	1.57
DSE0870F03	8.7		8.7	56.6	43	98	1.58
DSE0880F03	8.8		8.8	56.6	43	98	1.6
DSE0890F03	8.9		8.9	56.6	43	98	1.62
DSE0900F03	9	●	9	56.6	43	98	1.64
DSE0910F03	9.1		9.1	59.7	44	102	1.66
DSE0920F03	9.2		9.2	59.7	44	102	1.67
DSE0930F03	9.3		9.3	59.7	44	102	1.69
DSE0940F03	9.4		9.4	59.7	44	102	1.71
DSE0950F03	9.5	●	9.5	59.7	44	102	1.73
DSE0960F03	9.6		9.6	61.8	45	105	1.75
DSE0970F03	9.7		9.7	61.8	45	105	1.77
DSE0980F03	9.8		9.8	61.8	45	105	1.78
DSE0990F03	9.9		9.9	61.8	45	105	1.8
DSE1000F03	10	●	10	61.8	45	105	1.82

● : Line up

Reference pages: Standard cutting conditions → J053

STANDARD CUTTING CONDITIONS

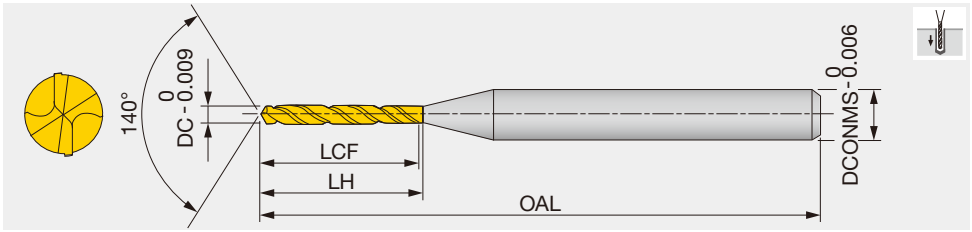
ISO	Workpiece material	Hardness	Cutting speed: *Vc* (sfm)			Feed: *f* (ipr)		
			ø0.118" ~ ø0.236"	ø0.236" ~ ø0.394"	ø0.394" ~ ø0.630"	ø0.118" ~ ø0.236"	ø0.236" ~ ø0.394"	ø0.394" ~ ø0.630"
P	Mild steels, Low carbon steels	< 180HB	131 - 328	197 - 394	197 - 427	0.006 - 0.012	0.006 - 0.014	0.008 - 0.020
P	Carbon steels, Alloy steels	180 ~ 300HB	131 - 295	164 - 394	197 - 427	0.006 - 0.012	0.006 - 0.014	0.006 - 0.016
P	High alloy steels, etc.	250 ~ 350HB	131 - 262	164 - 328	164 - 328	0.004 - 0.008	0.006 - 0.010	0.006 - 0.014
M	Stainless steels	< 200HB	33 - 66	33 - 66	33 - 66	0.002 - 0.006	0.002 - 0.006	0.002 - 0.006
K	Gray cast irons	< 200HB	131 - 295	164 - 312	164 - 328	0.006 - 0.012	0.008 - 0.016	0.008 - 0.016
K	Ductile cast irons	< 300HB	115 - 262	131 - 279	148 - 295	0.006 - 0.012	0.008 - 0.016	0.008 - 0.016
S	Titanium alloys		66 - 131	66 - 131	66 - 131	0.004 - 0.008	0.006 - 0.010	0.006 - 0.016
S	Heat-resistant alloys	250HB <	33 - 98	33 - 98	33 - 98	0.001 - 0.003	0.002 - 0.004	0.003 - 0.005
H	High hardened steels	< 40HRC	66 - 131	66 - 131	66 - 131	0.002 - 0.006	0.002 - 0.006	0.003 - 0.008

Because the cutting conditions may be changed depending on the material type, hardness, machinability, machine tool, and coolant, the most appropriate conditions must be decided based on the chip control condition and tool failure mode.
When using the smaller diameter tools in each range, set the feed "*f*" to the lower recommended values.
When drilling difficult-to-cut materials, coolant supplying conditions are critical for successful drilling. So, the use of constant and flood coolant is highly recommended.
When work material is austenitic stainless steel and the hole depth is over L/D = 2, using a step drilling program or a DSX drill with an oil hole is recommended.

GIGAMINIDRILL

DSM

Micro solid drill, 140° point angle, without coolant hole, shank diameter ø3 mm, L/D = 5 - 15, tool diameter ø0.1 - ø3 mm



Metric	DC	Coated YH170	Coated YH180	DCONMS	LCF	LH	OAL
DSM0010G10	0.1	●		3	1.15	1.4	38
DSM0011G10	0.11	●		3	1.25	1.5	38
DSM0012G10	0.12	●		3	1.35	1.6	38
DSM0013G10	0.13	●		3	1.55	1.8	38
DSM0014G10	0.14	●		3	1.65	1.9	38
DSM0015G10	0.15	●		3	1.75	2	38
DSM0016G10	0.16	●		3	1.85	2.1	38
DSM0017G10	0.17	●		3	1.95	2.2	38
DSM0018G10	0.18	●		3	2.15	2.4	38
DSM0019G10	0.19	●		3	2.25	2.5	38
DSM0020G10	0.2	●		3	2.35	2.6	38
DSM0021G10	0.21	●		3	2.45	2.7	38
DSM0022G10	0.22	●		3	2.55	2.8	38
DSM0023G10	0.23	●		3	2.75	3	38
DSM0024G10	0.24	●		3	2.85	3.1	38
DSM0025G10	0.25	●		3	3	3.3	38
DSM0026G10	0.26	●		3	3.1	3.4	38
DSM0027G10	0.27	●		3	3.2	3.5	38
DSM0028G10	0.28	●		3	3.4	3.7	38
DSM0029G10	0.29	●		3	3.5	3.8	38
DSM0030G10	0.3	●		3	3.9	4.2	38
DSM0031G15	0.31	●		3	5.6	5.9	38
DSM0032G15	0.32	●		3	5.6	5.9	38
DSM0033G15	0.33	●		3	5.6	5.9	38
DSM0034G15	0.34	●		3	5.6	5.9	38
DSM0035G15	0.35	●		3	5.6	5.9	38
DSM0036G15	0.36	●		3	6.5	6.8	38
DSM0037G15	0.37	●		3	6.5	6.8	38
DSM0038G15	0.38	●		3	6.5	6.8	38
DSM0039G15	0.39	●		3	6.5	6.8	38
DSM0040G15	0.4	●		3	6.5	6.8	38
DSM0041G15	0.41	●		3	7.4	7.7	38
DSM0042G15	0.42	●		3	7.4	7.7	38
DSM0043G15	0.43	●		3	7.4	7.7	38
DSM0044G15	0.44	●		3	7.4	7.7	38
DSM0045G15	0.45	●		3	7.4	7.7	38
DSM0046G15	0.46	●		3	8.1	8.7	38
DSM0047G15	0.47	●		3	8.1	8.7	38
DSM0048G15	0.48	●		3	8.1	8.7	38
DSM0049G15	0.49	●		3	8.1	8.7	38
DSM0050G15	0.5	●		3	8.1	8.7	38
DSM0051G10	0.51			3	6.6	7.2	38
DSM0052G10	0.52			3	6.6	7.2	38
DSM0053G10	0.53			3	6.6	7.2	38
DSM0054G10	0.54			3	6.6	7.2	38
DSM0055G10	0.55	●		3	6.6	7.2	38
DSM0056G10	0.56			3	7.3	7.9	38
DSM0057G10	0.57			3	7.3	7.9	38
DSM0058G10	0.58			3	7.3	7.9	38
DSM0059G10	0.59			3	7.3	7.9	38
DSM0060G10	0.6	●		3	7.3	7.9	38
DSM0061G10	0.61			3	7.9	8.5	38
DSM0062G10	0.62			3	7.9	8.5	38
DSM0063G10	0.63			3	7.9	8.5	38
DSM0064G10	0.64			3	7.9	8.5	38
DSM0065G10	0.65	●		3	7.9	8.5	38
DSM0066G10	0.66			3	8.6	9.2	38
DSM0067G10	0.67			3	8.6	9.2	38
DSM0068G10	0.68			3	8.6	9.2	38
DSM0069G10	0.69			3	8.6	9.2	38

Metric	DC	Coated YH170	Coated YH180	DCONMS	LCF	LH	OAL
DSM0070G10	0.7	●		3	8.6	9.2	38
DSM0071G10	0.71			3	9.2	9.8	38
DSM0072G10	0.72			3	9.2	9.8	38
DSM0073G10	0.73			3	9.2	9.8	38
DSM0074G10	0.74			3	9.2	9.8	38
DSM0075G10	0.75	●		3	9.2	9.8	38
DSM0076G10	0.76			3	9.9	10.5	38
DSM0077G10	0.77			3	9.9	10.5	38
DSM0078G10	0.78			3	9.9	10.5	38
DSM0079G10	0.79			3	9.9	10.5	38
DSM0080G10	0.8	●		3	9.9	10.5	38
DSM0081G10	0.81			3	10.5	11.1	38
DSM0082G10	0.82			3	10.5	11.1	38
DSM0083G10	0.83			3	10.5	11.1	38
DSM0084G10	0.84			3	10.5	11.1	38
DSM0085G10	0.85			3	10.5	11.1	38
DSM0086G10	0.86			3	9.9	10.5	38
DSM0087G10	0.87			3	9.9	10.5	38
DSM0088G10	0.88	●		3	9.9	10.5	38
DSM0089G10	0.89			3	9.9	10.5	38
DSM0090G10	0.9	●		3	9.9	10.5	38
DSM0091G10	0.91			3	10.5	11.1	38
DSM0092G10	0.92			3	10.5	11.1	38
DSM0093G10	0.93			3	10.5	11.1	38
DSM0094G10	0.94			3	10.5	11.1	38
DSM0095G10	0.95			3	10.5	11.1	38
DSM0096G10	0.96			3	11	11.6	38
DSM0097G10	0.97	●		3	11	11.6	38
DSM0098G10	0.98			3	11	11.6	38
DSM0099G10	0.99			3	11	11.6	38
DSM0100G10	1	●		3	11.5	12.1	38
DSM0101G05	1.01			3	8	8.6	38
DSM0102G05	1.02			3	8	8.6	38
DSM0103G05	1.03			3	8	8.6	38
DSM0104G05	1.04			3	8	8.6	38
DSM0105G05	1.05			3	8	8.6	38
DSM0106G05	1.06			3	8	8.6	38
DSM0107G05	1.07			3	8	8.6	38
DSM0108G05	1.08	●		3	8	8.6	38
DSM0109G05	1.09			3	8	8.6	38
DSM0110G05	1.1	●		3	8	8.6	38
DSM0111G05	1.11			3	8.9	9.5	38
DSM0112G05	1.12			3	8.9	9.5	38
DSM0113G05	1.13			3	8.9	9.5	38
DSM0114G05	1.14			3	8.9	9.5	38
DSM0115G05	1.15			3	8.9	9.5	38
DSM0116G05	1.16			3	8.9	9.5	38
DSM0117G05	1.17			3	8.9	9.5	38
DSM0118G05	1.18			3	8.9	9.5	38
DSM0119G05	1.19			3	8.9	9.5	38
DSM0120G05	1.2	●		3	8.9	9.5	38
DSM0121G05	1.21			3	9.7	10.3	38
DSM0122G05	1.22			3	9.7	10.3	38
DSM0123G05	1.23			3	9.7	10.3	38
DSM0124G05	1.24			3	9.7	10.3	38
DSM0125G05	1.25			3	9.7	10.3	38
DSM0126G05	1.26			3	9.7	10.3	38
DSM0127G05	1.27			3	9.7	10.3	38

● : Line up

Reference pages: Standard cutting conditions → J056

Metric	DC	Coated YH170	Coated YH180	DCONMS	LCF	LH	OAL
DSM0128G05	1.28			3	9.7	10.3	38
DSM0129G05	1.29			3	9.7	10.3	38
DSM0130G05	1.3	●		3	9.7	10.3	38
DSM0131G05	1.31			3	10.5	11.1	38
DSM0132G05	1.32			3	10.5	11.1	38
DSM0133G05	1.33			3	10.5	11.1	38
DSM0134G05	1.34			3	10.5	11.1	38
DSM0135G05	1.35			3	10.5	11.1	38
DSM0136G05	1.36			3	10.5	11.1	38
DSM0137G05	1.37			3	10.5	11.1	38
DSM0138G05	1.38			3	10.5	11.1	38
DSM0139G05	1.39			3	10.5	11.1	38
DSM0140G05	1.4	●		3	10.5	11.1	38
DSM0141G05	1.41			3	11.3	11.9	38
DSM0142G05	1.42			3	11.3	11.9	38
DSM0143G05	1.43			3	11.3	11.9	38
DSM0144G05	1.44			3	11.3	11.9	38
DSM0145G05	1.45	●		3	11.3	11.9	38
DSM0146G05	1.46			3	11.3	11.9	38
DSM0147G05	1.47			3	11.3	11.9	38
DSM0148G05	1.48			3	11.3	11.9	38
DSM0149G05	1.49			3	11.3	11.9	38
DSM0150G05	1.5	●		3	11.3	11.9	38
DSM0151G05	1.51			3	12.1	12.7	45
DSM0152G05	1.52			3	12.1	12.7	45
DSM0153G05	1.53	●		3	12.1	12.7	45
DSM0154G05	1.54			3	12.1	12.7	45
DSM0155G05	1.55	●		3	12.1	12.7	45
DSM0156G05	1.56			3	12.1	12.7	45
DSM0157G05	1.57			3	12.1	12.7	45
DSM0158G05	1.58			3	12.1	12.7	45
DSM0159G05	1.59			3	12.1	12.7	45
DSM0160G05	1.6	●		3	12.1	12.7	45
DSM0161G05	1.61			3	12.9	13.6	45
DSM0162G05	1.62			3	12.9	13.6	45
DSM0163G05	1.63			3	12.9	13.6	45
DSM0164G05	1.64			3	12.9	13.6	45
DSM0165G05	1.65	●		3	12.9	13.6	45
DSM0166G05	1.66			3	12.9	13.6	45
DSM0167G05	1.67			3	12.9	13.6	45
DSM0168G05	1.68			3	12.9	13.6	45
DSM0169G05	1.69			3	12.9	13.6	45
DSM0170G05	1.7	●		3	12.9	13.6	45
DSM0171G05	1.71			3	13.7	14.3	45
DSM0172G05	1.72			3	13.7	14.3	45
DSM0173G05	1.73			3	13.7	14.3	45
DSM0174G05	1.74			3	13.7	14.3	45
DSM0175G05	1.75			3	13.7	14.3	45
DSM0176G05	1.76			3	13.7	14.3	45
DSM0177G05	1.77			3	13.7	14.3	45
DSM0178G05	1.78			3	13.7	14.3	45
DSM0179G05	1.79			3	13.7	14.3	45
DSM0180G05	1.8	●		3	13.7	14.3	45
DSM0181G05	1.81			3	14.5	15.1	45
DSM0182G05	1.82	●		3	14.5	15.1	45
DSM0183G05	1.83			3	14.5	15.1	45
DSM0184G05	1.84			3	14.5	15.1	45
DSM0185G05	1.85	●		3	14.5	15.1	45
DSM0186G05	1.86			3	14.5	15.1	45
DSM0187G05	1.87			3	14.5	15.1	45
DSM0188G05	1.88			3	14.5	15.1	45
DSM0189G05	1.89			3	14.5	15.1	45
DSM0190G05	1.9	●		3	14.5	15.1	45
DSM0191G05	1.91			3	15.3	15.9	45
DSM0192G05	1.92			3	15.3	15.9	45
DSM0193G05	1.93			3	15.3	15.9	45
DSM0194G05	1.94			3	15.3	15.9	45
DSM0195G05	1.95	●		3	15.3	15.9	45
DSM0196G05	1.96			3	15.3	15.9	45
DSM0197G05	1.97			3	15.3	15.9	45
DSM0198G05	1.98			3	15.3	15.9	45
DSM0199G05	1.99			3	15.3	15.9	45
DSM0200G05	2		●	3	15.3	15.9	45
DSM0201G05	2.01			3	16.1	16.7	45
DSM0202G05	2.02			3	16.1	16.7	45
DSM0203G05	2.03		●	3	16.1	16.7	45

Metric	DC	Coated YH170	Coated YH180	DCONMS	LCF	LH	OAL
DSM0204G05	2.04			3	16.1	16.7	45
DSM0205G05	2.05			3	16.1	16.7	45
DSM0206G05	2.06			3	16.1	16.7	45
DSM0207G05	2.07			3	16.1	16.7	45
DSM0208G05	2.08			3	16.1	16.7	45
DSM0209G05	2.09			3	16.1	16.7	45
DSM0210G05	2.1		●	3	16.1	16.7	45
DSM0211G05	2.11			3	16.9	17.5	45
DSM0212G05	2.12			3	16.9	17.5	45
DSM0213G05	2.13			3	16.9	17.5	45
DSM0214G05	2.14			3	16.9	17.5	45
DSM0215G05	2.15			3	16.9	17.5	45
DSM0216G05	2.16			3	16.9	17.5	45
DSM0217G05	2.17			3	16.9	17.5	45
DSM0218G05	2.18			3	16.9	17.5	45
DSM0219G05	2.19			3	16.9	17.5	45
DSM0220G05	2.2		●	3	16.9	17.5	45
DSM0221G05	2.21			3	17.7	18.3	45
DSM0222G05	2.22			3	17.7	18.3	45
DSM0223G05	2.23			3	17.7	18.3	45
DSM0224G05	2.24			3	17.7	18.3	45
DSM0225G05	2.25			3	17.7	18.3	45
DSM0226G05	2.26			3	17.7	18.3	45
DSM0227G05	2.27			3	17.7	18.3	45
DSM0228G05	2.28			3	17.7	18.3	45
DSM0229G05	2.29			3	17.7	18.3	45
DSM0230G05	2.3		●	3	17.7	18.3	45
DSM0231G05	2.31			3	18.5	19.1	55
DSM0232G05	2.32			3	18.5	19.1	55
DSM0233G05	2.33			3	18.5	19.1	55
DSM0234G05	2.34			3	18.5	19.1	55
DSM0235G05	2.35			3	18.5	19.1	55
DSM0236G05	2.36			3	18.5	19.1	55
DSM0237G05	2.37			3	18.5	19.1	55
DSM0238G05	2.38			3	18.5	19.1	55
DSM0239G05	2.39			3	18.5	19.1	55
DSM0240G05	2.4		●	3	18.5	19.1	55
DSM0241G05	2.41			3	19.3	19.9	55
DSM0242G05	2.42			3	19.3	19.9	55
DSM0243G05	2.43			3	19.3	19.9	55
DSM0244G05	2.44			3	19.3	19.9	55
DSM0245G05	2.45			3	19.3	19.9	55
DSM0246G05	2.46			3	19.3	19.9	55
DSM0247G05	2.47			3	19.3	19.9	55
DSM0248G05	2.48			3	19.3	19.9	55
DSM0249G05	2.49			3	19.3	19.9	55
DSM0250G05	2.5		●	3	19.3	19.9	55
DSM0251G05	2.51			3	20.1	20.7	55
DSM0252G05	2.52			3	20.1	20.7	55
DSM0253G05	2.53			3	20.1	20.7	55
DSM0254G05	2.54			3	20.1	20.7	55
DSM0255G05	2.55			3	20.1	20.7	55
DSM0256G05	2.56		●	3	20.1	20.7	55
DSM0257G05	2.57			3	20.1	20.7	55
DSM0258G05	2.58			3	20.1	20.7	55
DSM0259G05	2.59			3	20.1	20.7	55
DSM0260G05	2.6		●	3	20.1	20.7	55
DSM0261G05	2.61			3	20.9	21.5	55
DSM0262G05	2.62			3	20.9	21.5	55
DSM0263G05	2.63			3	20.9	21.5	55
DSM0264G05	2.64			3	20.9	21.5	55
DSM0265G05	2.65			3	20.9	21.5	55
DSM0266G05	2.66			3	20.9	21.5	55
DSM0267G05	2.67			3	20.9	21.5	55
DSM0268G05	2.68			3	20.9	21.5	55
DSM0269G05	2.69			3	20.9	21.5	55
DSM0270G05	2.7		●	3	20.9	21.5	55
DSM0271G05	2.71			3	21.7	22.3	55
DSM0272G05	2.72			3	21.7	22.3	55
DSM0273G05	2.73			3	21.7	22.3	55
DSM0274G05	2.74			3	21.7	22.3	55
DSM0275G05	2.75			3	21.7	22.3	55
DSM0276G05	2.76			3	21.7	22.3	55
DSM0277G05	2.77			3	21.7	22.3	55

● : Line up

Reference pages: Standard cutting conditions → J056

Metric	DC	Coated YH170	Coated YH180	DCONMS	LCF	LH	OAL
DSM0278G05	2.78			3	21.7	22.3	55
DSM0279G05	2.79			3	21.7	22.3	55
DSM0280G05	2.8		●	3	21.7	22.3	55
DSM0281G05	2.81			3	22.5	23.1	55
DSM0282G05	2.82			3	22.5	23.1	55
DSM0283G05	2.83			3	22.5	23.1	55
DSM0284G05	2.84			3	22.5	23.1	55
DSM0285G05	2.85			3	22.5	23.1	55
DSM0286G05	2.86			3	22.5	23.1	55
DSM0287G05	2.87			3	22.5	23.1	55
DSM0288G05	2.88			3	22.5	23.1	55
DSM0289G05	2.89			3	22.5	23.1	55

Metric	DC	Coated YH170	Coated YH180	DCONMS	LCF	LH	OAL
DSM0290G05	2.9		●	3	22.5	23.1	55
DSM0291G05	2.91			3	23.3	23.9	55
DSM0292G05	2.92			3	23.3	23.9	55
DSM0293G05	2.93			3	23.3	23.9	55
DSM0294G05	2.94			3	23.3	23.9	55
DSM0295G05	2.95			3	23.3	23.9	55
DSM0296G05	2.96			3	23.3	23.9	55
DSM0297G05	2.97			3	23.3	23.9	55
DSM0298G05	2.98			3	23.3	23.9	55
DSM0299G05	2.99			3	23.3	23.9	55
DSM0300G05	3		●	3	23.3	23.9	55

● : Line up

STANDARD CUTTING CONDITIONS

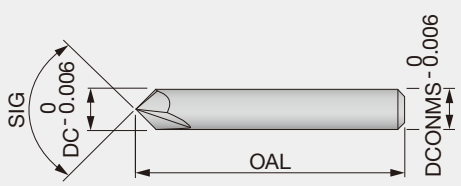
ISO	Workpiece material	Cutting speed: *Vc* (sfm) ø0.1 ~ ø0.3 (ø0.004" ~ ø0.012")	ø0.3 ~ ø0.5 (ø0.012" ~ ø0.020")	ø0.5 ~ ø3 (ø0.020" ~ ø0.118")	Feed: *f* (ipr) ø0.1 ~ ø0.3 (ø0.004" ~ ø0.012")	ø0.3 ~ ø0.5 (ø0.012" ~ ø0.020")	ø0.5 ~ ø1 (ø0.020" ~ ø0.039")	ø1 ~ ø2 (ø0.039" ~ ø0.079")	ø2 ~ ø3 (ø0.079" ~ ø0.118")
P	Carbon steels, Alloy steels	16 - 66	49 - 98	82 - 197	0.00004 - 0.00016	0.00008 - 0.0004	0.00020 - 0.0020	0.0012 - 0.0035	0.0020 - 0.004
M	Stainless steels	7 - 39	20 - 59	33 - 66	0.00002 - 0.00016	0.00008 - 0.00031	0.00020 - 0.0012	0.0004 - 0.0016	0.0008 - 0.0020
K	Gray cast irons	16 - 49	33 - 82	66 - 164	0.00002 - 0.00016	0.00008- 0.0005	0.00020 - 0.0012	0.0004 - 0.0024	0.0012 - 0.005
	Ductile cast irons	16 - 49	33 - 82	66 - 164	0.00004 - 0.00012	0.00008 - 0.0004	0.00020 - 0.0008	0.0004 - 0.0020	0.0012 - 0.004
N	Aluminum alloys	33 - 66	33 - 98	66 - 164	0.00004 - 0.0004	0.00020 - 0.0012	0.0004 - 0.0020	0.0016 - 0.006	0.0024 - 0.008
	Copper / Brass	33 - 66	33 - 98	66 - 164	0.00004 - 0.0004	0.00020 - 0.0012	0.0004 - 0.0020	0.0016 - 0.006	0.0024 - 0.008
S	Heat-resistant alloys	7 - 20	16 - 33	26 - 66	0.00002 - 0.00012	0.00008 - 0.00016	0.00008 - 0.00016	0.00008 - 0.00016	Not recommended
H	High hardened steels	13 - 26	20 - 33	20 - 52	0.00002 - 0.00008	0.00004 - 0.00020	0.00020 - 0.0008	0.0004 - 0.0012	0.0008 - 0.0024

When the drilling depth is deeper than L/D = 5, use drill pecking every 10 to 50% of the drill diameter.
The above cutting conditions apply when a water soluble cutting fluid is used. For drilling a hole smaller than ø0.012", use of a starting drill is recommended.
When setting the drill, the drill run out should be within 0.00008" on the taper. (Especially for the drill diameter smaller than ø0.020")

GIGAMINIDRILL

DSM-CP

Centering drill for DSM drill



Metric	DC	YH170	DCONMS	OAL	SIG
DSM-CP90	3	●	3	38.1	90°
DSM-CP140	3	●	3	38.1	140°

● : Line up

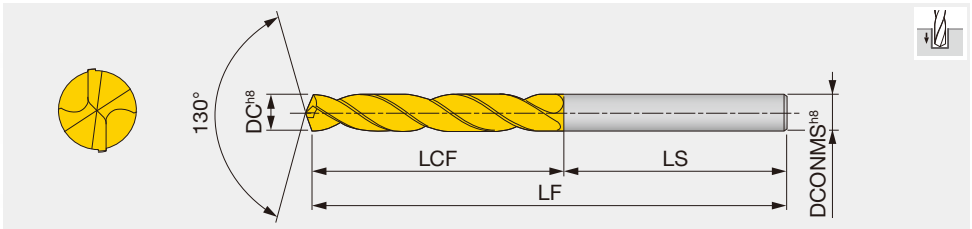
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed: *Vc* (sfm)	Feed: *f* (ipr) DSM-CP90	Feed: *f* (ipr) DSM-CP140
P	Carbon, Mild and Alloy steels	98 - 262	0.00039 - 0.00236	0.00118 - 0.00314
K	Gray and ductile cast irons	98 - 262	0.00078 - 0.00236	0.00196 - 0.00393
N	Aluminum alloys	197 - 394	0.00078 - 0.0039	0.00196 - 0.0059
M	Stainless steels	49 - 131	0.00039 - 0.00118	0.00078 - 0.00236
H	High hardened steels (~45HRC)	33 - 131	Not recommended	0.00039 - 0.00196

For hard materials and stainless steels which have work-hardening nature, DSM-CP140 is recommended.
Above cutting conditions are when using a water-soluble cutting fluid. When using a water-insoluble type, set the cutting speed to lower side.

DMXU L/D=2 (VS type)

Soliddrill with 130° point angle without oil hole & shank size equal to drill dia., L/D = 2, dia = ø0.111" - ø0.781"



Inch	DC	AH170	DCONMS	LCF	LS	LF
DMXU1110VS	#34	●	0.111	0.630	1.18	1.81
DMXU1130VS	#33	●	0.113	0.630	1.18	1.81
DMXU1160VS	#32	●	0.116	0.630	1.18	1.81
DMXU1200VS	#31	●	0.120	0.708	1.22	1.93
DMXU1250VS	1/8	●	0.125	0.708	1.22	1.93
DMXU1285VS	#30	●	0.129	0.708	1.22	1.93
DMXU1360VS	#29	●	0.136	0.787	1.26	2.05
DMXU1405VS	#28	●	0.141	0.787	1.26	2.05
DMXU1406VS	9/64	●	0.141	0.787	1.26	2.05
DMXU1440VS	#27	●	0.144	0.787	1.26	2.05
DMXU1470VS	#26	●	0.147	0.886	1.30	2.17
DMXU1495VS	#25	●	0.150	0.886	1.30	2.17
DMXU1520VS	#24	●	0.152	0.886	1.30	2.17
DMXU1540VS	#23	●	0.154	0.886	1.30	2.17
DMXU1562VS	5/32	●	0.156	0.886	1.30	2.17
DMXU1570VS	#22	●	0.157	0.886	1.30	2.17
DMXU1590VS	#21	●	0.159	0.886	1.30	2.17
DMXU1610VS	#20	●	0.161	0.886	1.30	2.17
DMXU1660VS	#19	●	0.166	0.945	1.34	2.28
DMXU1695VS	#18	●	0.170	0.945	1.34	2.28
DMXU1719VS	11/64	●	0.172	0.945	1.34	2.28
DMXU1730VS	#17	●	0.173	0.945	1.34	2.28
DMXU1770VS	#16	●	0.177	0.945	1.34	2.28
DMXU1800VS	#15	●	0.180	0.945	1.34	2.28
DMXU1820VS	#14	●	0.182	0.945	1.34	2.28
DMXU1850VS	#13	●	0.185	0.945	1.34	2.28
DMXU1875VS	3/16	●	0.188	1.02	1.42	2.44
DMXU1890VS	#12	●	0.189	1.02	1.42	2.44
DMXU1910VS	#11	●	0.191	1.02	1.42	2.44
DMXU1935VS	#10	●	0.194	1.02	1.42	2.44
DMXU1960VS	#9	●	0.196	1.02	1.42	2.44
DMXU1990VS	#8	●	0.199	1.02	1.42	2.44
DMXU2010VS	#7	●	0.201	1.02	1.42	2.44
DMXU2031VS	13/64	●	0.203	1.02	1.42	2.44
DMXU2040VS	#6	●	0.204	1.02	1.42	2.44
DMXU2055VS	#5	●	0.206	1.02	1.42	2.44
DMXU2090VS	#4	●	0.209	1.10	1.50	2.60
DMXU2130VS	#3	●	0.213	1.10	1.50	2.60
DMXU2188VS	7/32	●	0.219	1.10	1.50	2.60
DMXU2210VS	#2	●	0.221	1.10	1.50	2.60
DMXU2280VS	#1	●	0.228	1.10	1.50	2.60
DMXU2344VS	15/64	●	0.234	1.10	1.50	2.60
DMXU2380VS	#B	●	0.238	1.22	1.54	2.76
DMXU2420VS	#C	●	0.242	1.22	1.54	2.76
DMXU2460VS	#D	●	0.246	1.22	1.54	2.76
DMXU2500VS	1/4	●	0.250	1.22	1.54	2.76
DMXU2570VS	#F	●	0.257	1.22	1.54	2.76
DMXU2610VS	#G	●	0.261	1.22	1.54	2.76
DMXU2656VS	17/64	●	0.266	1.34	1.57	2.91
DMXU2660VS	#H	●	0.266	1.34	1.57	2.91
DMXU2720VS	#I	●	0.272	1.34	1.57	2.91
DMXU2770VS	#J	●	0.277	1.34	1.57	2.91
DMXU2810VS	#K	●	0.281	1.34	1.57	2.91
DMXU2812VS	9/32	●	0.281	1.34	1.57	2.91
DMXU2900VS	#L	●	0.290	1.34	1.57	2.91
DMXU2950VS	#M	●	0.295	1.34	1.57	2.91

Inch	DC	AH170	DCONMS	LCF	LS	LF
DMXU2969VS	19/64	●	0.297	1.46	1.65	3.11
DMXU3020VS	#N	●	0.302	1.46	1.65	3.11
DMXU3125VS	5/16	●	0.313	1.46	1.65	3.11
DMXU3160VS	#0	●	0.316	1.46	1.65	3.11
DMXU3230VS	#P	●	0.323	1.46	1.65	3.11
DMXU3281VS	21/64	●	0.328	1.46	1.65	3.11
DMXU3320VS	#Q	●	0.332	1.46	1.65	3.11
DMXU3390VS	#R	●	0.339	1.57	1.73	3.31
DMXU3438VS	11/32	●	0.344	1.57	1.73	3.31
DMXU3480VS	#S	●	0.348	1.57	1.73	3.31
DMXU3580VS	#T	●	0.358	1.57	1.73	3.31
DMXU3594VS	23/64	●	0.359	1.57	1.73	3.31
DMXU3680VS	#U	●	0.368	1.57	1.73	3.31
DMXU3750VS	3/8	●	0.375	1.69	1.81	3.50
DMXU3770VS	#V	●	0.377	1.69	1.81	3.50
DMXU3860VS	#W	●	0.386	1.69	1.81	3.50
DMXU3906VS	25/64	●	0.391	1.69	1.81	3.50
DMXU3970VS	#X	●	0.397	1.69	1.81	3.50
DMXU4040VS	#Y	●	0.404	1.69	1.81	3.50
DMXU4062VS	13/32	●	0.406	1.69	1.81	3.50
DMXU4130VS	#Z	●	0.413	1.69	1.81	3.50
DMXU4219VS	27/64	●	0.422	1.85	1.89	3.74
DMXU4375VS	7/16	●	0.438	1.85	1.89	3.74
DMXU4531VS	29/64	●	0.453	1.85	1.89	3.74
DMXU4688VS	15/32	●	0.469	2.01	2.01	4.02
DMXU4844VS	31/64	●	0.484	2.01	2.01	4.02
DMXU5000VS	1/2	●	0.500	2.01	2.01	4.02
DMXU5050VS	TUBE	●	0.505	2.01	2.01	4.02
DMXU5156VS	33/64	●	0.516	2.01	2.01	4.02
DMXU5312VS	17/32	●	0.531	2.13	2.09	4.21
DMXU5469VS	35/64	●	0.547	2.13	2.09	4.21
DMXU5625VS	9/16	●	0.563	2.20	2.17	4.37
DMXU5781VS	37/64	●	0.578	2.20	2.17	4.37
DMXU5937VS	19/32	●	0.594	2.28	2.24	4.53
DMXU6094VS	39/64	●	0.609	2.28	2.24	4.53
DMXU6250VS	5/8	●	0.625	2.28	2.24	4.53
DMXU6330VS	TUBE	●	0.633	2.36	2.32	4.69
DMXU6406VS	41/64	●	0.641	2.36	2.32	4.69
DMXU6562VS	21/32	●	0.656	2.36	2.32	4.69
DMXU6875VS	11/16	●	0.688	2.44	2.40	4.85
DMXU7031VS	45/64	●	0.703	2.44	2.40	4.85
DMXU7187VS	23/32	●	0.719	2.52	2.48	5.00
DMXU7344VS	47/64	●	0.734	2.52	2.48	5.00
DMXU7500VS	3/4	●	0.750	2.60	2.56	5.16
DMXU7590VS	TUBE	●	0.759	2.60	2.60	5.16
DMXU7656VS	49/64	●	0.766	2.60	2.56	5.16
DMXU7812VS	25/32	●	0.781	2.60	2.56	5.16

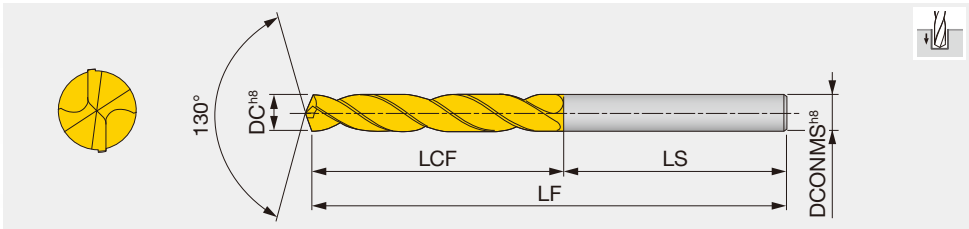
Cutting fluid should be sufficiently supplied to the drill point and the entrance of the hole.
Use a water soluble cutting fluid containing relatively high content of extreme pressure additive for heavy duty cutting or use a water-insoluble cutting fluid.

● : Line up

Reference pages: Standard cutting conditions → J059

DMXU L/D=3 (VM type)

Soliddrill with 130° point angle without oil hole & shank size equal to drill dia., L/D = 3, dia = ø0.199" - ø0.781"



Inch	DC	AH170	DCONMS	LCF	LS	LF
DMXU1990VM	#8	●	0.199	1.34	1.50	2.83
DMXU2010VM	#7	●	0.201	1.34	1.50	2.83
DMXU2031VM	13/64	●	0.203	1.34	1.50	2.83
DMXU2040VM	#6	●	0.204	1.34	1.50	2.83
DMXU2055VM	#5	●	0.206	1.34	1.50	2.83
DMXU2090VM	#4	●	0.209	1.34	1.50	2.83
DMXU2130VM	#3	●	0.213	1.34	1.50	2.83
DMXU2188VM	7/32	●	0.219	1.42	1.50	2.91
DMXU2210VM	#2	●	0.221	1.34	1.50	2.91
DMXU2280VM	#1	●	0.228	1.34	1.50	2.91
DMXU2344VM	15/64	●	0.234	1.61	1.56	3.19
DMXU2380VM	#B	●	0.238	1.34	1.58	3.19
DMXU2420VM	#C	●	0.242	1.34	1.58	3.19
DMXU2460VM	#D	●	0.246	1.34	1.58	3.19
DMXU2500VM	1/4	●	0.250	1.34	1.58	3.19
DMXU2570VM	#F	●	0.257	1.69	1.57	3.27
DMXU2610VM	#G	●	0.261	1.69	1.57	3.27
DMXU2656VM	17/64	●	0.266	1.69	1.57	3.27
DMXU2660VM	#H	●	0.266	1.69	1.57	3.27
DMXU2720VM	#I	●	0.272	1.69	1.57	3.27
DMXU2770VM	#J	●	0.277	1.77	1.65	3.43
DMXU2810VM	#K	●	0.281	1.77	1.65	3.43
DMXU2812VM	9/32	●	0.281	1.77	1.65	3.43
DMXU2900VM	#L	●	0.290	1.77	1.65	3.43
DMXU2950VM	#M	●	0.295	1.77	1.65	3.43
DMXU2969VM	19/64	●	0.297	1.89	1.65	3.54
DMXU3020VM	#N	●	0.302	1.77	1.65	3.54
DMXU3125VM	5/16	●	0.313	1.77	1.65	3.54
DMXU3160VM	#O	●	0.316	2.09	1.69	3.78
DMXU3230VM	#P	●	0.323	2.09	1.69	3.78
DMXU3281VM	21/64	●	0.328	2.09	1.69	3.78
DMXU3320VM	#Q	●	0.332	2.09	1.69	3.78
DMXU3390VM	#R	●	0.339	2.17	1.69	3.86
DMXU3438VM	11/32	●	0.344	2.17	1.69	3.86
DMXU3480VM	#S	●	0.348	2.17	1.69	3.86
DMXU3580VM	#T	●	0.358	2.28	1.73	4.02
DMXU3594VM	23/64	●	0.359	2.28	1.73	4.02
DMXU3680VM	#U	●	0.368	2.28	1.73	4.02
DMXU3750VM	3/8	●	0.375	2.36	1.77	4.13
DMXU3770VM	#V	●	0.377	2.36	1.77	4.13
DMXU3860VM	#W	●	0.386	2.36	1.77	4.13
DMXU3906VM	25/64	●	0.390	2.36	1.77	4.13
DMXU3970VM	#X	●	0.397	2.60	1.81	4.41
DMXU4040VM	#Y	●	0.404	2.60	1.81	4.41
DMXU4062VM	13/32	●	0.406	2.60	1.81	4.41
DMXU4130VM	#Z	●	0.413	2.60	1.81	4.41
DMXU4219VM	27/64	●	0.422	2.67	1.81	4.49
DMXU4375VM	7/16	●	0.438	2.80	1.85	4.65
DMXU4531VM	29/64	●	0.453	2.87	1.89	4.76
DMXU4688VM	15/32	●	0.469	2.87	1.89	4.76
DMXU4844VM	31/64	●	0.484	2.99	2.32	5.32
DMXU5000VM	1/2	●	0.500	3.07	2.32	5.39
DMXU5050VM	TUBE	●	0.505	3.07	2.32	5.39
DMXU5156VM	33/64	●	0.516	3.31	2.36	5.67
DMXU5312VM	17/32	●	0.531	3.31	2.36	5.67
DMXU5469VM	35/64	●	0.547	3.39	2.40	5.79

Inch	DC	AH170	DCONMS	LCF	LS	LF
DMXU5625VM	9/16	●	0.562	3.50	2.44	5.94
DMXU5781VM	37/64	●	0.578	3.58	2.44	6.03
DMXU5937VM	19/32	●	0.594	3.70	2.48	6.18
DMXU6094VM	39/64	●	0.609	3.70	2.48	6.18
DMXU6250VM	5/8	●	0.625	3.78	2.52	6.30
DMXU6330VM	TUBE	●	0.633	4.02	2.40	6.57
DMXU6406VM	41/64	●	0.641	4.02	2.40	6.57
DMXU6562VM	21/32	●	0.656	4.02	2.40	6.57
DMXU6875VM	11/16	●	0.688	4.02	2.40	6.57
DMXU7031VM	45/64	●	0.703	4.02	2.40	6.57
DMXU7187VM	23/32	●	0.719	4.49	2.40	7.05
DMXU7344VM	47/64	●	0.734	4.49	2.40	7.05
DMXU7500VM	3/4	●	0.750	4.49	2.40	7.05
DMXU7590VM	TUBE	●	0.759	4.49	2.40	7.05
DMXU7656VM	49/64	●	0.766	4.49	2.40	7.05
DMXU7812VM	25/32	●	0.781	4.49	2.40	7.05

Cutting fluid should be sufficiently supplied to the drill point and the entrance of the hole.
Use a water soluble cutting fluid containing relatively high content of extreme pressure additive for heavy duty cutting or use a water-insoluble cutting fluid.

● : Line up

Reference pages: Standard cutting conditions → J059

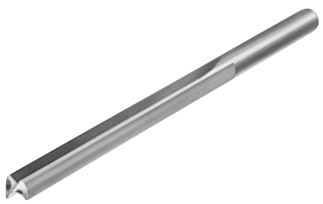
STANDARD CUTTING CONDITIONS

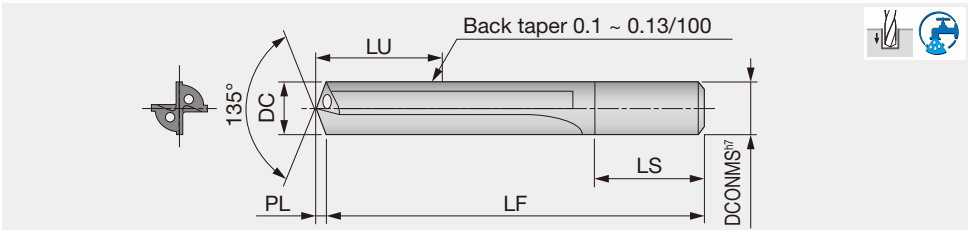
ISO	Workpiece material	Examples (JIS)	Hardness	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)			
					ø0.118 ~ ø0.197	ø0.197 ~ ø0.394	ø0.394 ~ ø0.630	ø0.630 ~ ø0.787
P	Mild steels · Low Carbon steels	1018, etc.	< 180HB	131 - 262	0.006 - 0.010	0.006 - 0.012	0.008 - 0.016	0.010 - 0.020
P	Carbon steels · Alloy steels	1045, etc.	180 ~ 300HB	131 - 262	0.006 - 0.010	0.006 - 0.012	0.008 - 0.016	0.010 - 0.020
P	High alloy steets, etc.	4140, etc.	250 ~ 350HB	131 - 230	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012	0.008 - 0.016
M	Stainless steels	304SS, etc.	< 200HB	66 - 131	0.002 - 0.008	0.004 - 0.010	0.004 - 0.012	0.006 - 0.012
K	Gray cast irons	Class 25, etc.	< 300HB	131 - 262	0.006 - 0.014	0.010 - 0.018	0.012 - 0.024	0.014 - 0.026
K	Ductile cast irons	60-40-18, etc.	< 300HB	131 - 262	0.006 - 0.012	0.008 - 0.016	0.010 - 0.020	0.012 - 0.024
S	Titanium alloys	Ti-6Al-4V, etc.		66 - 131	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012	0.008 - 0.016
S	Heat-resistant alloys	Inconel 718, etc.	250HB <	33 - 98	0.001 - 0.003	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005
H	Hardened material		< 45HRC	33 - 98	0.001 - 0.003	0.002 - 0.004	0.003 - 0.005	0.003 - 0.005

Because the cutting conditions may be changed depending on the material type, hardness, machinability, machine tool, and coolant, the most appropriate conditions must be decided whilst referring the chip control condition and tool failure mode.
When using the smaller side of the diameter range, the feed rate should be set lower.
When drilling difficult-to-cut materials, coolant supplying conditions are critical for successful drilling. So, the use of constant and flood coolant is highly recommended.
For the standard DMX-type drills, somewhat large honing width intended for drilling of general steels is applied. But, when drilling difficult-to-cut materials having high hardness, requiring lowering the feed rate, the honing width should be modified.
The drills with special honing specification are made to order on request.
Inconel is trademark of Huntington Alloys, Inc.

FDCU

Straight flute solid drill for high feed drilling of aluminum and cast iron, with oil hole





L/D = 5 (S type)

Inch	DC	G1F	DCONMS	LU	LS	LF
FDCU203S	0.2031	●	0.2362	1.73	1.57	3.35
FDCU218S	0.2188	●	0.2362	1.89	1.57	3.54
FDCU234S	0.2344	●	0.2362	1.89	1.57	3.54
FDCU265S	0.2656	●	0.2756	2.20	1.57	3.94
FDCU296S	0.2969	●	0.3150	2.52	1.65	4.33
FDCU312S	0.3125	●	0.3150	2.52	1.65	4.33
FDCU328S	0.3281	●	0.3543	2.68	1.73	4.53

● : Line up

DC	Tool diameter tolerance
0.2031 ≤ DC ≤ 0.2344	+0.0008 ~ +0.0004
0.2344 < DC ≤ 0.3281	+0.0010 ~ +0.0006

L/D = 8 (L type)

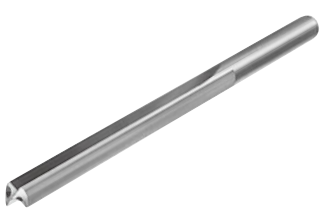
Inch	DC	G1F	DCONMS	LU	LS	LF
FDCU218L	0.2188	●	0.2362	2.60	1.57	4.33
FDCU250L	0.2500	●	0.2756	2.83	1.57	4.53
FDCU265L	0.2656	●	0.2756	3.03	1.57	4.72
FDCU281L	0.2813	●	0.3150	3.27	1.65	4.92
FDCU328L	0.3281	●	0.3543	3.70	1.73	5.51
FDCU343L	0.3438	●	0.3543	3.90	1.73	5.71

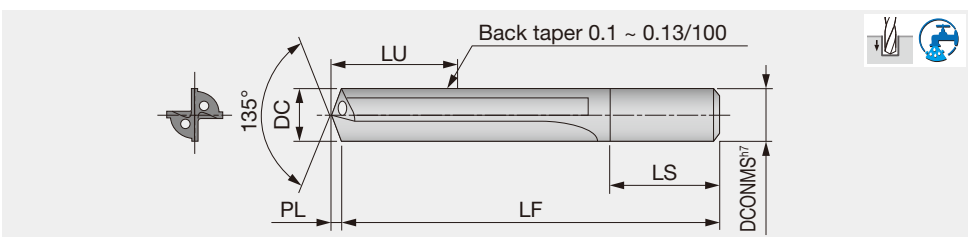
● : Line up

DC	Tool diameter tolerance
0.2188 ≤ DC	+0.0008 ~ +0.0004
0.2500 < DC ≤ 0.3438	+0.0010 ~ +0.0006

FDC-S L/D=5

Solid drill for cast iron and aluminum alloy, with straight flute, 135° point angle, with coolant hole, L/D = 5, ø5.1 - ø16 mm





Metric	DC	G1F	DCONMS	LU	LS	LF	PL
FDC0510S	5.1	●	6	45.1	40	85	1.06
FDC0600S	6	●	6	49.2	40	90	1.24
FDC0840S	8.4	●	9	69.7	44	115	1.74
FDC0860S	8.6	●	9	73.8	44	120	1.78
FDC1050S	10.5	●	11	86.2	46	140	2.17
FDC1100S	11	●	11	90.3	46	140	2.28
FDC1150S	11.5	●	12	94.4	48	150	2.38
FDC1200S	12	●	12	98.5	48	150	2.49

Metric	DC	G1F	DCONMS	LU	LS	LF	PL
FDC1250S	12.5	●	13	102.6	50	160	2.59
FDC1300S	13	●	13	106.7	50	160	2.69
FDC1350S	13.5	●	14	110.8	52	170	2.8
FDC1400S	14	●	14	114.9	52	170	2.9
FDC1450S	14.5	●	15	119	54	180	3
FDC1500S	15	●	15	123.1	54	180	3.11
FDC1550S	15.5	●	16	127.2	56	190	3.21
FDC1600S	16	●	16	131.3	56	190	3.31

● : Line up

DC	Tolerance (mm)
5 ≤ DC ≤ 6	+0.02 ~ +0.01
6 < DC ≤ 16	+0.025 ~ +0.015

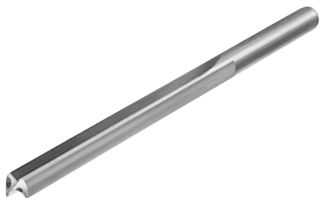
Coolant

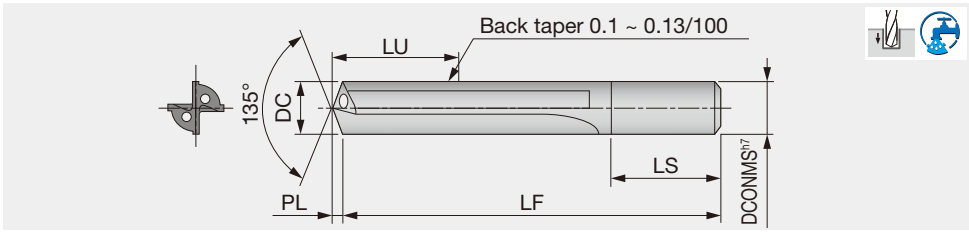
- Supply coolant through the inside of a drill.
- The coolant pressure should be 0.5 to 1 MPa.
- Use water-soluble coolant containing a large amount of extreme pressure additive.

Reference pages: Standard cutting conditions → J061

FDC-L L/D=8

Solid drill for cast iron and aluminum alloy, with straight flute, 135° point angle, with coolant hole, L/D = 8, ø5 - ø10 mm





Metric	DC	G1F	DCONMS	LU	LS	LF	PL
FDC0500L	5	●	5	56	38	95	1.04
FDC0550L	5.5	●	6	62.1	40	105	1.14
FDC0600L	6	●	6	67.2	40	110	1.24
FDC0620L	6.2	●	7	73.3	40	115	1.28
FDC0650L	6.5	●	7	73.4	40	115	1.35
FDC0680L	6.8	●	7	78.4	40	120	1.41
FDC0700L	7	●	7	78.5	40	120	1.45
FDC0750L	7.5	●	8	84.6	42	125	1.55

Metric	DC	G1F	DCONMS	LU	LS	LF	PL
FDC0780L	7.8	●	8	89.6	42	130	1.62
FDC0800L	8	●	8	89.7	42	130	1.66
FDC0850L	8.5	●	9	95.8	44	140	1.76
FDC0860L	8.6	●	9	100.8	44	145	1.78
FDC0900L	9	●	9	100.9	44	145	1.86
FDC0950L	9.5	●	10	107	44	150	1.97
FDC1000L	10	●	10	112.1	46	160	2.07

● : Line up

DC	Tolerance (mm)
5 ≤ DC ≤ 6	+0.02 ~ +0.01
6 < DC < 10	+0.025 ~ +0.015

Coolant

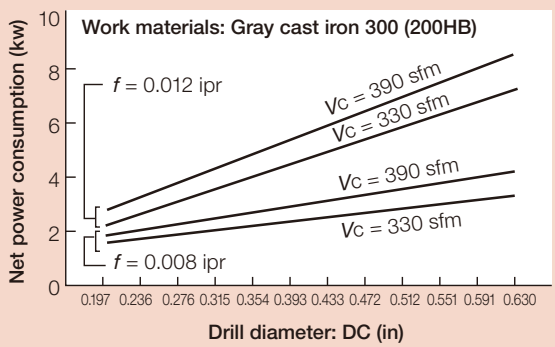
- Supply coolant through the inside of a drill.
- The coolant pressure should be 0.5 to 1 MPa.
- Use water-soluble coolant containing a large amount of extreme pressure additive.

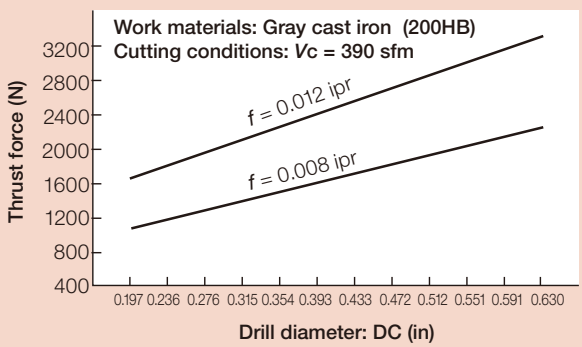
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed: *Vc* (sfm) ø5 ~ ø8 ø0.1969 - ø0.3150	ø8 ~ ø12 ø0.3150 - ø0.4724	ø12 ~ ø16 ø0.4724 - ø0.6300	Feed: *f* (ipr) ø5 ~ ø8 ø0.1969 - ø0.3150	ø8 ~ ø12 ø0.3150 - ø0.4724	ø12 ~ ø16 ø0.4724 - ø0.6300
N	Aluminum alloys	330 - 460	390 - 520	460 - 590	0.004 - 0.010	0.006 - 0.012	0.006 - 0.012
K	Gray cast irons	300 - 390	360 - 460	430 - 520	0.004 - 0.010	0.006 - 0.012	0.008 - 0.012
	Ductile cast irons	200 - 260	230 - 300	230 - 330	0.004 - 0.010	0.006 - 0.012	0.006 - 0.012

Caution: When changing a tool, completely clean the chips which may be clogged in the collet or adapter.
Note: The cutting conditions shown above may vary depending on the work material, coolant dilution ratio and coolant supply pressure used.

CUTTING PERFORMANCE





TungSix-Drill

		Inch	Metric
	**TUNGSIX-DRILL** Indexable drill with 6-corner inserts for high productivity ø0.750" - ø2.000" / L/D = 2, 3, 4	✓	
	**TUNGDRILLTWISTED** Indexable drill with 4-corner inserts for various drilling applications ø0.500" - ø2.125" / L/D = 2, 3, 4, 5	✓	
	**TUNGDRILLBIG** Large diameter drill with cartridges for TungSix-Drill and TungDrillTwisted inserts ø2.250" - ø3.150" / L/D = 2.5	✓	

J006, J064 - J073

J006, J074 - J084

J006, J085 - J091

TUNGSIX-DRILL

Indexable drill

6 cornered insert with high performance and high economical solution

Double-sided insert with 6-cutting edges

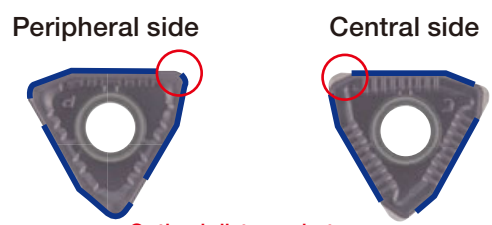
TungSixDrill is the first indexable drill in the world to adapt double-sided inserts with 6-cutting edges, reducing the insert consumption for the customers.

One insert type for both the central and peripheral pockets

One side has the central edge and other side has the peripheral edge.

Low cutting force even with double sided insert

The cutting forces are almost equal to competitors positive single sided inserts, especially at higher feed rates, thus complementing higher productivity.

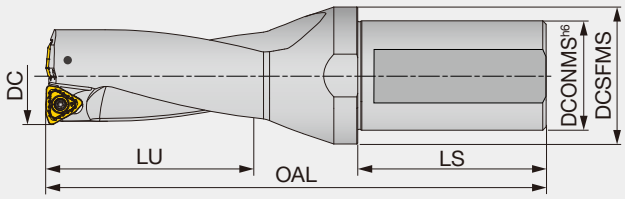


Reference pages: J065 - J073

TUNGSIX-DRILL

TDSU-F L/D=2

L/D = 2, flat, tool diameter ø0.812" - ø1.062"



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset** (radial)	WT(lb)	Insert
TDSU-0750FS-02***	0.750	1.000	1.457	1.531	2.280	4.897	0.004	0.80	WWMU05X205R-D*
TDSU0812F-2	0.812	1.000	1.457	1.657	2.205	4.697	0.031	0.77	WWMU05X205R-D*
TDSU0875F-2	0.875	1.000	1.457	1.782	2.205	4.862	0.018	0.82	WWMU05X205R-D*
TDSU0937F-2	0.937	1.000	1.457	1.911	2.205	5.028	0.047	0.86	WWMU060306R-D*
TDSU1000F-2	1.000	1.000	1.457	2.035	2.205	5.197	0.026	0.92	WWMU060306R-D*
TDSU1062F-2	1.062	1.250	1.575	2.161	2.342	5.500	0.012	1.32	WWMU060306R-D*

** For offsetting on lathe *** Drill with side port

SPARE PARTS

Designation	Clamping screw	Wrench
TDSU-0750FS-02	CSPB-2.2	IP-7D
TDSU0812... - TDSU0875...	CSPB-2.2	IP-7D
TDSU0937... - TDSU1062...	CSPB-2.5	IP-8D

Tool diameter	Tool diameter tolerance	Hole diameter tolerance*
ø0.750 - ø1.062	+ 0.008 / 0	+ 0.014 / 0

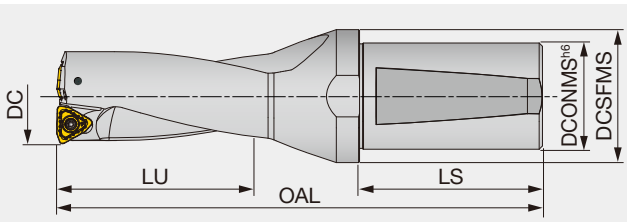
*Just for reference

Recommended clamping torque:
CSPB-2.2 = 0.74 lb·ft, CSPB-2.5 = 0.96 lb·ft

TUNGSIX-DRILL

TDSU L/D=2

L/D = 2, Whistle notch, tool diameter ø1.125" - ø2.000"



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset** (radial)	WT(lb)	Insert
TDSU1125-02	1.125	1.250	1.575	2.250	2.280	5.892	0.043	1.5	WWMU08X408R-D*
TDSU1187-02	1.187	1.250	1.575	2.374	2.280	6.079	0.019	1.6	WWMU08X408R-D*
TDSU1250-02	1.250	1.250	1.575	2.500	2.280	6.267	0.008	1.7	WWMU08X408R-D*
TDSU1312-02	1.312	1.500	1.969	2.624	2.688	6.862	0.055	2.5	WWMU09X510R-D*
TDSU1375-02	1.375	1.500	1.969	2.750	2.688	7.049	0.047	2.6	WWMU09X510R-D*
TDSU1437-02	1.437	1.500	1.969	2.874	2.688	7.237	0.027	2.8	WWMU09X510R-D*
TDSU1500-02	1.500	1.500	1.969	3.000	2.688	7.424	0.015	2.9	WWMU09X510R-D*
TDSU1562-02	1.562	1.500	1.969	3.124	2.688	7.612	0.074	3.0	WWMU11X512R-D*
TDSU1625-02	1.625	1.500	2.165	3.250	2.688	7.799	0.059	3.3	WWMU11X512R-D*
TDSU1687-02	1.687	1.500	2.165	3.374	2.688	7.987	0.051	3.5	WWMU11X512R-D*
TDSU1750-02	1.750	1.500	2.165	3.500	2.688	8.174	0.027	3.7	WWMU11X512R-D*
TDSU1812-02	1.812	1.500	2.165	3.624	2.688	8.362	0.015	3.9	WWMU11X512R-D*
TDSU1875-02	1.875	1.500	2.165	3.750	2.688	8.549	0.094	4.2	WWMU13X512R-D*
TDSU1937-02	1.937	1.500	2.165	3.874	2.688	8.737	0.078	4.3	WWMU13X512R-D*
TDSU2000-02	2.000	1.500	2.165	4.000	2.688	8.924	0.067	4.6	WWMU13X512R-D*

** For offsetting on lathe

SPARE PARTS

Designation	Clamping screw	Wrench
TDSU1125... - TDSU1250...	CSTB-3	T-9D
TDSU1312.. - TDSU1500...	CSTB-4	T-15D
TDSU1562.. - TDSU2000...	CSTB-5	T-20D

Tool diameter	Tool diameter tolerance	Hole diameter tolerance*
ø1.125 - ø2.000	+ 0.004	+ 0.008 / -0.004

*Just for reference

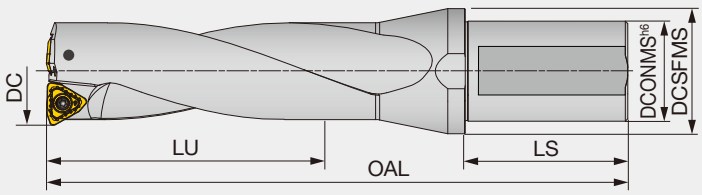
Recommended clamping torque:
CSTB-3 = 1.70 lb·ft, CSTB-4 = 2.58 lb·ft, CSTB-5 = 3.69 lb·ft

Reference pages: Inserts → J068, Standard cutting conditions → J070 - J071

TUNGSIX-DRILL

TDSU-F L/D=3

L/D = 3, flat, tool diameter ø0.812" - ø1.062"



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset** (radial)	WT(lb)	Insert
TDSU-0750FS-03***	0.750	1.000	1.457	2.281	2.280	5.653	0.004	0.84	WWMU05X205R-D*
TDSU0812F-3	0.812	1.000	1.457	2.470	2.205	5.547	0.031	0.84	WWMU05X205R-D*
TDSU0875F-3	0.875	1.000	1.457	2.657	2.205	5.697	0.018	0.87	WWMU05X205R-D*
TDSU0937F-3	0.937	1.000	1.457	2.848	2.205	5.929	0.047	0.93	WWMU060306R-D*
TDSU1000F-3	1.000	1.000	1.457	3.035	2.205	6.157	0.026	1.01	WWMU060306R-D*
TDSU1062F-3	1.062	1.250	1.575	3.221	2.342	6.524	0.012	1.43	WWMU060306R-D*

** For offsetting on lathe *** Drill with side port

SPARE PARTS

Designation	Clamping screw	Wrench
TDSU-0750FS-03	CSPB-2.2	IP-7D
TDSU0812... - TDSU0875...	CSPB-2.2	IP-7D
TDSU0937... - TDSU1062...	CSPB-2.5	IP-8D

Tool diameter	Tool diameter tolerance	Hole diameter tolerance*
ø0.750 - ø1.062	+ 0.008 / 0	+ 0.014 / 0

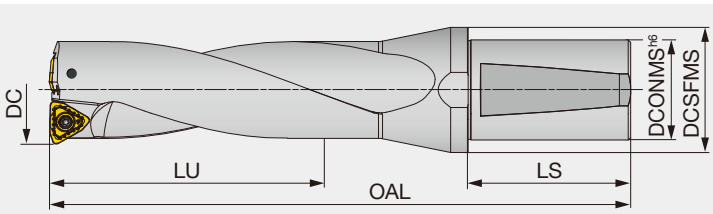
*Just for reference

Recommended clamping torque:
CSPB-2.2 = 0.74 lb·ft, CSPB-2.5 = 2.87 lb·ft

TUNGSIX-DRILL

TDSU L/D=3

L/D = 3, Whistle notch, tool diameter ø1.125" - ø2.000"



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset** (radial)	WT(lb)	Insert
TDSU1125-03	1.125	1.250	1.575	3.375	2.280	7.017	0.043	1.7	WWMU08X408R-D*
TDSU1187-03	1.187	1.250	1.575	3.561	2.280	7.267	0.019	1.8	WWMU08X408R-D*
TDSU1250-03	1.250	1.250	1.575	3.750	2.280	7.517	0.008	1.9	WWMU08X408R-D*
TDSU1312-03	1.312	1.500	1.969	3.936	2.688	8.174	0.055	2.8	WWMU09X510R-D*
TDSU1375-03	1.375	1.500	1.969	4.125	2.688	8.424	0.047	2.9	WWMU09X510R-D*
TDSU1437-03	1.437	1.500	1.969	4.311	2.688	8.674	0.027	3.1	WWMU09X510R-D*
TDSU1500-03	1.500	1.500	1.969	4.500	2.688	8.924	0.015	3.3	WWMU09X510R-D*
TDSU1562-03	1.562	1.500	1.969	4.686	2.688	9.174	0.074	3.4	WWMU11X512R-D*
TDSU1625-03	1.625	1.500	2.165	4.875	2.688	9.424	0.059	3.8	WWMU11X512R-D*
TDSU1687-03	1.687	1.500	2.165	5.061	2.688	9.674	0.051	4.1	WWMU11X512R-D*
TDSU1750-03	1.750	1.500	2.165	5.250	2.688	9.924	0.027	4.3	WWMU11X512R-D*
TDSU1812-03	1.812	1.500	2.165	5.436	2.688	10.174	0.015	4.6	WWMU11X512R-D*
TDSU1875-03	1.875	1.500	2.165	5.625	2.688	10.424	0.094	4.9	WWMU13X512R-D*
TDSU1937-03	1.937	1.500	2.165	5.811	2.688	10.674	0.078	5.1	WWMU13X512R-D*
TDSU2000-03	2.000	1.500	2.165	6.000	2.688	10.924	0.067	5.5	WWMU13X512R-D*

** For offsetting on lathe

SPARE PARTS

Designation	Clamping screw	Wrench
TDSU1125... - TDSU1250...	CSTB-3	T-9D
TDSU1312.. - TDSU1500...	CSTB-4	T-15D
TDSU1562.. - TDSU2000...	CSTB-5	T-20D

Tool diameter	Tool diameter tolerance	Hole diameter tolerance*
ø1.125 - ø2.000	+ 0.004	+ 0.008 / -0.004

*Just for reference

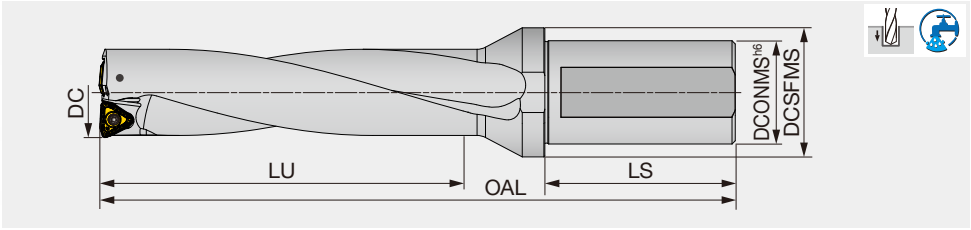
Recommended clamping torque:
CSTB-3 = 1.70 lb·ft, CSTB-4 = 2.58 lb·ft, CSTB-5 = 3.69 lb·ft

Reference pages: Inserts → J068, Standard cutting conditions → J070 - J071

TUNGSIX-DRILL

TDSU-F L/D=4

L/D = 4, flat, tool diameter ø0.812" - ø2.000"



Inch	DC	DCONMS	DCSFMS	LU	LS	OAL	Max. offset** (radial)	WT(lb)	Insert
TDSU-0750FS-04***	0.750	1.000	1.457	3.031	2.280	6.401	0.004	0.88	WWMU05X205R-D*
TDSU0812F-4	0.812	1.000	1.457	3.283	2.343	6.457	0.031	0.95	WWMU05X205R-D*
TDSU0875F-4	0.875	1.000	1.457	3.531	2.343	6.708	0.018	1.01	WWMU05X205R-D*
TDSU0937F-4	0.938	1.000	1.457	3.787	2.343	7.003	0.047	1.10	WWMU060306R-D*
TDSU1000F-4	1.000	1.000	1.457	4.035	2.343	7.294	0.024	1.22	WWMU060306R-D*
TDSU1062F-4	1.063	1.250	1.575	4.287	2.343	7.585	0.012	1.64	WWMU060306R-D*
TDSU1125F-4	1.125	1.250	1.575	4.543	2.343	7.894	0.043	1.70	WWMU08X408R-D*
TDSU1187F-4	1.187	1.250	1.575	4.791	2.343	8.174	0.019	1.82	WWMU08X408R-D*
TDSU1250F-4	1.250	1.250	1.575	5.043	2.343	8.469	0.008	1.97	WWMU08X408R-D*
TDSU1312F-4	1.312	1.500	1.969	5.299	2.736	9.161	0.055	2.85	WWMU09X510R-D*
TDSU1375F-4	1.375	1.500	1.969	5.551	2.736	9.450	0.047	2.95	WWMU09X510R-D*
TDSU1437F-4	1.437	1.500	1.969	5.799	2.736	9.742	0.027	3.19	WWMU09X510R-D*
TDSU1500F-4	1.500	1.500	1.969	6.051	2.736	10.033	0.015	3.37	WWMU09X510R-D*
TDSU1562F-4	1.562	1.500	1.969	6.307	2.736	10.352	0.074	3.57	WWMU11X512R-D*
TDSU1625F-4	1.625	1.500	2.165	6.559	2.736	10.641	0.059	3.86	WWMU11X512R-D*
TDSU1687F-4	1.687	1.500	2.165	6.807	2.736	10.932	0.051	4.16	WWMU11X512R-D*
TDSU1750F-4	1.750	1.500	2.165	7.059	2.736	11.223	0.027	4.42	WWMU11X512R-D*
TDSU1812F-4	1.812	1.500	2.165	7.307	2.736	11.517	0.015	4.70	WWMU11X512R-D*
TDSU1875F-4	1.875	1.500	2.165	7.571	2.736	11.813	0.094	5.08	WWMU13X512R-D*
TDSU1937F-4	1.937	1.500	2.165	7.819	2.736	12.105	0.078	5.30	WWMU13X512R-D*
TDSU2000F-4	2.000	1.500	2.165	8.071	2.736	12.396	0.067	5.75	WWMU13X512R-D*

** For offsetting on lathe *** Drill with side port

SPARE PARTS

Designation	Clamping screw	Wrench
TDSU-0750FS-04	CSPB-2.2	IP-7D
TDSU0812... - TDSU0875...	CSPB-2.2	IP-7D
TDSU0937... - TDSU1062...	CSPB-2.5	IP-8D
TDSU1125... - TDSU1250...	CSTB-3	T-9D
TDSU1312... - TDSU1500...	CSTB-4	T-15D
TDSU1562... - TDSU2000...	CSTB-5	T-20D

Recommended clamping torque: CSPB-2.2 = 0.74 lb·ft, CSPB-2.5 = 0.96 lb·ft, CSTB-3 = 1.70 lb·ft, CSTB-4 = 2.58 lb·ft, CSTB-5 = 3.69 lb·ft

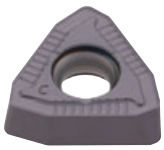
Tool diameter	Tool diameter tolerance	Hole diameter tolerance*
ø0.750 - ø2.000	+ 0.008 / 0	+ 0.014 / 0

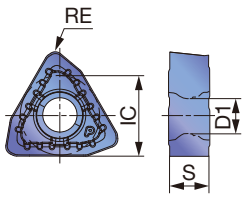
*Just for reference

Reference pages: Inserts → J068, Standard cutting conditions → J070 - J071

INSERT

DJ





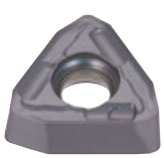
P	Steel	☆	★
M	Stainless	★	☆
K	Cast iron	☆	★
N	Non-ferrous	☆	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

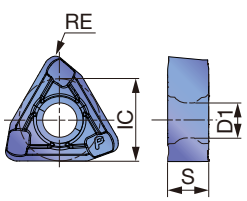
★ : First choice
☆ : Second choice

Designation	IC (in)	S (in)	Coated AH3135	Coated AH9030	D1 (in)	RE (in)	DCN (in)	DCX (in)
WWMU05X205R-DJ	0.228	0.094	●	●	0.098	0.020	0.812	0.875
WWMU060306R-DJ	0.264	0.114	●	●	0.118	0.024	0.937	1.062
WWMU08X408R-DJ	0.315	0.154	●	●	0.134	0.031	1.125	1.250
WWMU09X510R-DJ	0.382	0.193	●	●	0.173	0.039	1.312	1.500
WWMU11X512R-DJ	0.445	0.224	●	●	0.217	0.047	1.562	1.812
WWMU13X512R-DJ	0.512	0.224	●	●	0.217	0.047	1.875	2.000

● : Line up

DS





P	Steel	★
M	Stainless	★
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	

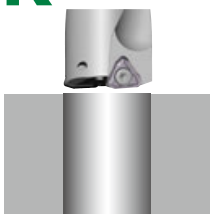
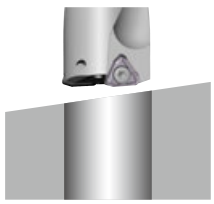
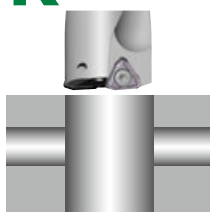
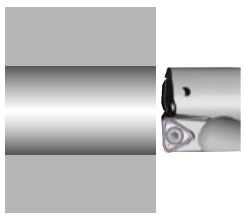
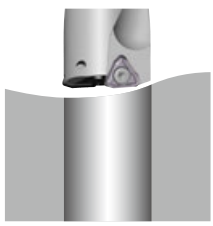
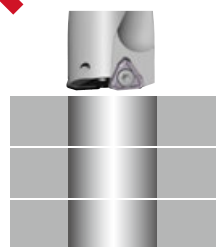
★ : First choice
☆ : Second choice

Designation	IC (in)	S (in)	Coated AH6030	D1 (in)	RE (in)	DCN (in)	DCX (in)
WWMU05X205R-DS	0.228	0.094	●	0.098	0.020	0.812	0.925
WWMU060306R-DS	0.264	0.114	●	0.118	0.024	0.941	1.063
WWMU08X408R-DS	0.315	0.154	●	0.134	0.031	1.125	1.250
WWMU09X510R-DS	0.382	0.193	●	0.173	0.039	1.312	1.500
WWMU11X512R-DS	0.445	0.224	●	0.217	0.047	1.562	1.812
WWMU13X512R-DS	0.512	0.224	●	0.217	0.047	1.875	2.000

● : Line up

APPLICATION RANGE

*In case of Interrupted cutting, feed should be decreased.

Feed *f* (ipr)	Refer to J060 - J061 page	0.002	0.002	0.002
Application range	OK Plane surface 	OK Slant surface 	OK Cross hole 	OK Plunging 
Feed *f* (ipr)	**0.004**	**0.002**	**Disapprove**	**Disapprove**
Application range	OK Boring 	OK Round surface 	Stacked plates 	Back boring 

STANDARD CUTTING CONDITIONS

ISO	Workpiece materials	Priority	Chip breakers	Grade	Cutting speed *Vc* (sfm)
P	Low carbon steels (C < 0.3) 1018, 1020, 1026, etc.	First choice	DS	AH6030	525 - 820
		Wear resistance	DJ	AH9030	525 - 1050
	Carbon steels (C > 0.3) 1045, 1055, etc.	First choice	DJ	AH9030	262 - 820
		Fracture resistance	DJ	AH3135	262 - 820
	Low alloy steels 5120, etc.	First choice	DS	AH6030	525 - 820
		Wear resistance	DJ	AH9030	525 - 820
	Alloy steels 4140, 8620, etc.	First choice	DJ	AH9030	262 - 656
		Fracture resistance	DJ	AH3135	262 - 656
M	Stainless steels (Austenitic) 304SS, 316SS, etc.	First choice	DS	AH6030	328 - 656
		Fracture resistance	DJ	AH3135	328 - 656
	Stainless steels (Martensitic and ferritic) 430SS, 416SS, etc.	First choice	DS	AH6030	328 - 656
		Fracture resistance	DJ	AH3135	328 - 656
	Stainless steels (Precipitation hardening) 17-4 PH, etc.	First choice	DS	AH6030	262 - 394
		Fracture resistance	DJ	AH3135	262 - 394
K	Gray cast irons Class 25, Class 30, etc.	First choice	DJ	AH9030	262 - 820
		Fracture resistance	DJ	AH3135	262 - 656
	Ductile cast irons 60-40-18, 60-55-06, etc.	First choice	DJ	AH9030	262 - 656
		Fracture resistance	DJ	AH3135	262 - 492
N	Aluminum alloy	First choice	DS	AH6030	656 - 1312
S	Heat resistant alloy Inconel718, etc	First choice	DS	AH6030	66 - 197
		Fracture resistance	DJ	AH3135	66 - 197
	Titanium alloys Ti-6Al-4V, etc.	First choice	DS	AH6030	131 - 394
		Fracture resistance	DJ	AH3135	131 - 394
H	Hardened steel Over 40HRC	First choice	DJ	AH9030	164 - 328
		Fracture resistance	DJ	AH3135	131 - 262

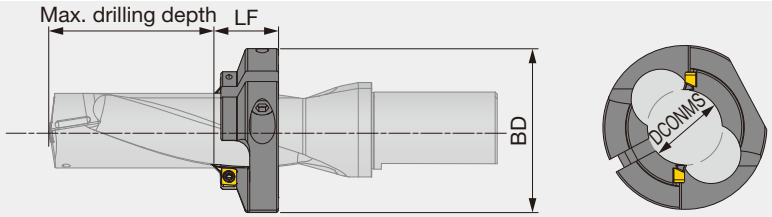
Feed: *f* (ipr)

L/D = 2, 3			L/D = 4		
DC (in)			DC (in)		
ø0.787 - ø1.083	ø1.102 - ø1.496	ø1.535 - ø2.126	ø0.787 - ø1.063	ø1.102 - ø1.496	ø1.353 - ø2.126
0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0024 - 0.0059	0.0024 - 0.0063	0.0031 - 0.0071	0.0024 - 0.0059	0.0024 - 0.0059	0.0031 - 0.0067
0.0016 - 0.0047	0.0016 - 0.0051	0.0016 - 0.0059	0.0016 - 0.0047	0.0016 - 0.0051	0.0016 - 0.0059
0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055
0.0024 - 0.0059	0.0024 - 0.0063	0.0031 - 0.0071	0.0024 - 0.0059	0.0024 - 0.0059	0.0031 - 0.0067
0.0016 - 0.0047	0.0016 - 0.0051	0.0016 - 0.0059	0.0016 - 0.0047	0.0016 - 0.0051	0.0016 - 0.0059
0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0024 - 0.0059	0.0024 - 0.0071	0.0031 - 0.0079	0.0024 - 0.0059	0.0024 - 0.0063	0.0031 - 0.0071
0.0024 - 0.0051	0.0024 - 0.0063	0.0031 - 0.0071	0.0024 - 0.0051	0.0024 - 0.0063	0.0031 - 0.0071
0.0024 - 0.0059	0.0024 - 0.0071	0.0031 - 0.0079	0.0024 - 0.0059	0.0024 - 0.0063	0.0031 - 0.0071
0.0024 - 0.0051	0.0024 - 0.0063	0.0031 - 0.0071	0.0024 - 0.0051	0.0024 - 0.0063	0.0031 - 0.0071
0.0039 - 0.0071	0.0039 - 0.0079	0.0039 - 0.0098	0.0039 - 0.0071	0.0039 - 0.0079	0.0039 - 0.0079
0.0039 - 0.0071	0.0039 - 0.0079	0.0039 - 0.0098	0.0039 - 0.0071	0.0039 - 0.0079	0.0039 - 0.0079
0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
0.0024 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0055
0.0024 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0055
0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031
0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031

TUNGSIX-DRILL

TDXCF chamfering tool

Chamfering tool for TungDrillTwisted and TungSix-Drill



Inch	DCONMS	BD	LF	Application drill	Max. drilling depth		
					L/D = 2	L/D = 3	L/D = 4
TDXCF210L25	0.791	1.929	0.984	TDSU0812...	0.700	1.512	-
TDXCF230L25	0.870	1.929	0.984	TDSU0875...	0.825	1.700	-
TDXCF240L25	0.909	1.929	0.984	TDSU0937...	0.950	1.887	-
TDXCF260L30	0.982	2.520	1.181	TDSU1000...	0.878	1.878	-
TDXCF270L30	1.020	2.520	1.181	TDSU1062...	1.003	2.065	-
TDXCF290L30	1.098	2.520	1.181	TDSU1125...	-	-	3.486
TDXCF300L30	1.138	2.520	1.181	TDSU1187...	-	-	3.726
TDXCF320L30	1.217	2.520	1.181	TDSU1250...	-	-	3.976
TDXCF340L30	1.291	2.520	1.181	TDSU1312...	-	-	4.226
TDXCF350L30	1.331	2.520	1.181	TDSU1375...	-	-	4.476
TDXCF370L30	1.409	3.346	1.181	TDSU1437...	-	-	4.726
TDXCF380L30	1.449	3.346	1.181	TDSU1500...	-	-	4.977
TDXCF400L30	1.528	3.346	1.181	TDSU1562...	-	-	5.245
TDXCF410L30	1.567	3.346	1.181	TDSU1625...	-	-	5.496
TDXCF430L30	1.638	3.346	1.181	TDSU1687...	-	-	5.746
TDXCF450L30	1.717	3.346	1.181	TDSU1750...	-	-	5.998
TDXCF460L30	1.756	3.346	1.181	TDSU1812...	-	-	6.248
TDXCF480L30	1.835	3.346	1.181	TDSU1875...	-	-	6.496
TDXCF500L30	1.913	3.346	1.181	TDSU1937...	-	-	6.746
TDXCF510L30	1.953	3.346	1.181	TDSU2000...	-	-	6.996

SPARE PARTS

Designation	Screw for insert	Screw for ring	Wrench for insert	Wrench for ring
TDXCF210 - 250	CSPB-4S	CM6X16	IP-15D	P-5
TDXCF260 - 540	CSPB-4S	CM8X1.25X20-A	IP-15D	P-6

Recommended clamping torque: CSPB-4S = 2.58 lb·ft

INSERT

XHGX-45A

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	PNA	C (in)	Coated
			GH130
XHGX090700R-45A	45°	0.100	●

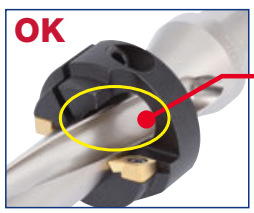
● : Line up

Caution in mounting the chamfering tool on the drill body

① Place the ring on the drill body and match the positions of flutes on drill and ring. Temporarily clamp the ring with the ring screw tightened lightly.

② Place the inserts, and tighten the insert screw lightly.

③ Adjust the ring position with a presetter, height gauge, or Vernier caliper, and securely tighten the ring screw, then the insert screw.



Match the positions of flutes on drill and ring.

(Inserts will be automatically set to the right positions.)

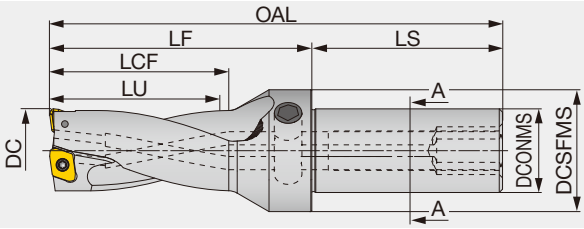
The cutting edge of the insert is in the ring flute.

The flutes on drill and ring do not match.

TUNGDRILLTWISTED

TDXU-FS L/D=2

L/D = 2, flat, tool diameter ø0.500" - ø2.125"




A - A section

Inch	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset** (radial)	WT(lb)	Insert
TDXU-0500FS-02	0.500	0.750	1.250	1.015	1.015	1.130	2.019	4.034	0.030	0.44	XPMT040104R-D*
TDXU-0531FS-02	0.531	0.750	1.250	1.077	1.077	1.200	2.089	4.104	0.024	0.45	XPMT040104R-D*
TDXU-0562FS-02	0.562	0.750	1.250	1.139	1.139	1.260	2.152	4.167	0.018	0.45	XPMT040104R-D*
TDXU-0625FS-02	0.625	0.750	1.250	1.271	1.271	1.390	2.283	4.304	0.026	0.46	XPMT050204R-D*
TDXU-0687FS-02	0.687	1.000	1.457	1.393	1.393	1.510	2.471	4.770	0.048	0.79	XPMT06X308R-D*
TDXU-0750FS-02	0.75	1.000	1.457	1.519	1.519	1.640	2.591	4.890	0.027	0.82	XPMT06X308R-D*
TDXU-0812FS-02	0.812	1.000	1.457	1.643	1.643	1.760	2.729	5.028	0.015	0.85	XPMT06X308R-D*
TDXU-0875FS-02	0.875	1.000	1.457	1.773	1.773	1.890	2.849	5.152	0.045	0.88	XPMT07H308R-D*
TDXU-0937FS-02	0.937	1.000	1.457	1.897	1.897	2.020	2.991	5.294	0.029	0.93	XPMT07H308R-D*
TDXU-1000FS-02	1.000	1.000	1.457	2.023	2.023	2.140	3.111	5.414	0.013	0.96	XPMT07H308R-D*
TDXU-1062FS-02	1.062	1.250	1.575	2.153	2.153	2.270	3.401	5.710	0.059	1.3	XPMT08T308R-D*
TDXU-1125FS-02	1.125	1.250	1.575	2.279	2.279	2.400	3.541	5.850	0.043	1.38	XPMT08T308R-D*
TDXU-1187FS-02	1.187	1.250	1.575	2.403	2.403	2.520	3.658	5.967	0.026	1.45	XPMT08T308R-D*
TDXU-1250FS-02	1.250	1.250	1.575	2.529	2.529	2.650	3.783	6.092	0.010	1.52	XPMT08T308R-D*
TDXU-1312FS-02	1.312	1.500	1.969	2.667	2.667	2.790	4.013	6.744	0.088	2.25	XPMT110412R-D*
TDXU-1375FS-02	1.375	1.500	1.969	2.793	2.793	2.910	4.155	6.886	0.072	2.32	XPMT110412R-D*
TDXU-1437FS-02	1.437	1.500	1.969	2.917	2.917	3.040	4.272	7.003	0.055	2.34	XPMT110412R-D*
TDXU-1500FS-02	1.500	1.500	1.969	3.043	3.043	3.160	4.413	7.144	0.038	2.53	XPMT110412R-D*
TDXU-1562FS-02	1.562	1.500	1.969	3.167	3.167	3.290	4.553	7.284	0.022	2.54	XPMT110412R-D*
TDXU-1625FS-02	1.625	1.500	2.165	3.311	3.311	3.430	4.728	7.477	0.128	2.85	XPMT150512R-D*
TDXU-1687FS-02	1.687	1.500	2.165	3.435	3.435	3.550	4.868	7.617	0.115	3.02	XPMT150512R-D*
TDXU-1750FS-02	1.750	1.500	2.165	3.561	3.561	3.680	4.986	7.735	0.097	3.14	XPMT150512R-D*
TDXU-1812FS-02	1.812	1.500	2.165	3.685	3.685	3.810	5.128	7.877	0.082	3.3	XPMT150512R-D*
TDXU-1875FS-02	1.875	1.500	2.165	3.811	3.811	3.930	5.251	8.000	0.063	3.49	XPMT150512R-D*
TDXU-1937FS-02	1.937	1.500	2.165	3.935	3.935	4.050	5.385	8.134	0.049	3.61	XPMT150512R-D*
TDXU-2000FS-02	2.000	1.500	2.165	4.061	4.061	4.180	5.510	8.259	0.030	3.82	XPMT150512R-D*
TDXU-2125FS-02	2.125	1.500	2.165	4.311	4.311	4.430	5.790	8.548	-	4.24	XPMT150512R-D*

** For offsetting on lathe

Tool diameter	Tool diameter tolerance	Hole diameter tolerance
ø0.500 - ø0.625	+ 0.004 / 0	+ 0.010/ 0
ø0.687 - ø2.125	+ 0.008 / 0	+ 0.012 / 0

SPARE PARTS




Designation	Clamping screw	Torx driver	Plug *	
			Side port	Rear port (Optional parts)
TDXU500 - TDXU0562	CSPB-2H	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU-0625FS-02	CSPB-2L043	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU0687 - TDXU0812	CSPB-2.2	IP-7D	NPTF1/8	(SL25IN)
TDXU0875 - TDXU1000	CSPB-2.5	IP-8D	NPTF1/8	(SL25IN)
TDXU1062 - TDXU1250	CSTB-3	T-9D	NPTF1/4	(SL32IN)
TDXU1312 - TDXU1562	CSTB-4	T-15D	NPTF1/4	(SL38IN)
TDXU1625 - TDXU2125	CSTB-5	T-20D	NPTF1/4	(SL38IN)

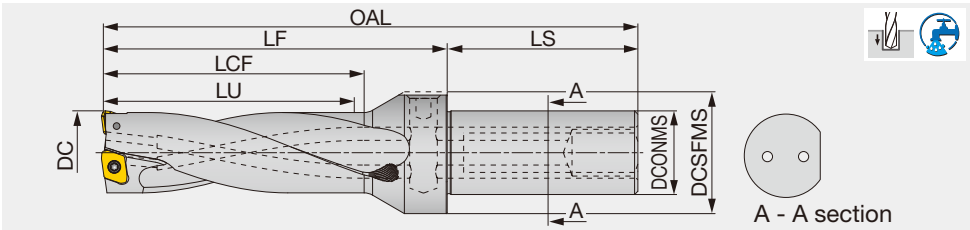
Recommended clamping torque: CSPB-2H/CSPB-2L043= 0.52 lb·ft, CSPB-2.2= 0.74 lb·ft, CSPB-2.5= 0.96 lb·ft, CSTB-3= 1.70 lb·ft, CSTB-4= 2.58 lb·ft, CSTB-5= 3.69 lb·ft

* Please see the dimensions on page J078.

Reference pages: Inserts → J079 - J080, Standard cutting conditions → J081

TDXU-FS L/D=3

L/D = 3, flat, tool diameter ø0.500" - ø2.125"



Inch	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset** (radial)	WT(lb)	Insert
TDXU-0500FS-03	0.500	0.750	1.250	1.515	2.000	1.630	2.519	4.534	0.030	0.45	XPMT040104R-D*
TDXU-0531FS-03	0.531	0.750	1.250	1.608	2.000	1.730	2.620	4.635	0.024	0.46	XPMT040104R-D*
TDXU-0562FS-03	0.562	0.750	1.250	1.701	2.000	1.820	2.715	4.730	0.018	0.47	XPMT040104R-D*
TDXU-0625FS-03	0.625	0.750	1.250	1.896	2.000	2.020	2.909	4.930	0.026	0.49	XPMT050204R-D*
TDXU-0687FS-03	0.687	1.000	1.457	2.080	2.280	2.200	3.159	5.458	0.048	0.83	XPMT06X308R-D*
TDXU-0750FS-03	0.750	1.000	1.457	2.269	2.280	2.390	3.341	5.640	0.027	0.87	XPMT06X308R-D*
TDXU-0812FS-03	0.812	1.000	1.457	2.455	2.280	2.580	3.542	5.841	0.015	0.91	XPMT06X308R-D*
TDXU-0875FS-03	0.875	1.000	1.457	2.648	2.280	2.770	3.724	6.027	0.045	0.95	XPMT07H308R-D*
TDXU-0937FS-03	0.937	1.000	1.457	2.834	2.280	2.960	3.929	6.232	0.029	1.03	XPMT07H308R-D*
TDXU-1000FS-03	1.000	1.000	1.457	3.023	2.280	3.210	4.111	6.314	0.013	1.05	XPMT07H308R-D*
TDXU-1062FS-03	1.062	1.250	1.575	3.215	2.280	3.340	4.464	6.773	0.059	1.43	XPMT08T308R-D*
TDXU-1125FS-03	1.125	1.250	1.575	3.404	2.280	3.520	4.666	6.975	0.043	1.52	XPMT08T308R-D*
TDXU-1187FS-03	1.187	1.250	1.575	3.590	2.280	3.710	4.845	7.154	0.026	1.62	XPMT08T308R-D*
TDXU-1250FS-03	1.250	1.250	1.575	3.779	2.280	3.900	5.033	7.342	0.010	1.74	XPMT08T308R-D*
TDXU-1312FS-03	1.312	1.500	1.969	3.979	2.688	4.100	5.325	8.056	0.088	2.51	XPMT110412R-D*
TDXU-1375FS-03	1.375	1.500	1.969	4.168	2.688	4.290	5.530	8.261	0.072	2.61	XPMT110412R-D*
TDXU-1437FS-03	1.437	1.500	1.969	4.354	2.688	4.470	5.709	8.440	0.055	2.63	XPMT110412R-D*
TDXU-1500FS-03	1.500	1.500	1.969	4.543	2.688	4.660	5.913	8.644	0.038	2.86	XPMT110412R-D*
TDXU-1562FS-03	1.562	1.500	1.969	4.729	2.688	4.850	6.115	8.846	0.022	2.92	XPMT110412R-D*
TDXU-1625FS-03	1.625	1.500	2.165	4.936	2.688	5.050	6.353	9.102	0.128	3.33	XPMT150512R-D*
TDXU-1687FS-03	1.687	1.500	2.165	5.122	2.688	5.240	6.555	9.304	0.115	3.57	XPMT150512R-D*
TDXU-1750FS-03	1.750	1.500	2.165	5.311	2.688	5.430	6.736	9.485	0.097	3.74	XPMT150512R-D*
TDXU-1812FS-03	1.812	1.500	2.165	5.497	2.688	5.620	6.941	9.690	0.082	3.95	XPMT150512R-D*
TDXU-1875FS-03	1.875	1.500	2.165	5.686	2.688	5.800	7.126	9.875	0.063	4.22	XPMT150512R-D*
TDXU-1937FS-03	1.937	1.500	2.165	5.872	2.688	5.990	7.322	10.071	0.049	4.41	XPMT150512R-D*
TDXU-2000FS-03	2.000	1.500	2.165	6.061	2.688	6.180	7.510	10.259	0.030	4.6	XPMT150512R-D*
TDXU-2125FS-03	2.125	1.500	2.165	6.436	2.688	6.550	7.915	10.664	-	5.31	XPMT150512R-D*

** For offsetting on lathe

Tool diameter	Tool diameter tolerance	Hole diameter tolerance
ø0.500 - ø0.625	+ 0.004 / 0	+ 0.010/ 0
ø0.687 - ø2.125	+ 0.008 / 0	+ 0.012 / 0

SPARE PARTS




Designation	Clamping screw	Torx driver	Plug *	
			Side port	Rear port (Optional parts)
TDXU500 - TDXU0562	CSPB-2H	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU-0625FS-03	CSPB-2L043	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU0687-TDXU0812	CSPB-2.2	IP-7D	NPTF1/8	(SL25IN)
TDXU0875 - TDXU1000	CSPB-2.5	IP-8D	NPTF1/8	(SL25IN)
TDXU1062 - TDXU1250	CSTB-3	T-9D	NPTF1/4	(SL32IN)
TDXU1312 - TDXU1562	CSTB-4	T-15D	NPTF1/4	(SL38IN)
TDXU1625 - TDXU2125	CSTB-5	T-20D	NPTF1/4	(SL38IN)

Recommended clamping torque: CSPB-2H/CSPB-2L043= 0.52 lb·ft, CSPB-2.2= 0.74 lb·ft, CSPB-2.5= 0.96 lb·ft, CSTB-3= 1.70 lb·ft, CSTB-4= 2.58 lb·ft, CSTB-5= 3.69 lb·ft

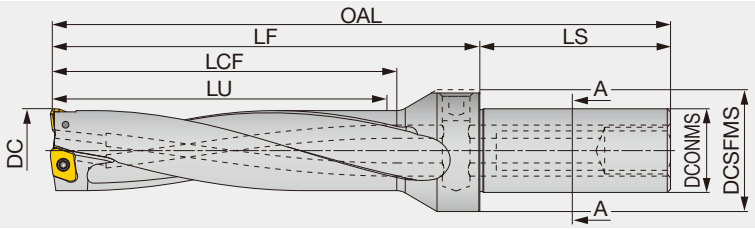
* Please see the dimensions on page J078.

Reference pages: Inserts → J079 - J080, Standard cutting conditions → J081

TUNGDRILLTWISTED

TDXU-FS L/D=4

L/D = 4, flat, tool diameter ø0.500" - ø2.125"



Inch	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset** (radial)	WT(lb)	Insert
TDXU-0500FS-04	0.500	0.750	1.250	2.015	2.000	2.130	3.019	5.034	0.030	0.460	XPMT040104R-D*
TDXU-0531FS-04	0.531	0.750	1.250	2.139	2.000	2.260	3.151	5.166	0.024	0.480	XPMT040104R-D*
TDXU-0562FS-04	0.562	0.750	1.250	2.263	2.000	2.390	3.278	5.293	0.018	0.490	XPMT040104R-D*
TDXU-0625FS-04	0.625	0.750	1.250	2.521	2.000	2.640	3.535	5.556	0.026	0.520	XPMT050204R-D*
TDXU-0687FS-04	0.687	1.000	1.457	2.767	2.280	2.890	3.847	6.146	0.048	0.860	XPMT06X308R-D*
TDXU-0750FS-04	0.750	1.000	1.457	3.019	2.280	3.140	4.091	6.390	0.027	0.920	XPMT06X308R-D*
TDXU-0812FS-04	0.812	1.000	1.457	3.267	2.280	3.390	4.355	6.654	0.015	0.960	XPMT06X308R-D*
TDXU-0875FS-04	0.875	1.000	1.457	3.523	2.280	3.640	4.599	6.902	0.045	1.030	XPMT07H308R-D*
TDXU-0937FS-04	0.937	1.000	1.457	3.771	2.280	3.890	4.867	7.170	0.029	1.130	XPMT07H308R-D*
TDXU-1000FS-04	1.000	1.000	1.457	4.023	2.280	4.140	5.111	7.414	0.013	1.140	XPMT07H308R-D*
TDXU-1062FS-04	1.062	1.250	1.575	4.277	2.280	4.400	5.527	7.836	0.059	1.560	XPMT08T308R-D*
TDXU-1125FS-04	1.125	1.250	1.575	4.529	2.280	4.650	5.791	8.100	0.043	1.660	XPMT08T308R-D*
TDXU-1187FS-04	1.187	1.250	1.575	4.777	2.280	4.900	6.032	8.341	0.026	1.800	XPMT08T308R-D*
TDXU-1250FS-04	1.250	1.250	1.575	5.029	2.280	5.150	6.283	8.592	0.010	1.950	XPMT08T308R-D*
TDXU-1312FS-04	1.312	1.500	1.969	5.291	2.688	5.410	6.637	9.368	0.088	2.770	XPMT110412R-D*
TDXU-1375FS-04	1.375	1.500	1.969	5.543	2.688	5.660	6.905	9.636	0.072	2.900	XPMT110412R-D*
TDXU-1437FS-04	1.437	1.500	1.969	5.791	2.688	5.910	7.146	9.877	0.055	2.930	XPMT110412R-D*
TDXU-1500FS-04	1.500	1.500	1.969	6.043	2.688	6.160	7.413	10.144	0.038	3.180	XPMT110412R-D*
TDXU-1562FS-04	1.562	1.500	1.969	6.291	2.688	6.410	7.677	10.408	0.022	3.310	XPMT110412R-D*
TDXU-1625FS-04	1.625	1.500	2.165	6.561	2.688	6.680	7.978	10.727	0.128	3.820	XPMT150512R-D*
TDXU-1687FS-04	1.687	1.500	2.165	6.809	2.688	6.930	8.242	10.991	0.115	4.120	XPMT150512R-D*
TDXU-1750FS-04	1.750	1.500	2.165	7.061	2.688	7.180	8.486	11.235	0.097	4.340	XPMT150512R-D*
TDXU-1812FS-04	1.812	1.500	2.165	7.309	2.688	7.430	8.754	11.503	0.082	4.600	XPMT150512R-D*
TDXU-1875FS-04	1.875	1.500	2.165	7.561	2.688	7.680	9.001	11.750	0.063	4.950	XPMT150512R-D*
TDXU-1937FS-04	1.937	1.500	2.165	7.809	2.688	7.930	9.259	12.008	0.049	5.210	XPMT150512R-D*
TDXU-2000FS-04	2.000	1.500	2.165	8.061	2.688	8.180	9.510	12.259	0.030	5.370	XPMT150512R-D*
TDXU-2125FS-04	2.125	1.500	2.165	8.561	2.688	8.680	10.040	12.789	-	6.390	XPMT150512R-D*

** For offsetting on lathe

Tool diameter	Tool diameter tolerance	Hole diameter tolerance
ø0.500 - ø0.625	+ 0.004 / 0	+ 0.016 / 0
ø0.687 - ø2.125	+ 0.008 / 0	+ 0.018 / 0

SPARE PARTS




Designation	Clamping screw	Torx driver	Plug *	
			Side port	Rear port (Optional parts)
TDXU500 - TDXU0562	CSPB-2H	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU-0625FS-04	CSPB-2L043	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU0687 - TDXU0812	CSPB-2.2	IP-7D	NPTF1/8	(SL25IN)
TDXU0875 - TDXU1000	CSPB-2.5	IP-8D	NPTF1/8	(SL25IN)
TDXU1062 - TDXU1250	CSTB-3	T-9D	NPTF1/4	(SL32IN)
TDXU1312 - TDXU1562	CSTB-4	T-15D	NPTF1/4	(SL38IN)
TDXU1625 - TDXU2000	CSTB-5	T-20D	NPTF1/4	(SL38IN)

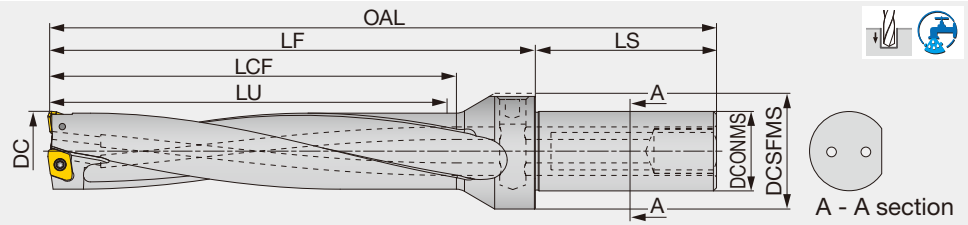
Recommended clamping torque: CSPB-2H/CSPB-2L043= 0.52 lb·ft, CSPB-2.2= 0.74 lb·ft, CSPB-2.5= 0.96 lb·ft, CSTB-3= 1.70 lb·ft, CSTB-4= 2.58 lb·ft, CSTB-5= 3.69 lb·ft

* Please see the dimensions on page J078.

Reference pages: Inserts → J079 - J080, Standard cutting conditions → J081

TDXU-FS L/D=5

L/D = 5, flat, tool diameter ø0.500" - ø2.125"



Inch	DC	DCONMS	DCSFMS	LU	LS	LCF	LF	OAL	Max. offset** (radial)	WT(lb)	Insert
TDXU-0500FS-05	0.500	0.750	1.250	2.515	2.000	2.630	3.519	5.534	0.030	0.47	XPMT040104R-D*
TDXU-0531FS-05	0.531	0.750	1.250	2.670	2.000	2.790	3.682	5.697	0.024	0.5	XPMT040104R-D*
TDXU-0562FS-05	0.562	0.750	1.250	2.825	2.000	2.950	3.841	5.856	0.018	0.51	XPMT040104R-D*
TDXU-0625FS-05	0.625	0.750	1.250	3.146	2.000	3.270	4.161	6.182	0.026	0.55	XPMT050204R-D*
TDXU-0687FS-05	0.687	1.000	1.457	3.454	2.280	3.580	4.535	6.834	0.048	0.9	XPMT06X308R-D*
TDXU-0750FS-05	0.750	1.000	1.457	3.769	2.280	3.890	4.841	7.140	0.027	0.96	XPMT06X308R-D*
TDXU-0812FS-05	0.812	1.000	1.457	4.079	2.280	4.200	5.168	7.467	0.015	1.02	XPMT06X308R-D*
TDXU-0875FS-05	0.875	1.000	1.457	4.398	2.280	4.520	5.474	7.777	0.045	1.1	XPMT07H308R-D*
TDXU-0937FS-05	0.937	1.000	1.457	4.708	2.280	4.830	5.805	8.108	0.029	1.22	XPMT07H308R-D*
TDXU-1000FS-05	1.000	1.000	1.457	5.023	2.280	5.140	6.111	8.414	0.013	1.23	XPMT07H308R-D*
TDXU-1062FS-05	1.062	1.250	1.575	5.339	2.280	5.460	6.590	8.899	0.059	1.69	XPMT08T308R-D*
TDXU-1125FS-05	1.125	1.250	1.575	5.654	2.280	5.770	6.916	9.225	0.043	1.81	XPMT08T308R-D*
TDXU-1187FS-05	1.187	1.250	1.575	5.964	2.280	6.080	7.219	9.528	0.026	1.97	XPMT08T308R-D*
TDXU-1250FS-05	1.250	1.250	1.575	6.279	2.280	6.400	7.533	9.842	0.010	2.16	XPMT08T308R-D*
TDXU-1312FS-05	1.312	1.500	1.969	6.603	2.688	6.720	7.949	10.680	0.088	3.03	XPMT110412R-D*
TDXU-1375FS-05	1.375	1.500	1.969	6.918	2.688	7.040	8.280	11.011	0.072	3.19	XPMT110412R-D*
TDXU-1437FS-05	1.437	1.500	1.969	7.228	2.688	7.350	8.583	11.314	0.055	3.22	XPMT110412R-D*
TDXU-1500FS-05	1.500	1.500	1.969	7.543	2.688	7.660	8.913	11.644	0.038	3.51	XPMT110412R-D*
TDXU-1562FS-05	1.562	1.500	1.969	7.853	2.688	7.970	9.239	11.970	0.022	3.7	XPMT110412R-D*
TDXU-1625FS-05	1.625	1.500	2.165	8.186	2.688	8.300	9.603	12.352	0.128	4.3	XPMT150512R-D*
TDXU-1687FS-05	1.687	1.500	2.165	8.496	2.688	8.610	9.929	12.678	0.115	4.67	XPMT150512R-D*
TDXU-1750FS-05	1.750	1.500	2.165	8.811	2.688	8.930	10.236	12.985	0.097	4.94	XPMT150512R-D*
TDXU-1812FS-05	1.812	1.500	2.165	9.121	2.688	9.240	10.567	13.316	0.082	5.25	XPMT150512R-D*
TDXU-1875FS-05	1.875	1.500	2.165	9.436	2.688	9.550	10.876	13.625	0.063	5.68	XPMT150512R-D*
TDXU-1937FS-05	1.937	1.500	2.165	9.746	2.688	9.860	11.196	13.945	0.049	6.01	XPMT150512R-D*
TDXU-2000FS-05	2.000	1.500	2.165	10.061	2.688	10.180	11.510	14.259	0.030	6.14	XPMT150512R-D*
TDXU-2125FS-05	2.125	1.500	2.165	10.686	2.688	10.800	12.165	14.914	-	7.46	XPMT150512R-D*

** For offsetting on lathe

Tool diameter	Tool diameter tolerance	Hole diameter tolerance
ø0.500 - ø0.625	+ 0.004 / 0	+ 0.016 / 0
ø0.687 - ø2.125	+ 0.008 / 0	+ 0.018 / 0

SPARE PARTS



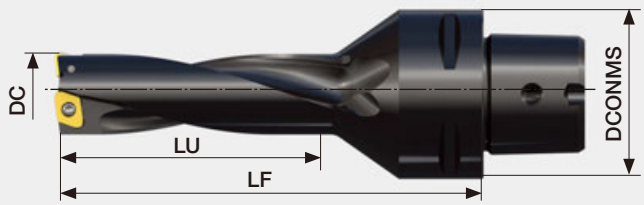

Designation	Clamping screw	Torx driver	Plug *	
			Side port	Rear port (Optional parts)
TDXU500 - TDXU0562	CSPB-2H	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU-0625FS-05	CSPB-2L043	IP-6DB	NPTF1/8	(NPTF1/4)
TDXU0687 - TDXU0812	CSPB-2.2	IP-7D	NPTF1/8	(SL25IN)
TDXU0875 - TDXU1000	CSPB-2.5	IP-8D	NPTF1/8	(SL25IN)
TDXU1062 - TDXU1250	CSTB-3	T-9D	NPTF1/4	(SL32IN)
TDXU1312 - TDXU1562	CSTB-4	T-15D	NPTF1/4	(SL38IN)
TDXU1625 - TDXU2000	CSTB-5	T-20D	NPTF1/4	(SL38IN)

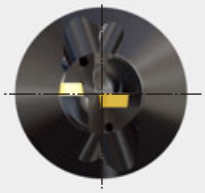
Recommended clamping torque: CSPB-2H/CSPB-2L043= 0.52 lb·ft, CSPB-2.2= 0.74 lb·ft, CSPB-2.5= 0.96 lb·ft, CSTB-3= 1.70 lb·ft, CSTB-4= 2.58 lb·ft, CSTB-5=3.69 lb·ft

* Please see the dimensions on page J078.

Reference pages: Inserts → J079 - J080, Standard cutting conditions → J081

TungCap C-TDX





Metric	DCONMS	DC	LF	L	Max. offset** (radial)	Insert
C4TDX150L082-3	40	15	82	45	0.9	XPMT050204R-D*
C4TDX200L101-3	40	20	101	60	0.5	XPMT06X308R-D*
C4TDX250L125-3	40	25	125	75	0.4	XPMT07H308R-D*
C4TDX300L139-3	40	30	139	90	0.7	XPMT08T308R-D*
C6TDX200L101-3	63	20	101	60	0.5	XPMT06X308R-D*
C6TDX250L121-3	63	25	121	75	0.4	XPMT07H308R-D*
C6TDX300L139-3	63	30	139	90	0.7	XPMT08T308R-D*
C6TDX350L159-3	63	35	159	105	1.8	XPMT110412R-D*
C6TDX400L177-3	63	40	177	120	0.5	XPMT110412R-D*

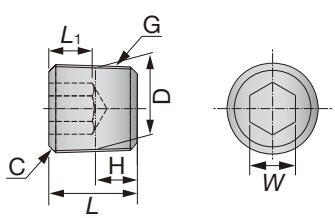
Applicable for 14 MPa pressure coolant
** For offsetting on lathe

SPARE PARTS


Designation	Clamping screw	Screw
C4TDX150L082-3	CSTB-2L040	T-6D
C4TDX200L101-3	CSTB-2.2R	T-7D
C4TDX250L125-3	CSTB-2.5	T-8D
C4TDX300L139-3	CSTB-3	T-9D
C6TDX200L101-3	CSTB-2.2R	T-7D
C6TDX250L121-3	CSTB-2.5	T-8D
C6TDX300L139-3	CSTB-3	T-9D
C6TDX350L159-3	CSTB-4	T-15D
C6TDX400L177-3	CSTB-4	T-15D

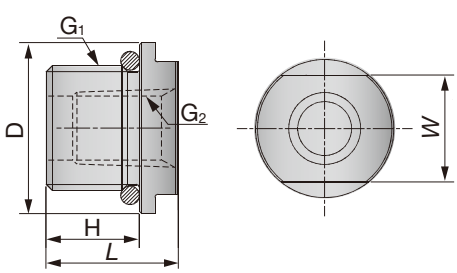
Side port

Inch	D	H	*L*	*W*	G	*L*1	C
NPTF1/8	0.374	0.161	0.312	0.187	NPTF1/8	0.156	0.028
NPTF1/4	0.492	0.228	0.437	0.250	NPTF1/4	0.239	0.039



Rear port

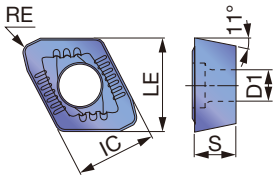
Inch	D	H	*L*	*W*	G1	G2
SL25IN	0.866	0.472	0.669	0.669	M16X1.5	NPTF1/8
SL32IN	1.142	0.591	0.827	0.866	M22X2.0	NPTF1/4
SL38IN	1.496	0.591	0.827	0.866	M30X2.0	NPTF1/4



Reference pages: Inserts → J079 - J080, Standard cutting conditions → J081

INSERT

DJ



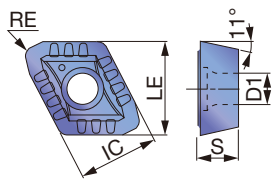
P	Steel			★	☆			
M	Stainless	☆		★				
K	Cast iron		☆	☆	★			
N	Non-ferrous	★		☆				
S	Superalloys	☆		★	☆			
H	Hard materials	☆		★	☆			

★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated				S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH725	T1115	AH6030	AH9030					
XPMT040104R-DJ	0.169	0.177	●	●	●	●	0.063	0.090	0.016	0.492	0.571
XPMT050204R-DJ	0.205	0.213	●	●	●	●	0.094	0.090	0.016	0.591	0.669
XPMT06X308R-DJ	0.236	0.276	●	●	●	●	0.118	0.100	0.032	0.689	0.847
XPMT07H308R-DJ	0.276	0.323	●	●	●	●	0.142	0.110	0.032	0.866	1.024
XPMT08T308R-DJ	0.335	0.390	●	●	●	●	0.156	0.130	0.032	1.063	1.260
XPMT110412R-DJ	0.441	0.492	●	●	●	●	0.187	0.170	0.047	1.299	1.614
XPMT150512R-DJ	0.591	0.634	●	●	●	●	0.219	0.220	0.047	1.654	2.126

● : Line up

DS



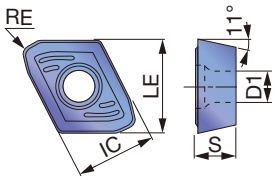
P	Steel	☆	★	
M	Stainless	☆	★	
K	Cast iron			
N	Non-ferrous	☆		
S	Superalloys	☆	★	
H	Hard materials			

★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated		S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH725	AH6030					
XPMT040104R-DS	0.169	0.177	●	●	0.063	0.090	0.016	0.492	0.571
XPMT050204R-DS	0.205	0.213	●	●	0.094	0.090	0.016	0.591	0.669
XPMT06X308R-DS	0.236	0.276	●	●	0.118	0.100	0.032	0.689	0.847
XPMT07H308R-DS	0.276	0.323	●	●	0.142	0.110	0.032	0.866	1.024
XPMT08T308R-DS	0.335	0.390	●	●	0.156	0.130	0.032	1.063	1.260
XPMT110412R-DS	0.441	0.492	●	●	0.187	0.170	0.047	1.299	1.614
XPMT150512R-DS	0.591	0.634	●	●	0.219	0.220	0.047	1.654	2.126

● : Line up

DW



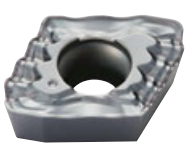
		AH725	AH6030	AH9030
P	Steel	☆	★	☆
M	Stainless	☆	★	☆
K	Cast iron		☆	★
N	Non-ferrous	☆	★	
S	Superalloys	☆	★	☆
H	Hard materials	☆	★	☆

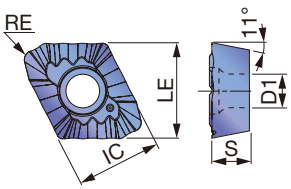
★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated AH725	Coated AH6030	Coated AH9030	S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
XPMT040104R-DW	0.169	0.177	●	●	●	0.063	0.090	0.016	0.492	0.571
XPMT050204R-DW	0.205	0.213	●	●	●	0.094	0.090	0.016	0.591	0.669
XPMT06X308R-DW	0.236	0.276	●	●	●	0.118	0.100	0.032	0.689	0.847
XPMT07H308R-DW	0.276	0.323	●	●	●	0.142	0.110	0.032	0.866	1.024
XPMT08T308R-DW	0.335	0.390	●	●	●	0.156	0.130	0.032	1.063	1.260
XPMT110412R-DW	0.441	0.492	●	●	●	0.187	0.170	0.047	1.299	1.614
XPMT150512R-DW	0.591	0.634	●	●	●	0.219	0.220	0.047	1.654	2.126

● : Line up

DG





		AH725
P	Steel	★
M	Stainless	☆
K	Cast iron	
N	Non-ferrous	★
S	Superalloys	☆
H	Hard materials	

★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated AH725	S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
XPMT08T308R-DG	0.335	0.390	●	0.156	0.130	0.032	1.063	1.260
XPMT110412R-DG	0.441	0.492	●	0.187	0.170	0.047	1.299	1.614
XPMT150512R-DG	0.591	0.634	●	0.219	0.220	0.047	1.654	2.126

● : Line up

RECOMMENDED INSERT

ISO	Workpiece material	First choice	High feed	High speed	Troubleshooting			
					Chipping resistance	Wear resistance	Surface finish	Chip control
P	Low carbon steels (C ≤ 0.3%)	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	DG, AH725
P	Carbon steels (C > 0.3%) Alloy steels	DJ, AH6030	DW, AH6030	DJ, AH9030	DW, AH725	DJ, AH9030	DW, AH6030	-
P	Low alloy steels	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	-
M	Stainless steel	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	DG, AH725
K	Gray cast irons	DJ, AH9030	DW, AH9030	DJ, T1115	DW, AH725	-	DW, AH9030	-
K	Ductile cast irons	DJ, AH9030	DW, AH9030	-	DW, AH725	-	DW, AH9030	-
N	Aluminum alloy	DJ, AH725	DW, AH725	DS, AH6030	-	-	DW, AH725	DG, AH725
S	Titanium alloys Heat-resistant alloys	DS, AH6030	-	-	DW, AH725	-	DW, AH725	DG, AH725
H	Hardened steel	DJ, AH9030	DW, AH9030	-	DW, AH725	-	DW, AH9030	-

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed *Vc* (sfm)	Series L/D	Feed: *f* (ipr)				
				ø0.500" - ø0.562"	ø0.625"	ø0.687" - ø1.000"	ø1.062" - ø1.25"	ø1.312" - ø2.000"
P	Low carbon steels (C < 0.3) 1018, 1026, etc.	525 - 1050	2D, 3D	0.0008 - 0.0024	0.0008 - 0.0024	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
			4D, 5D	0.0008 - 0.0024	0.0008 - 0.0024	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
P	Carbon steels (C > 0.3) 1045, 1055, etc.	262 - 820	2D, 3D	0.0016 - 0.0039	0.0016 - 0.0047	0.0024 - 0.0051	0.0024 - 0.0059	0.0031 - 0.0071
			4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0024 - 0.0039	0.0024 - 0.0047	0.0031 - 0.0055
P	Low alloy steels 4130, etc.	525 - 820	2D, 3D	0.0016 - 0.0031	0.0016 - 0.0031	0.0024 - 0.0047	0.0024 - 0.0047	0.0024 - 0.0055
			4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0024 - 0.0047	0.0024 - 0.0047	0.0024 - 0.0055
P	Alloy steels 4140, 5120, etc.	262 - 656	2D, 3D	0.0016 - 0.0039	0.0016 - 0.0047	0.0024 - 0.0051	0.0024 - 0.0059	0.0031 - 0.0071
			4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0024 - 0.0039	0.0024 - 0.0047	0.0031 - 0.0055
M	Stainless steels (Austenitic) 304, 316, etc.	328 - 656	2D, 3D	0.0008 - 0.0031	0.0008 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047
			4D, 5D	0.0008 - 0.0031	0.0008 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047
M	Stainless steels (Martensitic and ferritic) 430, 416, etc.	328 - 722	2D, 3D	0.0008 - 0.0031	0.0008 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047
			4D, 5D	0.0008 - 0.0031	0.0008 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0047	0.0016 - 0.0047
M	Stainless steels (Precipitation hardening) 630, etc.	262 - 394	2D, 3D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0024 - 0.0039
			4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0024 - 0.0039
K	Gray cast irons Class 25, Class 30, etc.	262 - 820	2D, 3D	0.0024 - 0.0047	0.0024 - 0.0047	0.0024 - 0.0059	0.0024 - 0.0071	0.0031 - 0.0079
			4D, 5D	0.0024 - 0.0039	0.0024 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0055	0.0031 - 0.0063
K	Ductile cast irons 60-40-18, etc.	262 - 656	2D, 3D	0.0016 - 0.0047	0.0016 - 0.0047	0.0024 - 0.0059	0.0024 - 0.0071	0.0031 - 0.0079
			4D, 5D	0.0016 - 0.0039	0.0016 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0055	0.0031 - 0.0063
N	Aluminum alloy 333.0, 383.0, etc.	656 - 1312	2D, 3D	0.0039 - 0.0047	0.0039 - 0.0059	0.0059 - 0.0079	0.0059 - 0.0079	0.0059 - 0.0098
			4D, 5D	0.0031 - 0.0047	0.0031 - 0.0047	0.0047 - 0.0063	0.0047 - 0.0063	0.0047 - 0.0079
S	Heat-resistant alloys Inconel 718, etc.	66 - 197	2D, 3D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
		66 - 197	4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
S	Titanium alloys Ti-6Al-4V, etc.	131 - 394	2D, 3D	0.0024 - 0.0039	0.0024 - 0.0039	0.0024 - 0.0047	0.0024 - 0.0047	0.0024 - 0.0047
		131 - 394	4D, 5D	0.0024 - 0.0031	0.0024 - 0.0031	0.0024 - 0.0039	0.0024 - 0.0039	0.0024 - 0.0039
H	Hardened steel ≥ 40HRC	131 - 328	2D, 3D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
		131 - 328	4D, 5D	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031	0.0016 - 0.0031

STANDARD CUTTING CONDITIONS FOR DG TYPE CHIPBREAKER

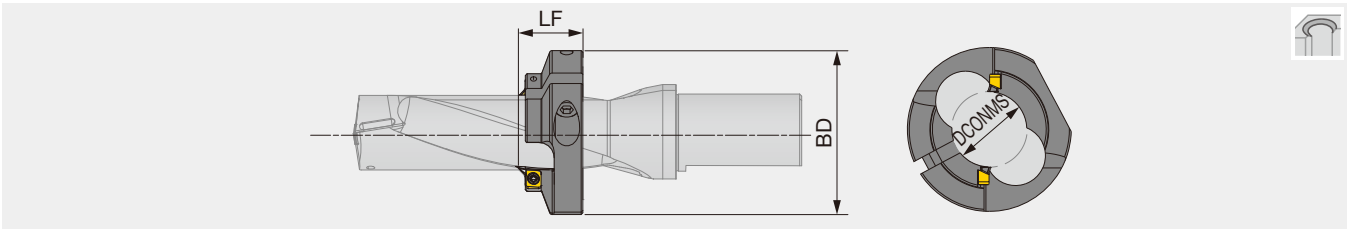
ISO	Workpiece material	Cutting speed *Vc* (sfm)	Series L/D	Feed: *f* (ipr)	
				ø1.062" - ø1.250"	ø1.312" - ø2.000"
P	Low carbon steels (C < 0.3) 1018, 1026, etc.	260 - 590	2D, 3D 4D, 5D	0.0016 - 0.0039	

When using the smaller side of the diameter range, the feed rate should be set lower.
When using DW insert for work materials of 40 HRC, the feed rate should be set below 50%.
For difficult-to-cut materials (heat-resistant alloys, etc.), the cutting speed should be set 25% below that of carbon steels.
High speed machining means cutting speeds over 150 m/min (429 sfm).
For high-feed machining, apply a feed rate that is approximately 1.5 times the standard feed conditions.
When using DW insert for troubleshooting, use it within the range of standard cutting conditions.
DG type chipbreaker is suitable for heavy machines that have low-rpm spindles. If chatter occurs, a lower feed rate is recommended.

TUNGDRILLTWISTED

TDXCF chamfering tool

Chamfering tool for TungDrillTwisted and TungSix-Drill



Inch	DCONMS	BD	LF	Application drill	L/D = 2		L/D = 3		L/D = 4		L/D = 5	
					TDX***F	TDX***W	TDX***F	TDX***W	TDX***F	TDX***W	TDX***F	TDX***W
TDXCF150L25	0.681	1.929	0.984	TDX175*25-*	0.512	0.740	1.201	1.429	1.890	2.118	2.579	2.807
TDXCF160L25	0.681	1.929	0.984	TDX180*25-*	0.551	0.783	1.260	1.492	1.969	2.201	2.677	2.909
TDXCF180L25	0.713	1.929	0.984	TDX185*25-*	0.591	0.831	1.319	1.559	2.047	2.287	2.776	3.016
TDXCF190L25	0.713	1.929	0.984	TDX190*25-*	0.630	0.874	1.378	1.622	2.126	2.370	2.874	3.118
TDXCF210L25	0.752	1.929	0.984	TDX195*25-*	0.669	0.921	1.437	1.689	2.205	2.457	2.972	3.224
TDXCF230L25	0.752	1.929	0.984	TDX200*25-*	0.787	0.965	1.575	1.752	2.323	2.539	3.110	3.327
TDXCF240L25	0.791	1.929	0.984	TDX205*25-*	0.827	1.012	1.634	1.819	2.402	2.626	3.209	3.433
TDXCF260L30	0.791	1.929	0.984	TDX210*25-*	0.866	1.055	1.693	1.882	2.480	2.709	3.307	3.535
TDXCF270L30	0.831	1.929	0.984	TDX215*25-*	0.906	1.102	1.752	1.949	2.559	2.795	3.406	3.642
TDXCF290L30	0.831	1.929	0.984	TDX220*25-*	0.945	1.146	1.811	2.012	2.638	2.878	3.504	3.744
TDXCF300L30	0.870	1.929	0.984	TDX225*25-*	0.984	1.193	1.870	2.079	2.717	2.965	3.602	3.850
TDXCF320L30	0.870	1.929	0.984	TDX230*25-*	1.024	1.236	1.929	2.142	2.795	3.047	3.701	3.953
TDXCF340L30	0.909	1.929	0.984	TDX235*25-*	1.063	1.283	1.988	2.209	2.874	3.134	3.799	4.059
TDXCF350L30	0.909	1.929	0.984	TDX240*25-*	1.102	1.327	2.047	2.272	2.953	3.217	3.898	4.161
TDXCF370L30	0.943	1.929	0.984	TDX245*25-*	1.142	1.374	2.106	2.339	3.031	3.303	3.996	4.268
TDXCF380L30	0.943	1.929	0.984	TDX250*25-*	1.181	1.417	2.165	2.402	3.110	3.386	4.094	4.370
TDXCF400L30	0.982	2.520	1.181	TDX255*25-*	1.024	1.268	2.028	2.272	2.992	3.276	3.996	4.280
TDXCF410L30	0.982	2.520	1.181	TDX260*25-*	1.063	1.311	2.087	2.335	3.071	3.358	4.094	4.382
TDXCF430L30	1.020	2.520	1.181	TDX270*32-*	1.142	1.402	2.205	2.465	3.228	3.528	4.291	4.591
TDXCF450L30	1.059	2.520	1.181	TDX280*32-*	1.193	1.492	2.295	2.594	3.386	3.697	4.488	4.799
TDXCF460L30	1.098	2.520	1.181	TDX290*32-*	1.272	1.583	2.413	2.724	3.543	3.866	4.685	5.008
TDXCF480L30	1.138	2.520	1.181	TDX300*32-*	1.350	1.673	2.531	2.854	3.701	4.035	4.882	5.217
TDXCF500L30	1.177	2.520	1.181	TDX310*32-*	1.429	1.764	2.650	2.984	3.858	4.205	5.079	5.425
TDXCF510L30	1.217	2.520	1.181	TDX320*32-*	1.508	1.854	2.768	3.114	4.016	4.374	5.276	5.634

SPARE PARTS




Designation	Screw for insert	Screw for ring	Wrench for insert	Wrench for ring
TDXCF130 - 250	CSPB-4S	CM6X16	IP-15D	P-5
TDXCF260 - 540	CSPB-4S	CM8X1.25X20-A	IP-15D	P-6

Recommended clamping torque: CSPB-4S = 2.58 lb·ft

INSERT

XHGX-45A

P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	☆
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	PNA	C (in)	Coated
			GH130
XHGX090700R-45A	45°	0.100	●

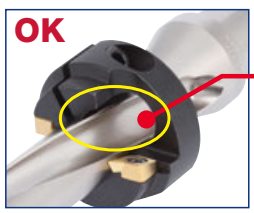
● : Line up

Caution in mounting the chamfering tool on the drill body

① Place the ring on the drill body and match the positions of flutes on drill and ring. Temporarily clamp the ring with the ring screw tightened lightly.

② Place the inserts, and tighten the insert screw lightly.

③ Adjust the ring position with a presetter, height gauge, or Vernier caliper, and securely tighten the ring screw, then the insert screw.



Match the positions of flutes on drill and ring.

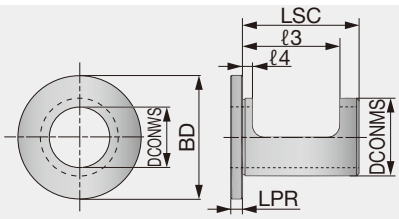
(Inserts will be automatically set to the right positions.)

The cutting edge of the insert is in the ring flute.

The flutes on drill and ring do not match.

EZ sleeve

Eccentric sleeve for TungDrillTwisted and TungSix-Drill



Inch	DCONWS	DCONMS	BD	LSC	LPR	ℓ3	ℓ4	Hole diameter adjustment	Cutting edge height adjustment
EZ0.75-1.25	0.750	1.250	1.750	2.000	0.200	1.575	0.375	+0.016 ~ - 0.008	+0.008 ~ - 0.006
EZ1.00-1.50	1.000	1.500	2.000	2.500	0.200	1.965	0.375	+0.016 ~ - 0.008	+0.008 ~ - 0.006
EZ1.25-2.00	1.250	2.000	2.500	2.700	0.200	1.965	0.375	+0.016 ~ - 0.008	+0.008 ~ - 0.006
EZ1.50-2.00	1.500	2.000	2.750	2.900	0.200	1.965	0.375	+0.024 ~ - 0.008	+0.012 ~ - 0.008

SPARE PARTS

Designation	Wrench
EZ...	P-2.5

Use EZ sleeves for the following purposes

Hole diameter adjustment on the milling machine

Adjusting the finishing diameter when milling

Adjusting the finishing diameter in tool-rotating applications such as on machining centers and milling machines:

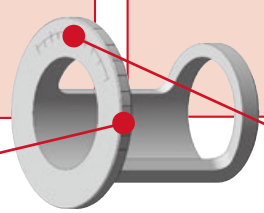
By using EZ sleeve, the finishing diameter can be adjusted in the range from +0.024" to -0.008".

Adjusting cutting edge height on lathe

Lathe

Adjusting of the cutting edge height in work rotating applications such as on lathes:

By using EZ sleeve, the cutting edge height can be adjusted in the range from +0.012" to -0.008". It results in eliminating troubles caused by improper cutting-edge height.



Scale for adjusting finishing diameter in milling (Periphery of sleeve)

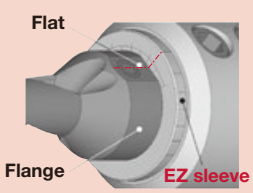
Scale for adjusting cutting edge height in turning (Front face of sleeve)

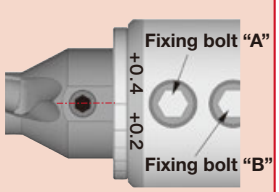
Setting of EZ sleeve

Hole diameter adjustment on the milling machine

As shown in the Figure on the right, set the EZ sleeve between the drill shank and the toolholder.

Align the graduated scale on the periphery of the EZ sleeve with the center of the flat of the drill flange. In the Figure shown on the right, the sleeve is set so that the finishing diameter will be increased by 0.4 mm.



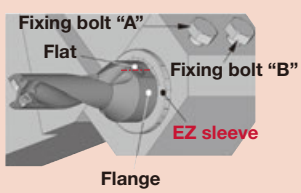


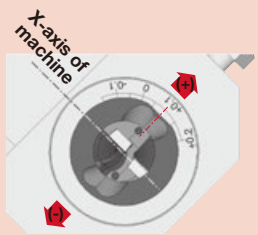
When rotating the EZ sleeve, insert the wrench into the hole at the flange periphery and rotate the EZ sleeve.
Screws A + B have to be loosened.
Secure the drill by screw A.
Secure the EZ sleeve by lightly tightening screw B.
Tighten screw B only lightly otherwise EZ sleeve can be damaged!

Adjusting cutting edge height on lathe

As shown in the Figure on the right, set the EZ sleeve between the drill shank and the toolblock.

Align the graduated scale on the front face of the EZ sleeve with the center of the flat of the drill flange. In the Figure shown on the right, the sleeve is set so that the center of the drill will shift by 0.1 mm to the plus (+) direction.



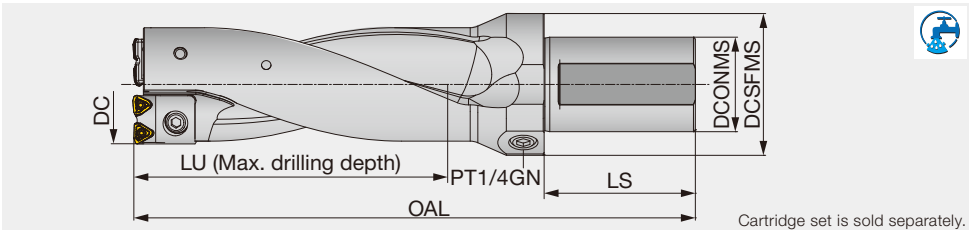


Cautious points

- The scale is only a rough guide, so be sure to measure the actual drilling diameter to confirm the result. Especially in turning, test machining is recommended as the drilling diameter will vary according to the adjustment.
- Can not be used for collet chuck holders.
- Over L/D 4 or bigger adjustment, please reduce feed.
- For smaller adjustment, the drill itself will interfere with the hole diameter. It is recommended that hole diameter should be adjusted to a larger diameter than the drill diameter.

TDB, TDS cartridge set

Adjustable tool diameter, L/D = 2.5, tool diameter ø2.250" - ø3.157"



Cartridge set is sold separately.

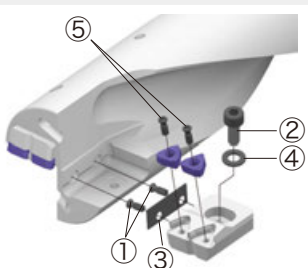
Body	Cartridge set	DC	DCONMS	DCSFMS	LU	LS	OAL	WT(lb)	Setting plate		Insert
Inch	Inch								Designation	Thickness	
TDBU2250-2447-2.5	TDSCA57-62	2.250	2.000	2.953	6.117	4.000	11.957	8.8	-	-	WWMU08X408R-D*
TDBU2250-2447-2.5	TDSCA57-62	2.289	2.000	2.953	6.117	4.000	11.957	8.8	AP0801	0.020	WWMU08X408R-D*
TDBU2250-2447-2.5	TDSCA57-62	2.329	2.000	2.953	6.117	4.000	11.957	8.8	AP0802	0.039	WWMU08X408R-D*
TDBU2250-2447-2.5	TDSCA57-62	2.368	2.000	2.953	6.117	4.000	11.957	8.8	AP0803	0.059	WWMU08X408R-D*
TDBU2250-2447-2.5	TDSCA57-62	2.407	2.000	2.953	6.117	4.000	11.957	8.8	AP0804	0.079	WWMU08X408R-D*
TDBU2250-2447-2.5	TDSCA57-62	2.447	2.000	2.953	6.117	4.000	11.957	8.8	AP0805	0.098	WWMU08X408R-D*
TDBU2461-2579-2.5	TDSCA63-66	2.461	2.000	2.953	6.447	4.000	12.567	10.1	-	-	WWMU08X408R-D*
TDBU2461-2579-2.5	TDSCA63-66	2.500	2.000	2.953	6.447	4.000	12.567	10.1	AP0801	0.020	WWMU08X408R-D*
TDBU2461-2579-2.5	TDSCA63-66	2.539	2.000	2.953	6.447	4.000	12.567	10.1	AP0802	0.039	WWMU08X408R-D*
TDBU2461-2579-2.5	TDSCA63-66	2.579	2.000	2.953	6.447	4.000	12.567	10.1	AP0803	0.059	WWMU08X408R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.632	2.000	2.953	7.170	4.000	13.544	11.9	-	-	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.671	2.000	2.953	7.170	4.000	13.544	11.9	AP1101	0.020	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.711	2.000	2.953	7.170	4.000	13.544	11.9	AP1102	0.039	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.750	2.000	2.953	7.170	4.000	13.544	11.9	AP1103	0.059	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.789	2.000	2.953	7.170	4.000	13.544	11.9	AP1104	0.079	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.829	2.000	2.953	7.170	4.000	13.544	11.9	AP1105	0.098	WWMU09X510R-D*
TDBU2632-2868-2.5	TDSCA67-73	2.868	2.000	2.953	7.170	4.000	13.544	11.9	AP1106	0.118	WWMU09X510R-D*
TDBU2921-3157-2.5	TDSCA74-80	2.921	2.000	2.953	7.894	4.000	13.973	13.7	-	-	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	2.961	2.000	2.953	7.894	4.000	13.973	13.7	AP1101	0.020	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	3.000	2.000	2.953	7.894	4.000	13.973	13.7	AP1102	0.039	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	3.039	2.000	2.953	7.894	4.000	13.973	13.7	AP1103	0.059	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	3.079	2.000	2.953	7.894	4.000	13.973	13.7	AP1104	0.079	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	3.118	2.000	2.953	7.894	4.000	13.973	13.7	AP1105	0.098	WWMU11X512R-D*
TDBU2921-3157-2.5	TDSCA74-80	3.157	2.000	2.953	7.894	4.000	13.973	13.7	AP1106	0.118	WWMU11X512R-D*

Body SPARE PARTS

Designation	① Setting plate screw	Plug Screw	② Cartridge screw	③ Setting plate 1	③ Setting plate 2	③ Setting plate 3	③ Setting plate 4	③ Setting plate 5	③ Setting plate 6	Wrench for setting plate	Wrench for cartridge	Wrench for plug	④ Washer
TDBU2250-2447-2.5	CSTB-3	PT1/4GN	CM5X0.8X12	AP0801	AP0802	AP0803	AP0804	AP0805	-	T-9D	P-4	P-6	5.3X10X1
TDBU2461-2579-2.5	CSTB-3	PT1/4GN	CHHM6-15	AP0801	AP0802	AP0803	-	-	-	T-9D	P-5	P-6	6.4X12.5X1.6
TDBU2632-2868-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6
TDBU2921-3157-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6

Cartridge set SPARE PARTS

Designation	⑤ Insert screw	Wrench
TDSCA57-62	CSTB-3	T-9F
TDSCA63-66	CSTB-3	T-9F
TDSCA67-73	CSTB-4	T-15F
TDSCA74-80	CSTB-5	T-20F



Cartridge SPARE PARTS

Designation	Insert screw (x2)	Setting plate screw
TDS08CA-C-57-62	CSTB-3	-
TDS08CA-C-63-66	CSTB-3	-
TDS09CA-C-67-73	CSTB-4	-
TDS11CA-C-74-80	CSTB-5	-

SPARE PARTS

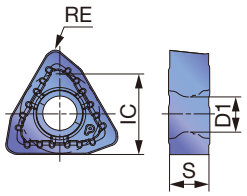
Designation	Insert screw (x2)	Setting plate screw (x2)
TDS08CA-P-57-62	CSTB-3	CSTB-3
TDS08CA-P-63-66	CSTB-3	CSTB-3
TDS09CA-P-67-73	CSTB-4	CSTB-3
TDS11CA-P-74-80	CSTB-5	CSTB-3

Recommended clamping torque: CSTB-3 = 1.70 lb·ft, CSTB-4 = 2.58 lb·ft, CSTB-5 = 3.69 lb·ft

Reference pages: Inserts → J086, Standard cutting conditions → J087

INSERT

DJ



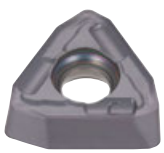
P	Steel	☆	★
M	Stainless	★	☆
K	Cast iron	☆	★
N	Non-ferrous	★	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

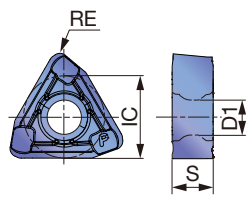
★ : First choice
☆ : Second choice

Designation	IC (in)	S (in)	Coated		D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH3135	AH9030				
WWMU05X205R-DJ	0.228	0.094	●	●	0.098	0.020	0.787	0.925
WWMU060306R-DJ	0.264	0.114	●	●	0.118	0.024	0.941	1.063
WWMU08X408R-DJ	0.315	0.154	●	●	0.134	0.031	1.083	1.260
WWMU09X510R-DJ	0.382	0.193	●	●	0.173	0.039	1.299	1.331
WWMU11X512R-DJ	0.445	0.224	●	●	0.217	0.047	1.535	1.811
WWMU13X512R-DJ	0.512	0.224	●	●	0.217	0.047	1.850	2.126

● : Line up

DS





P	Steel	★	
M	Stainless	★	
K	Cast iron		
N	Non-ferrous		
S	Superalloys	★	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	IC (in)	S (in)	Coated	D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH6030				
WWMU05X205R-DS	0.228	0.094	●	0.098	0.020	0.787	0.925
WWMU060306R-DS	0.264	0.114	●	0.118	0.024	0.941	1.063
WWMU08X408R-DS	0.315	0.154	●	0.134	0.031	1.083	1.260
WWMU09X510R-DS	0.382	0.193	●	0.173	0.039	1.299	1.331
WWMU11X512R-DS	0.445	0.224	●	0.217	0.047	1.535	1.811
WWMU13X512R-DS	0.512	0.224	●	0.217	0.047	1.850	2.126

● : Line up

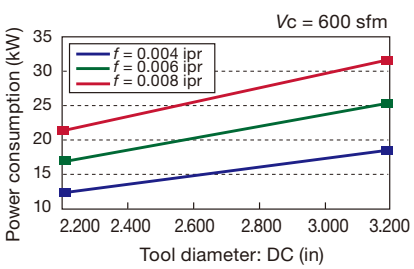
STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Priority	Chip breakers	Grade	Cutting speed *Vc* (sfm)	Feed: *f* (ipr) DC (in) ø2.165 - ø2.205	ø2.244 - ø2.874	ø2.913 - ø3.150
P	Low carbon steels (C<0.3) 1018, 1020, 1026, etc.	First choice	DS	AH6030	525 - 820	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
		Wear resistance	DJ	AH9030	525 - 1050	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
	Carbon steels (C>0.3) 1045, 1055, etc.	First choice	DJ	AH9030	262 - 820	0.0024 - 0.0063	0.0024 - 0.0071	0.0031 - 0.0079
		Fracture resistance	DJ	AH3135	262 - 820	0.0016 - 0.0051	0.0016 - 0.0059	0.0016 - 0.0063
	Low alloy steels 5120, etc.	First choice	DS	AH6030	525 - 820	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
		Wear resistance	DJ	AH9030	525 - 820	0.0024 - 0.0055	0.0024 - 0.0055	0.0024 - 0.0055
	Alloy steels 4140, 8620, etc.	First choice	DJ	AH9030	262 - 656	0.0024 - 0.0063	0.0024 - 0.0071	0.0031 - 0.0079
		Fracture resistance	DJ	AH3135	262 - 656	0.0016 - 0.0051	0.0016 - 0.0055	0.0016 - 0.0059
M	Stainless steels (Austenitic) 304SS, 316SS, etc.	First choice	DS	AH6030	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
		—	DJ	AH3135	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
	Stainless steels (Martensitic and ferritic) 430SS, 416SS, etc.	First choice	DS	AH6030	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
		—	DJ	AH3135	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0016 - 0.0047
	Stainless steels (Precipitation hardening) 17-4 PH, etc.	First choice	DS	AH6030	262 - 394	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
		—	DJ	AH3135	262 - 394	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
K	Gray cast irons Class 25, Class 30, etc.	First choice	DJ	AH9030	262 - 820	0.0024 - 0.0071	0.0031 - 0.0079	0.0031 - 0.0087
		Fracture resistance	DJ	AH3135	262 - 656	0.0024 - 0.0059	0.0031 - 0.0063	0.0031 - 0.0071
	Ductile cast irons 60-40-18, 60-55-06, etc.	First choice	DJ	AH9030	262 - 656	0.0024 - 0.0063	0.0024 - 0.0071	0.0031 - 0.0079
		Fracture resistance	DJ	AH3135	262 - 492	0.0024 - 0.0059	0.0031 - 0.0063	0.0031 - 0.0071
N	Aluminum alloy	First choice	DS	AH6030	656 - 1312	0.0039 - 0.0079	0.0039 - 0.0091	0.0039 - 0.0098
		—	DJ	AH9030	656 - 1312	0.0039 - 0.0079	0.0039 - 0.0091	0.0039 - 0.0098
S	Heat-resistant alloys Inconel718, etc.	First choice	DS	AH6030	66 - 197	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039
		—	DJ	AH3135	66 - 197	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039
	Titanium alloys Ti-6Al-4V, etc.	First choice	DS	AH6030	131 - 394	0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055
		—	DJ	AH3135	131 - 394	0.0024 - 0.0047	0.0024 - 0.0055	0.0024 - 0.0055
H	Hardened steel < 40HRC	First choice	DJ	AH9030	164 - 328	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039
		Fracture resistance	DJ	AH3135	131 - 262	0.0016 - 0.0031	0.0016 - 0.0039	0.0016 - 0.0039

Caution

Machine

- Use drills on a fully covered machine to maintain safety.
- Use drills on a high powered machine such as a BT50.
- Figure on right shows reference of required machine power.



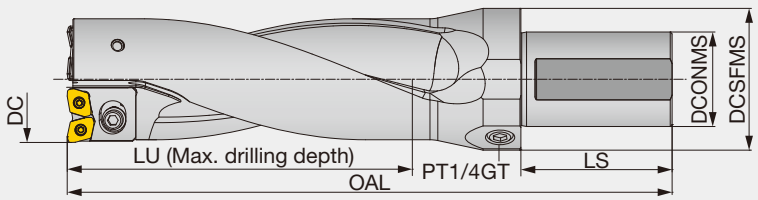
Cutting coolant

- Internal coolant supply is recommended.
- Coolant pressure higher than 1MPa is essential.
- Use water soluble type coolant.

TUNGDRILLBIG

TDB, TDX cartridge set

Adjustable tool diameter, L/D = 2.5, tool diameter ø2.250" - ø3.157"



Cartridge set is sold separately.

Body	Cartridge set	DC	DCONMS	DCSFMS	LU	LS	OAL	WT(lb)	Setting plate		Insert
Inch	Inch								Designation	Thickness	
TDBU2250-2447-2.5	TDXCA57-62	2.250	2.000	2.953	6.117	4.000	11.874	8.8	-	-	XPMT08T308R-D*
TDBU2250-2447-2.5	TDXCA57-62	2.289	2.000	2.953	6.117	4.000	11.874	8.8	AP0801	0.020	XPMT08T308R-D*
TDBU2250-2447-2.5	TDXCA57-62	2.329	2.000	2.953	6.117	4.000	11.874	8.8	AP0802	0.039	XPMT08T308R-D*
TDBU2250-2447-2.5	TDXCA57-62	2.368	2.000	2.953	6.117	4.000	11.874	8.8	AP0803	0.059	XPMT08T308R-D*
TDBU2250-2447-2.5	TDXCA57-62	2.407	2.000	2.953	6.117	4.000	11.874	8.8	AP0804	0.079	XPMT08T308R-D*
TDBU2250-2447-2.5	TDXCA57-62	2.447	2.000	2.953	6.117	4.000	11.874	8.8	AP0805	0.098	XPMT08T308R-D*
TDBU2461-2579-2.5	TDXCA63-66	2.461	2.000	2.953	6.447	4.000	12.465	10.1	-	-	XPMT08T308R-D*
TDBU2461-2579-2.5	TDXCA63-66	2.500	2.000	2.953	6.447	4.000	12.465	10.1	AP0801	0.020	XPMT08T308R-D*
TDBU2461-2579-2.5	TDXCA63-66	2.539	2.000	2.953	6.447	4.000	12.465	10.1	AP0802	0.039	XPMT08T308R-D*
TDBU2461-2579-2.5	TDXCA63-66	2.579	2.000	2.953	6.447	4.000	12.465	10.1	AP0803	0.059	XPMT08T308R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.632	2.000	2.953	7.170	4.000	13.449	11.9	-	-	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.671	2.000	2.953	7.170	4.000	13.449	11.9	AP1101	0.020	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.711	2.000	2.953	7.170	4.000	13.449	11.9	AP1102	0.039	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.750	2.000	2.953	7.170	4.000	13.449	11.9	AP1103	0.059	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.789	2.000	2.953	7.170	4.000	13.449	11.9	AP1104	0.079	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.829	2.000	2.953	7.170	4.000	13.449	11.9	AP1105	0.098	XPMT110412R-D*
TDBU2632-2868-2.5	TDXCA67-73	2.868	2.000	2.953	7.170	4.000	13.449	11.9	AP1106	0.118	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	2.921	2.000	2.953	7.894	4.000	13.843	13.7	-	-	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	2.961	2.000	2.953	7.894	4.000	13.843	13.7	AP1101	0.020	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	3.000	2.000	2.953	7.894	4.000	13.843	13.7	AP1102	0.039	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	3.039	2.000	2.953	7.894	4.000	13.843	13.7	AP1103	0.059	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	3.079	2.000	2.953	7.894	4.000	13.843	13.7	AP1104	0.079	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	3.118	2.000	2.953	7.894	4.000	13.843	13.7	AP1105	0.098	XPMT110412R-D*
TDBU2921-3157-2.5	TDXCA74-80	3.157	2.000	2.953	7.894	4.000	13.843	13.7	AP1106	0.118	XPMT110412R-D*

Body

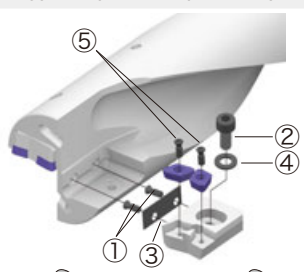
SPARE PARTS

Designation	① Setting plate screw	Plug Screw	② Cartridge screw	③ Setting plate 1	③ Setting plate 2	③ Setting plate 3	③ Setting plate 4	③ Setting plate 5	③ Setting plate 6	Wrench for setting plate	Wrench for cartridge	Wrench for plug	④ Washer
TDBU2250-2447-2.5	CSTB-3	PT1/4GN	CM5X0.8X12	AP0801	AP0802	AP0803	AP0804	AP0805	-	T-9D	P-4	P-6	5.3X10X1
TDBU2461-2579-2.5	CSTB-3	PT1/4GN	CHHM6-15	AP0801	AP0802	AP0803	-	-	-	T-9D	P-5	P-6	6.4X12.5X1.6
TDBU2632-2868-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6
TDBU2921-3157-2.5	CSTB-3	PT1/4GN	CM6X16	AP1101	AP1102	AP1103	AP1104	AP1105	AP1106	T-9D	P-5	P-6	6.4X12.5X1.6

Cartridge set

SPARE PARTS

Designation	⑤ Insert screw	Wrench
TDXCA57-62	CSTB-3	T-9F
TDXCA63-66	CSTB-3	T-9F
TDXCA67-73	CSTB-4	T-15F
TDXCA74-80	CSTB-4	T-15F



Cartridge

SPARE PARTS

Designation	Insert screw (x2)	Setting plate screw
TDX08CA-C1	CSTB-3	-
TDX08CA-C2	CSTB-3	-
TDX11CA-C1	CSTB-4	-
TDX11CA-C2	CSTB-4	-

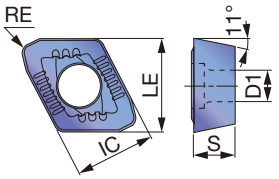
SPARE PARTS

Designation	Insert screw (x2)	Setting plate screw (x2)
TDX08CA-P1	CSTB-3	CSTB-3
TDX08CA-P2	CSTB-3	CSTB-3
TDX11CA-P1	CSTB-4	CSTB-3
TDX11CA-P2	CSTB-4	CSTB-3

Recommended clamping torque: CSTB-3= 1.70 lb·ft, CSTB-4= 2.58 lb·ft

Reference pages: Inserts → J089 - J090, Standard cutting conditions → J090 - J091

DJ



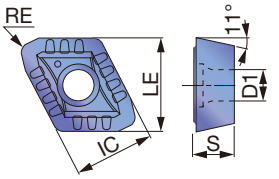
P	Steel			★	☆				
M	Stainless	☆		★					
K	Cast iron		☆	☆	★				
N	Non-ferrous	☆		★					
S	Superalloys	☆		★	☆				
H	Hard materials	☆		★	☆				

★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated							S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH725	T1115	AH6030	AH9030								
XPMT08T308R-DJ	0.335	0.390	●	●	●	●				0.156	0.134	0.031	2.250	2.579
XPMT110412R-DJ	0.441	0.492	●	●	●	●				0.187	0.173	0.047	2.632	3.157

● : Line up

DS



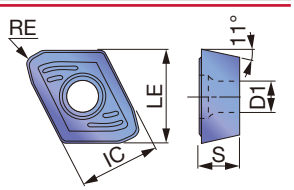
P	Steel	☆	★						
M	Stainless	☆	★						
K	Cast iron								
N	Non-ferrous	☆							
S	Superalloys	☆	★						
H	Hard materials								

★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated							S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH725	AH6030										
XPMT08T308R-DS	0.335	0.390	●	●						0.156	0.134	0.031	2.250	2.579
XPMT110412R-DS	0.441	0.492	●	●						0.187	0.173	0.047	2.632	3.157

● : Line up

DW



P	Steel	☆	★	☆					
M	Stainless	☆	★	☆					
K	Cast iron		☆	★					
N	Non-ferrous	☆	★						
S	Superalloys	☆	★	☆					
H	Hard materials	☆	★	☆					

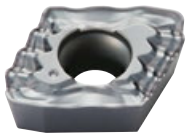
★ : First choice
☆ : Second choice

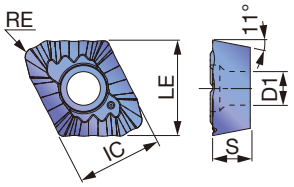
Designation	IC (in)	LE (in)	Coated							S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
			AH725	AH6030	AH9030									
XPMT08T308R-DW	0.335	0.390	●	●	●					0.156	0.134	0.031	2.250	2.579
XPMT110412R-DW	0.441	0.492	●	●	●					0.187	0.173	0.047	2.632	3.157

● : Line up

INSERT

DG





P	Steel	★	
M	Stainless	☆	
K	Cast iron		
N	Non-ferrous	★	
S	Superalloys	☆	
H	Hard materials		

★ : First choice
☆ : Second choice

Designation	IC (in)	LE (in)	Coated AH725	S (in)	D1 (in)	RE (in)	DCN (in)	DCX (in)
XPMT08T308R-DG	0.335	0.390	●	0.156	0.134	0.031	2.250	2.579
XPMT110412R-DG	0.441	0.492	●	0.187	0.173	0.047	2.632	3.157

● : Line up

RECOMMENDED INSERT

ISO	Workpiece material	First choice	High feed	High speed	Troubleshooting: Chipping resistance	Troubleshooting: Wear resistance	Troubleshooting: Surface finish	Troubleshooting: Chip control
P	Low carbon steels (C ≤ 0.3%)	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	DG, AH725
P	Carbon steels (C > 0.3%) Alloy steels	DJ, AH6030	DW, AH6030	DJ, AH9030	DW, AH725	DJ, AH9030	DW, AH6030	-
P	Low alloy steels	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	-
M	Stainless steel	DS, AH6030	-	-	DS, AH725	-	DW, AH6030	DG, AH725
K	Gray cast irons	DJ, AH9030	DW, AH9030	DJ, T1115	DW, AH725	-	DW, AH9030	-
K	Ductile cast irons	DJ, AH9030	DW, AH9030	-	DW, AH725	-	DW, AH9030	-
N	Aluminum alloy	DJ, AH725	DW, AH725	DS, AH6030		-	DW, AH725	DG, AH725
S	Titanium alloys Heat-resistant alloys	DS, AH6030	-	-	DW, AH725	-	DW, AH725	DG, AH725
H	Hardened steel	DJ, AH9030	DW, AH9030	-	DW, AH725	-	DW, AH9030	-

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Cutting speed *Vc* (sfm)	Feed: *f* (ipr)		
			ø2.165 ~ ø2.441	ø2.480 ~ ø2.874	ø2.913 ~ ø3.150
P	Low carbon steels (C < 0.3) 1018, 1026, etc.	525 - 1050	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
P	Carbon steels (C > 0.3) 1045, 1055, etc.	262 - 820	0.0031 - 0.0071	0.0031 - 0.0071	0.0039 - 0.0079
P	Low alloy steels 4130, etc.	525 - 820	0.0016 - 0.0063	0.0016 - 0.0063	0.0016 - 0.0063
P	Alloy steels 4140, 5120, etc.	262 - 656	0.0031 - 0.0071	0.0031 - 0.0071	0.0031 - 0.0079
M	Stainless steels (Austenitic) 304, 316, etc.	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0024 - 0.0055
M	Stainless steels (Martensitic and ferritic) 430, 416, etc.	328 - 656	0.0016 - 0.0047	0.0016 - 0.0047	0.0024 - 0.0055
M	Stainless steels (Precipitation hardening) 630, etc.	262 - 394	0.0016 - 0.0039	0.0016 - 0.0039	0.0024 - 0.0047
K	Gray cast irons Class 25, Class 30, etc.	262 - 820	0.0031 - 0.0079	0.0031 - 0.0079	0.0039 - 0.0087
K	Ductile cast irons 60-40-18, etc.	262 - 656	0.0031 - 0.0079	0.0031 - 0.0079	0.0039 - 0.0087
N	Aluminum alloy 333.0, 383.0, etc.	656 - 1312	0.0059 - 0.0098	0.0059 - 0.0098	0.0071 - 0.011
S	Heat-resistant alloys Inconel 718, etc.	66 - 197	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039
S	Titanium alloys Ti-6Al-4V, etc.	131 - 394	0.0024 - 0.0047	0.0024 - 0.0047	0.0024 - 0.0047
H	Hardened steel ≥ 40HRC	131 - 328	0.0016 - 0.0039	0.0016 - 0.0039	0.0016 - 0.0039

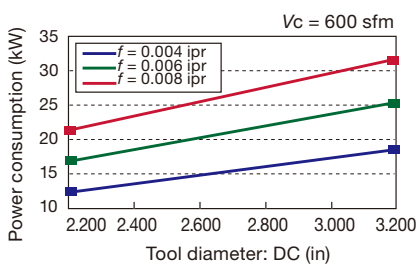
Standard cutting conditions for DG type chipbreaker

ISO	Workpiece material	Cutting speed *Vc* (sfm)	Series L/D	Feed: *f* (ipr)	
				ø1.062" - ø1.250"	ø1.312" - ø2.000"
P	Low carbon steels (C < 0.3) 1018, 1026, etc.	260 - 590	2D, 3D 4D, 5D	0.0016 - 0.0039	

Caution

Machine

- Use drills on a fully covered machine to maintain safety.
- Use drills on a high powered machine such as a BT50.
- Figure on right shows reference of required machine power.

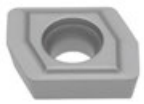


Cutting coolant

- Use water soluble type coolant with internal supply.
- Coolant pressure higher than 1MPa is essential.

Drilling Insert

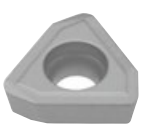
● LPMT03X206R-D4, LPMT05X204-D4

Shape	Designation	Coated					Applicable drill diameter	Applicable drill
		T313W						
	LPMT03X206R-D4	●					ø14 ~ ø17.5 (ø0.551" - ø0.689")	TDJ (Former products)
	LPMT05X204-D4	●					ø14 ~ ø17.5 (ø0.551" - ø0.689")	

● SPMP831DS, SPMP/M**2ERD

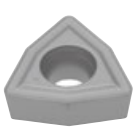
Shape	Designation	ISO Metric Designation	Coated					Applicable drill diameter	Applicable drill
			T313W						
	SPMP831DS	SPMT060204-DS	●					ø18 ~ ø19.5 (ø0.709" - ø0.768")	TDR, for Peripheral side (Former products)
	SPMP042ERD	SPMP080308ER-D	●					ø20 ~ ø28.5 (ø0.787" - ø1.122")	
	SPMM322ERD	SPMT090308ER-D	●					ø29 ~ ø34.5 (ø1.142" - ø1.358")	
	SPMM432ERD	SPMT120408ER-D	●					ø35 ~ ø49 (ø1.378" - ø1.929")	

● TPMP**ZDS, TPMP**ZERD, TPMM**ZERD

Shape	Designation	Coated					Applicable drill diameter	Applicable drill
		T313W						
	TPMP83ZDS	●					ø18 ~ ø19.5 (ø0.709" - ø0.768")	TDR, for Central side (Former products)
	TPMP04ZERD	●					ø20 ~ ø28.5 (ø0.787" - ø1.122")	
	TPMM32ZERD	●					ø29 ~ ø34.5 (ø1.142" - ø1.358")	
	TPMM43ZERD	●					ø35 ~ ø54 (ø1.378" - ø2.126")	

TPMM43ZERD can be used on the peripheral side.

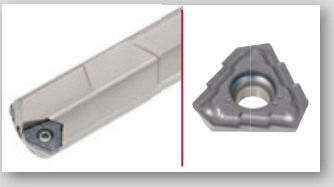
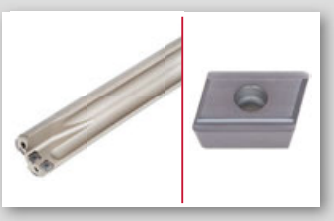
● WCMT**-D...

Shape	Designation	Coated						Applicable drill
		AH120	AH140	T313W				
	WCMT050308-DC			●				for counter boring, and drilling.
	WCMT050308-D4	●	●	●				
	WCMT06T308-DC			●				
	WCMT06T308-D4	●	●	●				
	WCMT080412-DC			●				
	WCMT080412-D4			●				

● : Line up

MEMO

Deep Hole Drill

		Inch	Metric
	**DEEP TRI DRILL** Excellent productivity and stability in deep hole drilling ø0.472" - ø1.575" (ø12 mm - ø40 mm) / L/D = 8, 10, 15, 20, 25, for machining centers OAL < 64.961" (1650 mm) for gundrill machines (standard line-ups) J007, J095 J096 - J121	✓	✓
	**GUNDRILL** Brazed gundrills suitable for small diameter deep hole drilling **ø3 mm - ø12.2 mm (ø0.118" - ø0.480")** **OAL ≤ 1650 mm (ø64.00") (standard line-ups)** J007, J095 J122		✓
	**TRI-FINE** Direct mount drill head with 3-cornered inserts **ø16 mm - ø28 mm (ø0.630" - ø1.102")** J007, J124 J128 - J131		✓
	**FINE-BEAM** Direct mount deep hole drilling heads **ø25 mm - ø65 mm (ø0.984" - ø2.559")** J007, J124 J132 - J137		✓
	**UNIDEX** Indexable deep hole drilling heads with adjustable diameters **ø38 mm - ø106.99 mm (ø1.496" - ø4.212")** J007, J124 J138 - J143		✓
	**Brazed BTA tool** New solution for BTA drilling with two types of tools: single tube and double tube **ø8 - ø65 (ø0.315" - ø0.614")** J007, J125 - 127 J144 - J156		✓
	**HF drills for deep hole drilling** Indexable deep hole drills for large diameter with high productivity **ø30 mm - ø63 mm (ø1.181" - ø2.480"), hole depth: L/D=14** J007, J157 - J158		✓

Indexable Gundrill guide

Indexable Gundrills & Brazed Gundrills

Drill type		Lathes & machining centers			Gundrill machines			Brazed tool
		MCTR	MCTRCH	MCTR	TRLG	TRLGCH	TRLG	SLJ
Indexable Gundrills Brazed Gundrill								
		Inch ✓ Metric ✓	Inch ✓ Metric ✓	Inch ✓ Metric ✓	Inch ✓ Metric ✓	Inch ✓ Metric ✓	Inch ✓ Metric ✓	Inch ☐ Metric ✓
Drill diameter		ø0.500" - ø1.062" (ø12 mm - ø28mm)	ø0.578" - ø0.937" (ø14 mm - ø28 mm)	ø1.125" - ø1.500" (ø28.01 mm - ø40 mm)	ø0.472" - ø1.102" (ø12 mm - ø28 mm)	ø0.591" - ø0.937" (ø14 mm - ø28 mm)	ø1.181" (ø28.01 mm - ø40 mm)	ø3 - ø12.2
MCTR: Drilling depth TRLG, SLJ: Tool over all length		Max L/D = 25	Max L/D = 25	Max L/D = 25	31.567" - 39.516" (801.8 mm - 1003.7 mm)	65.039" - 72.181" (1652 mm - 1653.4 mm)	65.075" (1002.9 mm - 1652.9 mm)	ø3 - ø4.1 : Max = 800 mm ø4.1 - ø4.9 : Max = 1250 mm ø4.9 - ø12.2 : Max = 2000 mm
Hole tolerance (in)*1		+ 0.002 / - 0.004	+ 0.002 / - 0.005	+ 0.002 / - 0.004	+ 0.002 / - 0.004	+ 0.002 / - 0.005	+ 0.002 / - 0.004	+0.03 / -0.01
Surface finish Ra (µm)		1	1	1	1	1	1	3 - 25
Machine	Deep hole drilling machines	-	-	-	-	-	-	-
	NC machines	○	○	○	-	-	-	-
	Lathes	○	○	○	△	△	△	△
	Machining centers M/C	○	○	○	△	△	△	△
	Gundrill machines	-	-	-	○	○	○	○
Workpiece material	P Steel	★★★	★★★	★★★	★★★	★★★	★★★	★★
	M Stainless	★★	★★	★★	★★	★★	★★	★
	K Cast iron	★★★	★★★	★★★	★★★	★★★	★★★	★★★
	N Non-ferrous	★★	★★	★★	★★	★★	★★	★★★
	S Superalloys	★★	★★	★★	★★	★★	★★	★
	H Hard materials (≥40HRC)	★★★	★★★	★★★	★★★	★★★	★★★	★
Insert type		LOGT / TOHT	TOHT	FBH / FBM	LOGT / TOHT	TOHT	FBH / FBM	-
Page		J097 - J100	J101	J0102 - J107	J108 - J109	J110	J111 - J121	J122 - J123

*1: Just for reference

★★★(Excellent) ◄—► ★(Standard)

DEEP TRI DRILL

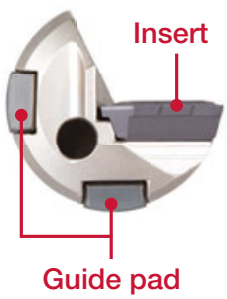
Indexable gundrill for extreme productivity and stability

Ultimate efficiency

Unique chipbreakers on the cutting edge enable impressive chip control and high feed rates.

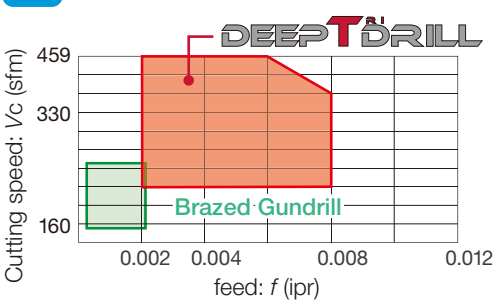
Excellent chip control

- Chip splitters breaks chips into smaller segments to facilitate smooth Chip evacuation process
- Its smooth chip evacuation ability allows the use in standard lathes and machining centers



Performance comparison with other types of drills

P 1055



Chip control

P 1055 Drill diameter : DC = 0.827"

Cutting speed : *Vc* = 328 sfm
feed : *f* = 0.006 ipr

Vc = 197 sfm
f = 0.002 ipr

Two bodies available for machining centers, lathes, and gundrill machines

MCTR : for machining centers and lathes

Tool dia.: DC = 0.500" - 1.575" (12 mm - 40 mm)
*Max. DC = 40 : Available tailor-made tools
L/D : 8, 10, 15, 20, 25

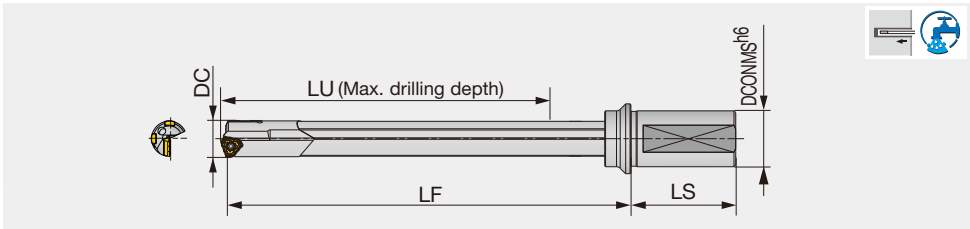
TRLG : for gundrill machines

Tool dia. : DC = 0.472" - 1.181" (12 mm - 30 mm)
*Max. DC = 40 : Available tailor-made tools
Overall length: 31.496", 39.370", 59.055", 64.961"
(800 mm, 1000 mm, 1500 mm, 1650 mm)
* Can be tailored up to 94.488" (2400 mm) overall length

Reference pages: J097 - J121, Technical references → L084

MCTR L/D=10

Drill body for lathes and machining centers, L/D = 10, Tool dia. ø0.687" - ø1.062" and ø16mm - ø28mm



Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR17.45XU25.4A-10	0.687	1.000	7.173	2.205	8.661	TOHT08..	GP05-075, GP05-18-075-DC
MCTR18.24XU25.4-10	0.718	1.000	7.598	2.205	9.134	TOHT09..	GP06-085, GP06-20-085-DC
MCTR18.64XU25.4-10	0.734	1.000	7.598	2.205	9.134	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.05XU25.4-10	0.750	1.000	7.992	2.205	9.567	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.94XU31.75-10	0.785	1.250	7.992	2.362	10.039	TOHT09..	GP06-085, GP06-20-085-DC
MCTR20.62XU31.75-10	0.812	1.250	8.394	2.362	10.039	TOHT10..	GP06-085, GP06-20-085-DC
MCTR22.23XU31.75-10	0.875	1.250	9.189	2.362	10.945	TOHT11..	GP06-100, GP06-20-100-DC
MCTR23.80XU31.75-10	0.937	1.250	9.976	2.362	11.850	TOHT11..	GP06-100, GP06-20-100-DC
MCTR25.40XU31.75-10	1.000	1.250	10.382	2.362	12.283	TOHT12..	GP06, GP06-20-120-DC
MCTR26.97XU31.75X-10	1.062	1.250	11.169	2.362	13.189	TOHT12..	GP06, GP06-20-120-DC

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR16.00XM25A-10	16	25	172.2	56	209	TOHT08...	GP05-075, GP05-18-075-DC
MCTR16.50XM25A-10	16.5	25	172.2	56	209	TOHT08...	GP05-075, GP05-18-075-DC
MCTR17.00XM25A-10	17	25	182.2	56	220	TOHT08...	GP05-075, GP05-18-075-DC
MCTR18.00XM25A-10	18	25	192.2	56	232	TOHT08...	GP05-075, GP05-18-075-DC
MCTR19.00XM25-10	19	25	203	56	243	TOHT09...	GP06-085, GP06-20-085-DC
MCTR20.00XM32-10	20	32	213	60	255	TOHT09...	GP06-085, GP06-20-085-DC
MCTR21.00XM32-10	21	32	223.2	60	266	TOHT10...	GP06-085, GP06-20-085-DC
MCTR22.00XM32-10	22	32	233.4	60	278	TOHT11...	GP06-100, GP06-20-100-DC
MCTR23.00XM32-10	23	32	243.4	60	289	TOHT11...	GP06-100, GP06-20-100-DC
MCTR24.00XM32-10	24	32	253.4	60	301	TOHT11...	GP06-100, GP06-20-100-DC
MCTR25.00XM32-10	25	32	263.4	60	312	TOHT11...	GP06-100, GP06-20-100-DC
MCTR26.00XM40-10	26	40	273.7	70	324	TOHT12...	GP06, GP06-20-120-DC
MCTR27.00XM40-10	27	40	283.7	70	335	TOHT12...	GP06, GP06-20-120-DC
MCTR28.00XM40-10	28	40	283.7	70	337	TOHT12...	GP06, GP06-20-120-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
0.630 - 1.102	0 / - 0.003	+ 0.002 / - 0.004

(Unit: Inch)

SPARE PARTS




Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTR16... - MCTR20.00...	SR14-560/S	T-8F	SR34-508	T-7F
MCTR20.62... - MCTR21...	SR34-506	T-9F	SR34-508	T-7F
MCTR22... - MCTR25.00...	SR14-571/S	T-10/5	SR34-508	T-7F
MCTR25.4... - MCTR28...	SR14-506	T-15F	SR34-508	T-7F

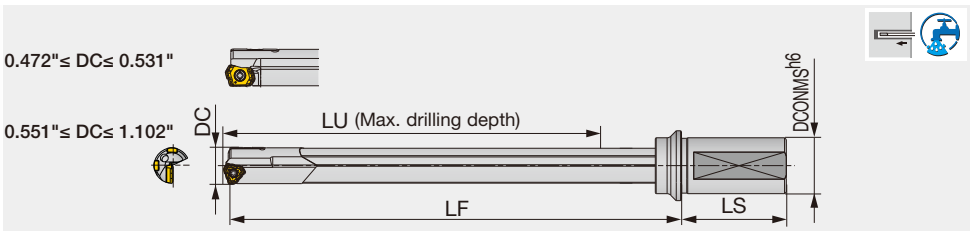
Recommended clamping torque (lb·ft): SR34-506=0.66, SR34-508=0.9, SR14-560/S=0.89, SR14-571/S=3.2, SR14-506=3.54

Reference pages: Inserts, Guide pads → J114 - J117, Standard cutting conditions → J118

DEEP DRILL

MCTR L/D=15

Drill body for lathes and machining centers, L/D = 15, Tool diameter ø0.5" - ø1.062" and ø12mm - ø28mm



Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR12.70XU25.4-15	0.500	1.000	7.748	2.205	9.016	LOGT06..	GP04-055, GP04-16-055-DC
MCTR13.49XU25.4-15	0.531	1.000	8.339	2.205	9.646	LOGT06..	GP04-055, GP04-16-055-DC
MCTR14.27XU25.4-15	0.562	1.000	8.937	2.205	10.276	TOHT07..	GP05-060, GP05-18-060-DC
MCTR15.88XU25.4-15	0.625	1.000	9.528	2.205	10.984	TOHT07..	GP05-060, GP05-18-060-DC
MCTR17.45XU25.4A-15	0.687	1.000	10.717	2.205	12.205	TOHT08..	GP05-075, GP05-18-075-DC
MCTR18.24XU25.4-15	0.718	1.000	11.339	2.205	12.874	TOHT09..	GP06-085, GP06-20-085-DC
MCTR18.64XU25.4-15	0.734	1.000	11.339	2.205	12.874	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.05XU25.4-15	0.750	1.000	11.929	2.205	13.504	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.94XU31.75-15	0.785	1.250	12.520	2.362	14.173	TOHT09..	GP06-085, GP06-20-085-DC
MCTR20.62XU31.75-15	0.812	1.250	12.528	2.362	14.173	TOHT10..	GP06-085, GP06-20-085-DC
MCTR22.23XU31.75-15	0.875	1.250	13.717	2.362	15.472	TOHT11..	GP06-100, GP06-20-100-DC
MCTR23.80XU31.75-15	0.937	1.250	14.898	2.362	16.772	TOHT11..	GP06-100, GP06-20-100-DC
MCTR25.40XU31.75-15	1.000	1.250	15.500	2.362	17.402	TOHT12..	GP06, GP06-20-120-DC
MCTR26.97XU31.75X-15	1.062	1.250	16.681	2.362	18.701	TOHT12..	GP06, GP06-20-120-DC

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR12.00XM20-15	12	20	196.8	50	225	LOGT06...	GP04-055, GP04-16-055-DC
MCTR12.50XM20-15	12.5	20	196.8	50	226	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.00XM25-15	13	25	211.8	56	245	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.50XM25-15	13.5	25	211.8	56	245	LOGT06...	GP04-055, GP04-16-055-DC
MCTR14.00XM25-15	14	25	227	56	245	TOHT07...	GP05-060, GP05-18-060-DC
MCTR14.50XM25-15	14.5	25	227	56	262	TOHT07...	GP05-060, GP05-18-060-DC
MCTR15.00XM25-15	15	25	242	56	278	TOHT07...	GP05-060, GP05-18-060-DC
MCTR16.00XM25A-15	16	25	257.2	56	294	TOHT08...	GP05-075, GP05-18-075-DC
MCTR16.50XM25A-15	16.5	25	257.2	56	294	TOHT08...	GP05-075, GP05-18-075-DC
MCTR17.00XM25A-15	17	25	272.2	56	310	TOHT08...	GP05-075, GP05-18-075-DC
MCTR17.50XM25A-15	17.5	25	272.2	56	310	TOHT08...	GP05-075, GP05-18-075-DC
MCTR18.00XM25A-15	18	25	287.2	56	327	TOHT08...	GP05-075, GP05-18-075-DC
MCTR18.50XM25-15	18.5	25	288	56	327	TOHT09...	GP06-085, GP06-20-085-DC
MCTR19.00XM25-15	19	25	303	56	343	TOHT09...	GP06-085, GP06-20-085-DC
MCTR19.50XM25-15	19.5	25	303	56	343	TOHT09...	GP06-085, GP06-20-085-DC
MCTR20.00XM32-15	20	32	318	60	360	TOHT09...	GP06-085, GP06-20-085-DC
MCTR21.00XM32-15	21	32	333.2	60	376	TOHT10...	GP06-085, GP06-20-085-DC
MCTR22.00XM32-15	22	32	348.4	60	393	TOHT11...	GP06-100, GP06-20-100-DC
MCTR23.00XM32-15	23	32	363.4	60	409	TOHT11...	GP06-100, GP06-20-100-DC
MCTR24.00XM32-15	24	32	378.4	60	426	TOHT11...	GP06-100, GP06-20-100-DC
MCTR25.00XM32-15	25	32	393.4	60	442	TOHT11...	GP06-100, GP06-20-100-DC
MCTR26.00XM40-15	26	40	408.7	70	459	TOHT12...	GP06, GP06-20-120-DC
MCTR27.00XM40-15	27	40	423.7	70	475	TOHT12...	GP06, GP06-20-120-DC
MCTR28.00XM40-15	28	40	423.7	70	477	TOHT12...	GP06, GP06-20-120-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
0.472 - 1.102	0 / - 0.003	+ 0.002 / - 0.004

(Unit: Inch)

SPARE PARTS



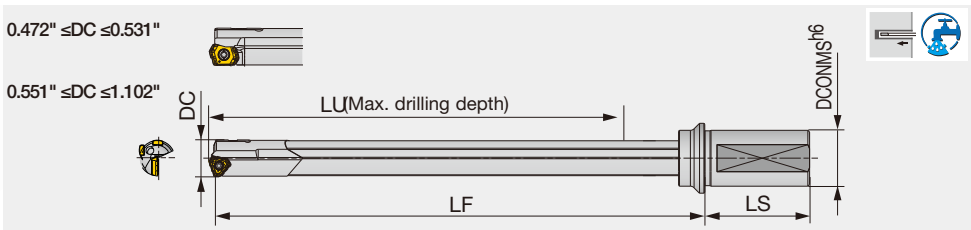

Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTR12... - MCTR13.5...	SR10503833L040	T-7F	CSPB-2L043	IP-6F
MCTR14... - MCTR20.00...	SR14-560/S	T-8F	SR34-508	T-7F
MCTR20.62... - MCTR21...	SR34-506	T-9F	SR34-508	T-7F
MCTR22... - MCTR25.00...	SR14-571/S	T-10/5	SR34-508	T-7F
MCTR25.4... - MCTR28...	SR14-506	T-15F	SR34-508	T-7F

Recommended clamping torque (lb·ft): CSPB-2L043=0.52, SR34-506=0.66, SR34-508=0.66, SR14-560/S=0.89, SR10503833L040=0.96, SR14-571/S=3.2, SR14-506=3.54

Reference pages: Inserts, Guide pads → J114 - J117, Standard cutting conditions → J118

MCTR L/D=20

Drill body for lathes and machining centers, L/D = 20, Tool diameter ø12 - ø15 mm



Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR12.00XM20-20	12	20	261.8	50	290	LOGT06...	GP04-055, GP04-16-055-DC
MCTR12.50XM20-20	12.5	20	261.8	50	291	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.00XM25-20	13	25	281.8	56	315	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.50XM25-20	13.5	25	281.8	56	315	LOGT06...	GP04-055, GP04-16-055-DC
MCTR14.00XM25-20	14	25	302	56	336	TOHT07...	GP05-060, GP05-18-060-DC
MCTR14.50XM25-20	14.5	25	302	56	337	TOHT07...	GP05-060, GP05-18-060-DC
MCTR15.00XM25-20	15	25	322	56	358	TOHT07...	GP05-060, GP05-18-060-DC

øDc	Tool diameter tolerance	Applicable tolerance range of hole diameter
12 - 15	0 / - 0.07	+ 0.05 / - 0.1

SPARE PARTS




Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTR12...-MCTR13.5...	SR10503833L040	T-7F	CSPB-2L043	IP-6F
MCTR14...-MCTR15...	SR14-560/S	T-8F	SR34-508	T-7F

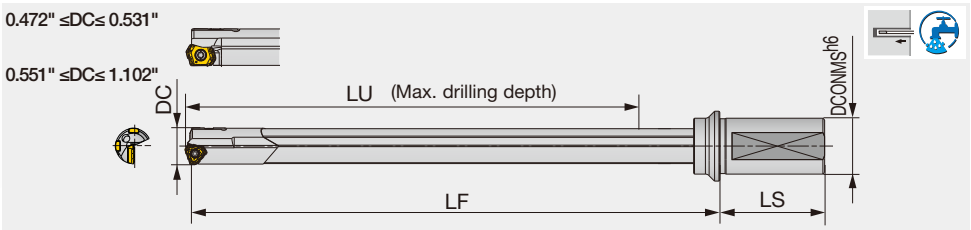
Recommended clamping torque (N·m): CSPB-2L043=0.7, SR34-508=0.9, SR14-560/S=1.2, SR10503833L040=1.3

Reference pages: Inserts, Guide pads → J114 - J117, Standard cutting conditions → J118

DEEP TRI DRILL

MCTR L/D=25

Drill body for lathes and machining centers, L/D = 25, Tool diameter ø0.5" - ø1.062" and ø12mm - ø28mm



Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR12.70XU25.4-25	0.500	1.000	12.866	2.205	14.134	LOGT06..	GP04-055, GP04-16-055-DC
MCTR13.49XU25.4-25	0.531	1.000	13.850	2.205	15.157	LOGT06..	GP04-055, GP04-16-055-DC
MCTR14.27XU25.4-25	0.562	1.000	14.843	2.205	16.181	TOHT07..	GP05-060, GP05-18-060-DC
MCTR15.88XU25.4-25	0.625	1.000	15.827	2.205	17.283	TOHT07..	GP05-060, GP05-18-060-DC
MCTR17.45XU25.4A-25	0.687	1.000	17.803	2.205	19.291	TOHT08..	GP05-075, GP05-18-075-DC
MCTR18.24XU25.4-25	0.718	1.000	18.819	2.205	20.354	TOHT09..	GP06-085, GP06-20-085-DC
MCTR18.64XU25.4-25	0.734	1.000	18.819	2.205	20.354	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.05XU25.4-25	0.750	1.000	19.803	2.205	21.378	TOHT09..	GP06-085, GP06-20-085-DC
MCTR19.94XU31.75-25	0.785	1.250	20.787	2.362	22.441	TOHT09..	GP06-085, GP06-20-085-DC
MCTR20.62XU31.75-25	0.812	1.250	20.795	2.362	22.441	TOHT10..	GP06-085, GP06-20-085-DC
MCTR22.23XU31.75-25	0.875	1.250	22.772	2.362	24.528	TOHT11..	GP06-100, GP06-20-100-DC
MCTR23.80XU31.75-25	0.937	1.250	24.740	2.362	26.614	TOHT11..	GP06-100, GP06-20-100-DC
MCTR25.40XU31.75-25	1.000	1.250	25.736	2.362	27.638	TOHT12..	GP06, GP06-20-120-DC
MCTR26.97XU31.75X-25	1.062	1.250	27.705	2.362	29.724	TOHT12..	GP06, GP06-20-120-DC

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR12.00XM20-25	12	20	326.8	50	355	LOGT06...	GP04-055, GP04-16-055-DC
MCTR12.50XM20-25	12.5	20	326.8	50	356	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.00XM25-25	13	25	351.8	56	385	LOGT06...	GP04-055, GP04-16-055-DC
MCTR13.50XM25-25	13.5	25	351.8	56	385	LOGT06...	GP04-055, GP04-16-055-DC
MCTR14.00XM25-25	14	25	377	56	411	TOHT07...	GP05-060, GP05-18-060-DC
MCTR14.50XM25-25	14.5	25	377	56	412	TOHT07...	GP05-060, GP05-18-060-DC
MCTR15.00XM25-25	15	25	402	56	438	TOHT07...	GP05-060, GP05-18-060-DC
MCTR16.00XM25A-25	16	25	427.2	56	464	TOHT08...	GP05-075, GP05-18-075-DC
MCTR16.50XM25A-25	16.5	25	427.2	56	464	TOHT08...	GP05-075, GP05-18-075-DC
MCTR17.00XM25A-25	17	25	452.2	56	490	TOHT08...	GP05-075, GP05-18-075-DC
MCTR17.50XM25A-25	17.5	25	452.2	56	490	TOHT08...	GP05-075, GP05-18-075-DC
MCTR18.00XM25A-25	18	25	477.2	56	517	TOHT08...	GP05-075, GP05-18-075-DC
MCTR18.50XM25-25	18.5	25	478	56	517	TOHT09...	GP06-085, GP06-20-085-DC
MCTR19.00XM25-25	19	25	503	56	543	TOHT09...	GP06-085, GP06-20-085-DC
MCTR19.50XM25-25	19.5	25	503	56	543	TOHT09...	GP06-085, GP06-20-085-DC
MCTR20.00XM32-25	20	32	528	60	570	TOHT09...	GP06-085, GP06-20-085-DC
MCTR21.00XM32-25	21	32	553.2	60	596	TOHT10...	GP06-085, GP06-20-085-DC
MCTR22.00XM32-25	22	32	578.4	60	623	TOHT11...	GP06-100, GP06-20-100-DC
MCTR23.00XM32-25	23	32	603.4	60	649	TOHT11...	GP06-100, GP06-20-100-DC
MCTR24.00XM32-25	24	32	628.4	60	676	TOHT11...	GP06-100, GP06-20-100-DC
MCTR25.00XM32-25	25	32	653.4	60	702	TOHT11...	GP06-100, GP06-20-100-DC
MCTR26.00XM40-25	26	40	678.7	70	729	TOHT12...	GP06, GP06-20-120-DC
MCTR27.00XM40-25	27	40	703.7	70	755	TOHT12...	GP06, GP06-20-120-DC
MCTR28.00XM40-25	28	40	703.7	70	757	TOHT12...	GP06, GP06-20-120-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
0.472 - 1.102	0 / - 0.003	+ 0.002 / - 0.004

(Unit: Inch)

SPARE PARTS



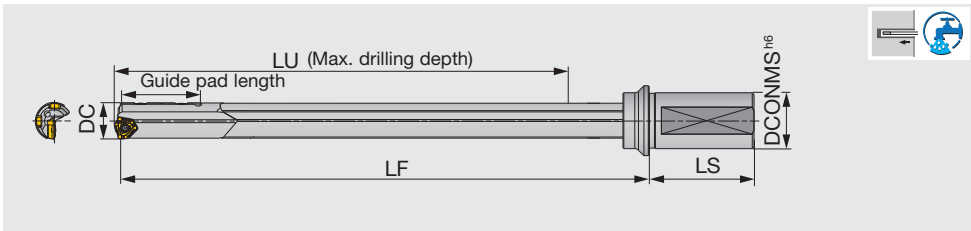

Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTR12... - MCTR13.5...	SR10503833L040	T-7F	CSPB-2L043	IP-6F
MCTR14... - MCTR20.00...	SR14-560/S	T-8F	SR34-508	T-7F
MCTR20.62... - ...MCTR21...	SR34-506	T-9F	SR34-508	T-7F
MCTR22... - MCTR25.00...	SR14-571/S	T-10/5	SR34-508	T-7F
MCTR25.4... - MCTR28...	SR14-506	T-15F	SR34-508	T-7F

Recommended clamping torque (lb·ft): CSPB-2L043=0.52, SR34-506=0.66, SR34-508=0.66, SR14-560/S=0.89, SR10503833L040=0.96, SR14-571/S=2.36, SR14-506=3.54

Reference pages: Inserts, Guide pads → J114 - J117, Standard cutting conditions → J118

MCTRCH L/D=25

Drill body for drilling cross hole applications on CNC lathes and machining centers, L/D = 25, Tool diameters ø0.578" - ø0.937" and ø14mm - ø28mm



Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad	Guide pad length
MCTRCH14.68XU25.4-25	0.578	1.000	14.843	2.205	16.220	TOHT07...	GP05-060, GP05-18-060-DC	1.417
MCTRCH15.06XU25.4-25	0.593	1.000	15.827	2.205	17.244	TOHT07...	GP05-060, GP05-18-060-DC	1.417
MCTRCH18.24XU25.4-25	0.718	1.000	18.819	2.205	20.354	TOHT09...	GP06-085, GP06-20-085-DC	1.575
MCTRCH18.64XU25.4-25	0.734	1.000	18.819	2.205	20.354	TOHT09...	GP06-085, GP06-20-085-DC	1.575
MCTRCH23.80XU31.75-25	0.937	1.250	24.740	2.362	26.614	TOHT11...	GP06-100, GP06-20-100-DC	1.575

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad	Guide pad length
MCTRCH14.00XM25-25	14	25	377	56	411	TOHT07...	GP05-060, GP05-18-060-DC	36
MCTRCH15.00XM25-25	15	25	402	56	438	TOHT07...	GP05-060, GP05-18-060-DC	36
MCTRCH16.00XM25A-25	16	25	427.2	56	464	TOHT08...	GP05-075, GP05-18-075-DC	36
MCTRCH18.00XM25A-25	18	25	477.2	56	517	TOHT08...	GP05-075, GP05-18-075-DC	36
MCTRCH19.00XM25-25	19	25	503	56	543	TOHT09...	GP06-085, GP06-20-085-DC	40
MCTRCH20.00XM32-25	20	32	528	60	570	TOHT09...	GP06-085, GP06-20-085-DC	40
MCTRCH23.00XM32-25	23	32	603.4	60	649	TOHT11...	GP06-100, GP06-20-100-DC	40
MCTRCH24.00XM32-25	24	32	628.4	60	676	TOHT11...	GP06-100, GP06-20-100-DC	40
MCTRCH28.00XM40-25	28	40	703.7	70	757	TOHT12...	GP06, GP06-20-120-DC	40

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
ø0.551 - ø1.102	0 / - 0.004	+ 0.002 / - 0.005

(Unit: Inch)

SPARE PARTS



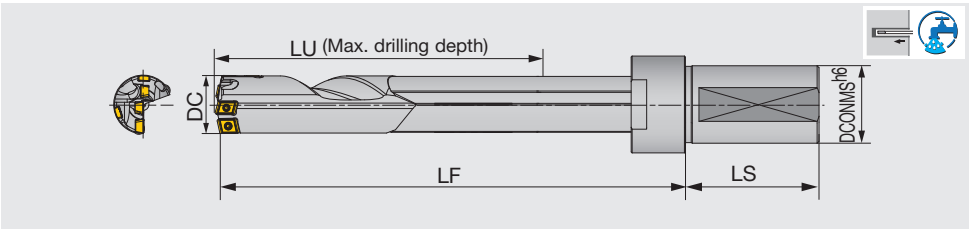

Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
MCTRCH14... - MCTRCH20...	SR14-560/S	T-8F	SR34-508	T-7F
MCTRCH23... - MCTRCH24...	SR14-571/S	T-10/5	SR34-508	T-7F
MCTRCH28...	SR14-506	T-15F	SR34-508	T-7F

Recommended clamping torque (lb·ft): SR34-508=0.66, SR14-560/S=0.89, SR14-571/S=2.36, SR14-506=3.54

Reference pages: Inserts, Guide pads → J114 - J117, Standard cutting conditions → J118

DEEP TRI DRILL
MCTR-F L/D=8

Drill body for lathes and machining centers, L/D = 8, Tool diameter ø33.1, ø39.1 mm



Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR33.10XFM40-8	33.1	40	275	69	350	FBM07**-C, FBM06**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR39.10XFM40-8	39.1	40	323	69	407	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
33.1, 39.1	0 / - 0.07	+ 0.05 / - 0.1

Max. DC = 40: Available tailor-made tools (Unit: mm)

SPARE PARTS

Designation	Insert						Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench
	Screw	Wrench	Screw	Wrench	Screw	Wrench		
MCTR33.1..., MCTR39.1...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-3S	T-9F

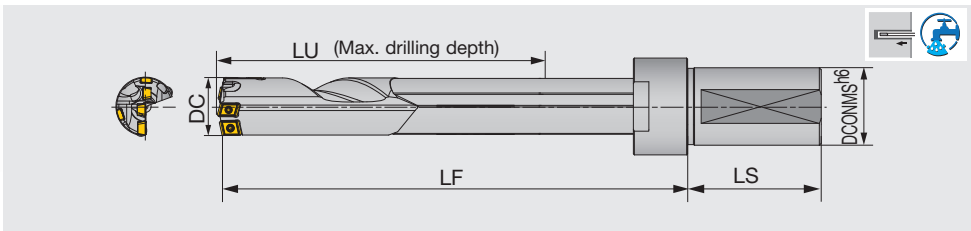
Recommended clamping torque (N·m): CSTB2.5=1.3, CSTB-3S=2.3

Note: The drill body surface is blackened for corrosion resistance and may appear uneven.
This, however, will not affect the performance of the drill.

Reference pages: Inserts, Guide pads → J114 - J117, Standard cutting conditions → J118

MCTR-F L/D=10

Drill body for lathes and machining centers, L/D = 10, Tool diameter ø1.125" - ø1.500" and ø29mm - ø40mm



Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR28.58XFU31.75-10	1.125	1.250	11.520	2.717	14.173	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC
MCTR31.75XFU31.75-10	1.250	1.250	12.717	2.717	15.551	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR34.93XFU31.75-10	1.375	1.250	13.902	2.717	16.850	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR38.10XFU31.75-10	1.500	1.250	15.488	2.717	18.661	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR29.00XFM40-10	29	40	292.6	69	360	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC
MCTR30.00XFM40-10	30	40	312.9	69	383	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR31.00XFM40-10	31	40	312.9	69	383	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR32.00XFM40-10	32	40	323	69	395	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR33.00XFM40-10	33	40	333.1	69	406	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR34.00XFM40-10	34	40	343	69	418	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR35.00XFM40-10	35	40	353.1	69	428	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR36.00XFM40-10	36	40	363.1	69	441	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR37.00XFM40-10	37	40	373	69	451	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR38.00XFM40-10	38	40	383.1	69	464	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR39.00XFM40-10	39	40	393.4	69	474	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC
MCTR40.00XFM40-10	40	40	403.3	69	487	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
1.125 - 1.500	0 / - 0.003	+ 0.002 / - 0.004

Max. DC = 40: Available tailor-made tools (Unit: Inch)

SPARE PARTS

Designation	Insert						Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench
	Screw	Wrench	Screw	Wrench	Screw	Wrench		
MCTR28.58... - MCTR29...	CSTB-2.5	T-8F	CSTB-2.2	T-7F	CSTB-2.2	T-7F	SR34-508	T-7F
MCTR30... - MCTR33...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	SR34-508	T-7F
MCTR34... - MCTR40...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-3S	T-9F

Recommended clamping torque (lb·ft): SR34-508=0.66, CSTB-2.2=0.74, CSTB-2.5=0.96, CSTB-3S=1.70,

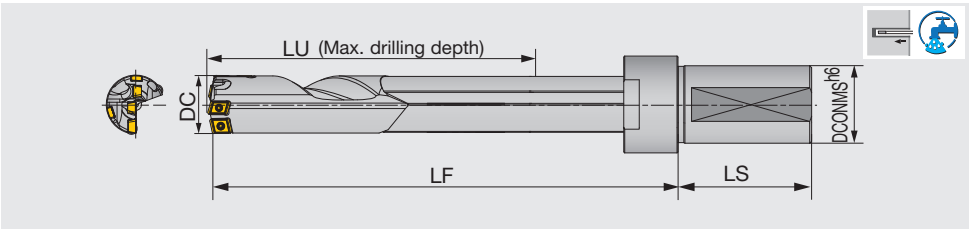
Note: The drill body surface is blackened for corrosion resistance and may appear uneven.
This will not affect the performance of the drill.

Reference pages: Inserts, Guide pads → J114 - J117, Standard cutting conditions → J118

DEEP TURN DRILL

MCTR-F L/D=15

Drill body for lathes and machining centers, L/D = 15, Tool diameter ø1.125" - ø1.500"and ø29mm - ø40mm



Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR28.58XFU31.75-15	1.125	1.250	17.228	2.717	19.882	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC
MCTR31.75XFU31.75-15	1.250	1.250	19.016	2.717	21.850	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR34.93XFU31.75-15	1.375	1.250	20.791	2.717	23.740	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR38.10XFU31.75-15	1.500	1.250	23.165	2.717	26.339	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR29.00XFM40-15	29	40	437.6	69	505	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC
MCTR30.00XFM40-15	30	40	467.9	69	538	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR31.00XFM40-15	31	40	467.9	69	538	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR32.00XFM40-15	32	40	483	69	555	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR33.00XFM40-15	33	40	498.1	69	571	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR34.00XFM40-15	34	40	513	69	588	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR35.00XFM40-15	35	40	528.1	69	603	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR36.00XFM40-15	36	40	543.1	69	621	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR37.00XFM40-15	37	40	558	69	636	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR38.00XFM40-15	38	40	573.1	69	654	FBM08**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR39.00XFM40-15	39	40	588.4	69	669	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC
MCTR40.00XFM40-15	40	40	603.3	69	687	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
1.125 - 1.500	0 / - 0.003	+ 0.002 / - 0.004

Max. DC = 40: Available tailor-made tools (Unit: Inch)

SPARE PARTS

Designation	Insert						Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench
	Screw	Wrench	Screw	Wrench	Screw	Wrench		
MCTR28.58... - MCTR29...	CSTB-2.5	T-8F	CSTB-2.2	T-7F	CSTB-2.2	T-7F	SR34-508	T-7F
MCTR30... - MCTR33...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	SR34-508	T-7F
MCTR34... - MCTR40...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-3S	T-9F

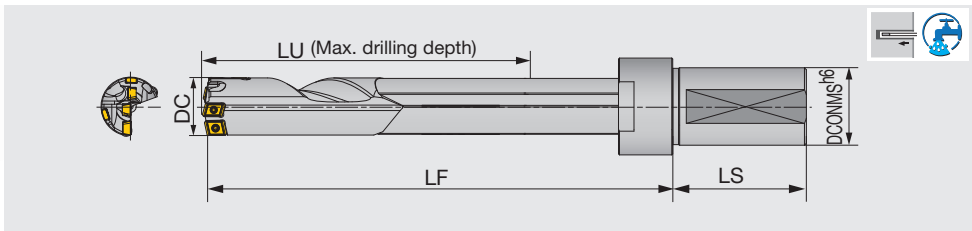
Recommended clamping torque (lb·ft): SR34-508=0.66, CSTB-2.2=0.74, CSTB-2.5=0.96, CSTB-3S=1.7

Note: The drill body surface is blackened for corrosion resistance and may appear uneven.
This will not affect the performance of the drill.

Reference pages: Inserts, Guide pads → J114 - J117, Standard cutting conditions → J118

MCTR-F L/D=25

Drill body for lathes and machining centers, L/D = 25, Tool diameter ø1.125" - ø1.500" and ø30mm



Inch	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR28.58XFU31.75-25	1.125	1.250	28.646	2.717	31.299	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC
MCTR31.75XFU31.75-25	1.250	1.250	31.614	2.717	34.449	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
MCTR34.93XFU31.75-25	1.375	1.250	34.571	2.717	37.520	FBM07**-C, FBM07**-I, FBH08**-P	GP07, GP07-20-120-DC
MCTR38.10XFU31.75-25	1.500	1.250	38.520	2.717	41.693	FBM08**-C, FBM07**-I, FBH09**-P	GP08, GP08-25-155-DC

Metric	DC	DCONMS	LU	LS	LF	Insert	Guide pad
MCTR30.00XFM40-25	30	40	777.9	69	848	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
1.125 - 1.500	0 / - 0.003	+ 0.002 / - 0.004

Max. DC = 40: Specials available upon request

(Unit: Inch)

SPARE PARTS

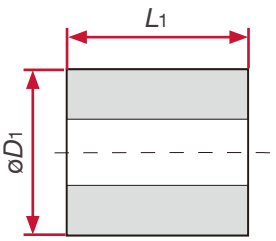
Designation	Insert						Guide pad	
	Central		Intermediate		Peripheral		Screw	Wrench
	Screw	Wrench	Screw	Wrench	Screw	Wrench		
MCTR28...	CSTB-2.5	T-8F	CSTB-2.2	T-7F	CSTB-2.2	T-7F	SR34-508	T-7F
MCTR30... - MCTR31...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	SR34-508	T-7F
MCTR34... - MCTR38...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-3S	T-9F

Recommended clamping torque (lb·ft): SR34-508=0.66, CSTB-2.2=0.74, CSTB-2.5=0.96, CSTB-3S=1.7

Note: The drill body surface is blackened for corrosion resistance and may appear uneven.
This will not affect the performance of the drill.

Reference pages: Inserts, Guide pads → J114 - J117, Standard cutting conditions → J118

DEEP TRI DRILL
MCTR Quotation sheet

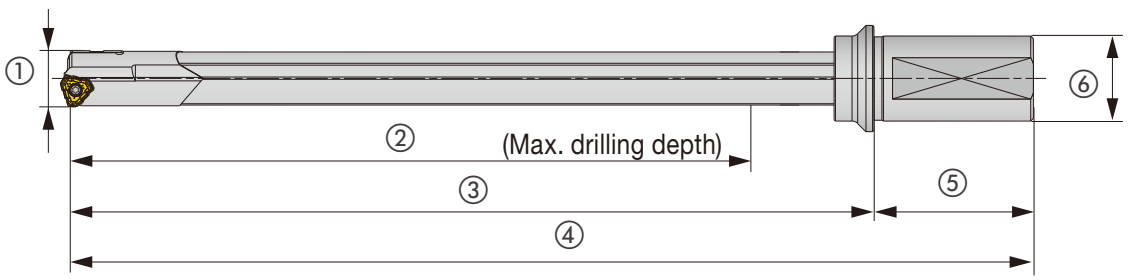


☐ Through

☐ Blind

$øD_1$	
L_1	
Hole tolerance	

Request



①	
②	
③	

④	
⑤	
⑥	

Description	
Quote QTY	pcs

*MOQ: 1pc

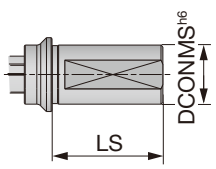
Technical data

Machine type	☐ MCT ☐ Lathe ☐ Vertical ☐ Horizontal
Machine name	
Power	Kw
Coolant type	☐ Oil ☐ Water-soluble

Workpiece

Part	
Material	
Hardness	

Driver

Driver	●	DCONMS		LS		Driver code	Coverage	
		Inch	Metric	Inch	Metric		Inch	Metric
		0.984	25	2.205	56	M25	ø0.551 - ø0.775	ø14 - ø19.69
		1.260	32	2.362	60	M32	ø0.775 - ø1.011	ø19.7 - ø25.69
		1.575	40	2.756	70	M40	ø1.011 - ø1.102	ø25.7 - ø28
		1.000	25.4	2.205	56	U25.4	ø0.551 - ø0.775	ø14 - ø19.69
		1.250	31.75	2.362	60	U31.75	ø0.775 - ø1.011	ø19.7 - ø25.69
		1.500	38.1	2.756	70	U38.1	ø1.011 - ø1.102	ø25.7 - ø28

- Please check "●" in the list of driver.
- If you need special design, please send us detail information.
- If the drill depth is more than "$øD_1$ x 30", you should use 2 types of DeepTriDrill, a short and a long one, because of tool fracture caused by chattering.

DESIGNATION FOR TAILOR MADE TOOLS

For tailor-made drills, use the below guide line to make the designation (Cat. No).

MCTR	18.50	XM	25	-	22
①	②		③		④

① Series	
MCTR	DeepTri-Drill (For machining centers and lathes)
MCTRCH	DeepTri-Drill (For gundrill machines, cross hole specification)

② Drill diameter DC (mm)	
18.50	18.50

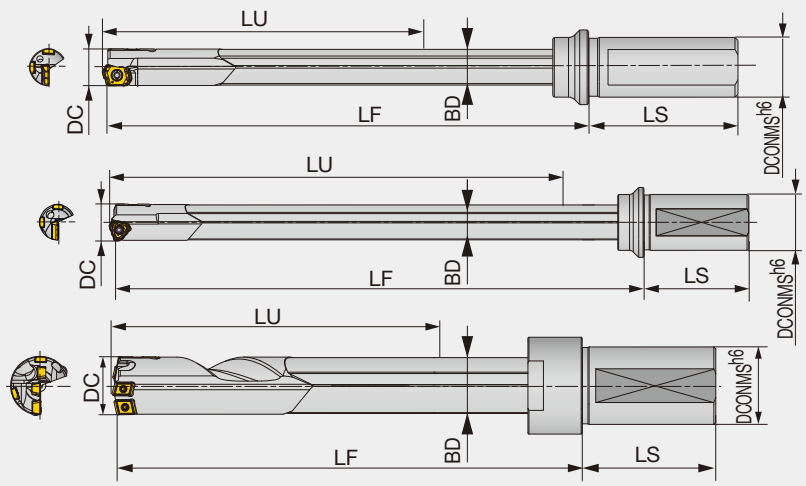
③ Driver diameter DCONMS (mm)	
25	25

④ L/D ratio

12 mm ≤ DC < 14 mm
0.472" ≤ DC < 0.551"

14 mm ≤ DC ≤ 28 mm
0.551" ≤ DC ≤ 1.102"

28 mm < DC ≤ 40 mm
1.102" < DC ≤ 1.575"



AVAILABLE RANGE OF TAILOR MADE DRILL BODIES

DC	DCONMS	LU	LS	LF	BD
12 - 12.49	20	124.8 - 326.8	50	153 - 225	11.5
12.5 - 12.99	20	123.8 - 326.8	50	153 - 226	12
13 - 13.49	25	122.8 - 351.8	56	156 - 245	12.5
13.5 - 13.99	25	122.8 - 351.8	56	156 - 245	13
14 - 14.49	25	122 - 377	56	156 - 411	13.5
14.5 - 14.99	25	122 - 377	56	157 - 412	14
15 - 15.99	25	130 - 402	56	166 - 438	14.5
16 - 16.79	25	138.2 - 427.2	56	175 - 464	15.5
16.8 - 17.69	25	146.2 - 452.2	56	184 - 490	16.2
17.7 - 18.69	25	154.2 - 478	56	194 - 517	17.2
18.7 - 19.69	25	163 - 503	56	203 - 543	18.2
19.7 - 20.69	32	171 - 528.2	60	213 - 570	19
20.7 - 21.69	32	179.2 - 553.2	60	222 - 596	20
21.7 - 22.69	32	187.2 - 578.4	60	232 - 623	21
22.7 - 23.69	32	195.4 - 603.4	60	241 - 649	22
23.7 - 24.69	32	203.4 - 628.4	60	251 - 676	23

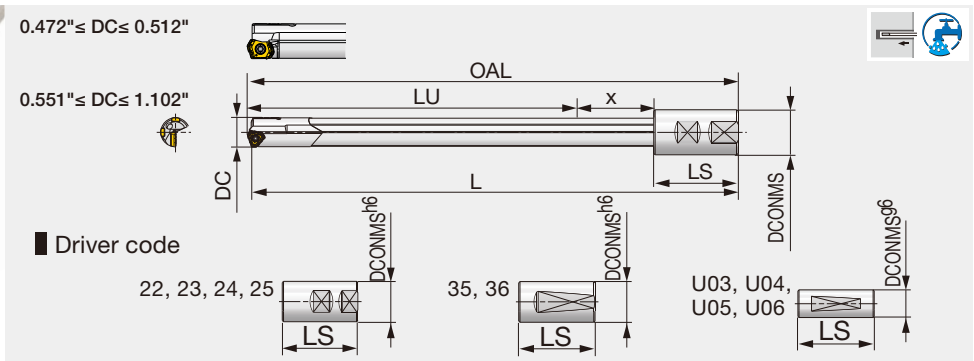
DC	DCONMS	LU	LS	LF	BD
24.7 - 25.69	32	211.4 - 653.7	60	260 - 702	24
25.7 - 26.69	40	219.7 - 678.7	70	270 - 719	25
26.7 - 27.69	40	227.7 - 703.7	70	279 - 745	26
27.7 - 28	40	227.7 - 703.7	70	281 - 747	27
28.01 - 29	40	148.7 - 728.7	69	215 - 795	27
29.01 - 29.99	40	153.7 - 753.7	69	222 - 822	28
30 - 31	40	158.7 - 778.7	69	228 - 848	29
31.01 - 32	40	163.7 - 803.7	69	235 - 875	30
32.01 - 33	40	168.7 - 828.7	69	241 - 901	31
33.01 - 34	40	173.7 - 853.7	69	248 - 928	32
34.01 - 35	40	178.7 - 878.7	69	253 - 953	32
35.01 - 36	40	183.7 - 903.7	69	261 - 981	34
36.01 - 37	40	188.7 - 928.7	69	266 - 1006	34
37.01 - 38	40	193.7 - 953.7	69	274 - 1034	36
38.01 - 39	40	198.7 - 978.7	69	279 - 1059	36
39.01 - 40	40	203.7 - 1003.7	69	287 - 1087	38

(unit: mm)

DEEP TRI DRILL

TRLG

Drill body for gundrill machines, Tool diameters ø0.5" - ø0.531" and ø12mm - ø28mm



Inch	DC	L	DCONMS	LU	OAL	LS	x	Driver code	Insert	Guide pad
TRLG12.70X1219-U04	0.500	47.992	1.000	44.559	48.063	2.756	0.748	U04	LOGT06..	GP04-055, GP04-16-055-DC
TRLG12.70X1524-U04	0.500	60.000	1.000	56.567	60.071	2.756	0.748	U04	LOGT06..	GP04-055, GP04-16-055-DC
TRLG13.49X1219-U04	0.531	47.992	1.000	44.520	48.063	2.756	0.787	U04	LOGT06..	GP04-055, GP04-16-055-DC
TRLG13.49X1527-U04	0.531	60.118	1.000	56.646	60.189	2.756	0.787	U04	LOGT06..	GP04-055, GP04-16-055-DC

Metric	DC	L	DCONMS	LU	OAL	LS	x	Driver code	Insert	Guide pad
TRLG12.00X800-U03	12	800	19.05	713.8	801.8	70	18	U03	LOGT06...	GP04-055, GP04-16-055-DC
TRLG12.00X800-22	12	800	20	733.8	801.8	50	18	22	LOGT06...	GP04-055, GP04-16-055-DC
TRLG12.00X1000-U03	12	1000	19.05	913.8	1001.8	70	18	U03	LOGT06...	GP04-055, GP04-16-055-DC
TRLG12.00X1000-22	12	1000	20	933.8	1001.8	50	18	22	LOGT06...	GP04-055, GP04-16-055-DC
TRLG12.00X1650-U03	12	1650	19.05	1563.8	1651.8	70	18	U03	LOGT06...	GP04-055, GP04-16-055-DC
TRLG12.00X1650-22	12	1650	20	1583.8	1651.8	50	18	22	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.00X800-U04	13	800	25.4	711.8	801.8	70	20	U04	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.00X800-23	13	800	25	725.8	801.8	56	20	23	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.00X1000-U04	13	1000	25.4	911.8	1001.8	70	20	U04	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.00X1000-23	13	1000	25	925.8	1001.8	56	20	23	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.00X1650-U04	13	1650	25.4	1561.8	1651.8	70	20	U04	LOGT06...	GP04-055, GP04-16-055-DC
TRLG13.00X1650-23	13	1650	25	1575.8	1651.8	56	20	23	LOGT06...	GP04-055, GP04-16-055-DC
TRLG14.00X800-23	14	800	25	725	802	56	21	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.00X800-U04	14	800	25.4	711	802	70	21	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.00X1000-23	14	1000	25	925	1002	56	21	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.00X1000-U04	14	1000	25.4	911	1002	70	21	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.00X1650-23	14	1650	25	1575	1652	56	21	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.00X1650-U04	14	1650	25.4	1561	1652	70	21	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X800-23	14.5	800	25	724	802	56	22	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X800-U04	14.5	800	25.4	710	802	70	22	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X1000-23	14.5	1000	25	924	1002	56	22	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X1000-U04	14.5	1000	25.4	910	1002	70	22	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X1650-23	14.5	1650	25	1574	1652	56	22	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG14.50X1650-U04	14.5	1650	25.4	1560	1652	70	22	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X800-23	15	800	25	723	802	56	23	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X800-U04	15	800	25.4	709	802	70	23	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X1000-23	15	1000	25	923	1002	56	23	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X1000-U04	15	1000	25.4	909	1002	70	23	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X1650-23	15	1650	25	1573	1652	56	23	23	TOHT07...	GP05-060, GP05-18-060-DC
TRLG15.00X1650-U04	15	1650	25.4	1559	1652	70	23	U04	TOHT07...	GP05-060, GP05-18-060-DC
TRLG16.00X800-23A	16	800	25	722.2	802.2	56	24	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG16.00X800-U04A	16	800	25.4	708.2	802.2	70	24	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG16.00X1000-23A	16	1000	25	922.2	1002.2	56	24	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG16.00X1000-U04A	16	1000	25.4	908.2	1002.2	70	24	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG16.00X1500-23A	16	1500	25	1422.2	1502.2	56	24	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG16.00X1500-U04A	16	1500	25.4	1408.2	1502.2	70	24	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG17.00X800-23A	17	800	25	721.2	802.2	56	25	23	TOHT08...	GP05-075, GP05-18-075-DC

Metric	DC	L	DCONMS	LU	OAL	LS	x	Driver code	Insert	Guide pad
TRLG17.00X800-U04A	17	800	25.4	707.2	802.2	70	25	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG17.00X1000-23A	17	1000	25	921.2	1002.2	56	25	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG17.00X1000-U04A	17	1000	25.4	907.2	1002.2	70	25	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.00X800-23A	18	800	25	719.2	802.2	56	27	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.00X800-U04A	18	800	25.4	705.2	802.2	70	27	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.00X1000-23A	18	1000	25	919.2	1002.2	56	27	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.00X1000-U04A	18	1000	25.4	905.2	1002.2	70	27	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.00X1500-23A	18	1500	25	1419.2	1502.2	56	27	23	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.00X1500-U04A	18	1500	25.4	1405.2	1502.2	70	27	U04	TOHT08...	GP05-075, GP05-18-075-DC
TRLG18.50X1500-23	18.5	1500	25	1420	1503	56	27	23	TOHT09...	GP06-085, GP06-20-085-DC
TRLG18.50X1500-U04	18.5	1500	25.4	1406	1503	70	27	U04	TOHT09...	GP06-085, GP06-20-085-DC
TRLG19.00X800-23	19	800	25	719	803	56	28	23	TOHT09...	GP06-085, GP06-20-085-DC
TRLG19.00X800-U04	19	800	25.4	705	803	70	28	U04	TOHT09...	GP06-085, GP06-20-085-DC
TRLG19.00X1000-23	19	1000	25	919	1003	56	28	23	TOHT09...	GP06-085, GP06-20-085-DC
TRLG19.00X1000-U04	19	1000	25.4	905	1003	70	28	U04	TOHT09...	GP06-085, GP06-20-085-DC
TRLG20.00X800-24	20	800	32	713	803	60	30	24	TOHT09...	GP06-085, GP06-20-085-DC
TRLG20.00X800-U05	20	800	31.75	703	803	70	30	U05	TOHT09...	GP06-085, GP06-20-085-DC
TRLG20.00X1000-24	20	1000	32	913	1003	60	30	24	TOHT09...	GP06-085, GP06-20-085-DC
TRLG20.00X1000-U05	20	1000	31.75	903	1003	70	30	U05	TOHT09...	GP06-085, GP06-20-085-DC
TRLG21.00X1000-24	21	1000	32	912.2	1003.2	60	31	24	TOHT10...	GP06-085, GP06-20-085-DC
TRLG21.00X1000-U05	21	1000	31.75	902.2	1003.2	70	31	U05	TOHT10...	GP06-085, GP06-20-085-DC
TRLG22.00X1000-24	22	1000	32	910.4	1003.4	60	33	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG22.00X1000-U05	22	1000	31.75	900.4	1003.4	70	33	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG22.00X1500-24	22	1500	32	1410.4	1503.4	60	33	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG22.00X1500-U05	22	1500	31.75	1400.4	1503.4	70	33	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG23.00X1000-24	23	1000	32	909.4	1003.4	60	34	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG23.00X1000-U05	23	1000	31.75	899.4	1003.4	70	34	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG23.00X1500-24	23	1500	32	1409.4	1503.4	60	34	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG23.00X1500-U05	23	1500	31.75	1399.4	1503.4	70	34	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG24.00X1000-24	24	1000	32	907.4	1003.4	60	36	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG24.00X1000-U05	24	1000	31.75	897.4	1003.4	70	36	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG24.00X1500-24	24	1500	32	1407.4	1503.4	60	36	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG24.00X1500-U05	24	1500	31.75	1397.4	1503.4	70	36	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG25.00X1000-24	25	1000	32	906.4	1003.4	60	37	24	TOHT11...	GP06-100, GP06-20-100-DC
TRLG25.00X1000-U05	25	1000	31.75	896.4	1003.4	70	37	U05	TOHT11...	GP06-100, GP06-20-100-DC
TRLG26.00X1000-25	26	1000	40	894.7	1003.7	70	39	25	TOHT12...	GP06, GP06-20-120-DC
TRLG26.00X1000-U06	26	1000	38.1	894.7	1003.7	70	39	U06	TOHT12...	GP06, GP06-20-120-DC
TRLG27.00X1000-25	27	1000	40	893.7	1003.7	70	40	25	TOHT12...	GP06, GP06-20-120-DC
TRLG27.00X1000-U06	27	1000	38.1	893.7	1003.7	70	40	U06	TOHT12...	GP06, GP06-20-120-DC
TRLG28.00X1000-25	28	1000	40	891.7	1003.7	70	42	25	TOHT12...	GP06, GP06-20-120-DC
TRLG28.00X1000-U06	28	1000	38.1	891.7	1003.7	70	42	U06	TOHT12...	GP06, GP06-20-120-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
0.472 - 1.102	0 / - 0.003	+ 0.002 / - 0.004

(Unit: Inch)

SPARE PARTS




Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
TRLG12... - TRLG13...	SR10503833L040	T-7F	CSPB-2L043	IP-6F
TRLG14... - TRLG20...	SR14-560/S	T-8F	SR34-508	T-7F
TRLG21...	SR34-506	T-9F	SR34-508	T-7F
TRLG22... - TRLG25...	SR14-571/S	T-10/5	SR34-508	T-7F
TRLG26... - TRLG28...	SR14-506	T-15F	SR34-508	T-7F

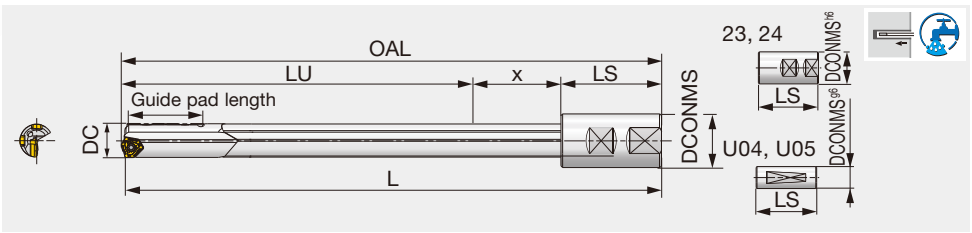
Recommended clamping torque (lb·ft): CSPB-2L043=0.52, SR34-508=0.66, SR34-506=0.66, SR14-560/S=0.89, SR10503833L040=0.96, SR14-571/S=2.36, SR14-506=3.54

Reference pages: Inserts, Guide pads → J114 - J117, Standard cutting conditions → J118

DEEP TRI DRILL

TRLGCH

Drill body for drilling cross hole applications on gun drilling machines, Tool diameters ø0.578" - ø0.937" and ø15mm - ø24mm



Inch	DC	L	DCONMS	LU	OAL	LS	X	Driver code	Insert	Guide pad	Guide pad length
TRLGCH14.68X1830-U05	0.578	72.047	1.250	68.504	72.126	2.756	0.866	U05	TOHT07...	GP05-060, GP05-18-060-DC	1.417
TRLGCH15.06X1830-U05	0.593	72.047	1.250	68.465	72.126	2.756	0.906	U05	TOHT07...	GP05-060, GP05-18-060-DC	1.417
TRLGCH18.24X1830-U05	0.718	72.047	1.250	68.346	72.165	2.756	1.063	U05	TOHT09...	GP06-085, GP06-20-085-DC	1.575
TRLGCH18.64X1830-U05	0.734	72.047	1.250	68.346	72.165	2.756	1.063	U05	TOHT09...	GP06-085, GP06-20-085-DC	1.575
TRLGCH23.42X1830-U05	0.922	72.047	1.250	68.087	72.181	2.756	1.339	U05	TOHT11...	GP06-100, GP06-20-100-DC	1.575
TRLGCH23.80X1830-U05	0.937	72.047	1.250	68.008	72.181	2.756	1.417	U05	TOHT11...	GP06-100, GP06-20-100-DC	1.575

Metric	DC	L	DCONMS	LU	OAL	LS	X	Driver code	Insert	Guide pad	Guide pad length
TRLGCH15.00X1650-U04	15	1650	25.4	1559	1652	70	23	U04	TOHT07...	GP05-060, GP05-18-060-DC	36
TRLGCH15.00X1650-23	15	1650	25	1573	1652	56	23	23	TOHT07...	GP05-060, GP05-18-060-DC	36
TRLGCH18.00X1650-U04A	18	1650	25.4	1555.2	1652.2	70	27	U04	TOHT08...	GP05-075, GP05-18-075-DC	36
TRLGCH18.00X1650-23A	18	1650	25	1569.2	1652.2	56	27	23	TOHT08...	GP05-075, GP05-18-075-DC	36
TRLGCH23.00X1650-U05	23	1650	31.75	1549.4	1653.4	70	34	U05	TOHT11...	GP06-100, GP06-20-100-DC	40
TRLGCH23.00X1650-24	23	1650	32	1559.4	1653.4	60	34	24	TOHT11...	GP06-100, GP06-20-100-DC	40
TRLGCH24.00X1650-U05	24	1650	31.75	1547.4	1653.4	70	36	U05	TOHT11...	GP06-100, GP06-20-100-DC	40
TRLGCH24.00X1650-24	24	1650	32	1557.4	1653.4	60	36	24	TOHT11...	GP06-100, GP06-20-100-DC	40

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
ø0.578 - ø0.945	0 / - 0.004	+ 0.002 / - 0.005

(Unit: Inch)

SPARE PARTS



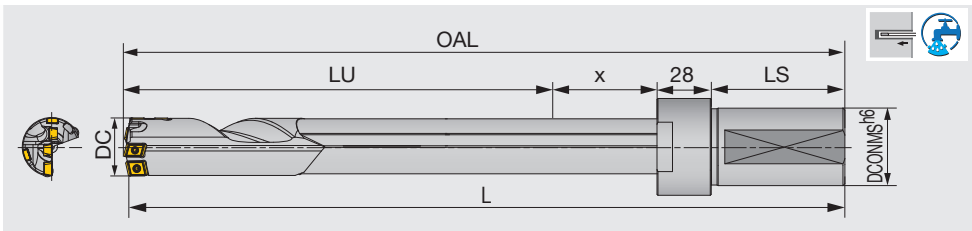

Designation	Insert		Guide pad	
	Screw	Wrench	Screw	Wrench
TRLGCH14... - TRLGCH18...	SR14-560/S	T-8F	SR34-508	T-7F
TRLGCH23... - TRLGCH24...	SR14-571/S	T-10/5	SR34-508	T-7F

Recommended clamping torque (lb·ft): SR34-508=0.66, R14-560/S=0.89, SR14-571/S=2.36

Reference pages: Inserts, Guide pads → J114 - J117, Standard cutting conditions → J118

TRLG

Drill body for gundrill machines, Tool diameter ø1.156" and ø30mm



Inch	DC	L	DCONMS	LU	OAL	LS	x	Driver code	Insert	Guide pad
TRLG29.36X1828-FU31.75	1.156	71.969	1.250	66.520	72.071	27.165	1.732	FU31.75	FBM07**-C, FBM06**-I, FBH06**-P	GP06, GP06-20-120-DC

Metric	DC	L	DCONMS	LU	OAL	LS	x	Driver code	Insert	Guide pad
TRLG30.00X1000-FM40	30	1000	40	860.9	1002.9	69	45	FM40	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
TRLG30.00X1650-FM40	30	1650	40	1510.9	1652.9	69	45	FM40	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC
TRLG30.00X1650-FU38.1	30	1650	38.1	1510.9	1652.9	69	45	FU38.1	FBM07**-C, FBM07**-I, FBH08**-P	GP06, GP06-20-120-DC

DC	Tool diameter tolerance	Applicable tolerance range of hole diameter
1.181	0 / - 0.003	+ 0.002 / - 0.004

Max. DC = 40: Available tailor-made tools (Unit: Inch)

SPARE PARTS

Designation	Insert						Guide pad	
	Central		Intermediate		Peripheral			
	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench
TRLG30...	CSTB-2.5	T-8F	CSTB-2.5	T-8F	CSTB-2.5	T-8F	SR34-508	T-7F

Recommended clamping torque (lb·ft): SR34-508=0.66, CSTB-2.5=0.96

Note: The drill body surface is blackened for corrosion resistance and may appear uneven.
This will not affect the performance of the drill.

Reference pages: Inserts, Guide pads → J114 - J117, Standard cutting conditions → J118

DESIGNATION FOR TAILOR MADE TOOLS

For tailor-made drills, use the below guide line to make the designation (Cat. No).

TRLG	18.50	X	900	-	23
①	②		③		④

① Series	
TRLG	DeepTri-Drill (for gundrill machines)
TRLGCH	DeepTri-Drill (For gundrill machines, cross hole specification)

② Drill diameter DC (mm)	
18.50	18.50

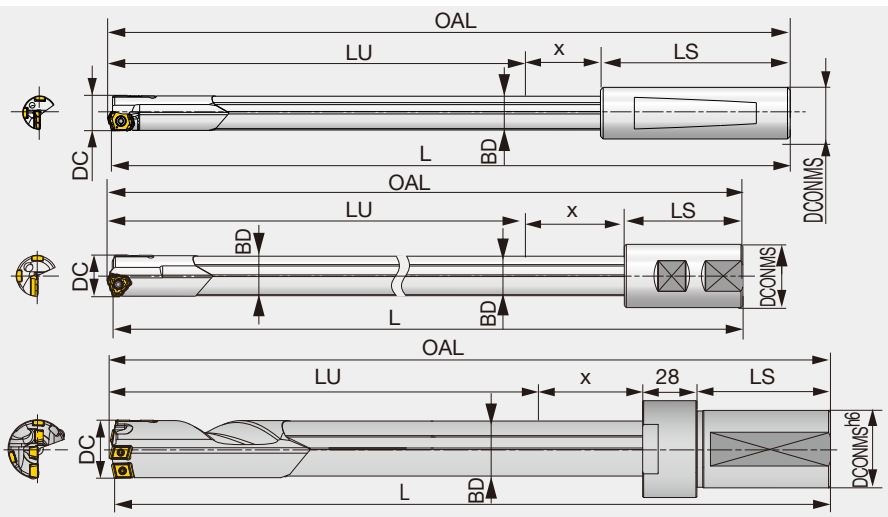
③ Overall length: L (mm)	
900	900

④ Driver code	
23	23

12 mm ≤ DC < 14 mm
0.472" ≤ DC < 0.561"

14 mm ≤ DC ≤ 28 mm
0.551" ≤ DC ≤ 1.102"

28 mm < DC ≤ 40 mm
1.102" < DC ≤ 1.575"



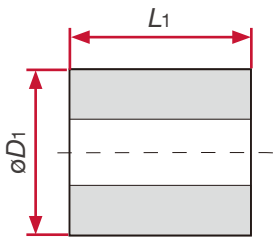
AVAILABLE RANGE OF TAILOR MADE DRILL BODIES

DC	L	x	BD
12 - 12.49	400 - 2400	18	11.5
12.5 - 12.99	400 - 2400	19	12
13 - 13.49	400 - 2400	20	12.5
13.5 - 13.99	400 - 2400	20	13
14 - 14.49	400 - 2400	21	13.5
14.5 - 14.99	400 - 2400	22	14
15 - 15.99	400 - 2400	23	14.5
16 - 16.79	400 - 2400	24	15.5
16.8 - 17.69	400 - 2400	25	16.2
17.7 - 18.69	400 - 2400	27	17.2
18.7 - 19.69	400 - 2400	28	18.2
19.7 - 20.69	400 - 2400	30	19
20.7 - 21.69	400 - 2400	31	20
21.7 - 22.69	400 - 2400	33	21
22.7 - 23.69	400 - 2400	34	22
23.7 - 24.69	400 - 2400	36	23

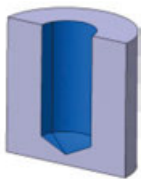
DC	L	x	BD
24.7 - 25.69	400 - 2400	37	24
25.7 - 26.69	400 - 2400	39	25
26.7 - 27.69	400 - 2400	40	26
27.7 - 28	400 - 2400	42	27
28.01 - 29	400 - 2400	42	27
29.01 - 29.99	400 - 2400	44	28
30 - 31	400 - 2400	45	29
31.01 - 32	400 - 2400	47	30
32.01 - 33	400 - 2400	48	31
33.01 - 34	400 - 2400	50	32
34.01 - 35	400 - 2400	50	32
35.01 - 36	400 - 2400	53	34
36.01 - 37	400 - 2400	53	34
37.01 - 38	400 - 2400	56	36
38.01 - 39	400 - 2400	56	36
39.01 - 40	400 - 2400	59	38

Please provide the driver shape necessary for your request

(Unit: mm)



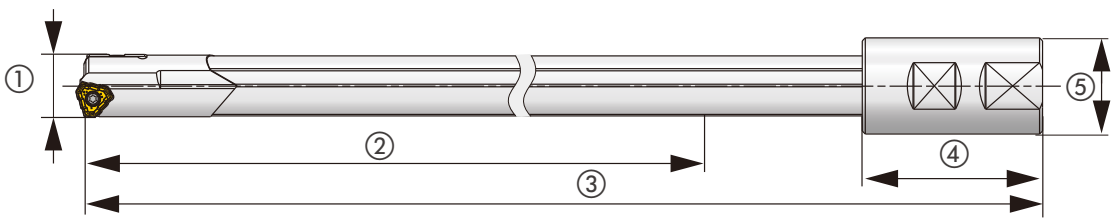
☐ Through



☐ Blind

$øD_1$	
L_1	
Hole tolerance	

Request



①		④	
②		⑤	
③		⑥	

Description	
Quote QTY	pcs

*MOQ: 1pc

Technical data

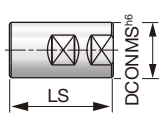
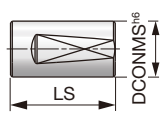
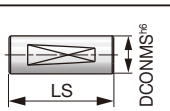
Machine type	☐ GM* ☐ Lathe ☐ Vertical ☐ Horizontal
Machine name	
Power	Kw
Coolant type	☐ Oil ☐ Water-soluble

*Gundrill machine

Workpiece

Part	
Material	
Hardness	

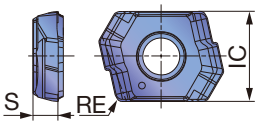
Driver

Driver	●	DCONMS Inch	DCONMS Metric	LS Inch	LS Metric	Driver code	Coverage Inch	Coverage Metric
		0.984	25	2.205	56	23	ø0.551 - ø0.775	ø14 - ø19.69
		1.260	32	2.362	60	24	ø0.551 - ø1.011	ø14 - ø25.69
		1.260	32	2.756	70	25	ø0.551 - ø1.130	ø14 - ø28.69
		1.969	50	2.756	80	26	ø0.551 - ø1.130	ø14 - ø28.69
		0.984	25	2.205	56	35	ø0.551 - ø0.775	ø14 - ø19.69
		1.260	32	2.362	60	36	ø0.551 - ø1.011	ø14 - ø25.69
		1.000	25.4	2.756	70	U04	ø0.551 - ø0.775	ø14 - ø19.69
		1.250	31.75	2.756	70	U05	ø0.551 - ø1.011	ø14 - ø25.69
		1.500	38.1	2.756	70	U06	ø0.551 - ø1.102	ø14 - ø28

- Please check "●" in the list of driver.
- If you need special design, please send us detail information.
- In case of using machines other than a Gundrill machine, if the drill depth is more than "$øD_1$ x 30", you should use 2 types of DeepTriDrill, a short and a long one, because of tool fracture caused by chattering.

INSERT

LOGT-NDJ



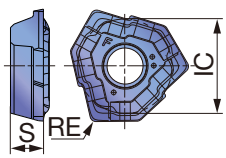
P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous	★	
S	Superalloys	★	
H	Hard materials	★	

★ : First choice
☆ : Second choice

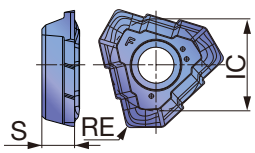
Designation	DCN (in)	DCX (in)	Coated AH725	S (in)	RE (in)
LOGT060204R-NDJ	0.472	0.551	●	0.079	0.016

● : Line up
Package quantity = 10 pcs.

TOHT-NDL (07..., 08...)



TOHT-NDL (09... - 12...)



P	Steel	★	
M	Stainless	★	
K	Cast iron	★	
N	Non-ferrous	★	
S	Superalloys	★	
H	Hard materials	★	

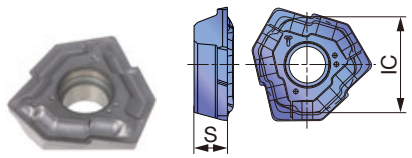
★ : First choice
☆ : Second choice

Designation	DCN (in)	DCX (in)	Coated AH725	IC (in)	S (in)	RE (in)
TOHT070304R-NDL	0.551	0.630	●	0.303	0.091	0.016
TOHT080305R-NDL	0.630	0.709	●	0.337	0.110	0.020
TOHT090305R-NDL	0.709	0.787	●	0.328	0.118	0.020
TOHT100305R-NDL	0.788	0.866	●	0.363	0.130	0.020
TOHT110405R-NDL	0.866	0.984	●	0.409	0.150	0.020
TOHT120405R-NDL	0.985	1.102	●	0.456	0.169	0.020

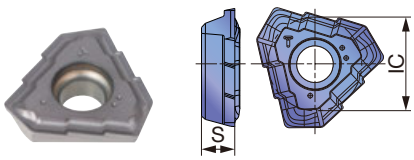
● : Line up
Package quantity = 10 pcs.

INSERT

TOHT-NDJ (070..., 080...)



TOHT-NDJ (090... - 120...)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

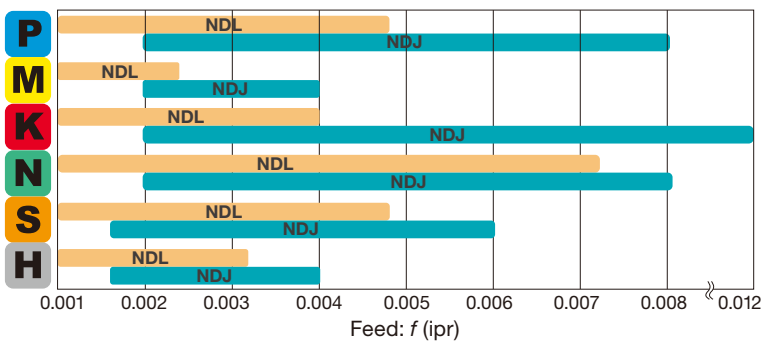
Designation	DCN (in)	DCX (in)	Coated AH725	IC (in)	S (in)
TOHT070304R-NDJ	0.551	0.630	●	0.303	0.091
TOHT080305R-NDJ	0.630	0.709	●	0.337	0.110
TOHT090305R-NDJ	0.709	0.787	●	0.328	0.118
TOHT100305R-NDJ	0.788	0.866	●	0.363	0.130
TOHT110405R-NDJ	0.866	0.984	●	0.409	0.150
TOHT120405R-NDJ	0.985	1.102	●	0.456	0.169

● : Line up
Package quantity = 10 pcs.

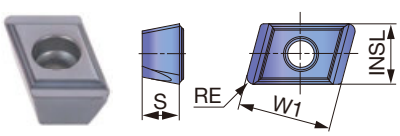
■ Identifications for NDL and NDJ geometries

Chipbreaker	NDL	NDJ
Cutting edge strength	Strong	Very strong
ID on insert		

■ Recommended feed rates



FBM-C (For central)



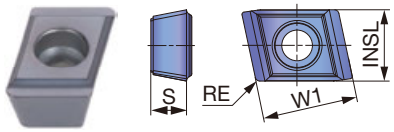
P	Steel	★ ☆
M	Stainless	★ ☆
K	Cast iron	★ ☆
N	Non-ferrous	★ ☆
S	Superalloys	★ ☆
H	Hard materials	★ ☆

★ : First choice
☆ : Second choice

Designation	INSL (in)	W1 (in)	Coated AH725	AH8015	S (in)	DCN (in)	DCX (in)	RE (in)
FBM070408L-G-C	0.256	0.394	●	●	0.157	1.103	1.378	0.031
FBM080408L-G-C	0.315	0.394	●	●	0.157	1.378	1.575	0.031

● : Line up
Package quantity = 10 pcs.

FBM-I (For intermediate)



G type chipbreaker	DL type chipbreaker
FBM060304R-G-I	FBM060304R-DL-I
FBM070404R-G-I	FBM070404R-DL-I

The designation of insert with G type and DL type is different, even in the same shape.

Please refer to the table above to check the insert designation. Both inserts can be mounted on the drill body.

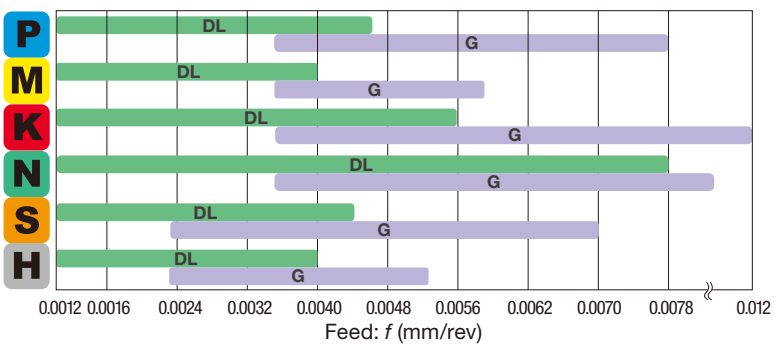
P	Steel	★	☆
M	Stainless	★	☆
K	Cast iron	★	☆
N	Non-ferrous	★	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

★ : First choice
☆ : Second choice

Designation	INSL (in)	W1 (in)	Coated		S (in)	DCN (in)	DCX (in)	RE (in)
			AH725	AH8015				
FBM060304R-G-I	0.217	0.315	●	●	0.118	1.103	1.181	0.016
FBM060304R-DL-I	0.217	0.315	●		0.118	1.103	1.181	0.016
FBM070404R-G-I	0.256	0.394	●	●	0.157	1.181	1.575	0.016
FBM070404R-DL-I	0.256	0.394	●		0.157	1.181	1.575	0.016

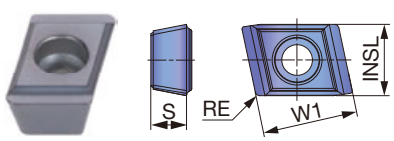
● : Line up
Package quantity = 10 pcs.

Recommended feed rates



For cross hole drilling, please use the new DL type chipbreaker because the feed needs to be reduced.

FBH-P (For peripheral)



P	Steel	★	☆	☆	☆
M	Stainless	★	☆	☆	☆
K	Cast iron	★	☆	☆	☆
N	Non-ferrous	★	☆	☆	☆
S	Superalloys	★	☆	☆	☆
H	Hard materials	★	☆	☆	☆

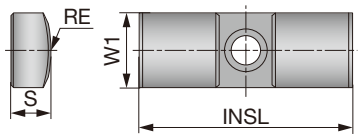
★ : First choice
☆ : Second choice

Designation	INSL (in)	W1 (in)	Coated				S (in)	DCN (in)	DCX (in)	RE (in)
			AH725	UC3120	AH8015	AH3135				
FBH060304R-G-P	0.236	0.315	●	●			0.118	1.103	1.181	0.016
FBH060308R-G-P	0.236	0.315	●		●	●	0.118	1.103	1.181	0.031
FBH080404R-G-P	0.295	0.394	●	●			0.157	1.181	1.496	0.016
FBH080408R-G-P	0.295	0.394	●		●	●	0.157	1.181	1.496	0.031
FBH090404R-G-P	0.354	0.394	●	●			0.157	1.496	1.575	0.016
FBH090408R-G-P	0.354	0.394	●		●	●	0.157	1.496	1.575	0.031

● : Line up
Package quantity = 10 pcs.

GUIDE PAD

GP04, 05, 06, 07, 08



P	Steel	☆	☆	★	☆	★ : First choice
M	Stainless	☆	☆	★	☆	☆ : Second choice
K	Cast iron	☆	☆	★	☆	
N	Non-ferrous	☆	☆	★	☆	
S	Superalloys	☆	☆	★	☆	
H	Hard materials	☆	☆	★	☆	

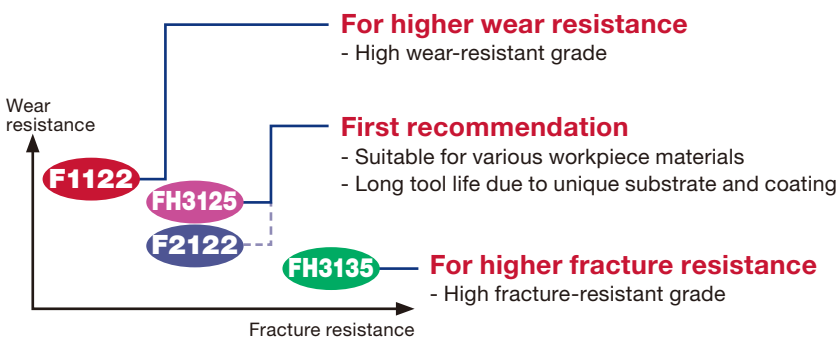
Designation	DCN (in)	DCX (in)	Coated				W1 (in)	INSL (in)	S (in)	RE (in)	Chamfer
			F1122	F2122	FH3125	FH3135					
GP04-055	0.472	0.5508	●	▲			0.157	0.63	0.079	0.217	Single
GP04-16-055-DC	0.472	0.5508			●	●	0.157	0.63	0.079	0.217	Double
GP05-060	0.5512	0.6295	●	▲			0.197	0.709	0.098	0.236	Single
GP05-18-060-DC	0.5512	0.6295			●	●	0.197	0.709	0.098	0.236	Double
GP05-075	0.6299	0.7087	●	▲			0.197	0.709	0.098	0.295	Single
GP05-18-075-DC	0.6299	0.7087			●	●	0.197	0.709	0.098	0.295	Double
GP06-085	0.7091	0.8268	●	▲			0.236	0.787	0.118	0.335	Single
GP06-20-085-DC	0.7091	0.8268			●	●	0.236	0.787	0.118	0.335	Double
GP06-100	0.8271	0.9843	●	▲			0.236	0.787	0.118	0.394	Single
GP06-20-100-DC	0.8271	0.9843			●	●	0.236	0.787	0.118	0.394	Double
GP06	0.9846	1.2992	●	▲			0.236	0.787	0.118	0.472	Single
GP06-20-120-DC	0.9846	1.2992			●	●	0.236	0.787	0.118	0.472	Double
GP07	1.2996	1.496	●	▲			0.276	0.787	0.138	0.472	Single
GP07-20-120-DC	1.2996	1.496			●	●	0.276	0.787	0.138	0.472	Double
GP08	1.4965	1.575	●	▲			0.315	0.984	0.177	0.610	Single
GP08-25-155-DC	1.4965	1.575			●	●	0.315	0.984	0.177	0.610	Double

● : Line up
▲ : To be discontinued
Package quantity = 5 pcs.

REPLACING GUIDE PADS

Guide pads are subject to wear, like inserts

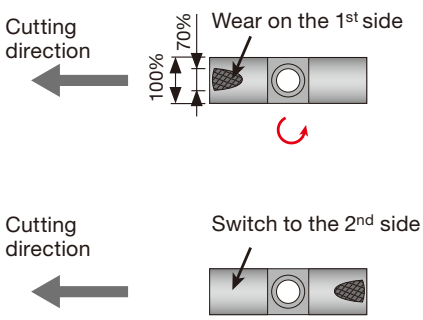
- The guide pad has two sides.
- Each guide pad can be used on two sides. When the first corner wears out to 70% of the width, reverse the guide pad to use the second side.
- Replace with a new guide pad when the second side wears out.

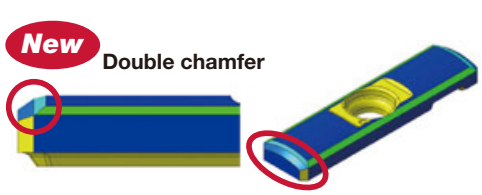


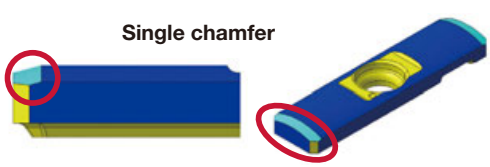
For higher wear resistance
- High wear-resistant grade

First recommendation
- Suitable for various workpiece materials
- Long tool life due to unique substrate and coating

For higher fracture resistance
- High fracture-resistant grade

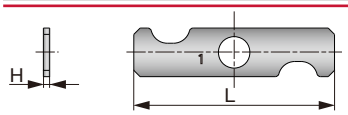




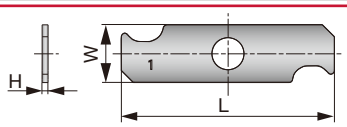


SHIM

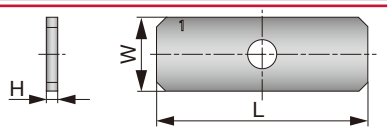
SHIMSET-GP04



SHIMSET-GP05



SHIMSET-GP06



Designation	DC	W	L	H
SHIMSET-GP04	12 - 13.99	4	16	2
SHIMSET-GP05	14 - 15.99	5	18	2.5
SHIMSET-GP06	16 - 18	5	18	2.5

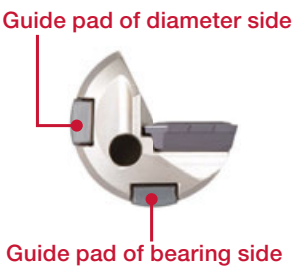
(Unit: mm)

Shim thickness: 0.01 / 0.02 / 0.03 / 0.04 / 0.05 mm
Shim sheets are sold as set.
Package quantity = 5 pcs. (1pc per each thickness)

Shim sheet combinations by adjusting diameter

Adjustment diameter	Shim thickness in guide pad of diameter side.	Shim thickness in guide pad of bearing side.	Required number of shim set
+0.0004	0.0004	-	1
+0.0008	0.0008	0.0004	1
+0.0012	0.0012	0.0004 + 0.0008	1
+0.0016	0.0016	0.0004 + 0.0012	1
+0.0020	0.0020	0.0008 + 0.0012	1
+0.0024	0.0004 + 0.0020	0.0008 + 0.0016	1
+0.0028	0.0008 + 0.0020	0.0012 + 0.0016	1
+0.0031	0.0012 + 0.0020	0.0016 + 0.0016	2
+0.0035	0.0016 + 0.0020	0.0016 + 0.0020	2
+0.0039	0.0020 + 0.0020	0.0016 + 0.0016 + 0.0008	2

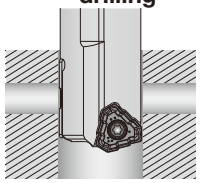
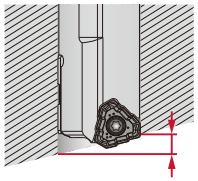
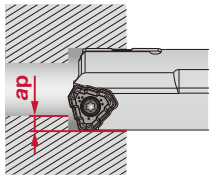
(Unit: in)



STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Priority	Chip-breaker	Cutting speed *Vc* (sfm)	*f* (ipr) ø0.472 - ø0.551	ø0.551 - ø0.709	ø0.709 - ø1.102	ø1.103 - ø1.575
P	Low carbon steel (C < 0.3) 70 ,1025, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.004	0.0012 - 0.004	-
		First choice	NDJ/G	262 - 459	0.0020 - 0.0039	0.0020 - 0.004	0.0020 - 0.004	0.004 - 0.008
	Carbon steel (C > 0.3) 1045c,1055, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.004	0.0012 - 0.005	-
		First choice	NDJ/G	262 - 459	0.0020 - 0.0063	0.0020 - 0.006	0.0020 - 0.008	0.004 - 0.008
	Low alloy steel (C < 0.3) 5120, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.004	0.0012 - 0.004	-
		First choice	NDJ/G	262 - 459	0.0020 - 0.0039	0.0020 - 0.004	0.0020 -0.004	0.004 - 0.008
	Alloy steel (C > 0.3) 4140, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.004	0.0012 - 0.005	-
		First choice	NDJ/G	262 - 394	0.0020 - 0.0063	0.0020 - 0.006	0.0020 - 0.008	0.004 - 0.008
M	Stainless steel (Austenitic) 304,316, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.002	0.0012 - 0.002	-
		First choice	NDJ/G	197 - 328	0.0020 - 0.0039	0.0020 - 0.004	0.0020 - 0.004	0.004 - 0.006
	Stainless steel (Martensitic, Ferritic) 430,416, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.002	0.0012 - 0.002	-
		First choice	NDJ/G	197 - 328	0.0020 - 0.0039	0.0020 - 0.004	0.0020 - 0.004	0.004 - 0.006
	Stainless steel (Precipitation hardening) S17400, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.002	0.0012 - 0.002	-
		First choice	NDJ/G	197 - 328	0.0020 - 0.0039	0.0020 - 0.004	0.0020 - 0.004	0.004 - 0.006
K	Gray cast iron No.250B, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.006	0.0020 - 0.007	-
		First choice	NDJ/G	262 - 459	0.0020 - 0.0098	0.0020 - 0.010	0.0020 - 0.012	0.004 - 0.012
	Ductile cast iron 700, etc.	For low feed machines	NDL	164 - 328	-	0.0012 - 0.006	0.0020 - 0.007	-
		First choice	NDJ/G	262 - 459	0.0020 - 0.0098	0.0020 - 0.010	0.0020 - 0.012	0.004 - 0.012
N	Aluminum alloys	For low feed machines	NDL	262 - 525	-	0.0012 - 0.006	0.0012 - 0.006	-
		First choice	NDJ/G	328 - 656	0.0020 - 0.0079	0.0020 - 0.008	0.0020 - 0.008	0.004 - 0.010
S	Heat-resistant alloys Inconel 718, etc.	For low feed machines	NDL	65.6 - 164	-	0.0012 - 0.002	0.0012 - 0.003	-
		First choice	NDJ/G	65.6 - 164	0.0016 - 0.0031	0.0016 - 0.003	0.0016 - 0.004	0.002 - 0.005
	Titanium alloys Ti-6Al-4V, etc.	For low feed machines	NDL	98.4 - 197	-	0.0012 - 0.004	0.0012 - 0.005	-
		First choice	NDJ/G	98.4 - 197	0.0020 - 0.0051	0.0020 - 0.005	0.0020 - 0.006	0.004 - 0.007
H	Hardened steel ≥ 40HRC	For low feed machines	NDL	131 - 328	-	0.0012 - 0.003	0.0012 - 0.003	-
		First choice	NDJ/G	164 - 328	0.0016 - 0.0031	0.0016 - 0.003	0.0016 - 0.004	0.002 - 0.005

APPLICATION RANGE

Feed *f* (ipr)	0.001 - 0.002	0.001 - 0.05	0.004 - 0.012
Application	OK Cross hole drilling 	OK Inclined exit 	OK Boring 

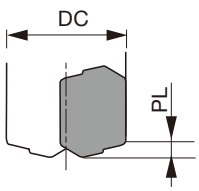
Note 1) When drilling cross holes or exiting the inclined surface, make sure the guide-pads are suitable.
Note 2) A pilot hole is needed prior to a boring operation. *ap* ≥ 0.040" is recommended for boring operations.

SHAPES OF THE HOLE BOTTOM

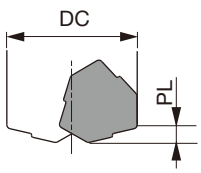
DC	Insert	Maximum difference PL
0.472 - 0.551	LOGT06	0.071
0.551 - 0.630	TOHT07	0.079
0.630 - 0.709	TOHT08	0.087
0.709 - 0.787	TOHT09	0.118
0.788 - 0.866	TOHT10	0.126
0.866 - 0.984	TOHT11	0.134
0.985 - 1.102	TOHT12	0.146

(Unit: Inch)

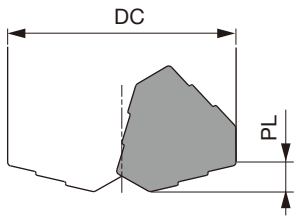
LOGT06...



TOHT07..., 08...



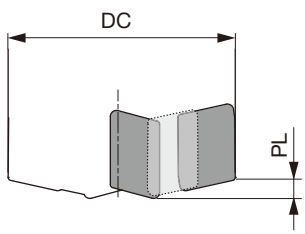
TOHT09... - TOHT12...



DC	Central	Insert Intermediate	Peripheral	Maximum difference PL
1.103 - 1.142	FBM070408L-G-C	FBM060304R-G-I	FBH060304R-G-P	0.102
1.142 - 1.181	FBM070408L-G-C	FBM060304R-G-I	FBH060304R-G-P	0.102
1.181 - 1.220	FBM070408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.114
1.221 - 1.260	FBM070408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.118
1.260 - 1.299	FBM070408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.122
1.300 - 1.339	FBM070408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.118
1.339 - 1.378	FBM070408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.122
1.378 - 1.417	FBM080408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.122
1.418 - 1.457	FBM080408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.118
1.457 - 1.496	FBM080408L-G-C	FBM070404R-G-I	FBH080404R-G-P	0.122
1.496 - 1.535	FBM080408L-G-C	FBM070404R-G-I	FBH090404R-G-P	0.134
1.536 - 1.575	FBM080408L-G-C	FBM070404R-G-I	FBH090404R-G-P	0.13

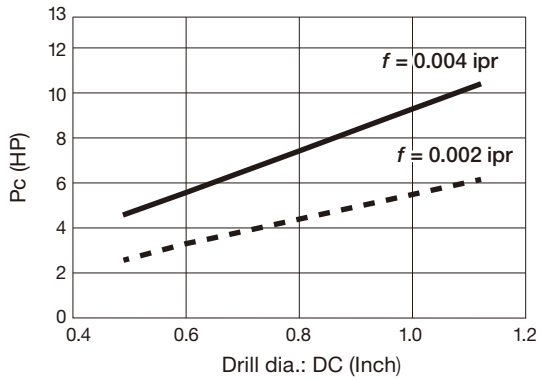
(Unit: Inch)

FBM...

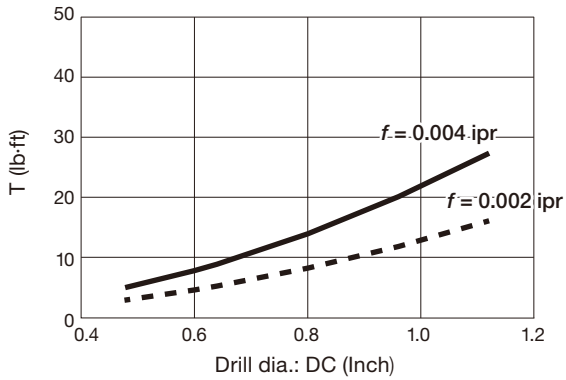


REQUIRED SPINDLE POWER AND COOLANT PRESSURE

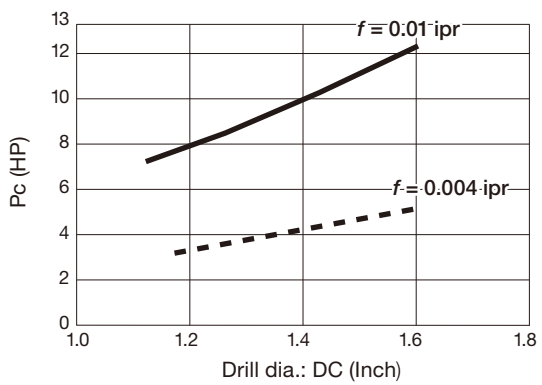
Net power



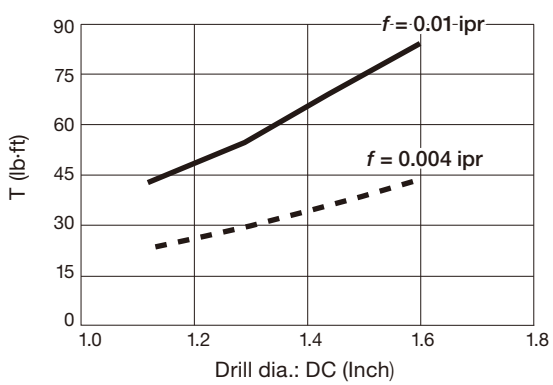
Torque



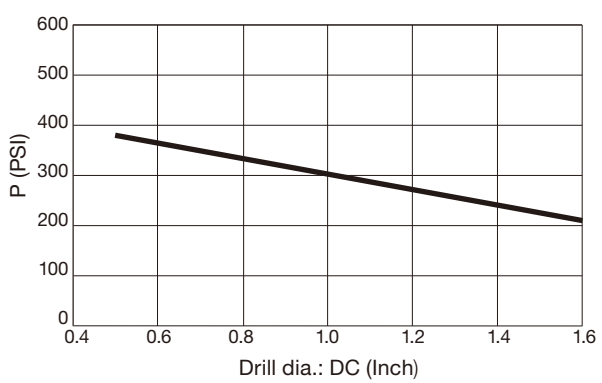
Net power



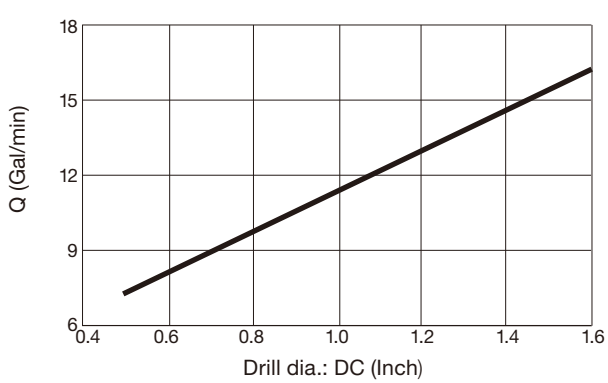
Torque



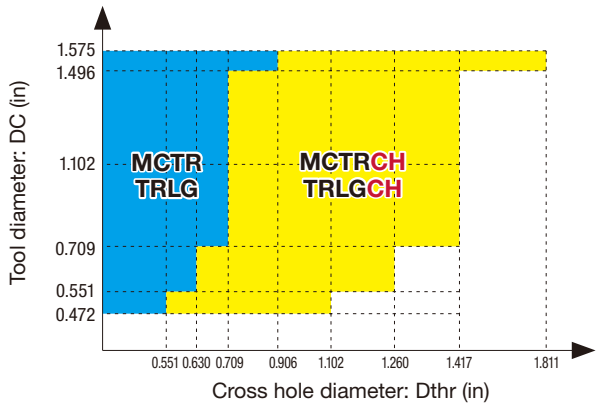
Coolant pressure

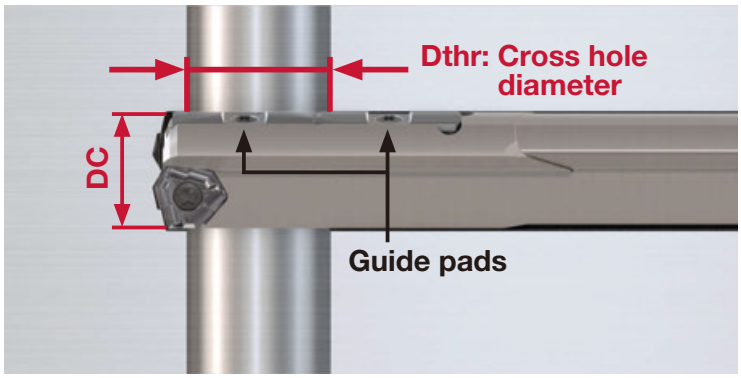


Coolant flow rate



PROPER DEEPTRI-DRILL MODEL FOR SUITABLE CROSS HOLE DISTANCE.





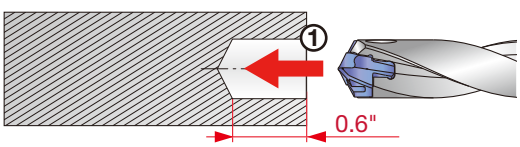
CAUTIONS FOR CROSS HOLE DRILLING

- Decrease the feed rate when the drill head comes in contact with a cross hole. (*f* = 0.001 - 0.002 ipr)
- **Retract the gundrill with a slow rotation. (*n* = 4 rpm, *Vf* = 12 ipm)**
- **When the gundrill is rapidly pulled out without rotating, the insert and/or guide pads may come in contact with burrs on the cross holes on the way back, resulting in damages**

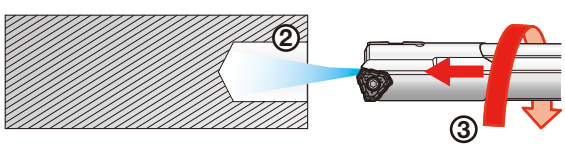
A tailor-made tool for a cross hole distance over 0.630"

DRILLING PROCEDURE ON MACHINING CENTERS AND LATHES

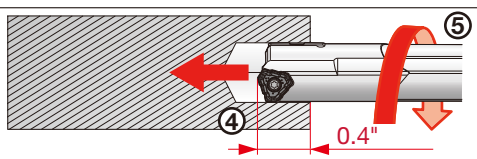
Proceed as instructed below in order to maximize the tool performance safely.



① Drill the guide hole
Hole diameter tolerance: +0.0004" - +0.004"
Hole depth: H = 0.6"
Please use DrillMeister or TDX + EZ sleeve to make a guide hole

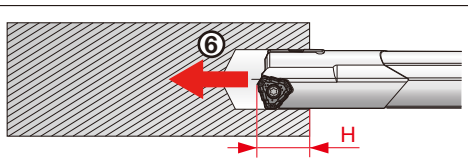


② Start coolant
③ Slowly insert DeepTriDrill into the guide hole
No. of revolution: *n* = 50 - 100 rpm
Feed speed: *Vf* = 4 - 12 ipm
Caution: Do not rotate the drill at machining speed outside the hole

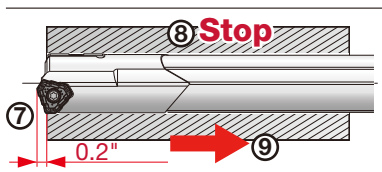


④ Stop the drill at 0.4" depth

⑤ Start rotating at machining speed



⑥ Start feed
At the entrance (H = 0.4" - 0.6")
→ Feed: *f* = 80% of programmed feed
Hole depth: H ≥ 0.6" → Feed: *f* = 100%

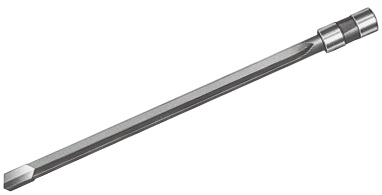


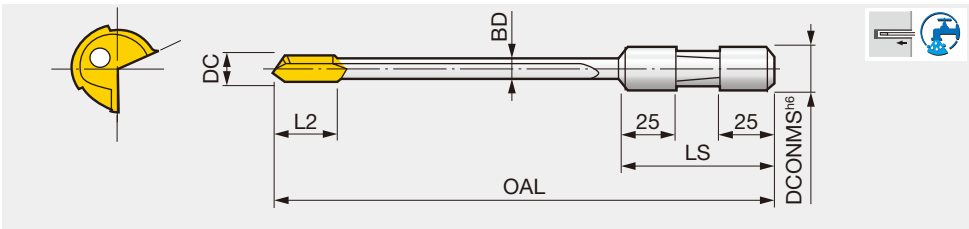
⑦ For through hole
Continue drilling until the drill head passes through the workpiece by 0.2"
⑧ Stop the rotation and coolant
⑨ Return the drill (Head back to the starting position)

GUNDRILL

GunDrill SLJ

Brazed gundrill, tool diameter ø3 - ø12.2 mm





Metric	DC	DCONMS	L2	OAL
SLJ0300L0400NA	3	12.7	15	400
SLJ0300L0600NA	3	12.7	15	600
SLJ0500L0600NA	5	12.7	25	600
SLJ0550L0600NA	5.5	19.05	25	600
SLJ0600L0600NA	6	19.05	25	600
SLJ0700L0600NA	7	19.05	25	600
SLJ0800L0600NA	8	19.05	25	600
SLJ1000L0600NA	10	19.05	30	600
SLJ0500L1000NA	5	12.7	25	1000
SLJ0600L1000NA	6	19.05	25	1000
SLJ0700L1000NA	7	19.05	25	1000
SLJ0800L1000NA	8	19.05	25	1000
SLJ1000L1000NA	10	19.05	30	1000
SLJ0600L1250NA	6	19.05	25	1250
SLJ0610L1250NA	6.1	19.05	25	1250
SLJ0620L1250NA	6.2	19.05	25	1250
SLJ0700L1250NA	7	19.05	25	1250
SLJ0800L1250NA	8	19.05	25	1250
SLJ0810L1250NA	8.1	19.05	25	1250
SLJ0820L1250NA	8.2	19.05	25	1250
SLJ1000L1250NA	10	19.05	30	1250
SLJ1010L1250NA	10.1	19.05	30	1250
SLJ1020L1250NA	10.2	19.05	30	1250
SLJ1200L1250NA	12	19.05	30	1250
SLJ1210L1250NA	12.1	19.05	30	1250
SLJ1220L1250NA	12.2	19.05	30	1250
SLJ0600L1650NA	6	19.05	25	1650
SLJ0610L1650NA	6.1	19.05	25	1650
SLJ0620L1650NA	6.2	19.05	25	1650
SLJ0700L1650NA	7	19.05	25	1650
SLJ0800L1650NA	8	19.05	25	1650
SLJ0810L1650NA	8.1	19.05	25	1650
SLJ0820L1650NA	8.2	19.05	25	1650
SLJ1000L1650NA	10	19.05	30	1650
SLJ1010L1650NA	10.1	19.05	30	1650
SLJ1020L1650NA	10.2	19.05	30	1650
SLJ1200L1650NA	12	19.05	30	1650
SLJ1210L1650NA	12.1	19.05	30	1650
SLJ1220L1650NA	12.2	19.05	30	1650

TUBE DIAMETER

DC	BD
3 - 3.19	2.9
3.2 - 3.39	3.1
3.4 - 3.59	3.3
3.6 - 3.89	3.5
3.9 - 4.09	3.7
4.1 - 4.29	3.9
4.3 - 4.49	4.1
4.5 - 4.89	4.3
4.9 - 5.19	4.7

DC	BD
5.2 - 5.49	5
5.5 - 5.79	5.3
5.8 - 5.99	5.6
6 - 6.19	5.8
6.2 - 6.59	5.9
6.6 - 7.09	6.4
7.1 - 7.59	6.9
7.6 - 8.09	7.4
8.1 - 8.69	7.9

DC	BD
8.7 - 9.19	8.5
9.2 - 9.69	9
9.7 - 10.39	9.5
10.4 - 10.89	10
10.9 - 11.39	10.6
11.4 - 11.99	11.1
12 - 12.2	11.7

STANDARD CUTTING CONDITIONS

ISO	Workpiece material	Heat treatment	Hardness HB	Hardness HRC	Cutting speed *Vc* (sfm)	feed *f* (ipr)
P	Free-cutting carbon steel		160 - 190	(5) - (11)	427	Refer to Fig. 1
	C10C ~ C15 S10C ~ S15C	Cold drawn				
	S30C ~ S50C C30 ~ C50	Cold drawn	200 - 230	(12) - 20	328	
	S35C ~ S50C C30 ~ C50	Hardened and tempered	250 - 300	25 - 32	262	
	Carbon steels		110 ~ 120		427	
	S10C ~ S35C C10 ~ C30	Annealed				
	S10C ~ S50C C10 ~ C50	Annealed	120 ~ 185	~ (9)	394	
	S50C ~ C50 ~	Annealed	170 ~ 200	(5) ~ (13)	328	
	S20C ~ S30C C20 ~ C30	Hardened and tempered	210 ~ 250	(16) ~ 24	295	Refer to Fig. 2
	S30C ~ S55C C30 ~ C55	Hardened and tempered	260 ~ 310	26 ~ 33	230	
	S50C ~ C50 ~	Hardened and tempered	320 ~ 375	34 ~ 40	164	
	S50C ~ C55 ~	Hardened and tempered	380 ~ 440	41 ~ 47	131	
	Alloy steels	Annealed	150 ~ 230	~ (20)	295	Refer to Fig. 2
		Annealed or Hardened and tempered	240 ~ 310	23 ~ 33	230	Refer to Fig. 2
			315 ~ 370	34 ~ 40	164	Refer to Fig. 3
			380 ~ 440	40 ~ 47	131	
			450 ~ 500	48 ~ 51	98	
	Cast steels	Hardened and tempered	140 ~ 180	~ (8)	328	Refer to Fig. 2
		Annealed	190 ~ 240	(11) ~ 22	295	
	Tool steels	Annealed	150 ~ 200	~ (13)	230	Refer to Fig. 3
		Annealed	210 ~ 300	(16) ~ 32	164	
M	Stainless steels Ferritic SUS405, 430 X6Cr17	Annealed	150 ~ 200	~ (13)	230	Refer to Fig. 3
	Austenitic SUS304, 305 X5CrNi18-9	Annealed	160 ~ 220	~ (18)	164	
	Martensitic SUS403, 410 X12Cr13	Annealed Hardened and tempered	160 ~ 220	~ (18)	230	
			300 ~ 350	32 ~ 38	164	
K	Gray cast iron		110 ~ 180		295	Refer to Fig. 4
			190 ~ 220		262	
			220 ~ 260		230	
	Ductile cast iron		120 ~ 170		262	Refer to Fig. 5
			180 ~ 240		213	
			240 ~ 280		180	
			260 ~ 320		131	
	Malleable cast irons		110 ~ 180		295	
			190 ~ 220		262	
			220 ~ 260		230	
N	Cast aluminum alloys Aluminum die cast alloys	Annealed	5000load		591	Refer to Fig. 4
			40 ~ 100			
	Copper alloys	Annealed	120 ~ 160		< 492	Refer to Fig. 4
			160 ~ 205		< 492	Refer to Fig. 5
H	Bearing steels		150 ~ 210		230	Refer to Fig. 3
	Heat-resistant alloys				66	
	High speed steels		210 ~ 285	(16) ~ 30	164	

Fig. 1 Carbon steels

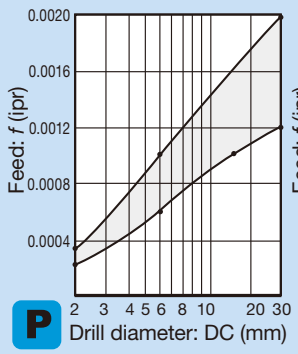
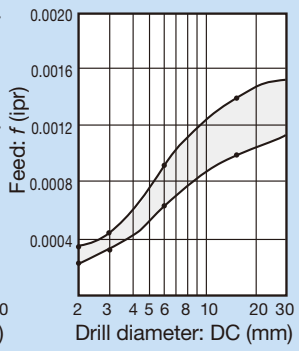
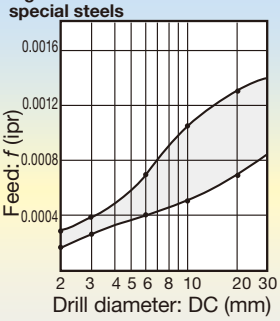


Fig. 2 Alloy steels



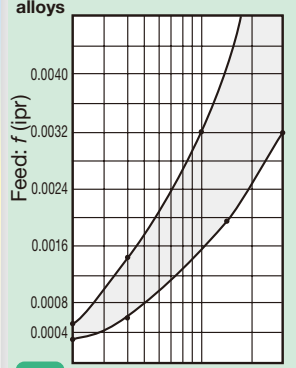
P

Fig. 3 Tool steels and other special steels



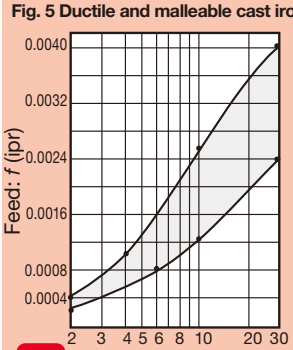
P M H

Fig. 4 Cast irons, aluminum alloys



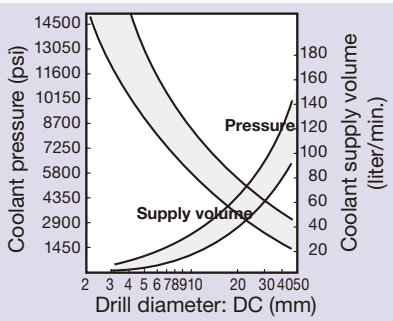
N

Fig. 5 Ductile and malleable cast irons



K

Coolant supply pressure and volume



Guidelines for attainable accuracies

Workpiece material	Surface roughness (µm)	Roundness (µm)	Cylindricity (µm)	Oversizing (µm)
Carbon and alloy steels	6 ~ 25	5 ~ 10	10 ~ 15	- 5 ~ 30
Cast irons	3 ~ 15	3 ~ 5	5 ~ 10	- 5 ~ 15
Aluminum alloys, Copper alloys	0.3 ~ 6	3 ~ 5	5 ~ 10	- 10 ~ 5

Note: Over size values given in the table are based on the drill diameter.

Cutting fluid

A water-insoluble fluid is recommended when machining with gun drills.
When using water soluble fluid, use the fluid for heavy duty cutting in higher concentration.
A water-insoluble fluid must be taken care for Fire prevention

Drill Head Category

Solid drilling - Indexable drill heads -

Applications		STS (Single Tube System)			DTS (Double Tube System)		
		TRI-FINE	FINE-BEAM	UNIDEX	TRI-FINE	FINE-BEAM	UNIDEX
		FNTR	FNBM	KUSTS	FNTR-D	FNBM-D	KUDTS
Solid drill head							
Drill diameter		ø16 mm - ø28 mm (ø0.630" - ø1.102")	ø25 mm - ø65 mm (ø0.984" - ø2.559")	ø38 mm - ø293.99 mm (ø1.496" - ø4.212")	ø18.4 mm - ø28 mm (ø0.724" - ø1.102")	ø25 mm - ø65 mm (ø0.984" - ø2.559")	ø38 mm - ø106.99 mm (ø1.496" - ø4.212")
Thread type	External 4-start thread	○	○	○	○	○	○
	Internal single-start thread	○	○	○	-	-	-
Hole tolerance		IT10	IT10	IT10	IT10	IT10	IT10
Surface finish Ra (μm)		2	2	3	2	2	3
Machine	Deep hole drilling machines	○	○	○	○	○	○
	NC machines	-	-	-	○	○	○
	Lathes	-	-	-	○	○	○
	Machining centers M/C	-	-	-	○	○	○
	Gundrill machines	-	-	-	-	-	-
Workpiece material	P Steel	★★★	★★★	★★★	★★★	★★★	★★★
	M Stainless	★★★	★★★	★★★	★★★	★★★	★★★
	K Cast iron	★★★	★★★	★★★	★★★	★★★	★★★
	N Non-ferrous	★★★	★★★	★★★	★★★	★★★	★★★
	S Superalloys	★★	★★	★★	★★	★★	★★
	H Hard materials (≥40HRC)	★★	★★	★★	★★	★★	★★
Insert type		TOHT	FBH / FBM	NPMX / TPMX (508 / 1123)	TOHT	FBH / FBM	NPMX / TPMX (508 / 1123)
Plus Cartridge and Guide pad +1 mm - +5 mm		-	-	○	-	-	○
Page		J128 - J131	J132 - J133 J135 - J137	J138 - J139 J142 - J143	J129 - J131	J134 - J137	J140 - J143

★★★(Excellent) ◄—► ★(Standard)

Solid drilling - Brazed drill heads -

Applications		STS (Single Tube System)			DTS (Double Tube System)
		MBU	UTE	BTU	ETU
Brazed drilling heads					
Drill diameter		ø8 mm - ø14.79 mm (ø0.315" - ø0.582")	ø12.6 mm - ø20 mm (ø0.496" - ø0.787")	ø12.6 mm - ø65 mm (ø0.496" - ø0.614")	ø18.4 mm - ø65 mm (ø0.724" - ø2.559")
Thread type	External single-start thread	○	-	-	-
	External 2-start thread	-	○*1	○*1	-
	External 4-start thread	-	○*2	○*2	○
	Internal single-start thread	-	-	-	-
Hole tolerance		IT9	IT9	IT9	IT9
Surface finish Ra (μm)		2	2	2	2
Machine	Deep hole drilling machines	○	○	○	○
	NC machines	-	-	-	○
	Lathes	-	-	-	○
	Machining centers M/C	-	-	-	○
	Gundrill machines	-	-	-	-
Workpiece material	P Steel	★★★	★★★	★★★	★★★
	M Stainless	★★★	★★★	★★★	★★★
	K Cast iron	★★★	★★★	★★★	★★★
	N Non-ferrous	★★★	★★★	★★★	★★★
	S Superalloys	★★	★★	★★	★★
	H Hard materials (≥40HRC)	★★	★★	★★	★★
Page		J144, J149	J145, J149	J146 - J147, J149	J148 - J149

*1: UTE & BTU Drill head : ø12.6 mm - ø15.59 mm, External 2-start thread
*2: UTE & BTU Drill head : ø15.6 mm -, External 4-start thread
★★★ (Excellent) ◄—► ★ (Standard)

Drill Tube Category

Drill Tubes

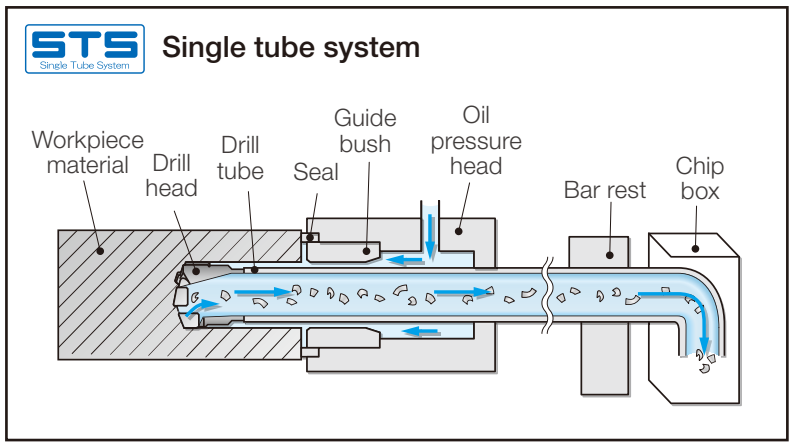
Applications				STS (Single Tube System)				DTS (Double Tube System)	
				UMBB	ST	ST	UB	OT	IT
Drill tubes									
Tube diameter				ø7.1 mm - ø12 mm (ø0.280" - ø0.472")	ø11 mm - ø13 mm (ø0.433" - ø0.512")	ø14 mm - ø274 mm (ø0.551" - ø10.787")	ø12 mm - ø274 mm (ø0.472" - ø10.787")	ø18 mm - ø166 mm (ø0.709" - ø6.535")	ø10 mm - ø130 mm (ø0.394" - ø5.118")
Thread type				Internal single-start thread	Internal 2-start thread	Internal 4-start thread	External single-start thread	Internal 4-start thread	-
Drill Head	Indexable	Solid	FNTR	-	-	○	○	○	○
			FNBM	-	-	○	○	○	○
			KUSTS	-	-	○	○	-	-
			KUDTS	-	-	-	-	○	○
	Brazed	Solid	MBU	○	-	-	-	-	-
			UTE	-	○	○	-	-	-
			BTU	-	○	○	-	-	-
			ETU	-	-	-	-	○	○
Drill diameter				ø8 mm - ø14.79 mm (ø0.315" - ø0.582")	ø12.6 mm - ø15.59 mm (ø0.496" - ø0.614")	ø15.6 mm - ø291.99 mm (ø0.614" - ø11.496")	ø14.5 mm - ø293.99 mm (ø0.571" - ø11.574")	ø18.4 mm - ø183.99 mm (ø0.724" - ø7.244")	ø18.4 mm - ø183.99 mm (ø0.724" - ø7.244")
Solid				○	○	○	○	○	○
Counter				-	-	○*1	○*1	○*1	○
Trepanning				-	-	○*2	○*2	-	-
Page				J150	J150	J150	J152	J154	J154

*1. Counter : ST / UB / OT Tube - Drill diameter ø25 mm or more
*2. Trepanning : ST / UB Tube - Drill diameter ø100 mm or more

Single Tube System (STS) and Double Tube System (DTS)

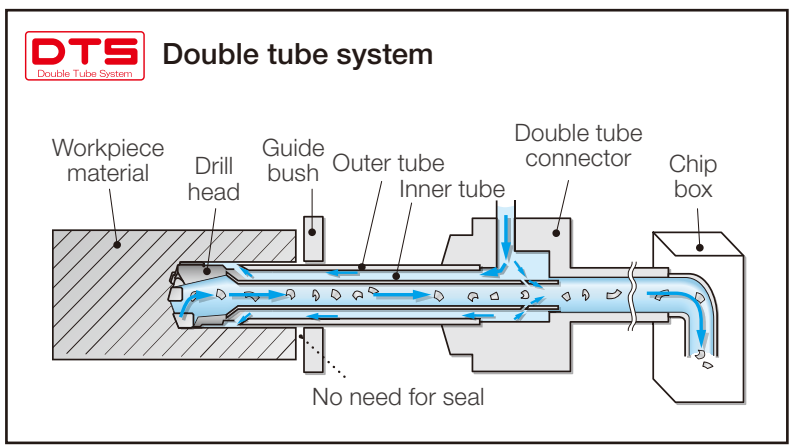
Single Tube System (STS)

The STS may also be referred to as the BTA system in the deep hole drilling process. A large volume of coolant is pumped under high pressure to the cutting area in the workpiece. Chips are then forced out through the drill tube at the back and they do not touch workpiece allowing super surface finish. STS is a very good method to obtain holes of high productivity and high accuracy by using a dedicated drilling machine and a sealing with the workpiece.



Double Tube System (DTS)

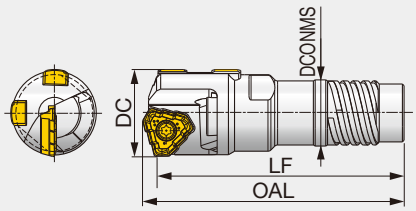
The DTS is characterized by its two tube construction and is therefore known as the double tube system. A sealing system and pressure head, which is required in the Single Tube System (STS) is not necessary for the DTS and it is therefore suitable for conventional general purpose machines such as lathes or machining centers.
In general, because of less efficient chip evacuation than the STS the recommended max drilling depth is 1000mm. However, the unique DTC-R tube connector that is capable of supplying high pressure coolant can successfully achieve drilling depths of up to 2000 mm.



TRI-FINE

TRI-FINE STS-EX

Indexable head with external 4-start thread for single tube system



Metric	DC		Drill tube		OAL	LF	DCONMS	Insert	Guide pad
	(in)	(mm)	Designation	Dia. (mm)					
FNTR-0097S-16.00	0.630	16	ST0097	14	57	55	12.6	TOHT080305R	GP06-075
FNTR-0098S-17.00	0.669	17	ST0098	15	57	55	13.6	TOHT080305R	GP06-075
FNTR-0000S-20.00	0.787	20	ST0000	17	59	56	15.5	TOHT090305R	GP06-085
FNTR-00S-21.00	0.827	21	ST00	18	63	60	16	TOHT100305R	GP06-085
FNTR-01S-22.00	0.866	22	ST01	20	69	65.5	18	TOHT110405R	GP06-100
FNTR-01S-24.00	0.945	24	ST01	20	69	65.5	18	TOHT110405R	GP06-100
FNTR-02S-25.00	0.984	25	ST02	22	69	65.5	19.5	TOHT110405R	GP06-100
FNTR-02S-25.40	1.000	25.4	ST02	22	69	65.5	19.5	TOHT120405R	GP06
FNTR-02S-26.00	1.024	26	ST02	22	69	65.5	19.5	TOHT120405R	GP06
FNTR-03S-28.00	1.102	28	ST03	24	69	65.5	21	TOHT120405R	GP06

INSERT SPARE PARTS

Designation	Screw	Wrench
TOHT080305R	CSTB-2.5S	T-8F
TOHT080305R	CSTB-2.5S	T-8F
TOHT090305R	CSTB-2.5S	T-8F
TOHT100305R	CSTB-3S	T-9F
TOHT110405R	CSTB-3.5H	T-15F
TOHT110405R	CSTB-3.5H	T-15F
TOHT110405R	CSTB-3.5H	T-15F
TOHT120405R	CSTB-4S	T-15F
TOHT120405R	CSTB-4S	T-15F
TOHT120405R	CSTB-4S	T-15F

GUIDE PAD SPARE PARTS

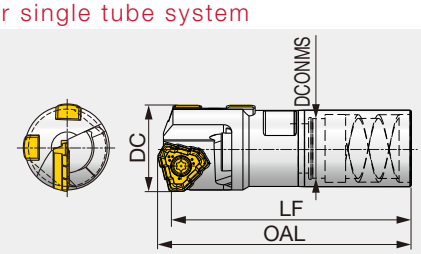
Designation	Screw	Wrench
GP06-075	CSTB-2.2S	T-7F
GP06-075	CSTB-2.2S	T-7F
GP06-085	CSTB-2.2S	T-7F
GP06-085	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F

Recommended clamping torque (N·m): CSTB-2.2S=1, CSTB-2.5S=1.3, CSTB-3S=2.3, CSTB-3.5H=3, CSTB-4S=3

TRI-FINE

TRI-FINE STS-IN

Indexable head with internal single-start thread for single tube system



Metric	DC		Drill tube		OAL	LF	DCONMS	Insert	Guide pad
	(in)	(mm)	Designation	Dia. (mm)					
FNTR-13N-1-16.00	0.630	16	UB13-1	13	55.5	53.5	10.8	TOHT080305R	GP06-075
FNTR-14N-2-18.00	0.709	18	UB14-2	14	55.5	53.5	12.1	TOHT080305R	GP06-075
FNTR-18N-20.00	0.787	20	UB18	18	61	58	14.5	TOHT090305R	GP06-085
FNTR-20N-22.00	0.866	22	UB20	20	63.5	60	16	TOHT110405R	GP06-100
FNTR-20N-24.00	0.945	24	UB20	20	63.5	60	16	TOHT110405R	GP06-100
FNTR-22N-25.00	0.984	25	UB22	22	63.5	60	17	TOHT110405R	GP06-100
FNTR-22N-26.00	1.024	26	UB22	22	68.5	65	17	TOHT120405R	GP06
FNTR-24N-28.00	1.102	28	UB24	24	68.5	65	19	TOHT120405R	GP06

INSERT SPARE PARTS

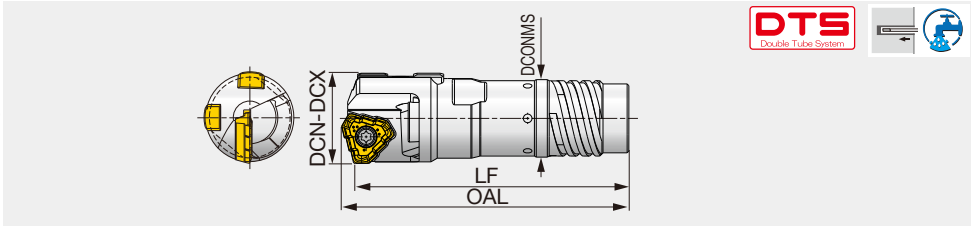
Designation	Screw	Wrench
TOHT080305R	CSTB-2.5S	T-8F
TOHT080305R	CSTB-2.5S	T-8F
TOHT090305R	CSTB-2.5S	T-8F
TOHT110405R	CSTB-3.5H	T-15F
TOHT110405R	CSTB-3.5H	T-15F
TOHT110405R	CSTB-3.5H	T-15F
TOHT120405R	CSTB-4S	T-15F
TOHT120405R	CSTB-4S	T-15F

GUIDE PAD SPARE PARTS

Designation	Screw	Wrench
GP06-075	CSTB-2.2S	T-7F
GP06-075	CSTB-2.2S	T-7F
GP06-085	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F

Recommended clamping torque (N·m): CSTB-2.2S=1, CSTB-2.5S, CSTB-3S=2.3, CSTB-3.5H=3, CSTB-4S=3

Indexable head with external 4-start thread for double tube system



Metric	DCN		DCX		Outer tube		OAL	LF	DCONMS	Insert	Guide pad
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)					
FNTR-00D-xx.xx	0.725	18.41	0.787	20	OT00	18	62	59	16	TOHT090305R	GP06-085
FNTR-01D-xx.xx	0.788	20.01	0.827	21	OT01	19.5	66.5	63.5	18	TOHT100305R	GP06-085
FNTR-01D-xx.xx	0.827	21.01	0.858	21.8	OT01	19.5	66.5	63.5	18	TOHT100305R	GP06-100
FNTR-02D-xx.xx	0.859	21.81	0.866	21.99	OT02	21.5	66.5	63.5	19.5	TOHT100305R	GP06-100
FNTR-02D-xx.xx	0.866	22	0.949	24.1	OT02	21.5	69	65.5	19.5	TOHT110405R	GP06-100
FNTR-03D-xx.xx	0.949	24.11	0.984	25	OT03	23.5	69	65.5	21	TOHT110405R	GP06-100
FNTR-03D-xx.xx	0.985	25.01	1.039	26.4	OT03	23.5	71	67.5	21	TOHT120405R	GP06
FNTR-04D-xx.xx	1.040	26.41	1.102	28	OT04	26	74	70.5	23.5	TOHT120405R	GP06

e.g. Designation for tool diameter ø20 mm : FNTR-00D-20.00

INSERT SPARE PARTS

Designation	Screw	Wrench
TOHT090305R	CSTB-2.5S	T-8F
TOHT100305R	CSTB-3S	T-9F
TOHT100305R	CSTB-3S	T-9F
TOHT100305R	CSTB-3S	T-9F
TOHT110405R	CSTB-3.5H	T-15F
TOHT110405R	CSTB-3.5H	T-15F
TOHT120405R	CSTB-4S	T-15F
TOHT120405R	CSTB-4S	T-15F

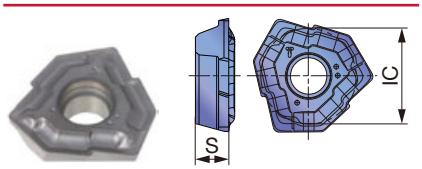
GUIDE PAD SPARE PARTS

Designation	Screw	Wrench
GP06-085	CSTB-2.2S	T-7F
GP06-085	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06-100	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F
GP06	CSTB-2.2S	T-7F

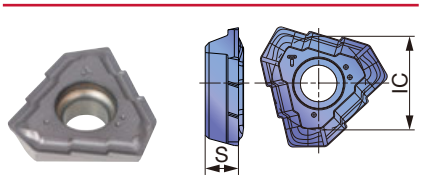
Recommended clamping torque (N·m): CSTB-2.2S=1, CSTB-2.5S, CSTB-3S=2.3, CSTB-3.5H=3, CSTB-4S=3

INSERT

TOHT-NDJ (070..., 080...)



TOHT-NDJ (090... - 120...)



		Coated
		AH725
P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

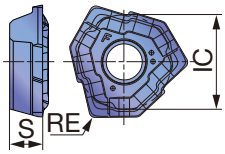
Designation	DCN (in)	DCX (in)	IC (in)	S (in)
TOHT080305R-NDJ	0.630	0.709	0.337	0.110
TOHT090305R-NDJ	0.709	0.787	0.328	0.118
TOHT100305R-NDJ	0.788	0.866	0.363	0.130
TOHT110405R-NDJ	0.866	0.984	0.409	0.150
TOHT120405R-NDJ	0.985	1.102	0.456	0.169

● : Line up
Package quantity = 10 pcs.

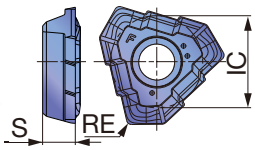
Reference pages: Inserts → J130 - J131, Guide pads → J131,
Drill tube (STS) → J150, Drill tube (DTS) → J154

INSERT

TOHT-NDL (07..., 08...)



TOHT-NDL (09... - 12...)



P	Steel	★
M	Stainless	★
K	Cast iron	★
N	Non-ferrous	★
S	Superalloys	★
H	Hard materials	★

★ : First choice
☆ : Second choice

Designation	DCN (in)	DCX (in)	Coated AH725	IC (in)	S (in)	RE (in)
TOHT070304R-NDL	0.551	0.630	●	0.303	0.091	0.016
TOHT080305R-NDL	0.630	0.709	●	0.337	0.110	0.020
TOHT090305R-NDL	0.709	0.787	●	0.328	0.118	0.020
TOHT100305R-NDL	0.788	0.866	●	0.363	0.130	0.020
TOHT110405R-NDL	0.866	0.984	●	0.409	0.150	0.020
TOHT120405R-NDL	0.985	1.102	●	0.456	0.169	0.020

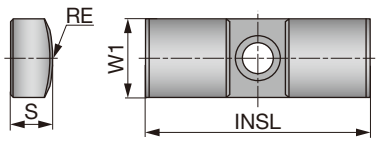
● : Line up
Package quantity = 10 pcs.

ISO classifications for Insert grades

	Grade	ISO area						
		10	15	20	25	30	35	40
P	AH725		■	■	■	■		
M	AH725			■	■	■		
K	AH725		■	■	■			
N	AH725		■	■	■			
S	AH725		■	■	■			
H	AH725			■	■	■		

GUIDE PAD

GP06



P	Steel	☆	☆	★	☆	★ : First choice
M	Stainless	☆	☆	★	☆	☆ : Second choice
K	Cast iron	☆	☆	★	☆	
N	Non-ferrous	☆	☆	★	☆	
S	Superalloys	☆	☆	★	☆	
H	Hard materials	☆	☆	★	☆	

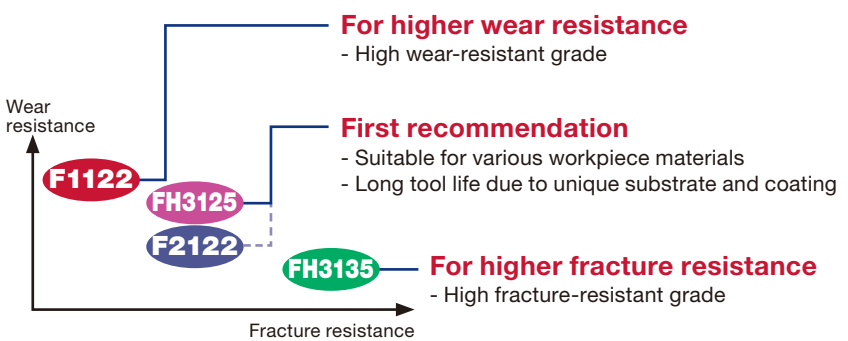
Designation	DCN (in)	DCX (in)	Coated				W1 (in)	INSL (in)	S (in)	RE (in)
			F1122	F2122	FH3125	FH3135				
GP06-075	0.630	0.709	●	▲			0.236	0.787	0.118	0.295
GP06-20-075-DC	0.630	0.709			●	●	0.236	0.787	0.118	0.295
GP06-085	0.709	0.827	●	▲			0.236	0.787	0.118	0.335
GP06-20-085-DC	0.709	0.827			●	●	0.236	0.787	0.118	0.335
GP06-100	0.827	0.984	●	▲			0.236	0.787	0.118	0.394
GP06-20-100-DC	0.827	0.984			●	●	0.236	0.787	0.118	0.394
GP06	0.985	1.299	●	▲			0.236	0.787	0.118	0.472
GP06-20-120-DC	0.985	1.299			●	●	0.236	0.787	0.118	0.472

● : Line up
▲ : To be discontinued
Package quantity = 5 pcs.

REPLACING GUIDE PADS

Guide pads are subject to wear, like inserts

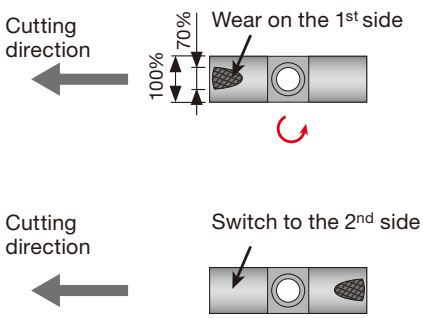
- The guide pad has two sides.
- Each guide pad can be used on two sides. When the first corner wears out to 70% of the width, reverse the guide pad to use the second side.
- Replace with a new guide pad when the second side wears out.



For higher wear resistance
- High wear-resistant grade

First recommendation
- Suitable for various workpiece materials
- Long tool life due to unique substrate and coating

For higher fracture resistance
- High fracture-resistant grade

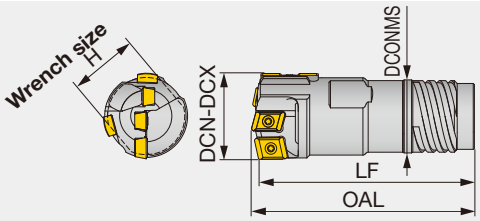


GP	06-075	F2122
Series	Size	Grade

FINE-BEAM

FINE BEAM STS-EX

Direct mount indexable head with external 4-start thread for single tube system (STS), tool diameter: ø25 - ø65 mm (0.984" - 2.559")



STS Single Tube System

Metric	DCN		DCX		Drill tube		Drill head			
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)	OAL	LF	DCONMS	H
FNBM-02S-xx.xx	0.984	25	1.039	26.4	ST02	22	73	70	19.5	19
FNBM-03S-xx.xx	1.040	26.41	1.130	28.7	ST03	24	73	70	21	21
FNBM-04S-xx.xx	1.130	28.71	1.220	31	ST04	26	78	75	23.5	24
FNBM-05S-xx.xx	1.221	31.01	1.311	33.3	ST05	28	78	75	25.5	26
FNBM-06S-xx.xx	1.311	33.31	1.425	36.2	ST06	30	83	80	28	28
FNBM-07S-xx.xx	1.426	36.21	1.559	39.6	ST07	33	93	90	30	30
FNBM-08S-xx.xx	1.559	39.61	1.693	43	ST08	36	99	95	33	32
FNBM-09S-xx.xx	1.693	43.01	1.850	47	ST09	39	104	100	36	36
FNBM-10S-xx.xx	1.851	47.01	2.035	51.7	ST10	43	104	100	39	38
FNBM-11S-xx.xx	2.036	51.71	2.213	56.2	ST11	47	114	110	43	46
FNBM-12S-xx.xx	2.213	56.21	2.559	65	ST12	51	120	115	47.5	50
FNBM-13S-xx.xx	2.386	60.61	2.559	65	ST13	56	120	115	51	54

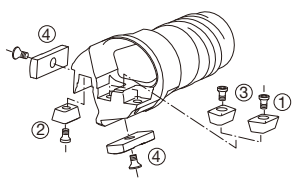
e.g. Designation for tool diameter ø30 mm : FNBM-04S-30.00

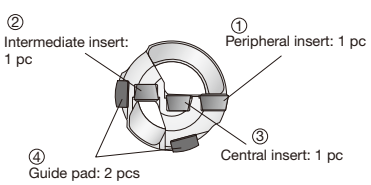
SPARE PARTS

Tool diameter DCN - DCX (mm)	Insert									Guide pad		
	①Peripheral			②Intermediate			③Central			④		
	Insert	Screw	Wrench	Insert	Screw	Wrench	Insert	Screw	Wrench	Guide pad	Screw	Wrench
25.00 - 28.00	FBH060304R-G-P	CSTB-2.2	T-7F	FBM060304R-G-I	CSTB-2.2	T-7F	FBM060308L-G-C	CSTB-2.2	T-7F	GP06	CSTB-2.2S	T-7F
	FBH060308R-HF-P	CSTB-2.2	T-7F	FBM060304R-HF-I	CSTB-2.2	T-7F	FBM060308L-HF-C	CSTB-2.2	T-7F	GP06	CSTB-2.2S	T-7F
28.01 - 29.99	FBH060304R-G-P	CSTB-2.2	T-7F	FBM060304R-G-I	CSTB-2.2	T-7F	FBM070408L-G-C	SR14-560-HG	T-8F	GP06	CSTB-2.2S	T-7F
	FBH060308R-HF-P	CSTB-2.2	T-7F	FBM060304R-HF-I	CSTB-2.2	T-7F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP06	CSTB-2.2S	T-7F
30.00 - 35.00	FBH080404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM070408L-G-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
35.01 - 38.00	FBH080404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
38.01 - 39.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
39.01 - 41.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
41.01 - 44.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
44.01 - 45.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
45.01 - 47.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
47.01 - 51.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
51.01 - 54.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
54.01 - 57.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
57.01 - 60.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
60.01 - 64.00	FBH130404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
64.01 - 65.00	FBH130404R-G-P	SR14-560-HG	T-8F	FBM130404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM130404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F

Please see the page J135 - J137 for the grades of inserts and guide pads.
Drill heads come with clamping screws and wrenches but do not include inserts and guide pads.
Please purchase inserts and guide pads separately.
Recommended clamping torque (N·m): CSTB-2.2/CSTB-2.2S = 1, SR14-560-HG = 1.2, CSTB-3S = 2.3, CSTB-3.5 = 3.5

G type chipbreaker	HF type chipbreaker
FBH060304R-G-P	FBH060308R-HF-P
FBH080404R-G-P	FBH080408R-HF-P
FBH090404R-G-P	FBH090408R-HF-P
FBH110404R-G-P	FBH110408R-HF-P
FBH130404R-G-P	FBH130408R-HF-P
FBM060304R-G-I	FBM060304R-HF-I
FBM070404R-G-I	FBM070404R-HF-I
FBM080404R-G-I	FBM080404R-HF-I
FBM100404R-G-I	FBM100404R-HF-I
FBM130404R-G-I	FBM130404R-HF-I
FBM060308L-G-C	FBM060308L-HF-C
FBM070408L-G-C	FBM070408L-HF-C
FBM080408L-G-C	FBM080408L-HF-C
FBM100408L-G-C	FBM100408L-HF-C
FBM130408L-G-C	FBM130408L-HF-C





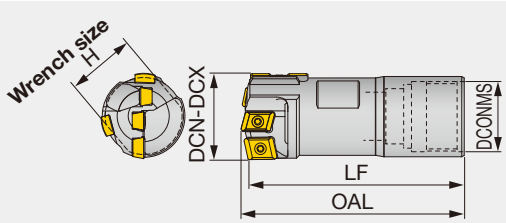
The designation of insert with G type and HF type is different, even in the same shape.
Please refer to the table on the left to check the insert designation. Both inserts can be mounted on the drill head.

Reference pages: Inserts → J135 - J136, Guide pads → J137, Drill tube (STS) → J150

FINE-BEAM

FINE BEAM STS-IN

Direct mount indexable head with internal single-start thread for single tube system (STS), tool diameter: ø25 - ø65 mm (0.984" - 2.559")



Metric	DCN		DCX		Drill tube		Drill head			
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)	OAL	LF	DCONMS	H
FNBM-22N-xx.xx	0.984	25	1.063	26.99	UB22	22	73	70	20	19
FNBM-24N-xx.xx	1.063	27	1.142	29	UB24	24	73	70	22	21
FNBM-24N-xx.xx	1.142	29.01	1.181	29.99	UB24	24	73	70	22	24
FNBM-26N-xx.xx	1.181	30	1.259	31.99	UB26	26	78	75	24	24
FNBM-28N-xx.xx	1.260	32	1.338	33.99	UB28	28	78	75	26	26
FNBM-30N-xx.xx	1.339	34	1.456	36.99	UB30	30	93	90	27	28
FNBM-33N-xx.xx	1.457	37	1.574	39.99	UB33	33	98	95	30	30
FNBM-36N-xx.xx	1.575	40	1.732	43.99	UB36	36	104	100	33	32
FNBM-39N-xx.xx	1.732	44	1.850	46.99	UB39	39	109	105	37	36
FNBM-43N-xx.xx	1.850	47	2.047	51.99	UB43	43	109	105	41	38
FNBM-47N-xx.xx	2.047	52	2.244	56.99	UB47	47	114	110	44	46
FNBM-51N-xx.xx	2.244	57	2.401	60.99	UB51	51	120	115	49	46
FNBM-56N-xx.xx	2.402	61	2.559	65	UB56	56	120	115	53	54

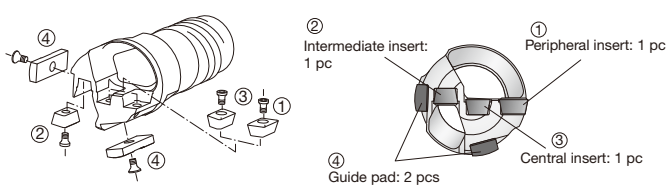
e.g. Designation for tool diameter ø30 mm : FNBM-26N-30.00

SPARE PARTS

Tool diameter DCN - DCX (mm)	Insert									Guide pad		
	①Peripheral			②Intermediate			③Central			④		
	Insert	Screw	Wrench	Insert	Screw	Wrench	Insert	Screw	Wrench	Guide pad	Screw	Wrench
25.00 - 28.00	FBH060304R-G-P	CSTB-2.2	T-7F	FBM060304R-G-I	CSTB-2.2	T-7F	FBM060308L-G-C	CSTB-2.2	T-7F	GP06	CSTB-2.2S	T-7F
	FBH060308R-HF-P	CSTB-2.2	T-7F	FBM060304R-HF-I	CSTB-2.2	T-7F	FBM060308L-HF-C	CSTB-2.2	T-7F	GP06	CSTB-2.2S	T-7F
28.01 - 29.99	FBH060304R-G-P	CSTB-2.2	T-7F	FBM060304R-G-I	CSTB-2.2	T-7F	FBM070408L-G-C	SR14-560-HG	T-8F	GP06	CSTB-2.2S	T-7F
	FBH060308R-HF-P	CSTB-2.2	T-7F	FBM060304R-HF-I	CSTB-2.2	T-7F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP06	CSTB-2.2S	T-7F
30.00 - 35.00	FBH080404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM070408L-G-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
35.01 - 38.00	FBH080404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
38.01 - 39.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
39.01 - 41.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
41.01 - 44.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
44.01 - 45.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
45.01 - 47.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
47.01 - 51.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
51.01 - 54.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
54.01 - 57.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
57.01 - 60.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
60.01 - 64.00	FBH130404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
64.01 - 65.00	FBH130404R-G-P	SR14-560-HG	T-8F	FBM130404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM130404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F

G type chipbreaker	HF type chipbreaker
FBH060304R-G-P	FBH060308R-HF-P
FBH080404R-G-P	FBH080408R-HF-P
FBH090404R-G-P	FBH090408R-HF-P
FBH110404R-G-P	FBH110408R-HF-P
FBH130404R-G-P	FBH130408R-HF-P
FBM060304R-G-I	FBM060304R-HF-I
FBM070404R-G-I	FBM070404R-HF-I
FBM080404R-G-I	FBM080404R-HF-I
FBM100404R-G-I	FBM100404R-HF-I
FBM130404R-G-I	FBM130404R-HF-I
FBM060308L-G-C	FBM060308L-HF-C
FBM070408L-G-C	FBM070408L-HF-C
FBM080408L-G-C	FBM080408L-HF-C
FBM100408L-G-C	FBM100408L-HF-C
FBM130408L-G-C	FBM130408L-HF-C

Please see the page J135 - J137 for the grades of inserts and guide pads.
Drill heads come with clamping screws and wrenches but do not include inserts and guide pads.
Please purchase inserts and guide pads separately.
Recommended clamping torque (N·m): CSTB-2.2/CSTB-2.2S = 1, SR14-560-HG = 1.2, CSTB-3S = 2.3, CSTB-3.5 = 3.5



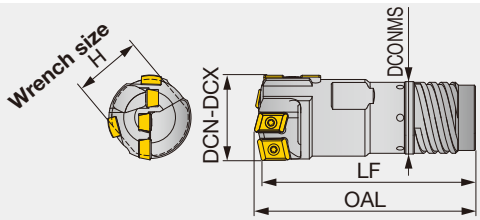
The designation of insert with G type and HF type is different, even in the same shape.
Please refer to the table on the left to check the insert designation. Both inserts can be mounted on the drill head.

Reference pages: Inserts → J135 - J136, Guide pads → J137, Drill tube (STS) → J150

FINE-BEAM

FINE BEAM DTS

Direct mount indexable head with external 4-start thread for double tube system (DTS), tool diameter: ø25 - ø65 mm (0.984" - 2.559")



DTS Double Tube System

Metric	DCN		DCX		Outer tube		Drill head			
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)	OAL	LF	DCONMS	H
FNBM-03D-xx.xx	0.984	25	1.039	26.4	OT03	23.5	73	70	21	19
FNBM-04D-xx.xx	1.040	26.41	1.130	28.7	OT04	26	78	75	23.5	21
FNBM-05D-xx.xx	1.130	28.71	1.220	31	OT05	28	78	75	25.5	24
FNBM-06D-xx.xx	1.221	31.01	1.311	33.3	OT06	30.5	83	80	28	26
FNBM-07D-xx.xx	1.311	33.31	1.425	36.2	OT07	33	93	90	30	28
FNBM-08D-xx.xx	1.426	36.21	1.559	39.6	OT08	35.5	99	95	33	30
FNBM-09D-xx.xx	1.559	39.61	1.693	43	OT09	39	104	100	36	32
FNBM-10D-xx.xx	1.693	43.01	1.850	47	OT10	42.5	104	100	39	36
FNBM-11D-xx.xx	1.851	47.01	2.035	51.7	OT11	46.5	114	110	43	38
FNBM-12D-xx.xx	2.036	51.71	2.213	56.2	OT12	51	120	115	47.5	46
FNBM-13D-xx.xx	2.213	56.21	2.386	60.6	OT13	55.5	120	115	51	50
FNBM-13D-xx.xx	2.386	60.61	2.559	65	OT13	55.5	120	115	51	54

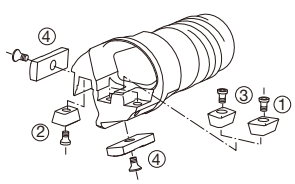
e.g. Designation for tool diameter ø30 mm : FNBM-05D-30.00

SPARE PARTS

Tool diameter DCN - DCX (mm)	Insert									Guide pad		
	①Peripheral			②Intermediate			③Central			④		
	Insert	Screw	Wrench	Insert	Screw	Wrench	Insert	Screw	Wrench	Guide pad	Screw	Wrench
25.00 - 28.00	FBH060304R-G-P	CSTB-2.2	T-7F	FBM060304R-G-I	CSTB-2.2	T-7F	FBM060308L-G-C	CSTB-2.2	T-7F	GP06	CSTB-2.2S	T-7F
	FBH060308R-HF-P	CSTB-2.2	T-7F	FBM060304R-HF-I	CSTB-2.2	T-7F	FBM060308L-HF-C	CSTB-2.2	T-7F	GP06	CSTB-2.2S	T-7F
28.01 - 29.99	FBH060304R-G-P	CSTB-2.2	T-7F	FBM060304R-G-I	CSTB-2.2	T-7F	FBM070408L-G-C	SR14-560-HG	T-8F	GP06	CSTB-2.2S	T-7F
	FBH060308R-HF-P	CSTB-2.2	T-7F	FBM060304R-HF-I	CSTB-2.2	T-7F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP06	CSTB-2.2S	T-7F
30.00 - 35.00	FBH080404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM070408L-G-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM070408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
35.01 - 38.00	FBH080404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH080408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
38.01 - 39.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP07	CSTB-3S	T-9F
39.01 - 41.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM070404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM070404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
41.01 - 44.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM080408L-G-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM080408L-HF-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
44.01 - 45.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP08	CSTB-3S	T-9F
45.01 - 47.00	FBH090404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
	FBH090408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
47.01 - 51.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM080404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM080404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
51.01 - 54.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM100408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM100408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
54.01 - 57.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP10S	CSTB-3.5	T-15F
57.01 - 60.00	FBH110404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
	FBH110408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
60.01 - 64.00	FBH130404R-G-P	SR14-560-HG	T-8F	FBM100404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM100404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
64.01 - 65.00	FBH130404R-G-P	SR14-560-HG	T-8F	FBM130404R-G-I	SR14-560-HG	T-8F	FBM130408L-G-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F
	FBH130408R-HF-P	SR14-560-HG	T-8F	FBM130404R-HF-I	SR14-560-HG	T-8F	FBM130408L-HF-C	SR14-560-HG	T-8F	GP12	CSTB-3.5	T-15F

G type chipbreaker	HF type chipbreaker
FBH060304R-G-P	FBH060308R-HF-P
FBH080404R-G-P	FBH080408R-HF-P
FBH090404R-G-P	FBH090408R-HF-P
FBH110404R-G-P	FBH110408R-HF-P
FBH130404R-G-P	FBH130408R-HF-P
FBM060304R-G-I	FBM060304R-HF-I
FBM070404R-G-I	FBM070404R-HF-I
FBM080404R-G-I	FBM080404R-HF-I
FBM100404R-G-I	FBM100404R-HF-I
FBM130404R-G-I	FBM130404R-HF-I
FBM060308L-G-C	FBM060308L-HF-C
FBM070408L-G-C	FBM070408L-HF-C
FBM080408L-G-C	FBM080408L-HF-C
FBM100408L-G-C	FBM100408L-HF-C
FBM130408L-G-C	FBM130408L-HF-C

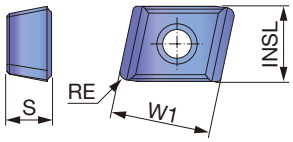
Please see the page J135 - J137 for the grades of inserts and guide pads.
Drill heads come with clamping screws and wrenches but do not include inserts and guide pads.
Please purchase inserts and guide pads separately.
Recommended clamping torque (N·m): CSTB-2.2/CSTB-2.2S = 1, SR14-560-HG = 1.2, CSTB-3S = 2.3, CSTB-3.5 = 3.5



The designation of insert with G type and HF type is different, even in the same shape.
Please refer to the table on the left to check the insert designation. Both inserts can be mounted on the drill head.

Reference pages: Inserts → J135 - J136, Guide pads → J137, Drill tube (DTS) → J154

FBM-C (Central insert)



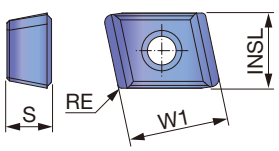
P	Steel	★	☆
M	Stainless	★	☆
K	Cast iron	★	☆
N	Non-ferrous	★	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

★ : First choice
☆ : Second choice

Designation	INSL (in)	W1 (in)	Coated AH725	Coated AH8015	S (in)	DCN (in)	DCX (in)	RE (in)
FBM060308L-G-C	0.217	0.315	●		0.118	0.984	1.102	0.031
FBM060308L-HF-C	0.217	0.315	●	●	0.118	0.984	1.102	0.031
FBM070408L-G-C	0.256	0.394	●	●	0.157	1.106	1.378	0.031
FBM070408L-HF-C	0.256	0.394	●	●	0.157	1.106	1.378	0.031
FBM080408L-G-C	0.315	0.394	●	●	0.157	1.378	1.732	0.031
FBM080408L-HF-C	0.315	0.394	●	●	0.157	1.378	1.732	0.031
FBM100408L-G-C	0.374	0.394	●		0.157	1.733	2.126	0.031
FBM100408L-HF-C	0.374	0.394	●	●	0.157	1.733	2.126	0.031
FBM130408L-G-C	0.492	0.394	●		0.157	2.126	2.559	0.031
FBM130408L-HF-C	0.492	0.394	●	●	0.157	2.126	2.559	0.031

● : Line-up

FBM-I (Intermediate insert)



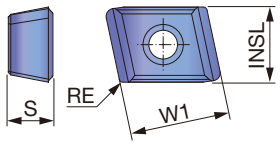
P	Steel	★	☆
M	Stainless	★	☆
K	Cast iron	★	☆
N	Non-ferrous	★	☆
S	Superalloys	★	☆
H	Hard materials	★	☆

★ : First choice
☆ : Second choice

Designation	INSL (in)	W1 (in)	Coated AH725	Coated AH8015	S (in)	DCN (in)	DCX (in)	RE (in)
FBM060304R-G-I	0.217	0.315	●	●	0.118	0.984	1.181	0.016
FBM060304R-HF-I	0.217	0.315	●	●	0.118	0.984	1.181	0.016
FBM070404R-G-I	0.256	0.394	●	●	0.157	1.181	1.614	0.016
FBM070404R-HF-I	0.256	0.394	●	●	0.157	1.181	1.614	0.016
FBM080404R-G-I	0.315	0.394	●		0.157	1.615	2.008	0.016
FBM080404R-HF-I	0.315	0.394	●	●	0.157	1.615	2.008	0.016
FBM100404R-G-I	0.374	0.394	●		0.157	2.008	2.520	0.016
FBM100404R-HF-I	0.374	0.394	●	●	0.157	2.008	2.520	0.016
FBM130404R-G-I	0.492	0.394	●		0.157	2.520	2.559	0.016
FBM130404R-HF-I	0.492	0.394	●	●	0.157	2.520	2.559	0.016

● : Line-up

FBH-P (Peripheral insert)



P	Steel	★	☆	☆	☆
M	Stainless	★	☆	☆	☆
K	Cast iron	★	☆	☆	☆
N	Non-ferrous	★	☆	☆	☆
S	Superalloys	★	☆	☆	☆
H	Hard materials	★	☆	☆	☆

★ : First choice
☆ : Second choice

Designation	INSL (in)	W1 (in)	Coated				S (in)	DCN (in)	DCX (in)	RE (in)
			AH725	UC3120	AH8015	AH3135				
FBH060304R-G-P	0.236	0.315	●	●			0.118	0.984	1.181	0.016
FBH060308R-G-P	0.236	0.315	●		●	●	0.118	1.103	1.181	0.031
FBH060308R-HF-P	0.236	0.315	●		●		0.118	0.984	1.181	0.031
FBH080404R-G-P	0.295	0.394	●	●			0.157	1.181	1.496	0.016
FBH080408R-G-P	0.295	0.394	●		●	●	0.157	1.181	1.496	0.031
FBH080408R-HF-P	0.295	0.394	●		●		0.157	1.181	1.496	0.031
FBH090404R-G-P	0.354	0.394	●	●			0.157	1.496	1.850	0.016
FBH090408R-G-P	0.354	0.394	●		●	●	0.157	1.496	1.575	0.031
FBH090408R-HF-P	0.354	0.394	●		●		0.157	1.496	1.850	0.031
FBH110404R-G-P	0.433	0.394	●				0.157	1.851	2.362	0.016
FBH110408R-HF-P	0.433	0.394	●		●		0.157	1.851	2.362	0.031
FBH130404R-G-P	0.512	0.394	●				0.157	2.363	2.559	0.016
FBH130408R-HF-P	0.512	0.394	●		●		0.157	2.363	2.559	0.031

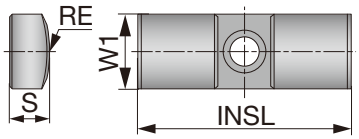
● : Line-up

ISO classifications for Insert grades

	Grade	(Former name)	ISO area							
			5	10	15	20	25	30	35	40
P	AH8015	-			■	■	■	■	■	
	AH725	(UC2220)			■	■	■	■		
M	AH8015	-		■	■	■	■	■		
	AH725	(UC2220)				■	■	■		
K	AH8015	-			■	■	■			
	AH725	(UC2220)			■	■	■			
N	AH8015	-			■	■	■			
	AH725	(UC2220)			■	■	■			
S	AH8015	-			■	■	■			
	AH725	(UC2220)			■	■	■			

GUIDE PAD

GP06, 07, 08, 10S, 12



P	Steel	☆	☆	★	☆	
M	Stainless	☆	☆	★	☆	
K	Cast iron	☆	☆	★	☆	
N	Non-ferrous	☆	☆	★	☆	
S	Superalloys	☆	☆	★	☆	
H	Hard materials	☆	☆	★	☆	

★ : First choice
☆ : Second choice

Designation	DCN (in)	DCX (in)	Coated				W1 (in)	INSL (in)	S (in)	RE (in)
			F1122	F2122	FH3125	FH3135				
GP06	0.984	1.181	●	▲			0.236	0.787	0.118	0.472
GP06-20-120-DC	0.984	1.181			●	●	0.236	0.787	0.118	0.472
GP07	1.181	1.535	●	▲			0.276	0.787	0.138	0.472
GP07-20-120-DC	1.181	1.535			●	●	0.276	0.787	0.138	0.472
GP08	1.536	1.772	●	▲			0.315	0.984	0.177	0.610
GP08-25-155-DC	1.536	1.772			●	●	0.315	0.984	0.177	0.610
GP10S	1.772	2.244	●	▲			0.394	1.181	0.177	0.787
GP10-30-200-DC	1.772	2.244			●	●	0.394	1.181	0.177	0.787
GP12	2.244	2.559	●	▲			0.472	1.378	0.217	0.984
GP12-35-250-DC	2.244	2.559			●	●	0.472	1.378	0.217	0.984

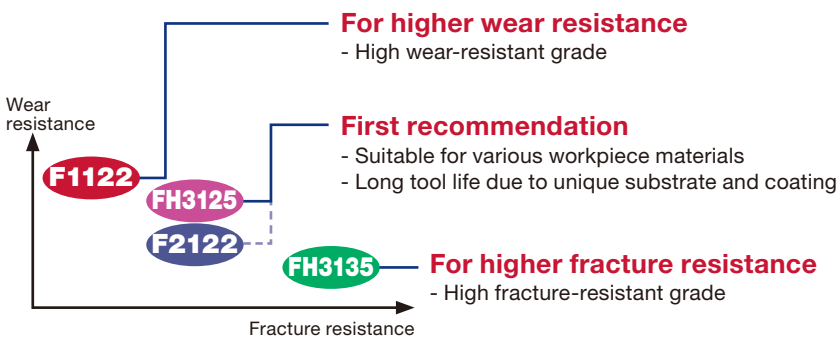
All of the above guide pads are finished with coating.

● : Line up
▲ : To be discontinued
Package quantity = 5 pcs.

REPLACING GUIDE PADS

Guide pads are subject to wear, like inserts

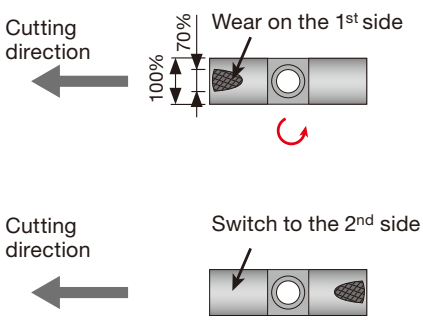
- The guide pad has two sides.
- Each guide pad can be used on two sides. When the first corner wears out to 70% of the width, reverse the guide pad to use the second side.
- Replace with a new guide pad when the second side wears out.



For higher wear resistance
- High wear-resistant grade

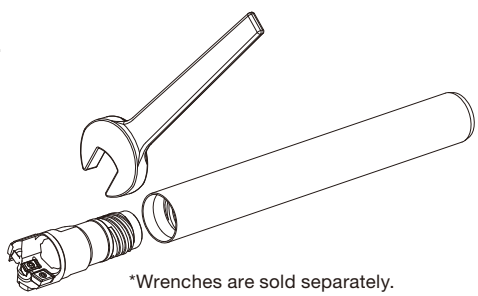
First recommendation
- Suitable for various workpiece materials
- Long tool life due to unique substrate and coating

For higher fracture resistance
- High fracture-resistant grade



NOTE FOR MOUNTING A DRILL HEAD

Please be sure to use a wrench for a drill head to be clamped firmly.

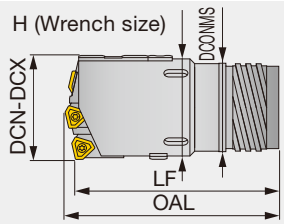


*Wrenches are sold separately.

UNIDEX

UNIDEX STS-EX

Indexable drill head with external 4-start thread for single tube system (STS), diameters adjustable, tool diameter ø38.00 - ø106.99 mm (1.496" - 4.212")



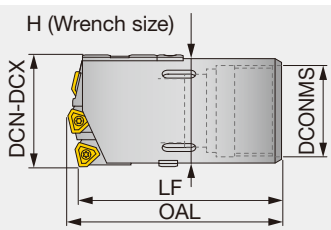
Metric	DCN		DCX		CICT	Drill tube		Drill head			
	(in)	(mm)	(in)	(mm)		Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUSTS07E-xx.xx	1.496	38	1.559	39.6	3	ST07	33	90	85	30	37
KUSTS08E-xx.xx	1.559	39.61	1.693	43	3	ST08	36	91	85	33	40
KUSTS09E-xx.xx	1.693	43.01	1.850	47	3	ST09	39	101	95	36	43
KUSTS10E-xx.xx	1.851	47.01	2.035	51.7	3	ST10	43	102	95	39	48
KUSTS11E-xx.xx	2.036	51.71	2.213	56.2	3	ST11	47	107	100	43	52
KUSTS12E-xx.xx	2.213	56.21	2.386	60.6	3	ST12	51	118	110	47	57
KUSTS13E-xx.xx	2.386	60.61	2.559	65	3	ST13	56	119	110	51	61
KUSTS14E-xx.xx	2.559	65	2.637	66.99	3	ST14	56	159	150	52	63
KUSTS15E-xx.xx	2.638	67	2.874	72.99	3	ST15	62	159	150	58	69
KUSTS16E-xx.xx	2.874	73	3.149	79.99	3	ST16	68	160	150	63	76
KUSTS17E-xx.xx	3.150	80	3.425	86.99	3	ST17	75	191	180	70	83
KUSTS18E-xx.xx	3.425	87	3.937	99.99	3	ST18	82	193	180	77	96
KUSTS19E-xx.xx	3.937	100	4.212	106.99	3	ST19	94	193	180	89	102

e.g. Designation for tool diameter ø60 mm: KUSTS12E-60.00
Drill heads with the diameter ø92 mm or over have a top guide pocket.
Adjusting diameters has to be required before using.

UNIDEX

UNIDEX STS-IN

Indexable drill head with internal single-start thread for single tube system (STS), diameters adjustable, tool diameter ø38.00 - ø106.99 mm (1.496" - 4.212")



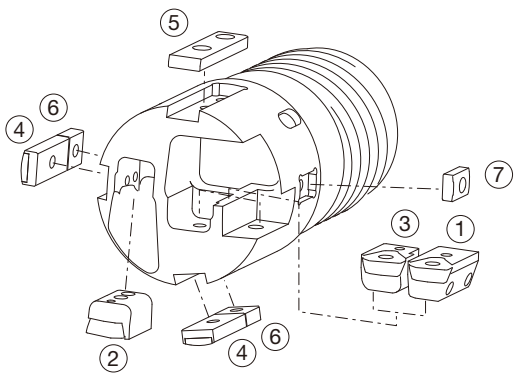
Metric	DCN		DCX		CICT	Drill tube		Drill head			
	(in)	(mm)	(in)	(mm)		Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUSTS33-xx.xx	1.496	38	1.574	39.99	3	UB33	33	85	80	30	37
KUSTS36-xx.xx	1.575	40	1.732	43.99	3	UB36	36	86	80	33	41
KUSTS39-xx.xx	1.732	44	1.850	46.99	3	UB39	39	96	90	37	43
KUSTS43-xx.xx	1.850	47	2.047	51.99	3	UB43	43	97	90	41	48
KUSTS47-xx.xx	2.047	52	2.244	56.99	3	UB47	47	107	100	44	53
KUSTS51-xx.xx	2.244	57	2.401	60.99	3	UB51	51	118	110	49	57
KUSTS56-xx.xx	2.402	61	2.677	67.99	3	UB56	56	119	110	53	64
KUSTS62-xx.xx	2.677	68	2.952	74.99	3	UB62	62	129	120	59	71
KUSTS68-xx.xx	2.953	75	3.189	80.99	3	UB68	68	161	150	65	77
KUSTS75-xx.xx	3.189	81	3.582	90.99	3	UB75	75	162	150	71	87
KUSTS82-xx.xx	3.583	91	3.897	98.99	3	UB82	82	162	150	79	95
KUSTS94-xx.xx	3.898	99	4.212	106.99	3	UB94	94	163	150	90	102

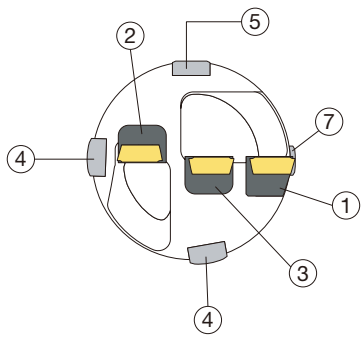
e.g. Designation for tool diameter ø60 mm: KUSTS51-60.00
Drill heads with the diameter ø92 mm or over have a top guide pocket.
Adjusting diameters has to be required before using.

Reference pages: UNIDEX STS-EX: Inserts → J142, Standard cutting conditions → J143, Drill tube (STS) → J150
UNIDEX STS-IN: Inserts → J142, Standard cutting conditions → J143, Drill tube (STS) → J152
Screw, Guide pad → J141

SPARE PARTS

Tool diameter DCN-DCX (mm)	Cartridge			Guide pad							
	Peripheral	Intermediate	Central	Guide pad		Filler		Protector		Sub guide pad	
	Cartridge①	Cartridge②	Cartridge③	④	Qty.	⑤	Qty.	⑥	Qty.	⑦	Qty.
38 - 39.99	OZ05R	IOZ05R	IOZ05R	GP08	2	-	-	GPT08	2	CUG08	1
40 - 44.99	OZ402 - 04	IOZ05R	IOZ05R	GP08	2	-	-	GPT08	2	CUG08	1
45 - 47.99	OZ402 - 04	IOZ05R	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
48 - 51.99	OZ402 - 04	IOZ402 - 04	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
52 - 54.99	OZ402 - 32	IOZ402 - 04	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
55 - 57.99	OZ402 - 32	IOZ402 - 04	IOZ402 - 32	GP10	2	-	-	GPT10	2	CUG08	1
58 - 59.99	OZ402 - 32	IOZ402 - 32	IOZ402 - 32	GP10	2	-	-	GPT10	2	CUG08	1
60 - 63.99	OZ402 - 32	IOZ402 - 32	IOZ402 - 32	GP14	2	-	-	GPT14	2	CUG08	1
64 - 67.99	OZ402 - 43	IOZ402 - 32	IOZ402 - 32	GP14	2	-	-	GPT14	2	CUG10	1
68 - 77.99	OZ402 - 32	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
78 - 84.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
85 - 91.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
92 - 98.99	OZ402 - 43	IOZ402 - 63	IOZ402 - 63	GP14	2	FILLER14	1	GPT14	2	CUG10	1
99 - 106.99	OZ402 - 63	IOZ402 - 63	IOZ402 - 63	GP18	2	FL18 - M	1	GPT18 - M	2	CUG14 - M	1





* Depending on tool diameters, parts may not be positioned as shown in the above.

INSERT

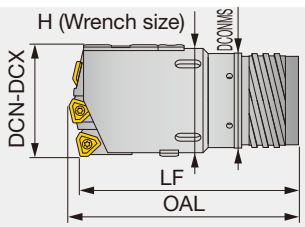
Tool diameter DCN-DCX (mm)	Peripheral insert		Qty.	Intermediate insert		Qty.	Central insert		Qty.
	New	Conventional		**New**	Conventional		**New**	Conventional	
38 - 39.99	NPMX08**R...	508 - 05R	1	NPMX08**R...	508 - 05R	1	NPMX08**R...	508 - 05R	1
40 - 44.99	TPMX14**R...	1123 - 04R	1	NPMX08**R...	508 - 05R	1	NPMX08**R...	508 - 05R	1
45 - 47.99	TPMX14**R...	1123 - 04R	1	NPMX08**R...	508 - 05R	1	TPMX14**R...	1123 - 04R	1
48 - 51.99	TPMX14**R...	1123 - 04R	1	TPMX14**R...	1123 - 04R	1	TPMX14**R...	1123 - 04R	1
52 - 54.99	TPMX17**R...	1123 - 32R	1	TPMX14**R...	1123 - 04R	1	TPMX14**R...	1123 - 04R	1
55 - 57.99	TPMX17**R...	1123 - 32R	1	TPMX14**R...	1123 - 04R	1	TPMX17**R...	1123 - 32R	1
58 - 59.99	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1
60 - 63.99	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1
64 - 67.99	TPMX24**R...	1123 - 43R	1	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1
68 - 77.99	TPMX17**R...	1123 - 32R	1	TPMX24**R...	1123 - 43R	1	TPMX24**R...	1123 - 43R	1
78 - 84.99	TPMX24**R...	1123 - 43R	1	TPMX24**R...	1123 - 43R	1	TPMX24**R...	1123 - 43R	1
85 - 91.99	TPMX28**R...	1123 - 63R	1	TPMX24**R...	1123 - 43R	1	TPMX24**R...	1123 - 43R	1
92 - 98.99	TPMX24**R...	1123 - 43R	1	TPMX28**R...	1123 - 63R	1	TPMX28**R...	1123 - 63R	1
99 - 106.99	TPMX28**R...	1123 - 63R	1	TPMX28**R...	1123 - 63R	1	TPMX28**R...	1123 - 63R	1

The tool diameter can be increased up to 5 mm using the plus (+) spare parts. (The expansion allowance depends on tool diameters.)
Drill heads come with cartridge, guide pad, filler, protector, sub guide pad, and wrench, but do not include inserts.

UNIDEX

UNIDEX DTS

Indexable drill head with external 4-start thread for double tube system (DTS), diameters adjustable, tool diameter ø38 - ø106.99 mm (1.496" - 4.212")



DTS Double Tube System

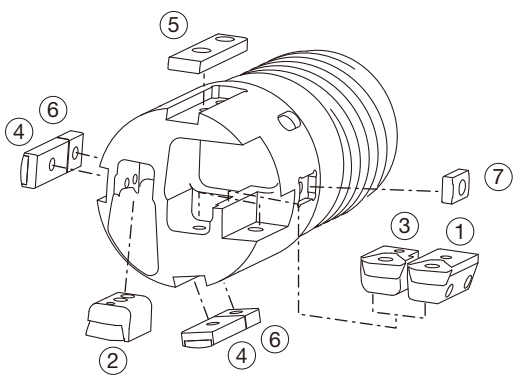
Metric	DCN		DCX		CICT	Drill tube		Drill head			
	(in)	(mm)	(in)	(mm)		Designation	Dia. (mm)	OAL	LF	DCONMS	H
KUDTS08E-xx.xx	1.496	38	1.559	39.6	3	OT08	35.5	90	85	33	37
KUDTS09E-xx.xx	1.559	39.61	1.693	43	3	OT09	39	91	85	36	40
KUDTS10E-xx.xx	1.693	43.01	1.850	47	3	OT10	42.5	101	95	39	43
KUDTS11E-xx.xx	1.851	47.01	2.035	51.7	3	OT11	46.5	102	100	43	48
KUDTS12E-xx.xx	2.036	51.71	2.213	56.2	3	OT12	51	107	100	47	52
KUDTS13E-xx.xx	2.213	56.21	2.559	65	3	OT13	55.5	119	110	51	61
KUDTS14E-xx.xx	2.559	65	2.637	66.99	3	OT14	56	159	150	52	63
KUDTS15E-xx.xx	2.638	67	2.874	72.99	3	OT15	62	159	150	58	69
KUDTS16E-xx.xx	2.874	73	3.149	79.99	3	OT16	68	160	150	63	76
KUDTS17E-xx.xx	3.150	80	3.425	86.99	3	OT17	75	191	180	70	83
KUDTS18E-xx.xx	3.425	87	3.937	99.99	3	OT18	82	193	180	77	96
KUDTS19E-xx.xx	3.937	100	4.212	106.99	3	OT19	94	193	180	89	102

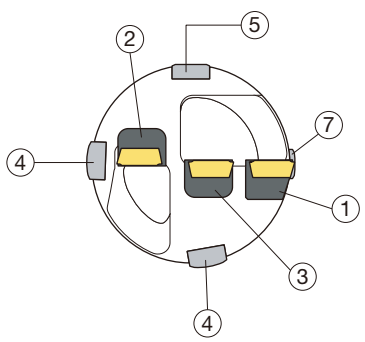
e.g. Designation for tool diameter ø60 mm: KUDTS13E-60.00
Drill heads with the diameter ø92 mm or over have a top guide pocket.
Adjusting diameters has to be required before using.

SPARE PARTS

Tool diameter DCN-DCX (mm)	Cartridge			Guide pad							
	Peripheral	Intermediate	Central	Guide pad		Filler		Protector		Sub guide pad	
	Cartridge ①	Cartridge ②	Cartridge③	④	Qty.	⑤	Qty.	⑥	Qty.	⑦	Qty.
38 - 39.99	OZ05R	IOZ05R	IOZ05R	GP08	2	-	-	GPT08	2	CUG08	1
40 - 44.99	OZ402 - 04	IOZ05R	IOZ05R	GP08	2	-	-	GPT08	2	CUG08	1
45 - 47.99	OZ402 - 04	IOZ05R	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
48 - 51.99	OZ402 - 04	IOZ402 - 04	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
52 - 54.99	OZ402 - 32	IOZ402 - 04	IOZ402 - 04	GP10	2	-	-	GPT10	2	CUG08	1
55 - 57.99	OZ402 - 32	IOZ402 - 04	IOZ402 - 32	GP10	2	-	-	GPT10	2	CUG08	1
58 - 59.99	OZ402 - 32	IOZ402 - 32	IOZ402 - 32	GP10	2	-	-	GPT10	2	CUG08	1
60 - 63.99	OZ402 - 32	IOZ402 - 32	IOZ402 - 32	GP14	2	-	-	GPT14	2	CUG08	1
64 - 67.99	OZ402 - 43	IOZ402 - 32	IOZ402 - 32	GP14	2	-	-	GPT14	2	CUG10	1
68 - 77.99	OZ402 - 32	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
78 - 84.99	OZ402 - 43	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
85 - 91.99	OZ402 - 63	IOZ402 - 43	IOZ402 - 43	GP14	2	-	-	GPT14	2	CUG10	1
92 - 98.99	OZ402 - 43	IOZ402 - 63	IOZ402 - 63	GP14	2	FILLER14	1	GPT14	2	CUG10	1
99 - 106.99	OZ402 - 63	IOZ402 - 63	IOZ402 - 63	GP18	2	FL18 - M	1	GPT18 - M	2	CUG14 - M	1

Filler is to protect a top guide pocket and included in the drill heads with ø92 mm or over.





* Depending on tool diameters, parts may not be positioned as shown in the above.

Reference pages: Inserts → J142, Standard cutting conditions → J143, Drill tube (DTS) → J154
Screw, Guide pad → J141

INSERT

Tool diameter DCN-DCX (mm)	Peripheral insert		Qty.	Intermediate insert		Qty.	Central insert		Qty.
	New	Conventional		**New**	Conventional		**New**	Conventional	
38 - 39.99	NPMX08**R...	508 - 05R	1	NPMX08**R...	508 - 05R	1	NPMX08**R...	508 - 05R	1
40 - 44.99	TPMX14**R...	1123 - 04R	1	NPMX08**R...	508 - 05R	1	NPMX08**R...	508 - 05R	1
45 - 47.99	TPMX14**R...	1123 - 04R	1	NPMX08**R...	508 - 05R	1	TPMX14**R...	1123 - 04R	1
48 - 51.99	TPMX14**R...	1123 - 04R	1	TPMX14**R...	1123 - 04R	1	TPMX14**R...	1123 - 04R	1
52 - 54.99	TPMX17**R...	1123 - 32R	1	TPMX14**R...	1123 - 04R	1	TPMX14**R...	1123 - 04R	1
55 - 57.99	TPMX17**R...	1123 - 32R	1	TPMX14**R...	1123 - 04R	1	TPMX17**R...	1123 - 32R	1
58 - 59.99	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1
60 - 63.99	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1
64 - 67.99	TPMX24**R...	1123 - 43R	1	TPMX17**R...	1123 - 32R	1	TPMX17**R...	1123 - 32R	1
68 - 77.99	TPMX17**R...	1123 - 32R	1	TPMX24**R...	1123 - 43R	1	TPMX24**R...	1123 - 43R	1
78 - 84.99	TPMX24**R...	1123 - 43R	1	TPMX24**R...	1123 - 43R	1	TPMX24**R...	1123 - 43R	1
85 - 91.99	TPMX28**R...	1123 - 63R	1	TPMX24**R...	1123 - 43R	1	TPMX24**R...	1123 - 43R	1
92 - 98.99	TPMX24**R...	1123 - 43R	1	TPMX28**R...	1123 - 63R	1	TPMX28**R...	1123 - 63R	1
99 - 106.99	TPMX28**R...	1123 - 63R	1	TPMX28**R...	1123 - 63R	1	TPMX28**R...	1123 - 63R	1

The tool diameter can be increased up to 5 mm using the plus (+) spare parts. (The expansion allowance depends on tool diameters.)
Drill heads come with cartridge, guide pad, filler, protector, sub guide pad, and wrench, but do not include inserts.

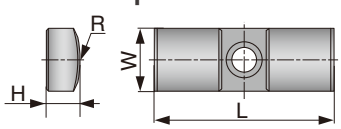
SCREW

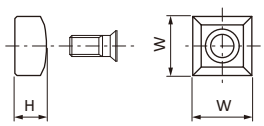
Tool diameter DCN - DCX (mm)	Insert						Guide pad					
	Peripheral		Intermediate		Central		Guide pad/Filler		Protector		Sub guide pad	
	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench	Screw	Wrench
38 - 39.99	CSTB-2.2	T-7D	CSTB-2.2	T-7D	CSTB-2.2	T-7D	CSTB-3S	T-9D	CSTB-3S	T-9D	CSTB-3S	T-9D
40 - 44.99	CSTB-2.5	T-8D	CSTB-2.2	T-7D	CSTB-2.2	T-7D	CSTB-3S	T-9D	CSTB-3S	T-9D	CSTB-3S	T-9D
45 - 47.99	CSTB-2.5	T-8D	CSTB-2.2	T-7D	CSTB-2.5	T-8D	CSTB-4S	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
48 - 51.99	CSTB-2.5	T-8D	CSTB-2.5	T-8D	CSTB-2.5	T-8D	CSTB-4S	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
52 - 54.99	CSTB-3.5D	T-9D	CSTB-2.5	T-8D	CSTB-2.5	T-8D	CSTB-4S	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
55 - 57.99	CSTB-3.5D	T-9D	CSTB-2.5	T-8D	CSTB-3.5D	T-9D	CSTB-4S	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
58 - 59.99	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTB-4S	T-15D	CSTB-4S	T-15D	CSTB-3S	T-9D
60 - 63.99	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTA-5S	T-15D	CSTA-5S	T-15D	CSTB-3S	T-9D
64 - 67.99	CSTB-4M	T-15D	CSTB-3.5D	T-9D	CSTB-3.5D	T-9D	CSTA-5S	T-15D	CSTA-5S	T-15D	CSTB-3S	T-9D
68 - 77.99	CSTB-3.5D	T-9D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTA-5S	T-15D	CSTA-5S	T-15D	CSTB-3S	T-9D
78 - 84.99	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTA-5S	T-15D	CSTA-5S	T-15D	CSTB-3S	T-9D
85 - 91.99	CSTB-5	T-20D	CSTB-4M	T-15D	CSTB-4M	T-15D	CSTA-5S	T-15D	CSTA-5S	T-15D	CSTB-3S	T-9D
92 - 98.99	CSTB-4M	T-15D	CSTB-5	T-20D	CSTB-5	T-20D	CSTA-5S	T-15D	CSTA-5S	T-15D	CSTB-3S	T-9D
99 - 106.99	CSTB-5	T-20D	CSTB-5	T-20D	CSTB-5	T-20D	LS1206S	H3	LS1206S	H3	CSTA-5S	T-15D

SCREW

Tool diameter DCN - DCX (mm)	Cartridge screws							
	Peripheral				Intermidiate		Central	
	Screw	Wrench	Adjustable screw	Wrench	Screw	Wrench	Screw	Wrench
38 - 39.99	LS1803RH	H2	AS0003-5	H1.5	CSTB-3	T-9D	CSTB-3	T-9D
40 - 44.99	LS1803.5RH	H2.5	AS0004-8	H2	CSTB-3	T-9D	CSTB-3	T-9D
45 - 47.99	LS1803.5RH	H2.5	AS0004-8	H2	CSTB-3	T-9D	CSTB-3.5	T-9D
48 - 51.99	LS1803.5RH	H2.5	AS0004-8	H2	CSTB-3.5	T-15D	CSTB-3.5	T-15D
52 - 54.99	LS1805RH	H3	AS0005-10	H2.5	CSTB-3.5	T-15D	CSTB-3.5	T-15D
55 - 57.99	LS1805RH	H3	AS0005-10	H2.5	CSTB-3.5	T-15D	CSTA-5	T-15D
58 - 59.99	LS1805RH	H3	AS0005-10	H2.5	CSTA-5	T-15D	CSTA-5	T-15D
60 - 63.99	LS1805RH	H3	AS0005-10	H2.5	CSTA-5	T-15D	CSTA-5	T-15D
64 - 67.99	LS1806RH	H4	AS0005-15	H2.5	CSTA-5	T-15D	CSTA-5	T-15D
68 - 77.99	LS1805RH	H3	AS0005-10	H2.5	LS1206	H3	LS1206	H3
78 - 84.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3	LS1206	H3
85 - 91.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3	LS1206	H3
92 - 98.99	LS1806RH	H4	AS0005-15	H2.5	LS1206	H3	LS1206S	H3
99 - 106.99	LS1806RH	H4	AS0006-15	H3	LS1206	H3	LS1206S	H3

Guide pads and protectors





Guide pad				Dimensions (in)			Lock screw	Wrench	Protector	Dimensions (in)		Lock screw	Wrench
	F1122	F2122	FH3125 FH3135	W	H	L				W	H		
GP08	●	▲		0.315	0.177	0.984	CSTB-3S	T-9D	GPT08	0.315	0.177	CSTB-3S	T-9D
GP08-25-155-DC			●	0.315	0.177	0.984	CSTB-3S	T-9D	GPT08	0.315	0.177	CSTB-3S	T-9D
GP10	●	▲		0.394	0.236	1.378	CSTB-4S	T-15D	GPT10	0.394	0.236	CSTB-4S	T-15D
GP10-35-200-DC			●	0.394	0.236	1.378	CSTB-4S	T-15D	GPT10	0.394	0.236	CSTB-4S	T-15D
GP14		▲		0.551	0.295	1.575	CSTA-5S	T-15D	GPT14	0.551	0.295	CSTA-5S	T-15D
GP14-40-250-DC			●	0.551	0.295	1.575	CSTA-5S	T-15D	GPT14	0.551	0.295	CSTA-5S	T-15D
GP18		▲		0.709	0.354	1.575	LS1206S / LS1206SSS ***	H3	GPT18-M	0.709	0.354	LS1206S	H3
GP18-40-300-DC			●	0.709	0.354	1.575	LS1206S / LS1206SSS ***	H3	GPT18-M	0.709	0.354	LS1206S	H3

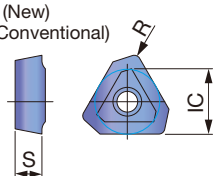
***LS1206SSS for dimensional guide pad
(for diameter ø118.00 - ø150.99, ø169.00 - ø208.99 and ø233.00 - ø247.99 mm)

● : Line up, ▲ : To be discontinued
Package quantity = 5 pcs.

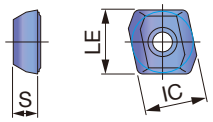
INSERT

NPMX..., TPMX.../508-05R..., 1123_**R...

TPMX type (New)
1123 type (Conventional)



NPMX type (New)
508 type (Conventional)



Right-hand type

Metric New	Metric Conventional	Chipbreaker New	Chipbreaker Conventional	AH8015	UC1220 (DLX2)	UC1125 (DLXT)	UC1230 (DLX3)	UC3215 (KLX2)	UC3210 (KLXT3)	UC2220 (NLX)	UC3120 (KLXT)	IC (in)	S (in)	R (in)	LE (in)
NPMX080308R-G	508-05R	G	-				●	●		●		0.315	0.125	-	0.329
NPMX080304R-B	508-05RBR1	B	BR1			●				●	●	0.315	0.125	-	0.329
TPMX140308R-G	-	G	-	●								0.333	0.138	0.031	-
TPMX140308R-G	1123-04R	G	-		●		●	●		●		0.333	0.138	0.031	-
TPMX140304R-B	-	B	-	●								0.333	0.138	0.031	-
TPMX140304R-B	1123-04RBR1	B	BR1			●			●	●	●	0.333	0.138	0.016	-
TPMX140308R-DT	1123-04RS	DT	S							●		0.333	0.138	0.031	-
TPMX170408R-G	-	G	-	●								0.406	0.157	0.031	-
TPMX170408R-G	1123-32R	G	-		●		●	●		●		0.406	0.157	0.031	-
TPMX170404R-B	-	B	-	●								0.406	0.157	0.031	-
TPMX170404R-B	1123-32RBR1	B	BR1			●			●	●	●	0.406	0.157	0.016	-
TPMX170408R-BG	-	BG	-	●								0.406	0.157	0.031	-
TPMX170408R-BG	1123-32RB	BG	B					●		●		0.406	0.157	0.031	-
TPMX170408R-DT	1123-32RS	DT	S							●		0.406	0.157	0.031	-
TPMX240512R-G	-	G	-	●								0.559	0.217	0.047	-
TPMX240512R-G	1123-43R	G	-		●		●	●		●		0.559	0.217	0.047	-
TPMX240504R-B	-	B	-	●								0.559	0.217	0.047	-
TPMX240504R-B	1123-43RBR1	B	BR1			●			●	●	●	0.559	0.217	0.016	-
TPMX240512R-BG	-	BG	-	●								0.559	0.217	0.047	-
TPMX240512R-BG	1123-43RB	BG	B					●		●		0.559	0.217	0.047	-
TPMX240512R-DT	1123-43RS	DT	S							●		0.559	0.217	0.047	-
TPMX280716R-G	-	G	-	●								0.669	0.295	0.063	-
TPMX280716R-G	1123-63R	G	-		●		●	●		●		0.669	0.295	0.063	-
TPMX280708R-B	-	B	-	●								0.669	0.295	0.063	-
TPMX280708R-B	1123-63RBR1	B	BR1			●			●	●	●	0.669	0.295	0.031	-
TPMX280716R-BG	-	BG	-	●								0.669	0.295	0.063	-
TPMX280716R-BG	1123-63RB	BG	B					●		●		0.669	0.295	0.063	-
TPMX280716R-DT	1123-63RS	DT	S							●		0.669	0.295	0.063	-

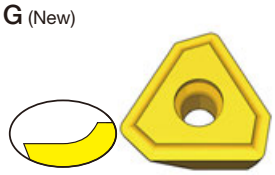
● : Line up

Left-hand type

Metric New	Metric Conventional	Chipbreaker New	Chipbreaker Conventional	AH8015	UC1220 (DLX2)	UC1125 (DLXT)	UC1230 (DLX3)	UC3215 (KLX2)	UC3210 (KLXT3)	UC2220 (NLX)	UC3120 (KLXT)	IC (in)	S (in)	R (in)	LE (in)
TPMX140308L-G	1123-04L	G	-				●			●		0.333	0.138	0.031	-
TPMX170408L-G	1123-32L	G	-				●			●		0.406	0.157	0.031	-
TPMX170408L-BG	1123-32LB	BG	B							●		0.406	0.157	0.031	-
TPMX170408L-DT	1123-32LS	DT	S							●		0.406	0.157	0.031	-
TPMX240512L-G	1123-43L	G	-				●			●		0.559	0.217	0.047	-
TPMX240512L-BG	1123-43LB	BG	B							●		0.559	0.217	0.047	-
TPMX240512L-DT	1123-43LS	DT	S							●		0.559	0.217	0.047	-
TPMX280716L-G	1123-63L	G	-				●			●		0.669	0.295	0.063	-
TPMX280716L-BG	1123-63LB	BG	B							●		0.669	0.295	0.063	-

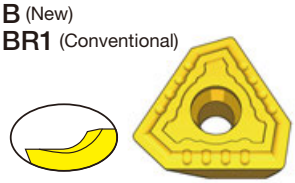
Chipbreaker

G (New)



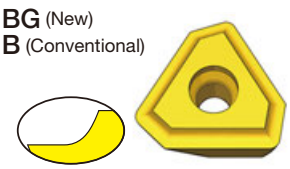
Versatile

B (New)
BR1 (Conventional)



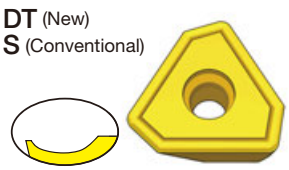
Good chip control for heat-resistant alloy

BG (New)
B (Conventional)



Good chip control for difficult-to-cut steel

DT (New)
S (Conventional)



Reduced cutting force

*Difficult-to-cut steel: Material that tends to produce long chips

ISO classifications for Insert grades

● : Line up

	Grade	(Former name)	ISO area 5	10	15	20	25	30	35	40
P	AH8015	-			●	●	●	●	●	
	UC1220	(DLX2)		●	●	●	●	●		
	UC2220	(NLX)			●	●	●	●	●	
	UC1125	(DLXT)				●	●	●		
	UC1230	(DLX3)				●	●	●	●	●
	UC3120	(KLXT)						●	●	●
M	AH8015	-		●	●	●	●	●		
	UC2220	(NLX)		●	●	●	●	●		
	UC1230	(DLX3)			●	●	●	●	●	
	UC3120	(KLXT)							●	●
K	AH8015	-			●	●	●			
	UC3215	(KLX2)		●	●	●				
	UC3120	(KLXT)				●	●	●		
N	AH8015	-			●	●	●			
	UC3215	(KLX2)		●	●	●				
	UC2220	(NLX)			●	●	●			
S	AH8015	-			●	●	●			
	UC3210	(KLXT3)	●	●	●					
	UC2220	(NLX)			●	●	●			
	UC3120	(KLXT)			●	●	●			
	UC1230	(DLX3)			●	●	●	●	●	

STANDARD CUTTING CONDITIONS

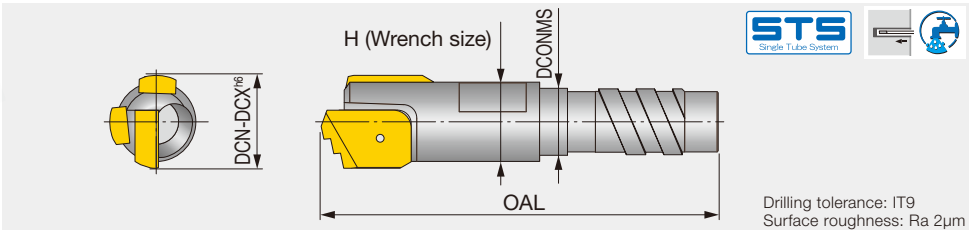
ISO	Workpiece materials				Hardness	Cutting speed	Feed: *fn* (in/rev) Drill dia. (in)				
					(HB)	*Vc* (sfm)	1.496" - 1.574"	1.575" - 2.047"	2.047" - 2.519"	2.520" - 3.346"	3.346" -
P	Carbon steels Casting steels High carbon steels Carbon tool steels	1010 - 1025	0.10 - 0.25%C	Non-hardened	125	197 - 394	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
		1025 - 1055	0.25 - 0.25%C	Non-hardened	190	197 - 394	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
			0.25 - 0.25%C	Hardened and tempered	250	197 - 394	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
		SK	0.55 - 0.80%C	Non-hardened	220	197 - 394	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
			0.55 - 0.80%C	Hardened and tempered	300	197 - 394	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
	Low alloy steels Casting steels (alloying element < 5%)	SNC, DCr, SNCN SCM, SMn		Non-hardened	200	197 - 328	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
				Hardened and tempered	275	197 - 328	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
					300	164 - 328	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
					350	164 - 328	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
	High alloy steels Casting steel Tool steels	SNS, SKD, SKT SKH, SK		Non-hardened	200	197 - 394	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
				Hardened and tempered	325	197 - 394	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
M	Stainless steels	430SS		Ferritic	200	197 - 361	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
		410SS		Martensite	240	197 - 361	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
		304SS,316SS		Austenite	180	197 - 361	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
K	Ductile cast irons	60-40-18 - 65-45-120		Ferritic / Pearlitic	180	197 - 328	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.008	0.007 - 0.009
		80-55-06 - 100-70-03		Pearlitic	260	197 - 328	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.008	0.007 - 0.009
	Gray cast irons	Class 10 - Class 20		Low tensile strength	160	197 - 328	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.008	0.007 - 0.009
		Class 25 - Class 35		High tensile strength	250	197 - 328	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.008	0.007 - 0.009
	Malleable cast irons	FCMB, FCMW		Ferritic	130	197 - 328	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.008	0.007 - 0.009
		FCMWP, FCMP		Pearlitic	230	197 - 328	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.008	0.007 - 0.009
N	Aluminum alloys Forging			Non-aged	60	197 - 427	0.003 - 0.008	0.004 - 0.010	0.005 - 0.011	0.006 - 0.012	0.007 - 0.013
				Soluted, Aged	100	197 - 427	0.003 - 0.008	0.004 - 0.010	0.005 - 0.011	0.006 - 0.012	0.007 - 0.013
	Aluminum alloys Casting		≤12% Si	Non-aged	75	197 - 427	0.003 - 0.008	0.004 - 0.010	0.005 - 0.011	0.006 - 0.012	0.007 - 0.013
				Soluted, Aged	90	197 - 427	0.003 - 0.008	0.004 - 0.010	0.005 - 0.011	0.006 - 0.012	0.007 - 0.013
			>12% Si	High silicon	130	197 - 427	0.003 - 0.008	0.004 - 0.010	0.005 - 0.011	0.006 - 0.012	0.007 - 0.013
	Copper alloys		>1% Pb	Free cutting copper	110	197 - 427	0.003 - 0.008	0.004 - 0.010	0.005 - 0.011	0.006 - 0.012	0.007 - 0.013
				Brass, Red brass	90	197 - 427	0.003 - 0.008	0.004 - 0.010	0.005 - 0.011	0.006 - 0.012	0.007 - 0.013
				Electrolytic copper	100	197 - 427	0.003 - 0.008	0.004 - 0.010	0.005 - 0.011	0.006 - 0.012	0.007 - 0.013
S	Nickel-based alloys		Fe base	Non-aged	200	66 - 213	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
				Soluted, Aged	280	66 - 213	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
			Ni / Co base	Non-aged	250	66 - 213	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
				Soluted, Aged	350	66 - 213	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
				Casted	320	66 - 213	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
	Titanium alloys		α		Rm400	98 - 328	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012
			α - β		Rm1050	98 - 328	0.003 - 0.006	0.004 - 0.008	0.005 - 0.009	0.006 - 0.010	0.007 - 0.012

The above values should not be used as the exact recommendations. They may need modification depending on the machining conditions, materials, etc.

MBU

MBU type drill head

Brazed drill head with external single-start thread for single tube system (STS), tool diameter ø8 - ø14.79 mm (0.315" - 0.582")



Drilling tolerance: IT9
Surface roughness: Ra 2µm

Metric	DCN		DCX		Drill tube		OAL	DCONMS	H
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)			
MBU-0899-1 xx.xx	0.315	8	0.328	8.32	UMBB071	7.1	34	6	6
MBU-0899-2 xx.xx	0.328	8.33	0.341	8.65	UMBB071	7.1	34	6	6
MBU-0899-3 xx.xx	0.341	8.66	0.354	8.99	UMBB071	7.1	34	6	6
MBU-0999-1 xx.xx	0.354	9	0.367	9.32	UMBB083	8.3	34	7.2	7
MBU-0999-2 xx.xx	0.367	9.33	0.380	9.65	UMBB083	8.3	34	7.2	7
MBU-0999-3 xx.xx	0.380	9.66	0.393	9.99	UMBB083	8.3	34	7.2	7
MBU-1099-1 xx.xx	0.394	10	0.406	10.32	UMBB090	9	34	7.6	8
MBU-1099-2 xx.xx	0.407	10.33	0.419	10.65	UMBB090	9	34	7.6	8
MBU-1099-3 xx.xx	0.420	10.66	0.433	10.99	UMBB090	9	34	7.6	8
MBU-1199-1 xx.xx	0.433	11	0.446	11.32	UMBB100	10	34	8.6	9
MBU-1199-2 xx.xx	0.446	11.33	0.459	11.65	UMBB100	10	34	8.6	9
MBU-1199-3 xx.xx	0.459	11.66	0.472	11.99	UMBB100	10	34	8.6	9
MBU-1349-1 xx.xx	0.472	12	0.487	12.36	UMBB110	11	34	9.1	10
MBU-1349-2 xx.xx	0.487	12.37	0.501	12.73	UMBB110	11	34	9.1	10
MBU-1349-3 xx.xx	0.502	12.74	0.516	13.1	UMBB110	11	34	9.1	10
MBU-1349-4 xx.xx	0.516	13.11	0.531	13.49	UMBB110	11	34	9.1	10
MBU-1449-1 xx.xx	0.531	13.5	0.544	13.82	UMBB120	12	34	10.8	11
MBU-1449-2 xx.xx	0.544	13.83	0.557	14.15	UMBB120	12	34	10.8	11
MBU-1449-3 xx.xx	0.557	14.16	0.570	14.48	UMBB120	12	34	10.8	11
MBU-1449-4 xx.xx	0.570	14.49	0.582	14.79	UMBB120	12	34	10.8	11

e.g. Designation for tool diameter ø9 mm: MBU-0899-1 9.00
The interface of the drill tube has a unique shape. Please be sure to use UMBB drill tube.

ISO classifications for Insert grades

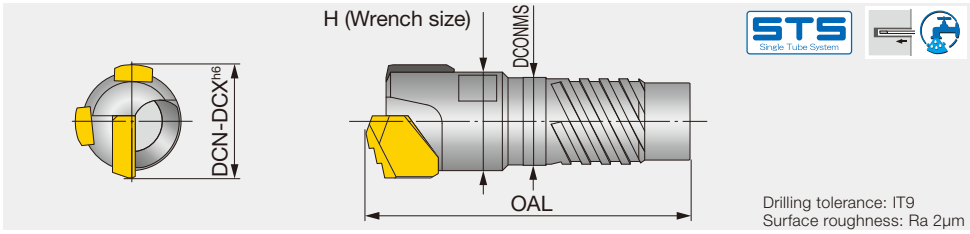
	Grade	(Former name)	ISO area							
			5	10	15	20	25	30	35	40
P	1122	(PC ZAP)								
M	3112	(TF ZAP)								
K	3112	(TF ZAP)								
N	3112	(TF ZAP)								
S	3112	(TF ZAP)								

Reference pages: Standard cutting conditions → J149, Drill tube (STS) → J150

UTE

UTE type drill head

Brazed drill head with external 2-start or 4-start thread for single tube system (STS), tool diameter ø12.6 - ø20 mm (0.496" - 0.787")



Metric	DCN		DCX		Drill tube		OAL	DCONMS	H
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)			
UTE-0094-1 xx.xx	0.496	12.6	0.509	12.92	ST0094	11	40	9.6	10
UTE-0094-2 xx.xx	0.509	12.93	0.511	12.99	ST0094	11	40	9.6	10
UTE-0094-3 xx.xx	0.512	13	0.522	13.25	ST0094	11	40	9.6	10
UTE-0094-4 xx.xx	0.522	13.26	0.535	13.6	ST0094	11	40	9.6	10
UTE-0095-1 xx.xx	0.536	13.61	0.548	13.93	ST0095	12	40	10.6	11
UTE-0095-2 xx.xx	0.549	13.94	0.551	13.99	ST0095	12	40	10.6	11
UTE-0095-3 xx.xx	0.551	14	0.561	14.26	ST0095	12	40	10.6	11
UTE-0095-4 xx.xx	0.562	14.27	0.575	14.6	ST0095	12	40	10.6	11
UTE-0096-1 xx.xx	0.575	14.61	0.588	14.93	ST0096	13	40	11.6	12
UTE-0096-2 xx.xx	0.588	14.94	0.601	15.26	ST0096	13	40	11.6	12
UTE-0096-3 xx.xx	0.601	15.27	0.614	15.59	ST0096	13	40	11.6	12
UTE-0097-1 xx.xx	0.614	15.6	0.628	15.96	ST0097	14	40	12.6	13
UTE-0097-2 xx.xx	0.629	15.97	0.643	16.32	ST0097	14	40	12.6	13
UTE-0097-3 xx.xx	0.643	16.33	0.657	16.7	ST0097	14	40	12.6	13
UTE-0098-1 xx.xx	0.658	16.71	0.670	17.03	ST0098	15	40	13.6	14
UTE-0098-2 xx.xx	0.671	17.04	0.683	17.36	ST0098	15	40	13.6	14
UTE-0098-3 xx.xx	0.684	17.37	0.697	17.7	ST0098	15	40	13.6	14
UTE-0099-1 xx.xx	0.697	17.71	0.712	18.09	ST0099	16	40	14.5	15
UTE-0099-2 xx.xx	0.713	18.1	0.728	18.48	ST0099	16	40	14.5	15
UTE-0099-3 xx.xx	0.728	18.49	0.744	18.9	ST0099	16	40	14.5	15
UTE-0000-1 xx.xx	0.744	18.91	0.758	19.26	ST0000	17	40	15.5	16
UTE-0000-2 xx.xx	0.759	19.27	0.772	19.62	ST0099	17	40	15.5	16
UTE-0000-3 xx.xx	0.773	19.63	0.787	20	ST0099	17	40	15.5	16

e.g. Designation for tool diameter ø12.92 mm: UTE-0094-1 12.92

UTE Drill head : ø12.6 mm - ø15.59 mm, External 2-start thread

UTE Drill head : ø15.6 mm - ø20 mm, External 4-start thread

ISO classifications for Insert grades

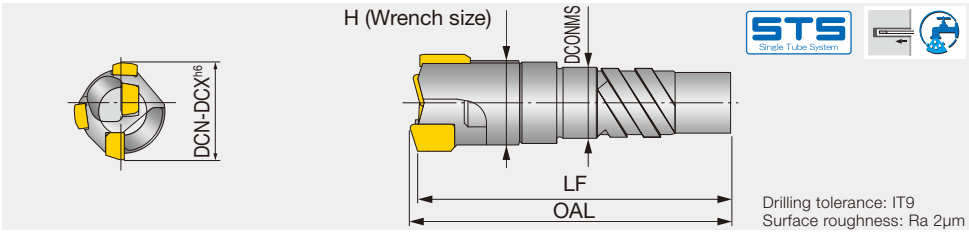
	Grade	(Former name)	ISO area							
			5	10	15	20	25	30	35	40
P	1122	(UP ZAP)								
M	3112	(TF ZAP)								
K	3112	(TF ZAP)								
N	3112	(TF ZAP)								
S	3132	(TFKS ZAP)								

Reference pages: Standard cutting conditions → J149, Drill tube (STS) → J150

BTU

BTU type drill head (Small diameter, 2 edges)

Brazed drill head with external 2-start thread for single tube system (STS),
tool diameter ø12.6 - ø15.59 mm (0.496" - 0.614")



Metric	DCN		DCX		Drill tube		OAL	LF	DCONMS	H
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)				
BTU-00941 xx.xx	0.496	12.6	0.516	13.1	ST0094	11	43	41.9	9.6	10
BTU-00942 xx.xx	0.516	13.11	0.535	13.6	ST0094	11	43	41.9	9.6	10
BTU-00951 xx.xx	0.536	13.61	0.555	14.1	ST0095	12	43	41.8	10.6	11
BTU-00952 xx.xx	0.556	14.11	0.575	14.6	ST0095	12	43	41.8	10.6	11
BTU-00961 xx.xx	0.575	14.61	0.594	15.1	ST0096	13	43	41.7	11.6	12
BTU-00962 xx.xx	0.595	15.11	0.614	15.59	ST0096	13	43	41.7	11.6	12

e.g. Designation for tool diameter ø13.1 mm: BTU-00941 13.10

ISO classifications for Insert grades

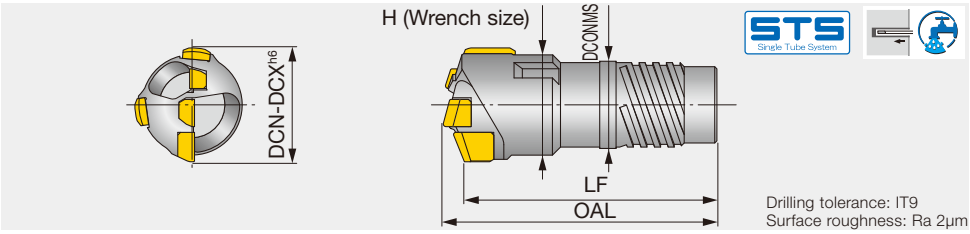
	Grade	(Former name)	ISO area							
			5	10	15	20	25	30	35	40
P	1122	(UP ZAP)								
M	2122	(N3 ZAP)								
K	1122	(UP ZAP)								
N	1122	(UP ZAP)								
S	1122	(UP ZAP)								

Reference pages: Standard cutting conditions → J149, Drill tube (STS) → J150

BTU

BTU type drill head (3 edges)

Brazed drill head with external 4-start thread for single tube system (STS), tool diameter ø15.6 - ø65 mm (0.614" - 0.559")



Metric	DCN		DCX		Drill tube		OAL	LF	DCONMS	H
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)				
BTU-00971 xx.xx	0.614	15.6	0.638	16.2	ST0097	14	43	40.3	12.6	-
BTU-00972 xx.xx	0.638	16.21	0.657	16.7	ST0097	14	43	40.3	12.6	14
BTU-00981 xx.xx	0.658	16.71	0.677	17.2	ST0098	15	43	40.3	13.6	15
BTU-00982 xx.xx	0.678	17.21	0.697	17.7	ST0098	15	43	40.3	13.6	15
BTU-00991 xx.xx	0.697	17.71	0.724	18.4	ST0099	16	47	44.2	14.5	15
BTU-00992 xx.xx	0.725	18.41	0.744	18.9	ST0099	16	47	44.1	14.5	-
BTU-001 xx.xx	0.744	18.91	0.756	19.2	ST0000	17	47	44.1	15.5	17
BTU-002 xx.xx	0.756	19.21	0.787	20	ST0000	17	47	44	15.5	18
BTU-011 xx.xx	0.788	20.01	0.823	20.9	ST00	18	52.5	49.4	16	18
BTU-012 xx.xx	0.823	20.91	0.858	21.8	ST00	18	52.5	49.4	16	19
BTU-021 xx.xx	0.859	21.81	0.902	22.9	ST01	20	56	52.8	18	20
BTU-022 xx.xx	0.902	22.91	0.949	24.1	ST01	20	56	52.6	18	21
BTU-031 xx.xx	0.949	24.11	0.992	25.2	ST02	22	57.5	54	19.5	23
BTU-032 xx.xx	0.993	25.21	1.039	26.4	ST02	22	57.5	54	19.5	24
BTU-041 xx.xx	1.040	26.41	1.083	27.5	ST03	24	57.5	53.8	21	25
BTU-042 xx.xx	1.083	27.51	1.130	28.7	ST03	24	57.5	53.8	21	26
BTU-051 xx.xx	1.130	28.71	1.173	29.8	ST04	26	63.5	59.5	23.5	27
BTU-052 xx.xx	1.174	29.81	1.220	31	ST04	26	63.5	59.3	23.5	28
BTU-061 xx.xx	1.221	31.01	1.264	32.1	ST05	28	63.5	59.4	25.5	29
BTU-062 xx.xx	1.264	32.11	1.311	33.3	ST05	28	63.5	59.1	25.5	30
BTU-071 xx.xx	1.311	33.31	1.370	34.8	ST06	30	63.5	59	28	32
BTU-072 xx.xx	1.370	34.81	1.425	36.2	ST06	30	63.5	58.9	28	33
BTU-081 xx.xx	1.426	36.21	1.469	37.3	ST07	33	73.5	68.7	30	34
BTU-082 xx.xx	1.469	37.31	1.512	38.4	ST07	33	73.5	68.5	30	35
BTU-083 xx.xx	1.512	38.41	1.559	39.6	ST07	33	73.5	68.3	30	36
BTU-091 xx.xx	1.559	39.61	1.598	40.6	ST08	36	73.5	68.2	33	37
BTU-092 xx.xx	1.599	40.61	1.646	41.8	ST08	36	73.5	68	33	38
BTU-093 xx.xx	1.646	41.81	1.693	43	ST08	36	73.5	67.8	33	39
BTU-101 xx.xx	1.693	43.01	1.744	44.3	ST09	39	75	69.5	36	41
BTU-102 xx.xx	1.744	44.31	1.795	45.6	ST09	39	75	69.3	36	42
BTU-103 xx.xx	1.796	45.61	1.850	47	ST09	39	75	69.1	36	43
BTU-111 xx.xx	1.851	47.01	1.909	48.5	ST10	43	75	68.8	39	44
BTU-112 xx.xx	1.910	48.51	1.972	50.1	ST10	43	75	68.7	39	46
BTU-113 xx.xx	1.973	50.11	2.035	51.7	ST10	43	75	68.5	39	47
BTU-121 xx.xx	2.036	51.71	2.094	53.2	ST11	47	82	75.2	43	49
BTU-122 xx.xx	2.095	53.21	2.154	54.7	ST11	47	82	75.2	43	50
BTU-123 xx.xx	2.154	54.71	2.213	56.2	ST11	47	82	75.2	43	51
BTU-131 xx.xx	2.213	56.21	2.299	58.4	ST12	51	84	77.4	47	54
BTU-132 xx.xx	2.300	58.41	2.386	60.6	ST12	51	84	76.9	47	55
BTU-133 xx.xx	2.386	60.61	2.472	62.8	ST12	51	84	76.8	47	57
BTU-134 xx.xx	2.473	62.81	2.559	65	ST12	51	84	76.5	47	59
BTU-133L xx.xx	2.386	60.61	2.472	62.8	ST13	56	84	76.8	51	57
BTU-134L xx.xx	2.473	62.81	2.559	65	ST13	56	84	76.5	51	59

e.g. Designation for tool diameter ø16.2 mm: BTU-00971 16.20

ISO classifications for Insert grades

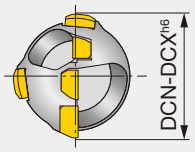
	Grade	(Former name)	ISO area							
			5	10	15	20	25	30	35	40
P	1122	(UP ZAP)								
	1132	(UX-2 ZAP)								
M	1132	(UX-2 ZAP)								
	2122	(N3 ZAP)								
K	3132	(TFKS ZAP)								
N	3132	(TFKS ZAP)								
S	3132	(TFKS ZAP)								

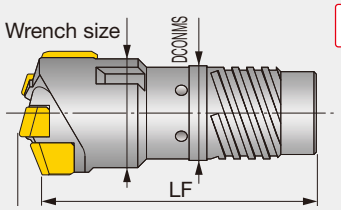
Reference pages: Standard cutting conditions → J149, Drill tube (STS) → J150

ETU

ETU type drill head

Brazed drill head with external 4-start thread for double tube system (DTS), tool diameter ø18.4 - ø65 mm (0.724" - 2.559")





DTS Double Tube System

Drilling tolerance: IT9
Surface roughness: Ra 2µm

Metric	DCN		DCX		Drill tube		OAL	LF	DCONMS	H
	(in)	(mm)	(in)	(mm)	Designation	Dia. (mm)				
ETU-001 xx.xx	0.724	18.4	0.756	19.2	OT00	18	50	47.1	16	17
ETU-002 xx.xx	0.756	19.21	0.787	20	OT00	18	50	47	16	18
ETU-011 xx.xx	0.788	20.01	0.823	20.9	OT01	20	56	52.8	18	18
ETU-012 xx.xx	0.823	20.91	0.858	21.8	OT01	20	56	52.7	18	19
ETU-021 xx.xx	0.859	21.81	0.902	22.9	OT02	22	56	52.8	19.5	20
ETU-022 xx.xx	0.902	22.91	0.949	24.1	OT02	22	56	52.6	19.5	21
ETU-031 xx.xx	0.949	24.11	0.992	25.2	OT03	24	57.5	54	21	23
ETU-032 xx.xx	0.993	25.21	1.039	26.4	OT03	24	57.5	54	21	24
ETU-041 xx.xx	1.040	26.41	1.083	27.5	OT04	26	60.5	56.8	23.5	25
ETU-042 xx.xx	1.083	27.51	1.130	28.7	OT04	26	60.5	56.8	23.5	26
ETU-051 xx.xx	1.130	28.71	1.173	29.8	OT05	28	63.5	59.5	25.5	27
ETU-052 xx.xx	1.174	29.81	1.220	31	OT05	28	63.5	59.3	25.5	28
ETU-061 xx.xx	1.221	31.01	1.264	32.1	OT06	31	63.5	59.4	28	29
ETU-062 xx.xx	1.264	32.11	1.311	33.3	OT06	31	63.5	59.2	28	30
ETU-071 xx.xx	1.311	33.31	1.370	34.8	OT07	33	70.5	66	30	32
ETU-072 xx.xx	1.370	34.81	1.425	36.2	OT07	33	70.5	65.8	30	33
ETU-081 xx.xx	1.426	36.21	1.469	37.3	OT08	36	73.5	68.7	33	34
ETU-082 xx.xx	1.469	37.31	1.512	38.4	OT08	36	73.5	68.5	33	35
ETU-083 xx.xx	1.512	38.41	1.559	39.6	OT08	36	73.5	68.3	33	36
ETU-091 xx.xx	1.559	39.61	1.598	40.6	OT09	39	73.5	68.2	36	37
ETU-092 xx.xx	1.599	40.61	1.646	41.8	OT09	39	73.5	68	36	38
ETU-093 xx.xx	1.646	41.81	1.693	43	OT09	39	73.5	67.9	36	39
ETU-101 xx.xx	1.693	43.01	1.744	44.3	OT10	43	75	69.5	39	41
ETU-102 xx.xx	1.744	44.31	1.795	45.6	OT10	43	75	69.3	39	42
ETU-103 xx.xx	1.796	45.61	1.850	47	OT10	43	75	69.1	39	43
ETU-111 xx.xx	1.851	47.01	1.909	48.5	OT11	47	79	72.9	43	44
ETU-112 xx.xx	1.910	48.51	1.972	50.1	OT11	47	79	72.8	43	46
ETU-113 xx.xx	1.973	50.11	2.035	51.7	OT11	47	79	72.5	43	47
ETU-121 xx.xx	2.036	51.71	2.094	53.2	OT12	51	82	75.3	47	49
ETU-122 xx.xx	2.095	53.21	2.154	54.7	OT12	51	82	75.5	47	50
ETU-123 xx.xx	2.154	54.71	2.213	56.2	OT12	51	82	75.3	47	51
ETU-131 xx.xx	2.213	56.21	2.299	58.4	OT13	56	84	77.4	51	54
ETU-132 xx.xx	2.300	58.41	2.386	60.6	OT13	56	84	76.9	51	55
ETU-133 xx.xx	2.386	60.61	2.472	62.8	OT13	56	84	77	51	57
ETU-134 xx.xx	2.473	62.81	2.559	65	OT13	56	84	76.6	51	59

e.g. Designation for tool diameter ø19.2 mm: ETU-001 19.20

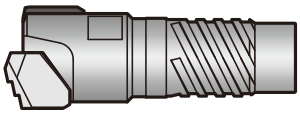
ISO classifications for Insert grades

	Grade	(Former name)	ISO area							
			5	10	15	20	25	30	35	40
P	1122	(UP ZAP)								
	1132	(UX-2 ZAP)								
M	1132	(UX-2 ZAP)								
	2122	(N3 ZAP)								
K	3132	(TFKS ZAP)								
N	3132	(TFKS ZAP)								
S	3132	(TFKS ZAP)								

Reference pages: Standard cutting conditions → J149, Drill tube (DTS) → J154

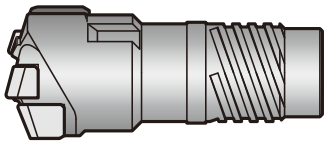
STS Single Tube System

MBU



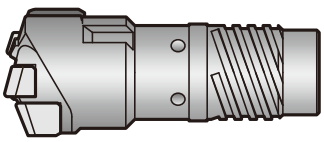
UTE

BTU
(2 edges)



BTU
(3 edges)

DTS Double Tube System



ETU
(3 edges)

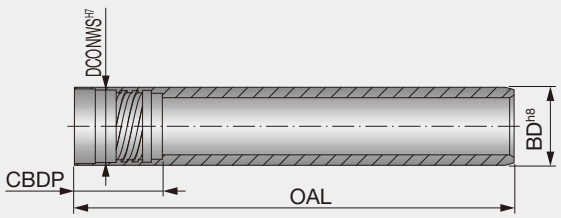
ISO	Workpiece material	JIS	Condition		Hardness (HB)	Cutting speed Vc (sfm)	Feed per revolution: fn (in/rev) Drill dia. (in) 0.315" - 0.787" MBU, UTE	0.496" - 0.787" BTU, ETU	0.788" - 1.220" BTU, ETU	1.221" - 1.693" BTU, ETU	1.693" - 2.559" BTU, ETU
P	Carbon steels Cast steels High carbon steels Carbon tool steels	1010 - 1025	0.1 - 0.25 %C	Non-hardened	125	230 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.012
		1025 - 1055	0.25 - 0.25 %C	Non-hardened	190	230 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.012
			0.25 - 0.25 %C	Hardened	250	230 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.012
		SK	0.55 - 0.80 %C	Non-hardened	220	230 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.012
			0.55 - 0.80 %C	Hardened	300	230 - 427	0.002 - 0.004	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.011
	Low alloy steels Cast steels (alloying element < 5%)	SNC, DCr, SNCN SCM, SMn		Non-hardened	200	230 - 361	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.012
				Hardened	275	197 - 361	0.002 - 0.004	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.011
					300	197 - 361	0.002 - 0.004	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.011
					350	197 - 361	0.002 - 0.004	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.011
	High alloy steels, Cast steels Tool steels	SNS, SKD, SKT SKH, SK		Non-hardened	200	230 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.012
				Hardened	325	230 - 427	0.002 - 0.004	0.003 - 0.005	0.004 - 0.006	0.005 - 0.007	0.006 - 0.011
M	Stainless steels	430SS		Ferritic	200	131 - 361	0.002 - 0.005	0.003 - 0.006	0.004 - 0.011	0.005 - 0.012	0.006 - 0.014
		410SS		Martensitic	240	131 - 361	0.002 - 0.005	0.003 - 0.006	0.004 - 0.011	0.005 - 0.012	0.006 - 0.014
		304SS,316SS		Austenitic	180	131 - 361	0.002 - 0.005	0.002 - 0.005	0.003 - 0.010	0.004 - 0.011	0.006 - 0.013
K	Ductile cast iron	60-40-18 - 65-45-120		Ferritic / Pearlitic	180	164 - 361	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.012
		80-55-06 - 100-70-03		Pearlitic	260	164 - 361	0.002 - 0.005	0.003 - 0.006	0.004 - 0.007	0.005 - 0.008	0.006 - 0.012
	Gray cast iron	Class 10 - Class 20		Low tensile strength	160	197 - 361	0.002 - 0.005	0.002 - 0.005	0.003 - 0.007	0.004 - 0.008	0.006 - 0.010
		Class 25 - Class 35		High tensile strength	250	197 - 361	0.002 - 0.005	0.002 - 0.005	0.003 - 0.007	0.004 - 0.008	0.006 - 0.010
	Malleable cast irons	FCMB,FCMW		Ferritic	130	230 - 361	0.002 - 0.005	0.002 - 0.005	0.003 - 0.007	0.004 - 0.008	0.006 - 0.010
		FCMWP,FCMP		Pearlitic	230	230 - 361	0.002 - 0.005	0.002 - 0.005	0.003 - 0.007	0.004 - 0.008	0.006 - 0.010
N	Aluminum alloy Wrought			Non-aged	60	213 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012
				Soluted, Aged	100	213 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012
	Aluminum alloy Cast		<=12% Si	Non-aged	75	213 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012
				Soluted, Aged	90	213 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012
			>12% Si	High silicon content	130	213 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012
	Copper alloys		>1% Pb	Free-cutting copper	110	213 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012
				Brass, Red brass	90	213 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012
				Electrolytic copper	100	213 - 427	0.002 - 0.005	0.003 - 0.006	0.004 - 0.008	0.006 - 0.010	0.006 - 0.012
S	Heat-resistant alloy		Fe based alloys	Non-aged	200	66 - 164	0.002 - 0.005	0.002 - 0.005	0.003 - 0.006	0.005 - 0.007	0.006 - 0.010
				Soluted, Aged	280	66 - 164	0.002 - 0.005	0.002 - 0.005	0.003 - 0.006	0.005 - 0.007	0.006 - 0.010
			Ni / Co based alloys	Non-aged	250	66 - 164	0.002 - 0.005	0.002 - 0.005	0.003 - 0.006	0.005 - 0.007	0.006 - 0.010
				Soluted, Aged	350	66 - 164	0.002 - 0.005	0.002 - 0.005	0.003 - 0.006	0.005 - 0.007	0.006 - 0.010
				Cast	320	66 - 164	0.002 - 0.005	0.002 - 0.005	0.003 - 0.006	0.005 - 0.007	0.006 - 0.010
	Titanium alloys		α		Rm400	98 - 197	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004 - 0.006	0.005 - 0.008
			α-β		Rm1050	98 - 197	0.002 - 0.004	0.002 - 0.004	0.003 - 0.005	0.004 - 0.006	0.005 - 0.008

The above values may need modification depending on the machining conditions, materials, etc.

ST

ST - for single tube system

Drill tube for single tube system (STS), internal thread type, 2-start thread (tool dia. ≤ ø15.59 mm, 0.614") or 4-start thread (tool dia. ≥ ø15.6 mm, 0.614")



Metric	DCN - DCX (in)	DCN - DCX (mm)	OAL 1600	OAL 2600	OAL Special length	BD	DCONWS	CBDP
ST0094	0.496 - 0.535	12.6 - 13.6	●		○	11	9.6	22
ST0095	0.536 - 0.575	13.61 - 14.6	●		○	12	10.6	22
ST0096	0.575 - 0.614	14.61 - 15.59	●		○	13	11.6	22
ST0097	0.614 - 0.657	15.6 - 16.7	●		○	14	12.6	21
ST0098	0.658 - 0.697	16.71 - 17.7	●	●	○	15	13.6	21
ST0099	0.697 - 0.744	17.71 - 18.9	●	●	○	16	14.5	22
ST0000	0.744 - 0.787	18.91 - 20	●	●	○	17	15.5	22
ST00	0.788 - 0.858	20.01 - 21.8	●	●	○	18	16	27.5
ST01	0.859 - 0.949	21.81 - 24.1		●	○	20	18	30
ST02	0.949 - 1.039	24.11 - 26.4		●	○	22	19.5	30
ST03	1.040 - 1.130	26.41 - 28.7		●	○	24	21	30
ST04	1.130 - 1.220	28.71 - 31		●	○	26	23.5	33
ST05	1.221 - 1.311	31.01 - 33.3		●	○	28	25.5	33
ST06	1.311 - 1.425	33.31 - 36.2		●	○	30	28	33
ST07	1.426 - 1.559	36.21 - 39.6		●	○	33	30	40
ST08	1.559 - 1.693	39.61 - 43		●	○	36	33	40
ST09	1.693 - 1.850	43.01 - 47		●	○	39	36	40
ST10	1.851 - 2.035	47.01 - 51.7		●	○	43	39	40
ST11	2.036 - 2.213	51.71 - 56.2		●	○	47	43	44
ST12	2.213 - 2.386	56.21 - 60.6		●	○	51	47	44
ST13	2.386 - 2.559	60.61 - 65			○	56	51	44

Metric	DCN - DCX (in)	DCN - DCX (mm)	OAL Special length	BD	DCONWS	CBDP
ST14	2.559 - 2.637	65 - 66.99	○	56	52	75
ST15	2.638 - 2.874	67 - 72.99	○	62	58	75
ST16	2.874 - 3.149	73 - 79.99	○	68	63	75
ST17	3.15 - 3.425	80 - 86.99	○	75	70	97
ST18	3.425 - 3.937	87 - 99.99	○	82	77	97
ST19	3.937 - 4.409	100 - 111.99	○	94	89	97
ST20	4.409 - 4.881	112 - 123.99	○	106	101	118
ST21	4.882 - 5.354	124 - 135.99	○	118	113	118
ST22	5.354 - 5.826	136 - 147.99	○	130	125	118
ST23	5.827 - 6.299	148 - 159.99	○	142	137	139
ST24	6.299 - 6.771	160 - 171.99	○	154	149	139
ST25	6.772 - 7.244	172 - 183.99	○	166	161	139
ST26	7.244 - 7.716	184 - 195.99	○	178	173	144
ST27	7.717 - 8.189	196 - 207.99	○	190	185	144
ST28	8.189 - 8.661	208 - 219.99	○	202	197	144
ST29	8.661 - 9.133	220 - 231.99	○	214	208	164
ST30	9.134 - 9.606	232 - 243.99	○	226	220	164
ST31	9.606 - 10.078	244 - 255.99	○	238	232	164
ST32	10.079 - 10.551	256 - 267.99	○	250	244	184
ST33	10.551 - 11.023	268 - 279.99	○	262	256	184
ST34	11.024 - 11.496	280 - 291.99	○	274	268	184

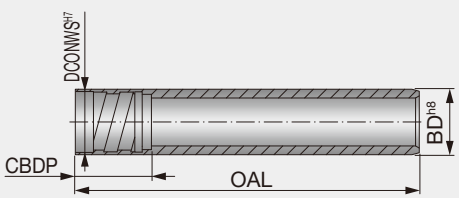
Please specify the length (L) when ordering.
e.g. For ø60 mm drill diameter / 2600 mm drill tube length: ST12X2600
The lengths that are not in the above will be available upon request.

● : Line up
○ : Item to be customized

UMBB

UMBB - for single tube system with MBU

Drill tube with internal single-start thread for MBU drill head



Metric	DCN - DCX (in)	DCN - DCX (mm)	OAL Special length	BD	DCONWS	CBDP
UMBB071	0.315 - 0.354	8 - 8.99	○	7.1	6	13.5
UMBB083	0.354 - 0.393	9 - 9.99	○	8.3	7.2	13.5
UMBB090	0.394 - 0.433	10 - 10.99	○	9	7.6	13.5
UMBB100	0.433 - 0.472	11 - 11.99	○	10	8.6	13.5
UMBB110	0.472 - 0.531	12 - 13.49	○	11	9.1	13.5
UMBB120	0.531 - 0.582	13.5 - 14.79	○	12	10.8	13.5

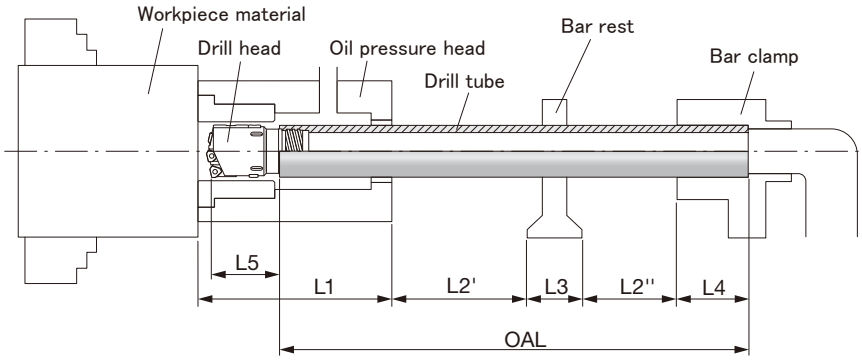
Please specify the length (L) when ordering.
e.g. For ø11 mm drill diameter / 1000 mm drill tube length: UMBB100X1000

○: Item to be customized

Reference pages: ST: Drill head → J128 (TRI-FINE STS-EX), J132 (FINE BEAM STS-EX), J138 (UNIDEX STS-EX), J145 (UTE), J146 - J147 (BTU)
UMBB: Drill head → J144 (MBU)

TUBE LENGTH FOR SPECIAL DRILLS

Drill tubes with the lengths that are not for standard items will be available upon request.
Please use the below guide to calculate the drill tube length.



L = Drill tube whole length
L1 = Oil pressure head length
L2 = Drilli ng depth (L2' + L2'')
L3 = Bar rest length
L4 = Drill tube clamp length
L5 = Length from drill tube tip and peripheral edge tip

Drill tube length OAL = L1 + L2 + L3 + L4 - L5

BTU

DCN - DCX (in)	DCN - DCX (mm)	L5
0.496 - 0.697	12.6 - 17.7	20
0.697 - 0.756	17.71 - 19.2	23
0.756 - 0.858	19.21 - 21.8	22
0.859 - 0.949	21.81 - 24.1	23
0.949 - 1.130	24.11 - 28.7	24
1.130 - 1.311	28.71 - 33.3	27
1.311 - 1.425	33.31 - 36.2	26
1.426 - 1.598	36.21 - 40.6	29
1.599 - 1.693	40.61 - 43	28
1.693 - 1.850	43.01 - 47	30
1.851 - 2.035	47.01 - 51.7	29
2.036 - 2.213	51.71 - 56.2	32
2.213 - 2.299	56.21 - 58.4	34
2.300 - 2.559	58.41 - 65	33

FINE-BEAM

DCN - DCX (in)	DCN - DCX (mm)	L5
0.984 - 1.130	25 - 28.7	40
1.130 - 1.311	28.71 - 33.3	42
1.311 - 1.425	33.31 - 36.2	47
1.426 - 1.559	36.21 - 39.6	50
1.559 - 1.693	39.61 - 43	55
1.693 - 2.035	43.01 - 51.7	60
2.036 - 2.213	51.71 - 56.2	66
2.213 - 2.559	56.21 - 65	71

UNIDEX

DCN - DCX (in)	DCN - DCX (mm)	L5
1.496 - 1.693	38 - 43	45
1.693 - 2.035	43.01 - 51.7	55
2.036 - 2.213	51.71 - 56.2	56
2.213 - 2.559	56.21 - 65	66
2.559 - 3.149	65 - 79.99	75
3.150 - 4.409	80 - 111.99	83
4.409 - 5.826	112 - 147.99	87
5.827 - 7.244	148 - 183.99	86
7.244 - 10.078	184 - 255.99	101
10.079 - 11.496	256 - 291.99	106

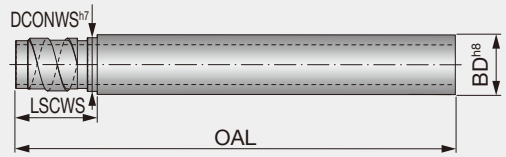
TRI-FINE

DCN - DCX (in)	DCN - DCX (mm)	L5
0.630 - 0.657	16 - 16.7	34
0.658 - 0.697	16.71 - 17.7	34
0.697 - 0.744	17.71 - 18.9	34
0.744 - 0.787	18.91 - 20	34
0.788 - 0.858	20.01 - 21.8	32.5
0.859 - 0.866	21.81 - 21.99	33.5
0.866 - 0.949	22 - 24.1	35.5
0.949 - 1.039	24.11 - 26.4	35.5
1.040 - 1.102	26.41 - 28	35.5

UB

UB - for single tube system

Drill tube for single tube system (STS), external thread type, single-start thread



Metric	DCN - DCX (in)	DCN - DCX (mm)	OAL Special length	BD	DCONWS	LSCWS
UB12-1	0.571 - 0.591	14.5 - 15	○	12	11.5	23
UB12-2	0.591 - 0.61	15.01 - 15.5	○	12	11.8	23
UB13-1	0.611 - 0.63	15.51 - 16	○	13	12.4	23
UB13-2	0.630 - 0.650	16.01 - 16.5	○	13	12.7	23
UB14-1	0.650 - 0.679	16.51 - 17.25	○	14	13.4	23
UB14-2	0.680 - 0.709	17.26 - 18	○	14	13.7	23
UB15	0.709 - 0.748	18.01 - 19	○	15	14.4	23
UB16.5	0.748 - 0.787	19.01 - 19.99	○	16.5	15.4	23
UB18	0.787 - 0.866	20 - 21.99	○	18	16.5	26
UB20	0.866 - 0.984	22 - 24.99	○	20	19	26
UB22	0.984 - 1.063	25 - 26.99	○	22	20	26
UB24	1.063 - 1.181	27 - 29.99	○	24	22	26
UB26	1.181 - 1.259	30 - 31.99	○	26	24	26
UB28	1.260 - 1.338	32 - 33.99	○	28	26	26
UB30	1.339 - 1.456	34 - 36.99	○	30	27	41
UB33	1.457 - 1.574	37 - 39.99	○	33	30	41
UB36	1.575 - 1.732	40 - 43.99	○	36	33	41
UB39	1.732 - 1.850	44 - 46.99	○	39	37	41
UB43	1.850 - 2.047	47 - 51.99	○	43	41	41
UB47	2.047 - 2.244	52 - 56.99	○	47	44	41
UB51	2.244 - 2.401	57 - 60.99	○	51	49	41

Metric	DCN - DCX (in)	DCN - DCX (mm)	OAL Special length	BD	DCONWS	LSCWS
UB56	2.402 - 2.677	61 - 67.99	○	56	53	41
UB62	2.677 - 2.952	68 - 74.99	○	62	59	41
UB68	2.953 - 3.189	75 - 80.99	○	68	65	71
UB75	3.189 - 3.582	81 - 90.99	○	75	71	71
UB82	3.583 - 3.897	91 - 98.99	○	82	79	71
UB94	3.898 - 4.370	99 - 110.99	○	94	90	71
UB106	4.370 - 4.842	111 - 122.99	○	106	102	71
UB118	4.843 - 5.315	123 - 134.99	○	118	114	71
UB130	5.315 - 5.866	135 - 148.99	○	130	126	71
UB142	5.866 - 6.378	149 - 161.99	○	142	139	71
UB154	6.378 - 6.850	162 - 173.99	○	154	151	86
UB166	6.850 - 7.322	174 - 185.99	○	166	163	86
UB178	7.323 - 7.795	186 - 197.99	○	178	175	86
UB190	7.795 - 8.267	198 - 209.99	○	190	187	86
UB202	8.268 - 8.740	210 - 221.99	○	202	199	86
UB214	8.740 - 9.212	222 - 233.99	○	214	211	86
UB226	9.213 - 9.685	234 - 245.99	○	226	223	86
UB238	9.685 - 10.157	246 - 257.99	○	238	235	86
UB250	10.157 - 10.63	258 - 269.99	○	250	247	121
UB262	10.63 - 11.102	270 - 281.99	○	262	259	121
UB274	11.102 - 11.574	282 - 293.99	○	274	271	121

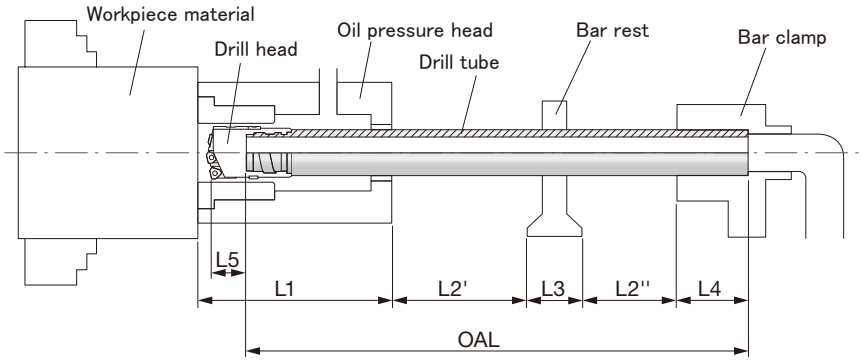
Please specify the length (L) when ordering.
e.g. For ø60 mm drill diameter / 2600 mm drill tube length: UB51X2600

○ : Item to be customized

Reference pages: Drill head → J128 (TRI-FINE STS-IN), J133 (FINE BEAM STS-IN), J138 (UNIDEX STS-IN)

TUBE LENGTH FOR SPECIAL DRILLS

Please use the below guide to calculate the drill tube length.



OAL = Drill tube whole length
L1 = Oil pressure head length
L2 = Drilli ng depth (L2' + L2'')
L3 = Bar rest length
L4 = Drill tube clamp length
L5 = Length from drill tube tip and peripheral edge tip

Drill tube length OAL = L1 + L2 + L3 + L4 - L5

FINE-BEAM

DCN - DCX		L5
(in)	(mm)	
0.984 - 1.181	25 - 29.99	45
1.181 - 1.338	30 - 33.99	50
1.339 - 1.456	34 - 36.99	50
1.457 - 1.574	37 - 39.99	55
1.575 - 1.732	40 - 43.99	60
1.732 - 2.047	44 - 51.99	65
2.047 - 2.244	52 - 56.99	70
2.244 - 2.559	57 - 65	75

UNIDEX

DCN - DCX		L5
(in)	(mm)	
1.496 - 1.732	38 - 43.99	40
1.732 - 2.047	44 - 51.99	50
2.047 - 2.244	52 - 56.99	60
2.244 - 2.677	57 - 67.99	70
2.677 - 6.378	68 - 161.99	80
6.378 - 10.157	162 - 257.99	105
10.157 - 11.574	258 - 293.99	90

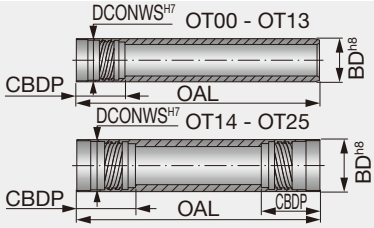
TRI-FINE

DCN - DCX		L5
(in)	(mm)	
0.63 - 0.65	16 - 16.5	31.5
0.65 - 0.679	16.51 - 17.25	31.5
0.68 - 0.709	17.26 - 18	31.5
0.709 - 0.748	18.01 - 19	31.5
0.748 - 0.787	19.01 - 19.99	31.5
0.787 - 0.866	20 - 21.99	33
0.866 - 0.984	22 - 24.99	35
0.984	25	35
0.985 - 1.063	25.01 - 26.99	40
1.063 - 1.102	27 - 28	40

OT & IT

OT & IT - for double tube system

Outer tube and inner tube for double tube system



Outer tube (OT)

Metric	DCN - DCX (in)	DCN - DCX (mm)	OAL Special length	BD	DCONWS	CBDP
OT00	0.724 - 0.787	18.4 - 20	○	18	16	27.5
OT01	0.788 - 0.858	20.01 - 21.8	○	19.5	18	30
OT02	0.859 - 0.949	21.81 - 24.1	○	21.5	19.5	30
OT03	0.949 - 1.039	24.11 - 26.4	○	23.5	21	30
OT04	1.040 - 1.130	26.41 - 28.7	○	26	23.5	33
OT05	1.130 - 1.220	28.71 - 31	○	28	25.5	33
OT06	1.221 - 1.311	31.01 - 33.3	○	30.5	28	33
OT07	1.311 - 1.425	33.31 - 36.2	○	33	30	40
OT08	1.426 - 1.559	36.21 - 39.6	○	35.5	33	40
OT09	1.559 - 1.693	39.61 - 43	○	39	36	40
OT10	1.693 - 1.850	43.01 - 47	○	42.5	39	40
OT11	1.851 - 2.035	47.01 - 51.7	○	46.5	43	44
OT12	2.036 - 2.213	51.71 - 56.2	○	51	47	44
OT13	2.213 - 2.559	56.21 - 65	○	55.5	51	44
OT14	2.559 - 2.637	65 - 66.99	○	56	52	75
OT15	2.756 - 2.874	70 - 72.99	○	62	58	75
OT16	2.874 - 3.149	73 - 79.99	○	68	63	75
OT17	3.150 - 3.425	80 - 86.99	○	75	70	97
OT18	3.425 - 3.937	87 - 99.99	○	82	77	97
OT19	3.937 - 4.409	100 - 111.99	○	94	89	97
OT20	4.409 - 4.881	112 - 123.99	○	106	101	118
OT21	4.882 - 5.354	124 - 135.99	○	118	113	118
OT22	5.354 - 5.826	136 - 147.99	○	130	125	118
OT23	5.827 - 6.299	148 - 159.99	○	142	137	139
OT24	6.299 - 6.771	160 - 171.99	○	154	149	139
OT25	6.772 - 7.244	172 - 183.99	○	166	161	139

Inner tube (IT)

Metric	DCN - DCX (in)	DCN - DCX (mm)	OAL Special length	BD	BD2
IT00	0.724 - 0.787	18.4 - 20	○	12	10
IT01	0.788 - 0.858	20.01 - 21.8	○	14	12
IT02	0.859 - 0.949	21.81 - 24.1	○	15	13
IT03	0.949 - 1.039	24.11 - 26.4	○	16	14
IT04	1.040 - 1.130	26.41 - 28.7	○	18	16
IT05	1.130 - 1.220	28.71 - 31	○	20	18
IT06	1.221 - 1.311	31.01 - 33.3	○	22	20
IT07	1.311 - 1.425	33.31 - 36.2	○	24	22
IT08	1.426 - 1.559	36.21 - 39.6	○	26	24
IT09	1.559 - 1.693	39.61 - 43	○	29	27
IT10	1.693 - 1.850	43.01 - 47	○	32	30
IT11	1.851 - 2.035	47.01 - 51.7	○	35	32
IT12	2.036 - 2.213	51.71 - 56.2	○	39	36
IT13	2.213 - 2.559	56.21 - 65	○	43	40
IT14	2.559 - 2.637	65 - 66.99	○	-	40
IT15	2.756 - 2.874	70 - 72.99	○	-	44
IT16	2.874 - 3.149	73 - 79.99	○	-	48
IT17	3.15 - 3.425	80 - 86.99	○	-	54
IT18	3.425 - 3.937	87 - 99.99	○	-	60
IT19	3.937 - 4.409	100 - 111.99	○	-	70
IT20	4.409 - 4.881	112 - 123.99	○	-	80
IT21	4.882 - 5.354	124 - 135.99	○	-	80
IT22	5.354 - 5.826	136 - 147.99	○	-	95
IT23	5.827 - 6.299	148 - 159.99	○	-	100
IT24	6.299 - 6.771	160 - 171.99	○	-	120
IT25	6.772 - 7.244	172 - 183.99	○	-	130

○ : Item to be customized

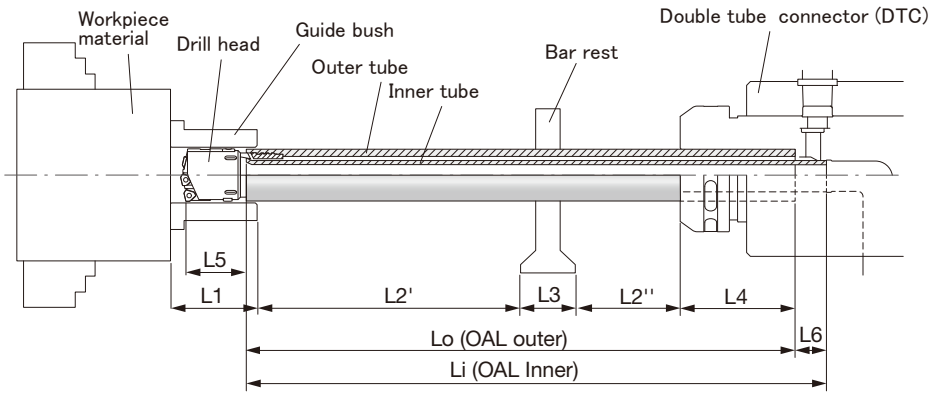
Please specify the length when ordering.
e.g. For ø60 mm drill diameter / 1070 mm drill outer tube length: OT13X1070
Please choose the inner tube length according to the below.

- tool diameter: ø18.40 - 65.00 mm (OT00 - OT13) ..... Inner tube length = Outer tube length + 30 mm
- tool diameter: ø65.00 - 123.99 mm (OT14 - OT20) ..... Inner tube length = Outer tube length + 190 mm
- tool diameter: ø124.00 - 183.99 mm (OT21 - OT25) ..... Inner tube length = Outer tube length + 220 mm

Reference pages: Drill head → J129 (TRI-FINE DTS), J134 (FINE BEAM DTS), J140 (UNIDEX DTS), J148 (ETU)

TUBE LENGTH FOR SPECIAL DRILLS

Please use the below guide to calculate the drill tube length.



Lo = Outer tube whole length
Li = Inner tube whole length
L1 = Guide bush length (or Pilot hole depth)
L2 = Drilling depth (L2' + L2")
L3 = Bar rest length
L4 = Length of outer tube in connector *
L5 = Length from drill tube tip and peripheral edge tip
L6 = Difference between outer tube length and inner tube length

Outer tube length Lo = L1 + L2 + L3 + L4 - L5

Inner tube length Li = Lo + L6

DTC type	L4 *	L6 **
DTC 4R type (OT00 – OT13)	120	30
DTC 5R type (OT14 – OT20)	0	190
DTC 6R type (OT21 – OT25)	0	220

(mm)

The outer tube should enter in th e guide bush or the pilot hole with at least 5 mm.

ETU

DCN - DCX (in)	DCN - DCX (mm)	L5
0.724 - 0.787	18.4 - 20	20
0.788 - 0.949	20.01 - 24.1	23
0.949 - 1.130	24.11 - 28.7	24
1.130 - 1.311	28.71 - 33.3	27
1.311 - 1.425	33.31 - 36.2	26
1.426 - 1.598	36.21 - 40.6	29
1.599 - 1.693	40.61 - 43	28
1.693 - 1.850	43.01 - 47	30
1.851 - 2.035	47.01 - 51.7	29
2.036 - 2.213	51.71 - 56.2	32
2.213 - 2.299	56.21 - 58.4	34
2.300 - 2.559	58.41 - 65	33

FINE-BEAM

DCN - DCX (in)	DCN - DCX (mm)	L5
0.984 - 1.039	25 - 26.4	40
1.040 - 1.220	26.41 - 31	42
1.221 - 1.311	31.01 - 33.3	47
1.311 - 1.425	33.31 - 36.2	50
1.426 - 1.559	36.21 - 39.6	55
1.559 - 1.850	39.61 - 47	60
1.851 - 2.035	47.01 - 51.7	66
2.036 - 2.559	51.71 - 65	71

UNIDEX

DCN - DCX (in)	DCN - DCX (mm)	L5
1.496 - 1.693	38 - 43	45
1.693 - 1.850	43.01 - 47	55
1.851 - 2.035	47.01 - 51.7	51
2.036 - 2.213	51.71 - 56.2	56
2.213 - 2.559	56.21 - 65	66
2.559 - 3.149	65 - 79.99	75
3.150 - 4.409	80 - 111.99	83
4.409 - 5.826	112 - 147.99	87
5.827 - 7.244	148 - 183.99	86

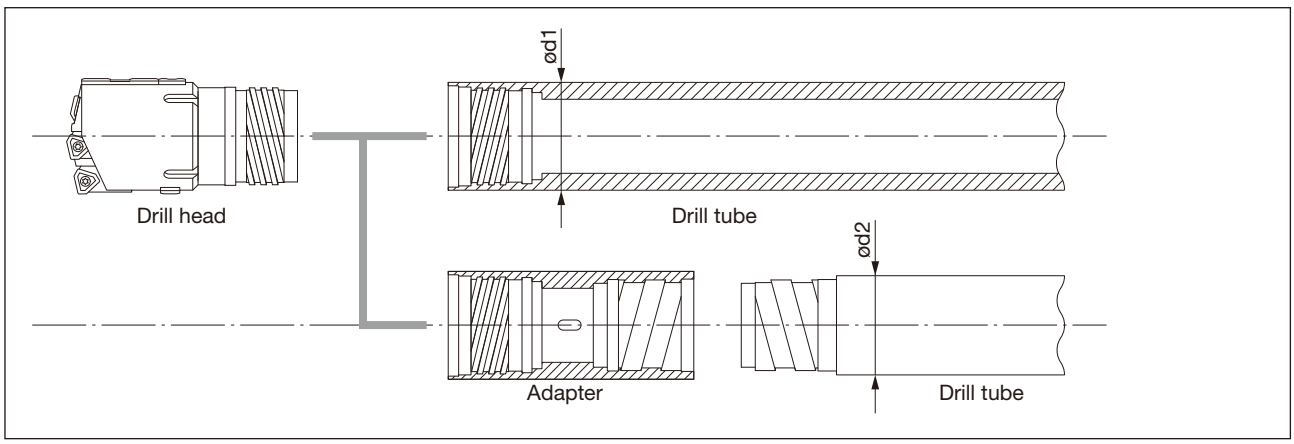
TRI-FINE

DCN - DCX (in)	DCN - DCX (mm)	L5
0.724 - 0.787	18.4 - 20	31.5
0.788 - 0.858	20.01 - 21.8	33.5
0.859 - 0.866	21.81 - 21.99	33.5
0.866 - 0.949	22 - 24.1	35.5
0.949 - 0.984	24.11 - 25	35.5
0.985 - 1.039	25.01 - 26.4	37.5
1.040 - 1.102	26.41 - 28	37.5

STS Single Tube System DTS Double Tube System

CONVERSION ADAPTER

Adapter for external thread - internal thread conversion



ød1: Outer diameter of the tube that is applicable for the drill head
ød2: Outer diameter of the tube that is connected with the adapter

ADPT- □□□ / □□□

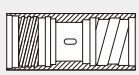
SS	Single-start thread	SS	Single-start thread
TS	2-start thread	TS	2-start thread
FS	4-start thread	FS	4-start thread
ød1		ød2	
F	Internal thread	F	Internal thread
M	External thread	M	External thread

Designation example

For the conversion from ST11 to UB47

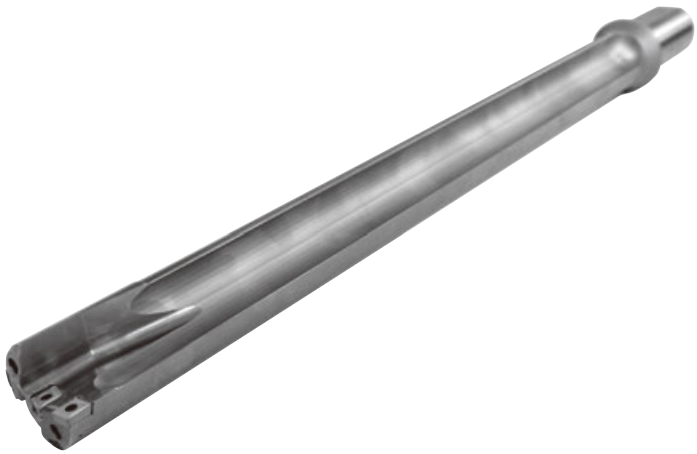
ADPT-F47FS / F47SS

ST11 UB47



* The adapters to change sizes will be available upon request.

HF Drill : Indexable drill for deep hole



Economical for middle range deep hole drilling

- Tool diameter range: ø30 - ø63 mm (*)
- Drilling depth: 6xD - 14xD
- Shortened drilling time when using conventional machine

* Other diameters are available upon request.

Effective machining on conventional machines

- Recommended for use on Horizontal M/C
- Can also be used on turning machine

Good chip evacuation

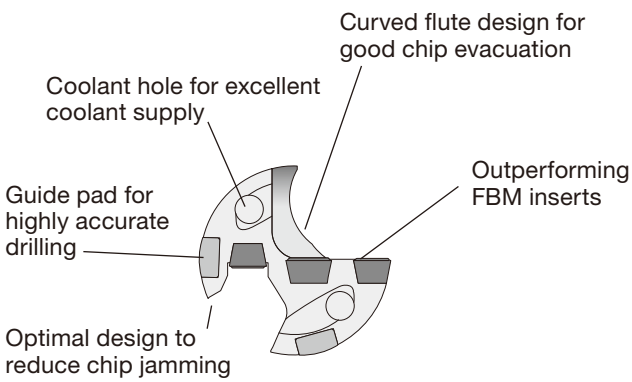
- FBM inserts enable best chip control
- Unique head design eliminates chip jamming
- Curved flute design ensures good chip evacuation

Easy to use, rigid drill body

- Direct mount inserts, no diameter adjustment necessary
- Body is made from heat treated tool steel

High quality surface finish

- Burnishing effect improves surface finish
- Possible to eliminate finish process



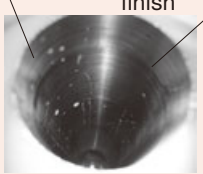
PRACTICAL EXAMPLE

Cutting conditions

Tool diameter DC:	ø30 mm
Drilling depth:	200 mm
Workpiece material:	S45C
Cutting speed *Vc*:	100 m/min
Feed *f*:	0.1 mm/rev
Machine:	BT50 M/C

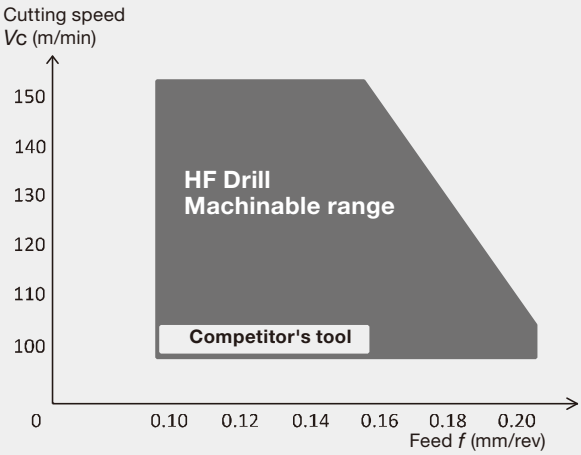
No spiral marks caused by chips

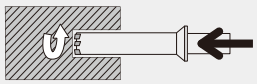
Burnishing effect by guide pads improves surface finish



BT50 M/C Machining data

Excellent chip evacuation ensures the stable drilling on M/C.





- Water-soluble coolant
- Pressure: 1.5 MPa
- Through spindle

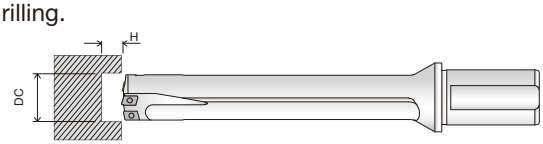
Tool diameter DC:	ø30 mm
Drilling depth:	200 mm
Workpiece material:	S45C
Cutting speed *Vc*:	100 - 150 m/min
Feed *f*:	0.1 - 0.2 mm/rev
Machine:	BT50 Horizontal M/C (Max 11 KW)

Cautionary points in use

To start the tool, a pilot hole is required. (tolerance: + 0.1 to 0.15 mm)

Tool diameter DC (mm)	Pilot hole length H (mm)
ø30 ~ ø39	over 10
ø39.01 ~ ø45	over 12.5
ø45.01 ~ ø57	over 15
ø57.01 ~ ø63	over 17.5

- The pilot hole should ideally have a flat bottom, but generally a indexable drill is acceptable to create a pilot hole if the inner insert touches the bottom last.
- DrillForce-Meister series or TDX drills are recommended for a pilot hole drilling.

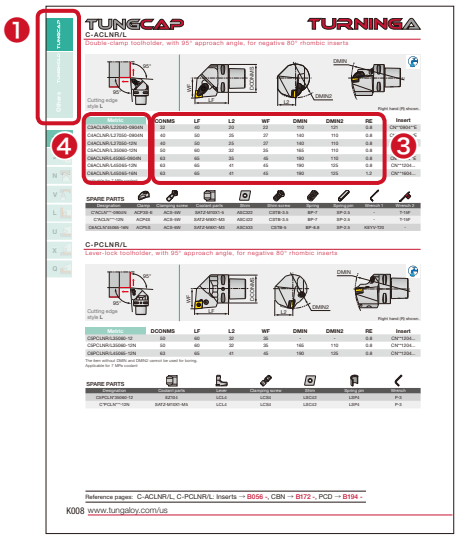


Tooling System

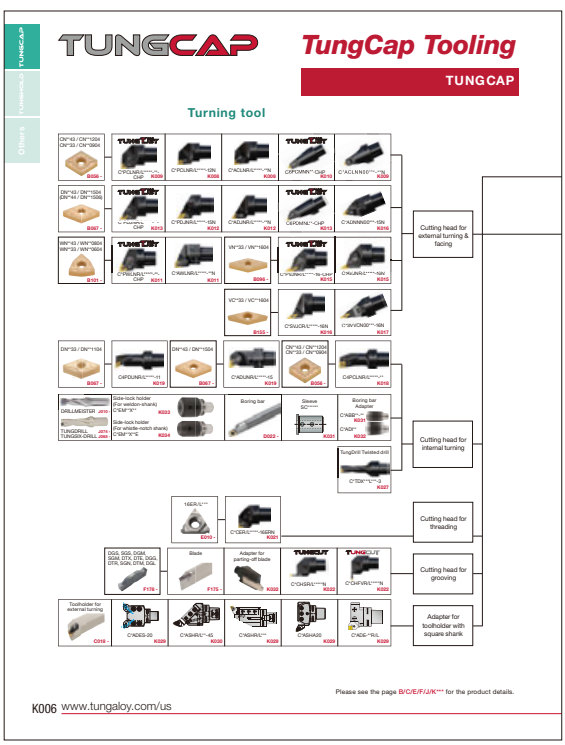
Tooling System - Content structure

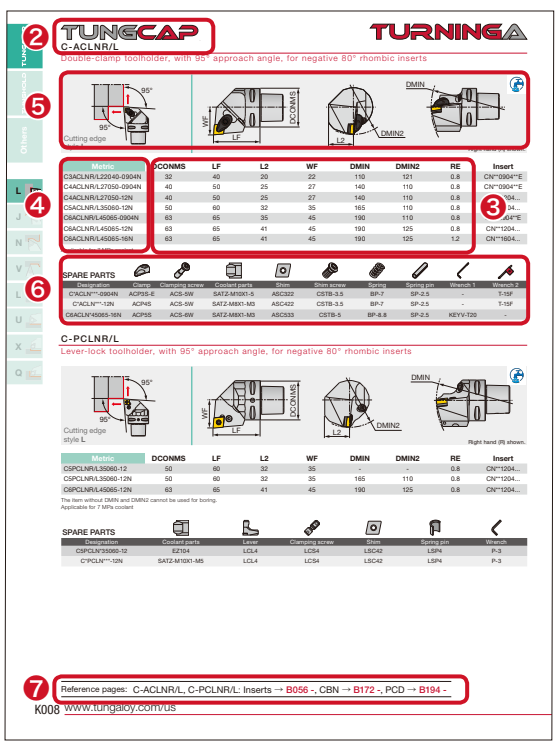
Products are listed by series.
Please refer the table of contents.
Tooling items in the catalog are our standard stock items.

How to use the page
Method 1.
Select the series name (❶) described at the left end of each page and choose a designation you need (❹) in the dimension table (❸).



Method 2.
Select the series name on **K003** and check the details on the product page.





❶ Name of the series
❷ Series name and item
❸ Dimension
❹ Designation
❺ Dimension drawing (conforming to ISO13399)
❻ Spare parts
❼ Reference pages

When ordering

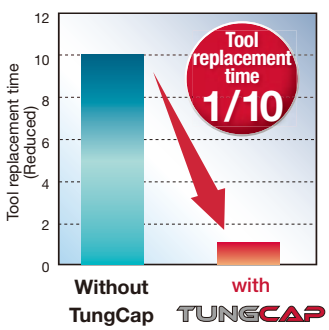
- Please specify the designation and quantity.
  e.g. Chuck: **CAT 40 ER32X4.000** ... 1 (one chuck per package)
  Collet: **ER32 SPR6-7** ... 1 (one collet per package)
  *The designation in the catalog may be described with spaces. Please remove such spaces.
  *Inserts are sold separately.

Main products

		Inch	Metric
	**TUNGCAP** Quick change system with polygon PSC coupling tooling K004 - K054		✓
	**TUNGHOLD** Tooling system for holders with unique functions in wide varieties HSK A/E - **K055** CAT - **K079** Tung Shrink - **K064** K055 - K135	✓	✓
	**Other tooling system** Spin Jet - **K136** Swiss Bore - **K142** K136 - K153	✓	✓

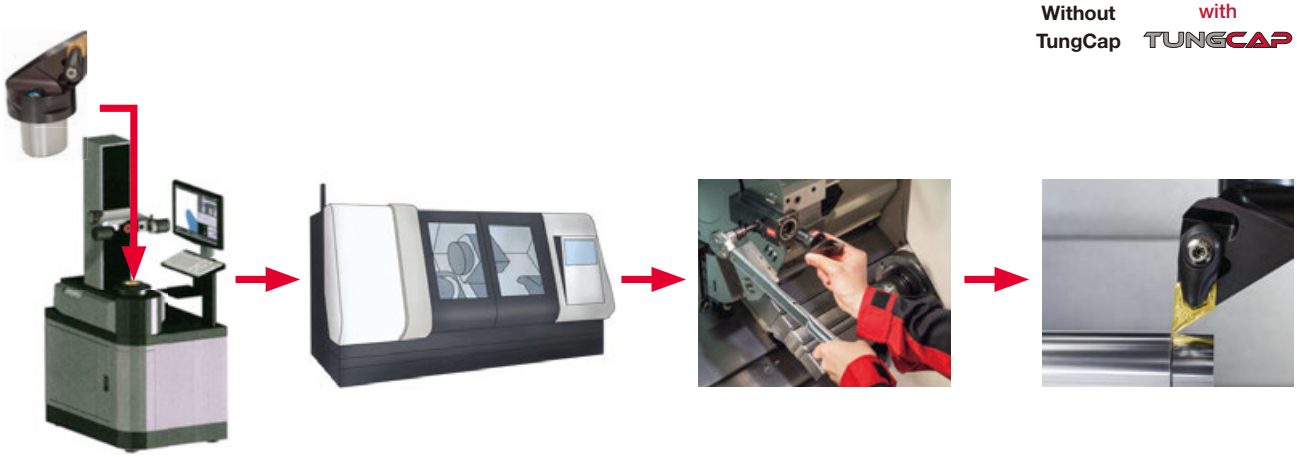
TUNGCAP

Productivity increases when used on CNC turret lathes / turning centers



Reduce downtime in your machine

- Short setup time - no tool adjustment required on the machine
- Once adjusted outside the machine, high precision



Measurement outside the machine

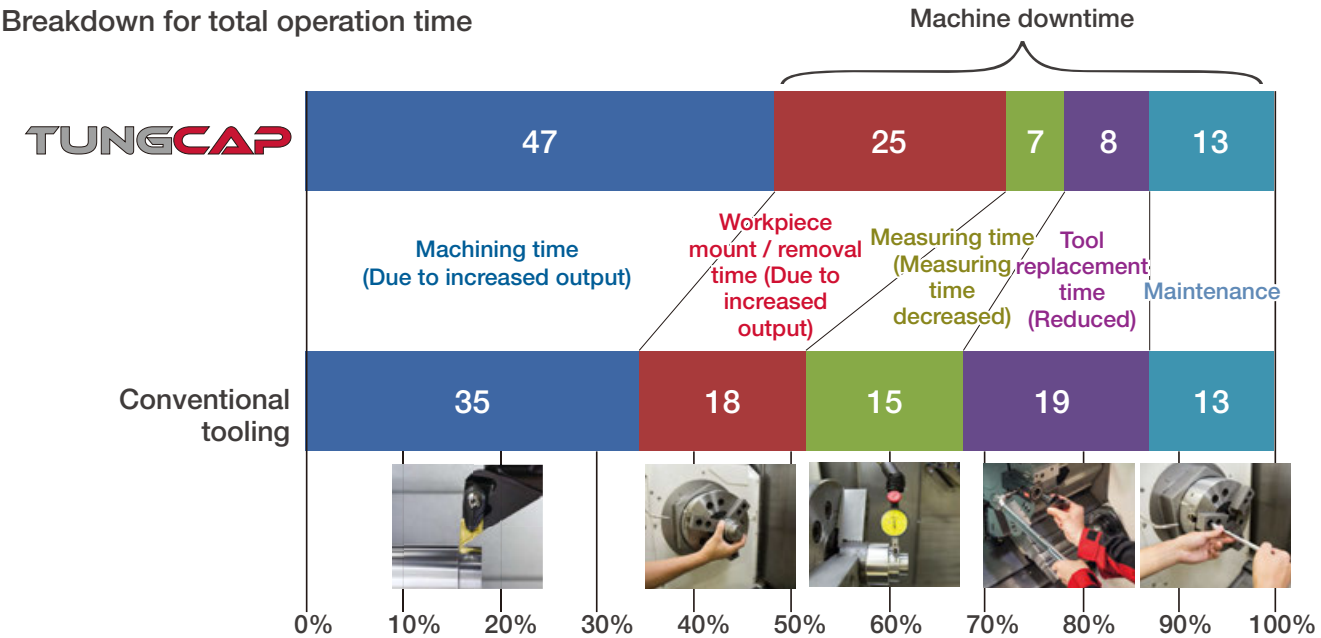
Input measured data

Short tool change time

High precision in simple process

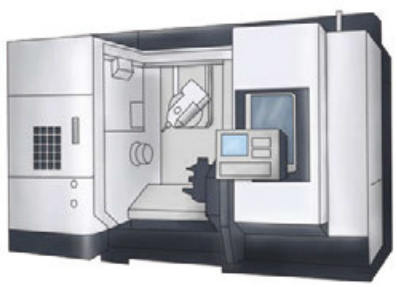
Reference pages: K006 - K054

Breakdown for total operation time



Tooling for multi-tasking machine

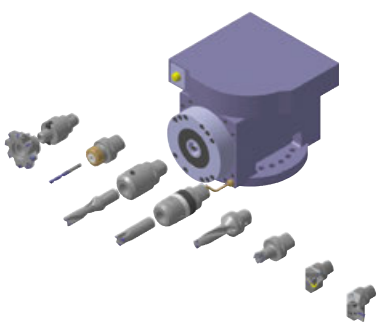
A multi-tasking machine is a combination of a turning center and a machining center, which allows a workpiece to be completed in a single machine setup. TungCap offers a complete range of efficient tooling solutions in such a highly advanced machine-tool.



Easy tool management

Suitable for a wide range of applications

- TungCap modular system enhances tooling flexibility in a wide range of applications, without compromising other interface adapters
- Dual contact Cat holders for USA also available



Ideal tooling

An optimized overhang length can be set with an extension or reduction holder

Cutting heads for a B-axis locked at 45° in multi-tasking machines

A large radial stroke is possible for B-axis
Heavy-duty machining is possible due to diverse cutting force
No interference in machining corner radii

TungCap Tooling

TUNGCAP

Turning tool

Please see the page B/C/E/F/J/K*** for the product details.

System for Multi - Tasking Machine

TOOLING SYSTEM

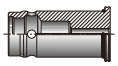
Tool spindle

Rotating tool

Endmill holder

C*MAXIN**X***
K040

Straight collet for endmill holder



SC*******
K041

Side-lock holder (For weldon-shank)

C*EM**X**K033

Side-lock holder (For whistle-notch shank)

C*EM**X**E
K034

ER-collet chuck holder

C*ER**X***
K035
C*ER**X***M
K036

ER-collet

ER******
K108 -

Collet chuck holder with adjusting alignment
TUNGFINE

ADJC*ER32
K036

ER-collet

ER******
K108 -

Shrink holder
TUNGSHRINK

C*SRKIN*X**
K042

TungDrill Twisted drill

C*TDX***L***-3
K027

Digital fine boring

K046

Arbor for face mill

C*SEM**X**C
K038

Arbor for slot mill

C*SCA**
K043

Holder for modular tool
TUNGFLEX

C*ODP**X**K039

High speed spindle
SPINJET

K136 -, K138

Extension adapter

C*EX-***

K044

Reduction adapter

C*-C*RE-***

K045

MULTICLAMPC*

MULTICLAMPC*
K045

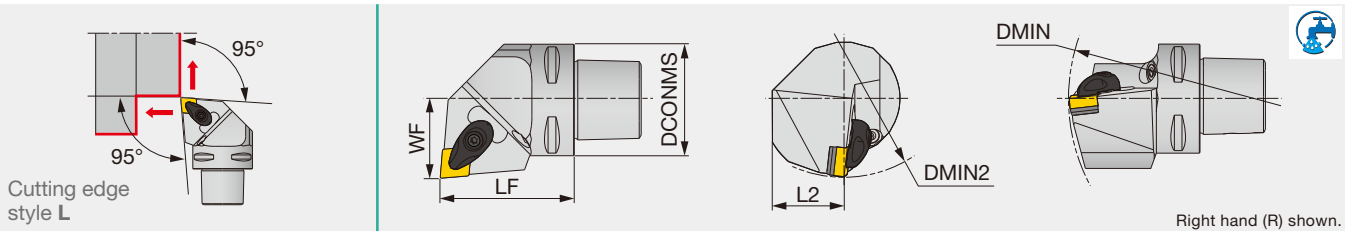
Please see the page B/C/E/F/J/K*** for the product details.

TUNGCAP

C-ACLNR/L

TURNINGA

Double-clamp toolholder, with 95° approach angle, for negative 80° rhombic inserts



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C3ACLNR/L22040-0904N	32	40	20	22	110	121	0.8	CN**0904**E
C4ACLNR/L27050-0904N	40	50	25	27	140	110	0.8	CN**0904**E
C4ACLNR/L27050-12N	40	50	25	27	140	110	0.8	CN**1204...
C5ACLNR/L35060-12N	50	60	32	35	165	110	0.8	CN**1204...
C6ACLNR/L45065-0904N	63	65	35	45	190	110	0.8	CN**0904**E
C6ACLNR/L45065-12N	63	65	41	45	190	125	0.8	CN**1204...
C6ACLNR/L45065-16N	63	65	41	45	190	125	1.2	CN**1606...

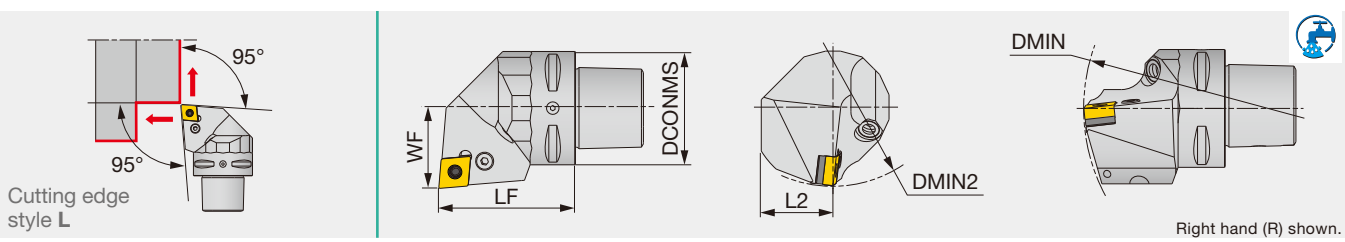
Applicable for 7 MPa coolant

SPARE PARTS

Designation	Clamp	Clamping screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench 1	Wrench 2
C*ACLN***-0904N	ACP3S-E	ACS-5W	SATZ-M10X1-5	ASC322	CSTB-3.5	BP-7	SP-2.5	-	T-15F
C*ACLN***-12N	ACP4S	ACS-5W	SATZ-M8X1-M3	ASC422	CSTB-3.5	BP-7	SP-2.5	-	T-15F
C6ACLN*45065-16N	ACP5S	ACS-6W	SATZ-M8X1-M3	ASC533	CSTB-5	BP-8.8	SP-2.5	KEYV-T20	-

C-PCLNR/L

Lever-lock toolholder, with 95° approach angle, for negative 80° rhombic inserts



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C5PCLNR/L35060-12	50	60	32	35	-	-	0.8	CN**1204...
C5PCLNR/L35060-12N	50	60	32	35	165	110	0.8	CN**1204...
C6PCLNR/L45065-12N	63	65	41	45	190	125	0.8	CN**1204...

The item without DMIN and DMIN2 cannot be used for boring.
Applicable for 7 MPa coolant

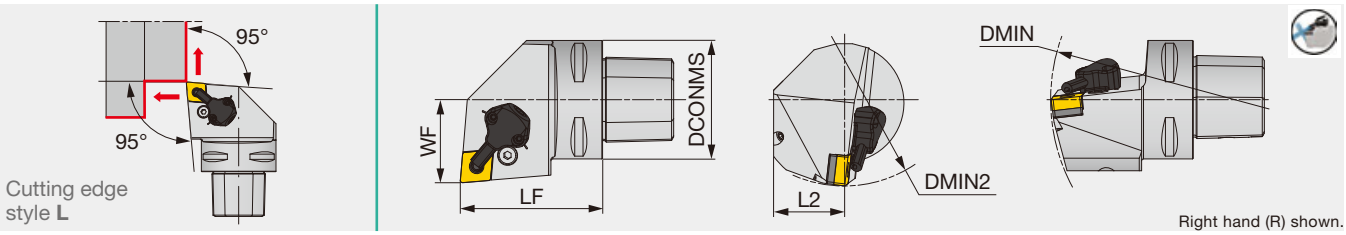
SPARE PARTS

Designation	Coolant parts	Lever	Clamping screw	Shim	Spring pin	Wrench
C5PCLN*35060-12	EZ104	LCL4	LCS4	LSC42	LSP4	P-3
C*PCLN***-12N	SATZ-M10X1-M5	LCL4	LCS4	LSC42	LSP4	P-3

Reference pages: C-ACLNR/L, C-PCLNR/L: Inserts → B056 -, CBN → B172 -, PCD → B194 -

C-PCLNR/L-CHP

Lever-lock toolholder, with 95° approach angle, for negative 80° rhombic inserts, with high pressure coolant capability



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4PCLNR/L27050-0904-CHP	40	50	25	27	140	110	0.8	CN**0904...
C4PCLNR/L27050-12-CHP	40	50	25	27	140	110	0.8	CN**1204...
C5PCLNR/L35060-12-CHP	50	60	32	35	165	110	0.8	CN**1204...
C6PCLNR/L45065-0904-CHP	63	65	41	45	190	125	0.8	CN**0904...
C6PCLNR/L45065-12-CHP	63	65	41	45	190	125	0.8	CN**1204...

Applicable for 14 MPa coolant

SPARE PARTS

Designation	Shim	Clamping screw	Spring pin	Lever	Wrench
C*PCLNR/L**-12-CHP	LSC42	LCS4	LSP4	LCL4	P-3
C*PCLNR/L**0904-CHP	LSC317	LCS3	LSP3	LCL33	P-2.5

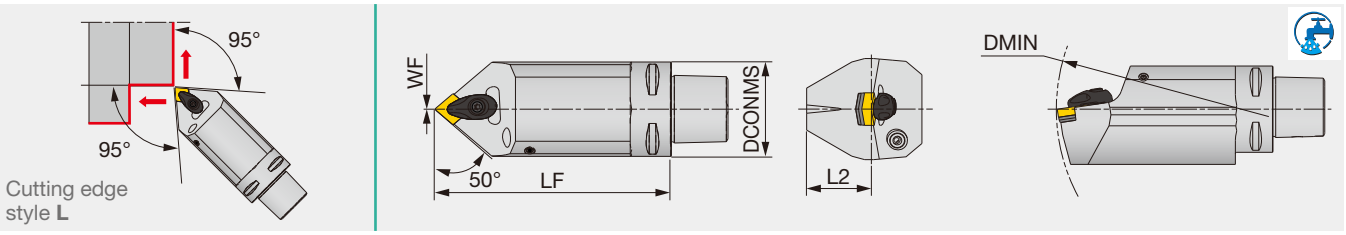
COOLANT SET

Designation	Coolant unit	Mounting screw	Wrench	O-ring
C*PCLNR/L**-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

C-ACLNN

TURNINGA

Double-clamp toolholder, with 50° approach angle, for negative 80° rhombic inserts



Metric	DCONMS	LF	L2	WF	DMIN	RE	Insert
C5ACLNN00090-12(1)	50	90	32	0	-	0.8	CN**1204...
C5ACLNN00090-12N(2)	50	90	32	0	165	0.8	CN**1204...
C5ACLNN00125-12(1)	50	125	32	0	-	0.8	CN**1204...
C5ACLNN00125-12N(2)	50	125	32	0	165	0.8	CN**1204...
C6ACLNN00100-12N(2)	63	100	37.5	0	190	0.8	CN**1204...
C6ACLNN00140-12N(2)	63	140	37.5	0	190	0.8	CN**1204...

The items without DMIN cannot be used for boring.
(1) Applicable for 3 MPa coolant (2) Applicable for 7 MPa coolant

SPARE PARTS

Designation	Clamp	Clamping screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench
C5ACLNN00090-12	ACP4S	ACS-5W	EZ83	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ACLNN00090-12N	ACP4S	ACS-5W	SATZ-M8X1-M3	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ACLNN00125-12	ACP4S	ACS-5W	EZ83	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ACLNN00125-12N	ACP4S	ACS-5W	SATZ-M8X1-M3	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ACLNN00100-12N	ACP4S	ACS-5W	SATZ-M8X1-M3	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ACLNN00140-12N	ACP4S	ACS-5W	SATZ-M8X1-M3	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F

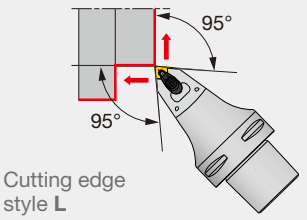
Reference pages: C-PCLNR/L-CHP, C-ACLNN: Inserts → B056 -, CBN → B172 -, PCD → B194 -

TUNGCAP

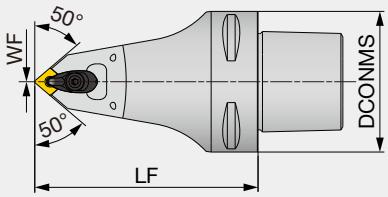
C-ACMNN

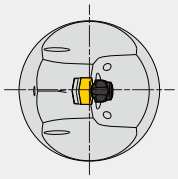
TURNINGA

Double-clamp toolholder, with 50° approach angle, for negative 80° rhombic inserts



Cutting edge style **L**





Metric	DCONMS	LF	WF	DMIN	RE	Insert
C6ACMNN00100-0904N	63	100	0	110	0.8	CN**0904**E
C6ACMNN00140-0904N	63	140	0	110	0.8	CN**0904**E
C6ACMNN00100-12N	63	100	0	110	0.8	CN**1204...
C6ACMNN00140-12N	63	140	0	110	0.8	CN**1204...

Applicable for 7 MPa coolant

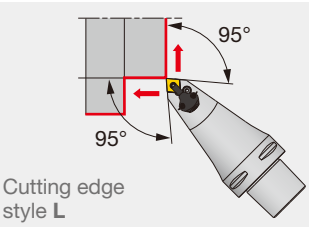
SPARE PARTS

Designation	Clamp	Clamping screw	Shim	Shim screw	Spring	Spring pin	Wrench
C6ACMNN001**-0904N	ACP3S-E	ACS-5W	ACS322	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ACMNN001**-12N	ACP4S	ACS-5W	ASC422	CSTB-3.5	BP-7	SP-2.5	T-15F

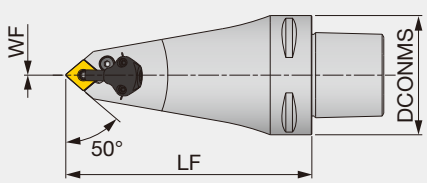
C-PCMNN-CHP

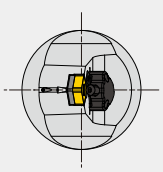
TUNGTJET URN

Lever-lock toolholder, with 50° approach angle, for negative 80° rhombic inserts, with high pressure coolant capability



Cutting edge style **L**





Metric	DCONMS	LF	WF	RE	Insert
C6PCMNN00130-12-CHP	63	130	0	0.8	CN**1204...

Applicable for 14 MPa coolant

Cannot be used for boring.

SPARE PARTS

Designation	Shim	Spring pin	Lever	Clamping screw	Wrench	Coolant unit
C6PCMNN00130-12-CHP	LSC42	LSP4	LCL4	LCS4	P-3	CU-CW-CHP

COOLANT SET

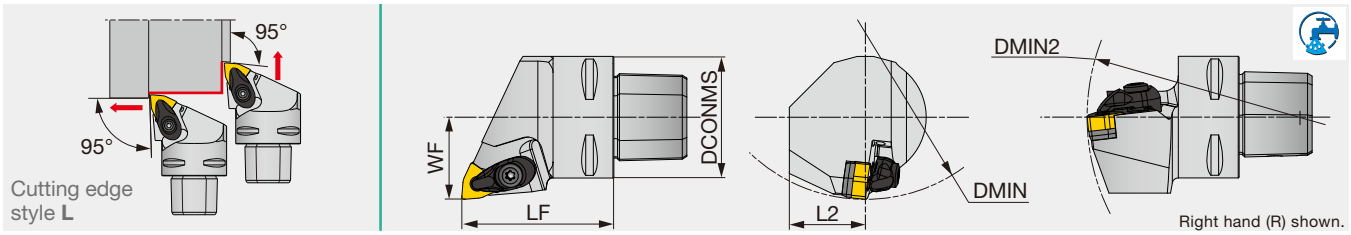
Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C6PCMNN00130-12-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

Reference pages: C-ACMNN, C-PCMNN-CHP: Inserts → B056 -, CBN → B172 -, PCD → B194 -

TUNGCAP
C-AWLNR/L

TURNINGA

Double-clamp toolholder, with 95° approach angle, for negative 80° trigon inserts



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4AWLNR/L27050-0604N	40	50	25	27	140	110	0.8	WN**0604...
C4AWLNR/L27050-08N	40	50	25	27	-	-	0.8	WN**0804...
C6AWLNR/L45065-08N	63	65	35	45	190	110	0.8	WN**0804...

The items without DMIN and DMIN2 cannot be used for boring.
Applicable for 7 MPa coolant

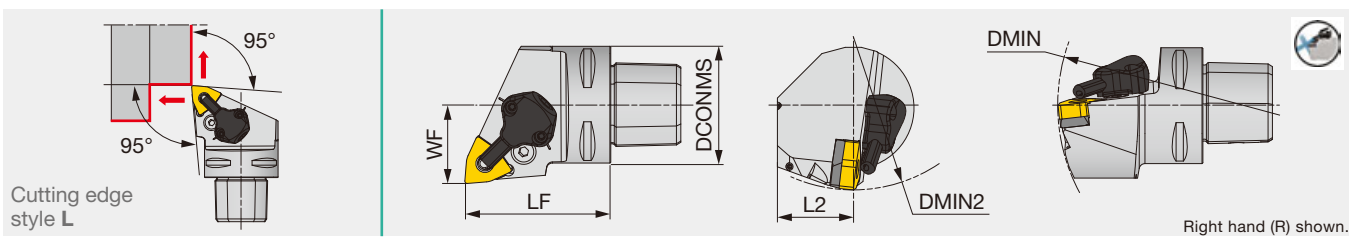
SPARE PARTS

Designation	Clamp	Clamp screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench
C4AWLNR/L27050-0604N	ACP3S-E	ACS-5W	-	ASW322	CSTB-3.5	BP-7	SP-2.5	T-15F
C4AWLNR/L27050-08N	ACP4S	ACS-5W	-	ASW422	CSTB-3.5	BP-7	SP-2.5	T-15F
C6AWLNR/L45065-08N	ACP4S	ACS-5W	SATZ-M8X1-M3	ASW422	CSTB-3.5	BP-7	SP-2.5	T-15F

TUNGCAP
C-PWLNR/L-CHP

TUNGTJET URN

Lever-lock toolholder, for negative 80° trigon inserts, with high pressure coolant capability



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4PWLNR/L27050-0604-CHP	40	50	25	27	140	110	0.8	WN**0604...
C4PWLNR/L27050-08-CHP	40	50	25	27	140	110	0.8	WN**0804...
C6PWLNR/L45065-08-CHP	63	65	41	45	190	125	0.8	WN**0804...

Applicable for 14 MPa coolant

SPARE PARTS

Designation	Shim	Clamping screw	Spring pin	Lever	Wrench
C*PWLNR/L**-08-CHP	LSW42BL	LCS4	LSP4	LCL4	P-3
C*PWLNR/L**0604-CHP	LSW312	LCS3	LSP3	LCL3	P-2.5

COOLANT SET

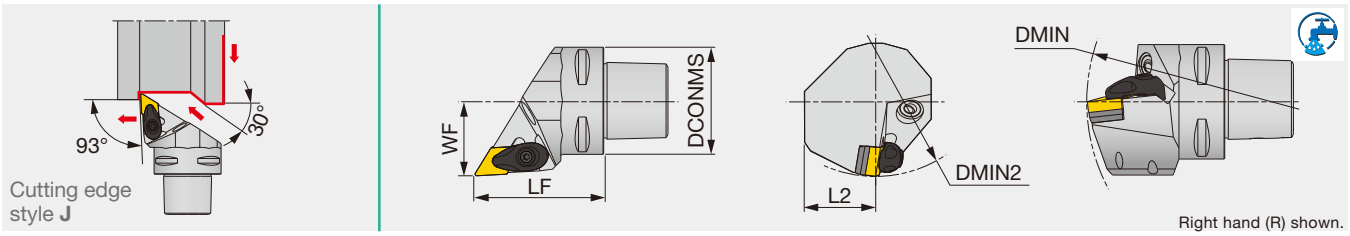
Designation	Coolant unit	Mounting screw	Wrench	O-ring
C*PWLNR/L**-CHP	CU-CW-CHP	SRM3	T-8F	OR6.4X0.9N

Reference pages: C-AWLNR/L, C-PWLNR/L-CHP: Inserts → B101 -, CBN → B181

C-ADJNR/L

TURNINGA

Double-clamp toolholder, with 93° approach angle, for negative 55° rhombic inserts



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C3ADJNR/L22050-1104N	32	50	20	22	121	85	0.8	DN**1104...
C4ADJNR/L27050-1104N	40	50	25	27	145	110	0.8	DN**1104...
C4ADJNR/L27050-15N	40	50	25	27	145	110	0.8	DN**15...
C5ADJNR/L35060-15N	50	60	32	35	165	110	0.8	DN**15...
C6ADJNR/L45065-1104N	63	65	35	45	190	110	0.8	DN**1104...
C6ADJNR/L45065-15N	63	65	41	45	190	110	0.8	DN**15...
C6ADJNR/L45135-15N	63	135	41	45	190	110	0.8	DN**15...

Applicable for 7 MPa coolant

SPARE PARTS

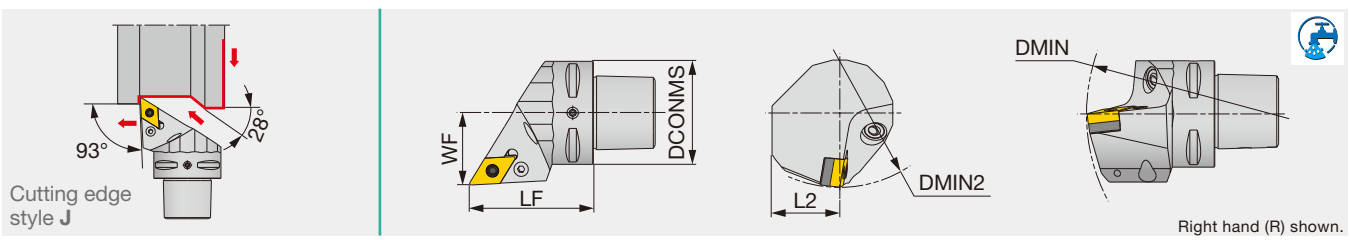
Designation	Clamp	Clamping screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench
C*ADJN**-1104N	ACP3S-E	ACS-5W	-	ASD322	CSTB-3.5	BP-7	SP-2.5	T-15F
C4ADJN*27050-15N	ACP4S	ACS-5W	-	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ADJN*35060-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ADJN*45065-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ADJN*45135-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F

Option: ASD423 (Shim for DN**1506**)

TUNGCAP

C-PDJNR/L

Lever-lock toolholder, with 93° approach angle, for negative 55° rhombic inserts



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C5PDJNR/L35060-15N	50	60	32	35	165	110	0.8	DN**1504(06)
C6PDJNR/L45065-15N	63	65	41	45	195	95	0.8	DN**1504(06)

Applicable for 7 MPa coolant

SPARE PARTS

Designation	Coolant parts	Shim	Lever	Clamping screw	Spring pin	Wrench
C5PDJN*35060-15N	SATZ-M10X1-M5	LSD43A	LCL4	LCS4	LSP4	P-3
C6PDJN*45065-15N	SATZ-M10X1-M5	LSD43A	LCL4	LCS4	LSP4S	P-3

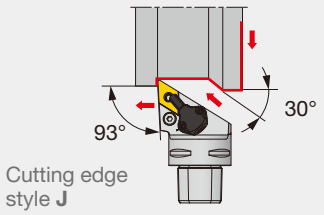
Option: LSD42A (Shim for DN**1506**), LSP4S (Spring pin for DN**1506**)

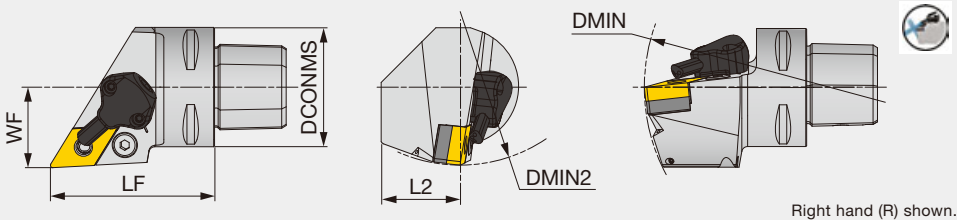
Reference pages: C-ADJNR/L, C-PDJNR/L: Inserts → B067 -, CBN → B174 -, PCD → B194 -

TUNGCAP
C-PDJNR/L-CHP

TUNGTJET URN

Lever-lock toolholder, with 93° approach angle, for negative 55° rhombic inserts, with high pressure coolant capability





Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4PDJNR/L27055-1104-CHP	40	55	25	27	140	110	0.8	DN**1104...
C4PDJNR/L27055-15-CHP	40	55	25	27	140	110	0.8	DN**1504(06)...
C5PDJNR/L35060-15-CHP	50	60	32	35	165	110	0.8	DN**1504(06)...
C6PDJNR/L45065-1104-CHP	63	65	41	45	190	110	0.8	DN**1104...
C6PDJNR/L45065-15-CHP	63	65	41	45	190	110	0.8	DN**1504(06)...

Applicable for 14 MPa coolant

SPARE PARTS

Designation	Shim	Clamping screw	Spring pin	Lever	Wrench
C*PDJNR/L**-15-CHP	LSD43A	LCS4	LSP4	LCL4	P-3
C*PDJNR/L**1104-CHP	ELSD32	LCS3	LSP3	LCL33L	P-2.5

Option: LSD42A (Shim for DN**1506**), LSP4S (Spring pin for DN**1506**)

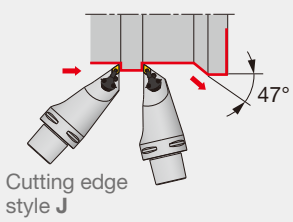
COOLANT SET

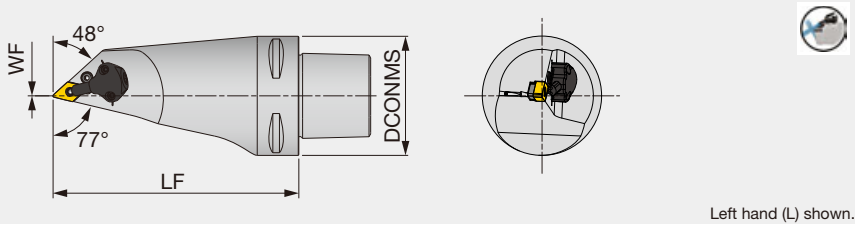
Designation	Coolant unit	Mounting screw	Wrench	O-ring
C*PDJLNR/L**-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N

TUNGCAP
C-PDMNL-CHP

TUNGTJET URN

Lever-lock toolholder, with 48° approach angle, for negative 55° rhombic inserts, with high pressure coolant capability





Metric	DCONMS	LF	WF	RE	Insert
C6PDMNL00130-1104-CHP	63	130	0	0.8	DN**1104...

Applicable for 14 MPa coolant

Cannot be used for boring

SPARE PARTS

Designation	Shim	Spring pin	Lever	Clamping screw	Wrench	Coolant unit
C6PDMNL00130-1104-CHP	ELSD32	LSP3	LCL33L	LCS3	P-2.5	CU-D-CHP

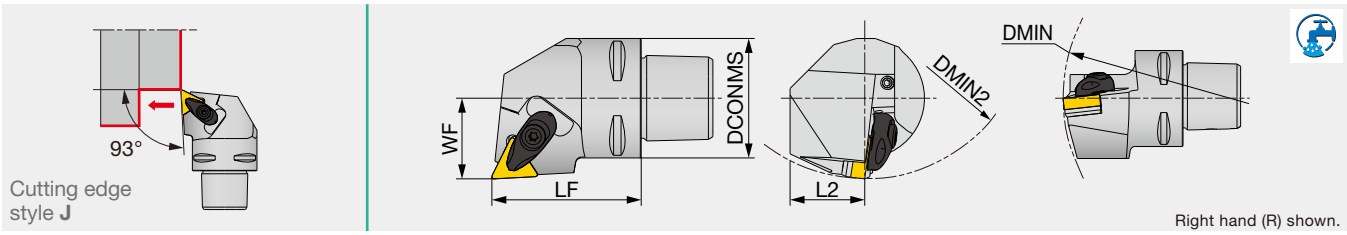
COOLANT SET

Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C6PDMNL00130-1104-CHP	CU-D-CHP	SRM3	T-8F	OR6.4X0.9N

Reference pages: C-PDJNR/L-CHP, C-PDMNL-CHP: Inserts → B067 -, CBN → B174 -, PCD → B194 -

TUNGCAP
C-ATJNR/L

Double-clamp toolholder, with 93° approach angle, for negative 60° triangular inserts



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4ATJNR/L27050-16N	40	50	25	27	140	110	0.8	TN**1604...

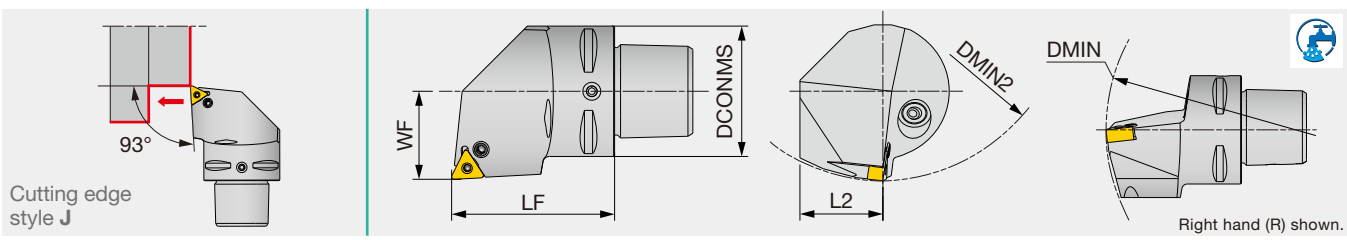
Applicable for 7 MPa coolant

SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Spring pin	Wrench
C4ATJNR/L...	ACP3S	ACS-5W	AST322	CSTB-3.5	BP-7	SP-2.5	T-15F

TUNGCAP
C-PTJNR/L

Lever-lock toolholder, with 93° approach angle, for negative 60° triangular inserts



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4PTJNR/L27050-1104N	40	50	25	27	140	110	0.8	TN**1104**E

Applicable for 7 MPa coolant

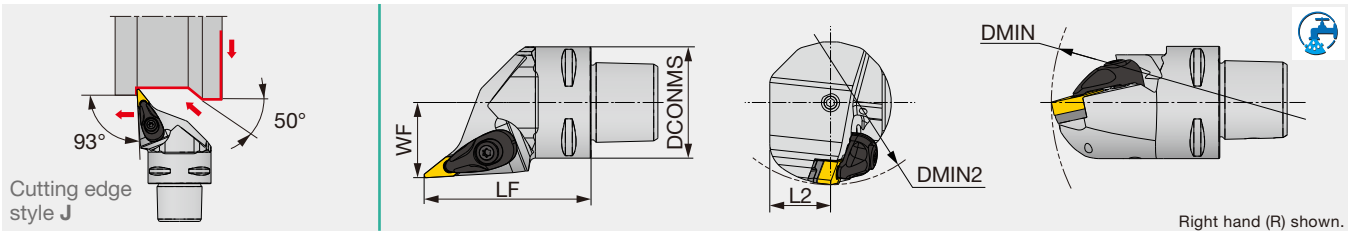
SPARE PARTS

Designation	Coolant parts	Lever	Clamping screw	Wrench
C4PTJNR/L27050-1104N	SATZ-M8X1-M3	LCL23	LCS23A	P-2.5

Reference pages: C-ATJNR/L: Inserts → B086 -, CBN → B178 -, PCD → B194 -
C-PTJNR/L: Inserts → B086 -

C-AVJNR/L

Double-clamp toolholder, with 93° approach angle, for negative 35° rhombic inserts



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE**	Insert
C4AVJNR/L27060-1204N	40	60	20	27	140	55	0.8	VN**1204...
C4AVJNR/L27060-16N	40	60	25	27	140	110	0.8	VN**1604...
C6AVJNR/L45065-1204N	63	65	31.5	45	190	81	0.8	VN**1204...
C6AVJNR/L45065-16N	63	65	35	45	190	81	0.8	VN**1604...

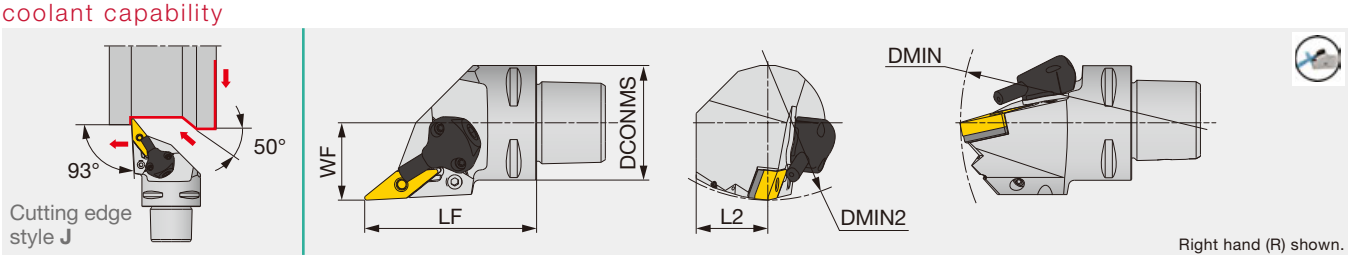
Applicable for 7 MPa coolant

SPARE PARTS

Designation	Clamp	Clamp screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench 1	Wrench 2
C4AVJNR/L...	ACP3L-E	ACS-5W	-	ASV222	CSTB-3	BP-7	SP-2.5	T-9F	T-15F
C6AVJNR/L...	ACP3L-E	ACS-5W	SATZ-M10X1-M5	ASV222	CSTB-3	BP-7	SP-2.5	T-9F	T-15F

C-PVJNR/L-CHP

Lever-lock toolholder, with 93° approach angle, for negative 35° rhombic inserts, with high pressure coolant capability



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C4PVJNR/L27060-16-CHP	40	60	25	27	140	110	0.8	VN**1604...
C6PVJNR/L45065-16-CHP	63	65	32	45	190	81	0.8	VN**1604...

Applicable for 14 MPa coolant

SPARE PARTS

Designation	Shim	Spring pin	Lever	Clamping screw	Wrench	Coolant unit
C*PVJNR/L...16-CHP	LSV317	LSP3	LCL3V	LCS3V	P-2.5	CU-V-CHP

COOLANT SET

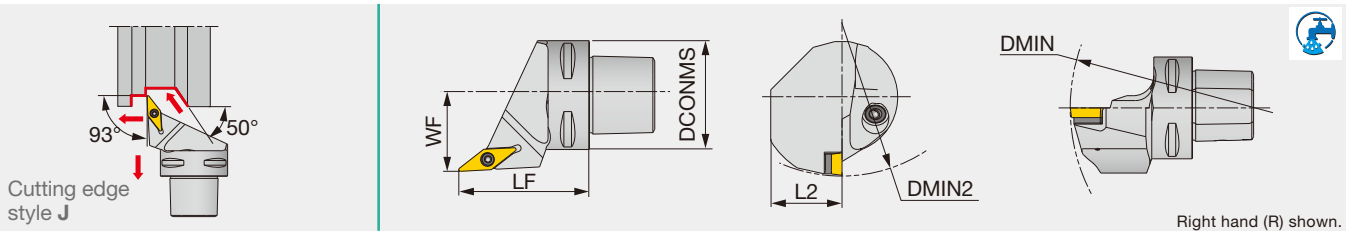
Designation	Coolant unit	Mounting screw	Wrench 2	O-ring
C*PVJNR/L...16-CHP	CU-V-CHP	SRM3	T-8F	OR6.4X0.9N

Reference pages: C-AVJNR/L, C-PVJNR/L-CHP: Inserts → B096 -, CBN → B180, PCD → B194

TUNGCAP

C-SVJCR/L

Screw-on toolholder, with 93° approach angle, for positive 35° rhombic inserts



Metric	DCONMS	LF	L2	WF	DMIN	DMIN2	RE	Insert
C3SVJCR/L22040-11N (2)	32	40	20	22	-	-	0.4	VC**1103...
C5SVJCL35060-16(1)	50	60	32	35	-	-	0.8	VC**1604...
C5SVJCR/L35060-16N(2)	50	60	32	35	170	160	0.8	VC**1604...
C6SVJCR/L45065-16(1)	63	65	41	45	-	-	0.8	VC**1604...
C6SVJCR/L45065-16N(2)	63	65	41	45	170	190	0.8	VC**1604...

The items without DMIN and DMIN2 cannot be used for boring
(1) Applicable for 3 MPa coolant (2) Applicable for 7 MPa coolant

SPARE PARTS

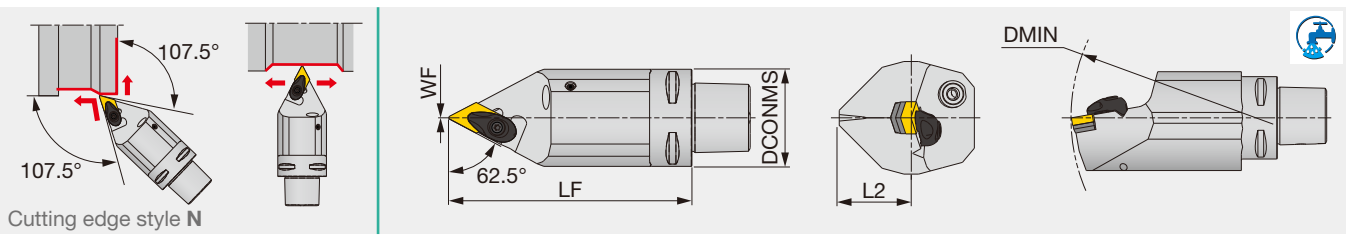
Designation	Clamping screw	Coolant parts	Shim	Shim screw	Wrench 1	Wrench 2
C3SVJC*22040-11N	CSTB-2.5	SATZ-M8X1-M3	-	-	-	T-8F
C5SVJC*35060-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C5SVJC*35060-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVJC*45065-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVJC*45065-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F

TUNGCAP

C-ADNNN

TURNINGA

Double-clamp toolholder, with 62.5° approach angle, for negative 55° rhombic inserts



Metric	DCONMS	LF	L2	WF	DMIN	RE	Insert
C5ADNNN00090-15(1)	50	90	32	0	-	0.8	DN**1504(06)
C5ADNNN00090-15N(2)	50	90	32	0	165	0.8	DN**1504(06)
C5ADNNN00125-15(1)	50	125	32	0	-	0.8	DN**1504(06)
C5ADNNN00125-15N(2)	50	125	32	0	165	0.8	DN**1504(06)
C6ADNNN00100-15N(2)	63	100	37.5	0	190	0.8	DN**1504(06)
C6ADNNN00140-15N(2)	63	140	37.5	0	190	0.8	DN**1504(06)

The items without DMIN cannot be used for boring
(1) Applicable for 3 MPa coolant (2) Applicable for 7 MPa coolant

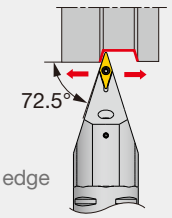
SPARE PARTS

Designation	Clamp	Clamp screw	Coolant parts	Shim	Shim screw	Spring	Spring pin	Wrench
C5ADNNN00090-15	ACP4S	ACS-5W	EZ104	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ADNNN00090-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ADNNN00125-15	ACP4S	ACS-5W	EZ104	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C5ADNNN00125-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ADNNN00100-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F
C6ADNNN00140-15N	ACP4S	ACS-5W	SATZ-M10X1-M5	ASD432	CSTB-3.5	BP-7	SP-2.5	T-15F

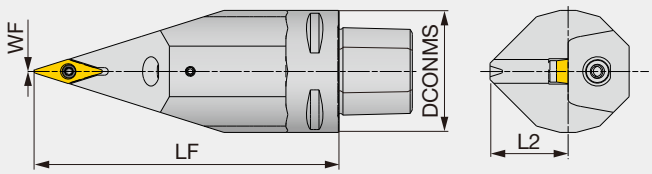
Option: ASD423 (Shim for DN**1506**)

C-SVVCN

Screw-on toolholder, with 72.5° approach angle, for positive 35° rhombic inserts



Cutting edge style **V**



Metric	DCONMS	LF	L2	WF	RE	Insert
C5SVVCN00090-16(1)	50	90	32	0	0.8	VC**1604...
C5SVVCN00090-16N(2)	50	90	32	0	0.8	VC**1604...
C5SVVCN00125-16(1)	50	125	32	0	0.8	VC**1604...
C5SVVCN00125-16N(2)	50	125	32	0	0.8	VC**1604...
C6SVVCN00100-16N(2)	63	100	37.5	0	0.8	VC**1604...
C6SVVCN00140-16N(2)	63	140	37.5	0	0.8	VC**1604...

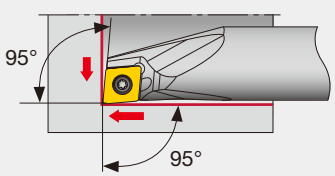
(1) Applicable for 3 MPa coolant (2) Applicable for 7 MPa coolant

SPARE PARTS

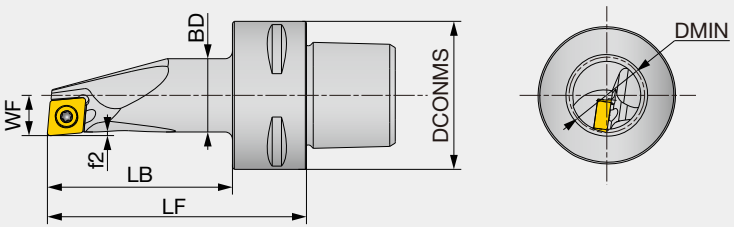
Designation	Clamping screw	Coolant parts	Shim	Shim screw	Wrench 1	Wrench 2
C5SVVCN00090-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C5SVVCN00090-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F
C5SVVCN00125-16	CSTB-3.5L	EZ104	SSV32	DTS5-3.5	P-3.5	T-15F
C5SVVCN00125-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVVCN00100-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F
C6SVVCN00140-16N	CSTB-3.5L	SATZ-M10X1-M5	SSV32	DTS5-3.5	P-3.5	T-15F

C-SCLCR

Screw-on internal toolholder, for positive 80° rhombic inserts



Cutting edge style **L**



Metric	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C3SCLCR11070-09	22	32	19.8	70	52	11	1.0	0.8	CC**09...
C4SCLCR11070-09	22	40	19.8	70	47	11	1.0	0.8	CC**09...

Applicable for 14 MPa coolant
Use right-hand toolholders (R) with left-hand inserts (L).

SPARE PARTS

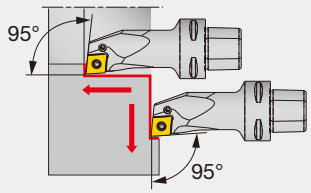
Designation	Clamping screw	Wrench
C*SCLCR11070-09	CSTB-4S	T-15F

Reference pages: C-SVJCR/L: Inserts → B155 -, CBN → B192, PCD → B196 -
C-ADNNN: Inserts → B067 -, CBN → B174 -, PCD → B194 -
C-SVVCN: Inserts → B155 -, CBN → B192, PCD → B196 -
C-SCLCR: Inserts → B111 -, CBN → B182 -, PCD → B196 -

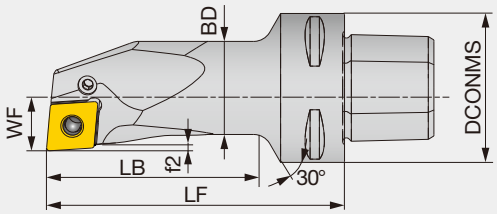
TUNGCAP

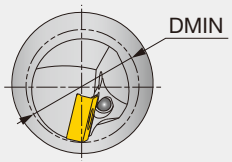
C-PCLNR/L-IN

Lever-lock internal toolholder, for negative 80° rhombic inserts



Cutting edge style **L**





Right hand (R) shown.

Metric	DMIN	DCONMS	BD	LB	LF	WF	f2	RE	Insert
C3PCLNR17090-12	32	32	25	90	71	17	1.6	0.8	CN**1204...
C4PCLNR17090-0904	32	40	25	90	63	17	1.3	0.8	CN**0904**E
C4PCLNR/L17080-12	32	40	25	80	58.5	17	1.6	0.8	CN**1204...
C4PCLNR22110-0904	40	40	32	110	86.5	22	1.3	0.8	CN**0904**E
C4PCLNR27120-0904	50	40	39.5	120	100	27	1.7	0.8	CN**0904**E

Applicable for 10 MPa coolant

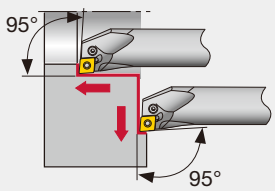
SPARE PARTS

Designation	Shim	Clamping screw	Spring pin	Lever	Wrench 1	Wrench 2
C3PCLNR17090-12	-	LCS43	-	LCL43N	P-2.5	-
C4PCLNR17090-0904	-	LCS33	-	LCL33N	-	P-2F
C4PCLNR/L17080-12	-	LCS43	-	LCL43N	P-2.5	-
C4PCLNR22110-0904	LSC317	LCS3	LSP3	LCL33	-	P-2.5F
C4PCLNR27120-0904	LSC317	LCS3	LSP3	LCL33	-	P-2.5F

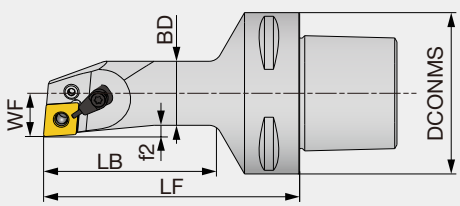
C-PCLNR/L-CHP

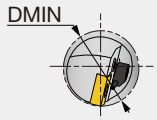
TUNGTURN JET

Lever-lock internal toolholder, for negative 80° rhombic inserts



Cutting edge style **L**





Right hand (R) shown.

Metric	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C6PCLNL17100-12-CHP	32	63	25	100	67.5	17	4.5	0.8	CN**1204...

SPARE PARTS

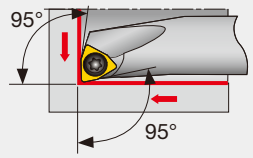
Designation	Clamping screw	Coolant unit	Wrench	Lever
C6PCLNL17100-12-CHP	LCS43	S-CU-CHP	P-2.5	LCL43N

Reference pages: C-PCLNR/L-IN, C-PCLNR/L-CHP: Inserts → B056 -, CBN → B172 -, PCD → B194 -

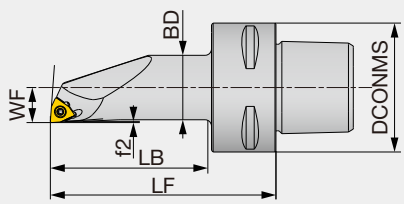
C-SWLXR/L

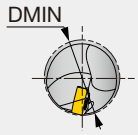
MINIFORCE TURN

Screw-on internal toolholder, for WXGU inserts



Cutting edge style **L**





Right hand (R) shown.

Metric	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C4SWLXR11070-04	22	40	20	70	47	11	0.4	0.4	WXGU0403**L...

Applicable for 14 MPa coolant

SPARE PARTS

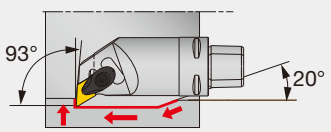
Designation	Clamping screw	Wrench
C4SWLXR11070-04	SR34-514	T-7F

C-ADUNR/L

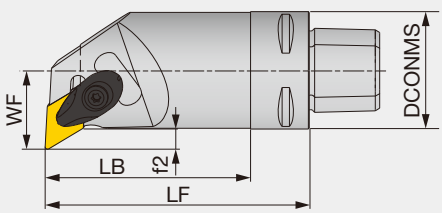
TUNGCAP

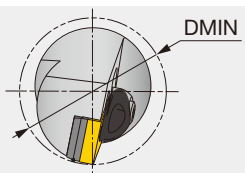
TURNINGA

Double-clamp internal toolholder, for negative 55° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Metric	DMIN	DCONMS	LF	LB	WF	f2	RE	Insert
C4ADUNR20070-15	38	40	70	50	20	5	0.8	DN**1504...
C4ADUNR27090-15	50	40	90	-	27	7	0.8	DN**1504...

Applicable for 10 MPa coolant

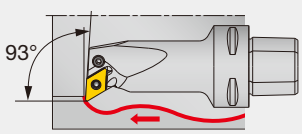
SPARE PARTS

Designation	Clamp	Clamp screw	Shim	Shim screw	Spring	Spring pin	Wrench
C*ADUNR/L...	ACP4S	ACS-5W	ASD423(04)	CSTB-3.5	BP-7	SP-2.5	T-15F

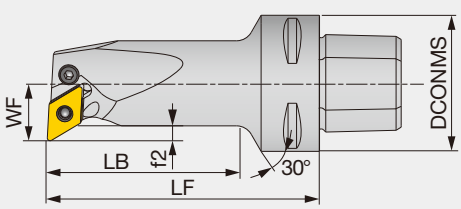
Option: ASD423 (Shim for DN**1506**)

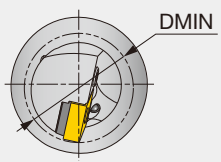
C-PDUNR/L

Lever-lock internal toolholder, for negative 55° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Metric	DMIN	DCONMS	LF	LB	WF	f2	RE	Insert
C4PDUNR/L17080-11	32	40	80	58.5	17	4.4	0.8	DN**1104...

Applicable for 10 MPa coolant

SPARE PARTS

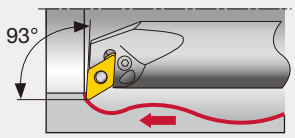
Designation	Lever	Clamping screw	Shim	Spring pin	Wrench
C4PDUNR17080-11	LCL33L	LCS3	ELSD317BR	LSP3	P-2.5
C4PDUNL17080-11	LCL33L	LCS3	ELSD317BL	LSP3	P-2.5

Reference pages: C-SWLXR/L: Inserts → B161 -
C-ADUNR/L: Inserts → B067 -, CBN → B174 -, PCD → B194 -
C-PDUNR/L: Inserts → B067 -

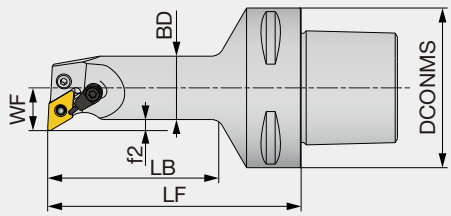
TUNGCAP
C-PDUNR/L

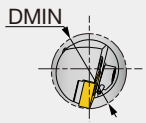
TUNGTJET TURN

Lever-lock internal toolholder, for negative 55° rhombic inserts



Cutting edge style **U**





Right hand (R) shown.

Metric	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C6PDUNL17100-1104-CHP	32	63	25	100	67.5	17	4.5	0.8	DN**1104...

Applicable for 14 MPa coolant

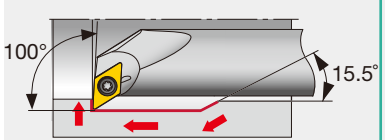
SPARE PARTS

Designation	Shim	Clamping screw	Coolant unit	Wrench	Spring pin	Lever
C6PDUNL17100-1104-CHP	ELSD317BL	LCS43	S-CU-CHP	P-2.5	LSP3	LCL33L

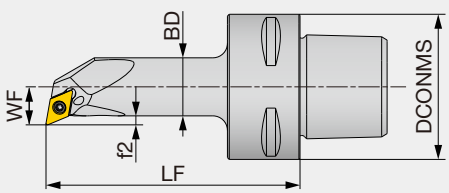
TUNGCAP
C-SDXXR

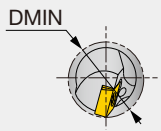
MINIFORCE TURN

Screw-on internal toolholder, for DXGU inserts



Cutting edge style **X**





Right hand (R) shown.

Metric	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C3SDXXR11065-07	20	32	16	65	45	10.6	2.5	0.4	DXGU0703**L...
C3SDXXR13080-07	24	32	20	80	62	12.6	2.5	0.4	DXGU0703**L...
C4SDXXR11070-07	20	40	16	70	46	10.6	2.5	0.4	DXGU0703**L...
C4SDXXR13080-07	24	40	20	80	58	12.6	2.5	0.4	DXGU0703**L...

Applicable for 14 MPa coolant
Use right-hand toolholders (R) with left-hand inserts (L).

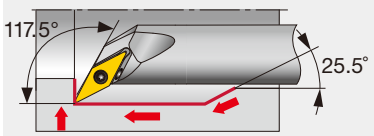
SPARE PARTS

Designation	Clamping screw	Wrench
C*SDXXR...	SR34-514	T-7F

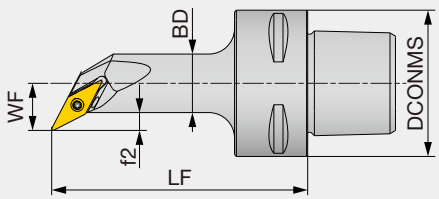
Reference pages: C-PDUNR/L: Inserts → B067 -
C-SDXXR: Inserts → B127 -

C-SVQBR/L

Screw-on internal toolholder, for positive 35° rhombic inserts



Cutting edge style **Q**



Right hand (R) shown.

Metric	DMIN	DCONMS	BD	LF	LB	WF	f2	RE	Insert
C3SVQBR13065-11	21.5	32	16	65	45	13	4.9	0.4	VB**11...
C3SVQBR15080-11	25.5	32	20	80	59	15	4.9	0.4	VB**11...
C3SVQBR18090-16	30.5	32	25	90	71	17.5	4.9	0.8	VB**16...
C4SVQBR13070-11	21.5	40	16	70	43	13	4.9	0.4	VB**11...
C4SVQBR15080-11	25.5	40	20	80	52	15	4.9	0.4	VB**11...
C4SVQBR18095-16	30.5	40	25	95	68	17.5	4.9	0.8	VB**16...

Applicable for 14 MPa coolant

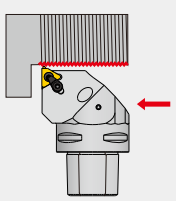
SPARE PARTS

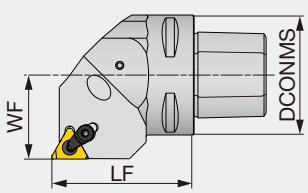
Designation	Clamping screw	Wrench
C*SVQBR**-11	CSTB-2.5	T-6F
C*SVQBR**-16	CSTB-3.5	T-15F

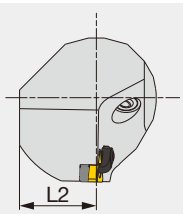
C-CER/L

TUNGTHREAD

External threading toolholder, alternative clamping of screw-on or clamp-on







Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	Insert
C3CER/L22040-16ERN(3)	32	40	20	22	16ER/L...
C4CER/L27050-16ERN(3)	40	50	25	27	16ER/L...
C5CEL35060-16ER(1)	50	60	32	35	16ER/L...
C5CER/L35060-16ERN(2)	50	60	32	35	16ER/L...
C6CEL45065-16ER(1)	63	65	41	45	16ER/L...
C6CER/L45065-16ERN(2)	63	65	41	45	16ER/L...

(1) Applicable for 3 MPa coolant (2) & (3) Applicable for 7 MPa coolant

SPARE PARTS

Designation	Shim	Shim screw	Clamp screw	Clamping screw	Wrench 1	Wrench 2	Coolant parts
C*CER/L*****-16ER...	A16-1DT	DTS5-3.5	CSTB-3.5ST	CSP16	T-15F	P-3.5	EZ104(1)
C*CER/L*****-16ER...	A16-1DT	DTS5-3.5	CSTB-3.5ST	CSP16	T-15F	P-3.5	SATZ-M10X1-M5(2)
C*CER/L*****-16ER...	A16-1DT	DTS5-3.5	CSTB-3.5ST	CSP16	T-15F	P-3.5	SATZ-M8X1-M3(3)

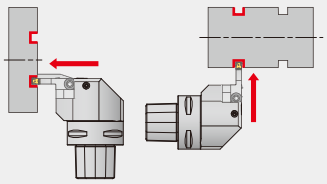
(1) Applicable for 3 MPa coolant (2) & (3) Applicable for 7 MPa coolant

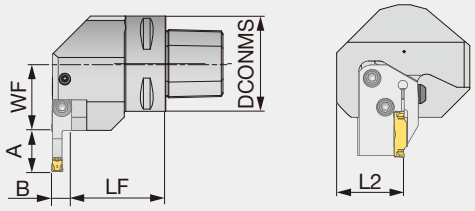
Reference pages: C-SVQBR/L: Inserts → B152 -, CBN → B191 -
C-CER/L: Inserts → E010 -

TUNGCAP C-CHFVR/L

TUNGCUT

Shank for CAER/L and CAFR/L blades





Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	A	B
C3CHFVR/L22040N	32	32.5	35	22	*Table:	*Table:
C4CHFVR/L27050N	40	42.5	36	27	*Table:	*Table:
C5CHFVR/L35060N	50	49.5	36	35	*Table:	*Table:
C6CHFVR/L45065N	63	54.5	41	45	*Table:	*Table:

Applicable for 7 MPa coolant
See the table below for the offset dimensions.

SPARE PARTS

Designation	Coolant parts1	Coolant parts2	Clamping screw	Wrench
C5CHFV*35060N	SATZ-M10X1-M5	-	CSHB-6-A	P-4
C6CHFV*45065	CNZ125	PNZ5	CSHB-6-A	P-4
C6CHFV*45065N	SATZ-M10X1-M5	-	CSHB-6-A	P-4

Combination of blade and toolholder

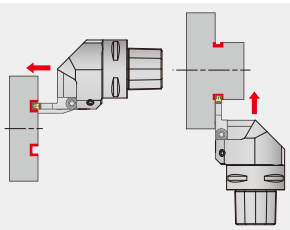
Toolholder	Blade			
	CAER...	CAEL...	CAFR...	CAFL...
C*CHFVR...	–	●	●	–
C*CHFVL...	●	–	–	●

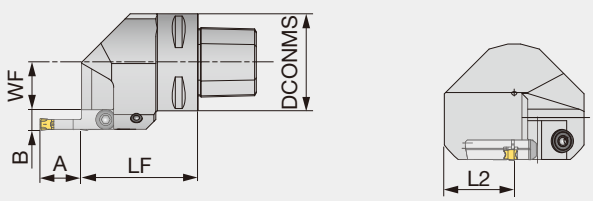
●: Corresponding

TUNGCAP C-CHSR/L

TUNGCUT

Shank for CAER/L and CAFR/L blades





Right hand (R) shown.

Metric	DCONMS	LF	L2	WF	A	B
C3CHSR/L22050N	32	50	35	11.5	*Table:	*Table:
C4CHSR/L27050N	40	50	36	16.5	*Table:	*Table:
C5CHSR/L35060N	50	60	36	24.5	*Table:	*Table:
C6CHSR/L45065N	63	65	41	34.5	*Table:	*Table:

Applicable for 7 MPa coolant
See the table below for the offset dimensions.

SPARE PARTS

Designation	Coolant parts1	Coolant parts2	Clamping screw	Wrench
C4CHS*27050N	SATZ-M8X1-M3	-	CSHB-6-A	P-4
C5CHS*35060	CNZ125	PNZ5	CSHB-6-A	P-4
C*CHS**506*N	SATZ-M10X1-M5	-	CSHB-6-A	P-4

Combination of blade and toolholder

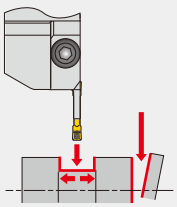
Toolholder	Blade			
	CAER...	CAEL...	CAFR...	CAFL...
C*CHSR...	●	–	–	●
C*CHSL...	–	●	●	–

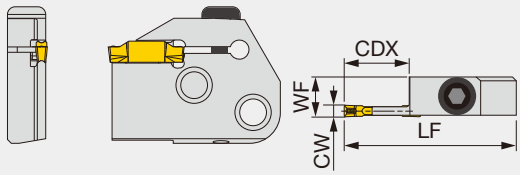
●: Corresponding

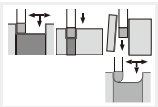
*Table: Off set dimensions for blade

Application	Blade	A	B
For external grooving	CAER/L-3T16	16	10.4
	CAER/L-4T16	16	10.5
	CAER/L-5T20	20	10.5
	CAER/L-6T20	20	10.5
For face grooving	CAFR/L-3T12-*	12	10.4
	CAFR/L-4T16-*	16	10.5
	CAFR/L-5T20-*	20	10.5
	CAFR/L-6T20-*	25	10.5

Blades for external grooving, parting, and turning







Insert
DGS, SGS, DGM, SGM, DTX, DTE, DGG, DTR, SGN, DTM, DGL

Right hand (R) shown.

Inch	CW (in)	Seat size	CDX	LF	WF	Shank	Torque
CAER/L-3T16	0.118	3	0.630	1.772	0.409	C*CHSR/L, C*CHFVL/R	3.69
CAER/L-4T16	0.157	4	0.630	1.772	0.413	C*CHSR/L, C*CHFVL/R	3.69
CAER/L-5T20	0.197	5	0.787	1.929	0.413	C*CHSR/L, C*CHFVL/R	3.69
CAER/L-6T20	0.236	6	0.787	1.929	0.413	C*CHSR/L, C*CHFVL/R	3.69

Metric	CW	Seat size	CDX	LF	WF	Shank	Torque*
CAER/L-3T16	3	3	16	45	10.4	C*CHSR/L, C*CHFVL/R	5
CAER/L-4T16	4	4	16	45	10.5	C*CHSR/L, C*CHFVL/R	5
CAER/L-5T20	5	5	20	49	10.5	C*CHSR/L, C*CHFVL/R	5
CAER/L-6T20	6	6	20	49	10.5	C*CHSR/L, C*CHFVL/R	5

Torque: Recommended clamping torque: lbs·ft (*N·m)
When groove depth is larger than (insert length - 0.059"/1.5 mm), please use 1-cornered insert.
Not compatible with TungModularSystem

SPARE PARTS

Designation	Clamping screw	Wrench
CAER/L...	BHM6-20-A	P-4

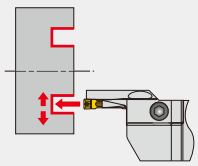
Reference pages: CAER/L: Inserts → F023 -

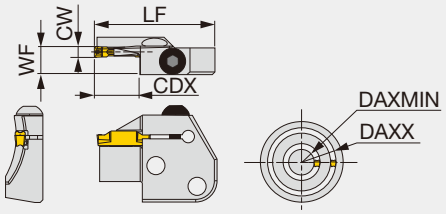
TUNGCAP

CAFR/L

TUNGCUT

Blade for face grooving and turning





Insert
CAFR/L-3T12-040055:DTF
Seat size 3(2)-6:DTF(3), DTE, DGG, DTX, DGS, DGM, DTR, DTM, DGL,SNG
Shank
CHFVR/L, CHSR/L
Right hand (R) shown.

Inch	CW (in)	CW (mm)	DAXMIN	DAXX	Seat size	CDX	LF	WF (1)
CAFR/L-3T12-040055	0.118	3	1.575	2.17	3	0.472	1.772	0.409
CAFR/L-3T12-055075	0.118	3	2.165	2.95	3	0.472	1.772	0.409
CAFR/L-3T12-075100	0.118	3	2.953	3.94	3	0.472	1.772	0.409
CAFR/L-3T12-100140	0.118	3	3.937	5.51	3	0.472	1.772	0.409
CAFR/L-3T12-140200	0.118	3	5.512	7.87	3	0.472	1.772	0.409
CAFR/L-4T16-050070	0.157	4	1.969	2.76	4	0.63	1.772	0.413
CAFR/L-4T16-070100	0.157	4	2.756	3.94	4	0.63	1.772	0.413
CAFR/L-4T16-100150	0.157	4	3.937	5.91	4	0.63	1.772	0.413
CAFR/L-4T16-150250	0.157	4	5.906	9.84	4	0.63	1.772	0.413
CAFR/L-5T20-055080	0.197	5	2.165	3.15	5	0.787	1.929	0.413
CAFR/L-5T20-080120	0.197	5	3.15	4.72	5	0.787	1.929	0.413
CAFR/L-5T20-120180	0.197	5	4.724	7.09	5	0.787	1.929	0.413
CAFR/L-5T20-180300	0.197	5	7.087	11.81	5	0.787	1.929	0.413
CAFR/L-5T20-300000	0.197	5	11.811	0	5	0.787	1.929	0.413
CAFR/L-6T25-060090	0.236	6	2.362	3.54	6	0.984	2.165	0.413
CAFR/L-6T25-090150	0.236	6	3.543	5.91	6	0.984	2.165	0.413
CAFR/L-6T25-150250	0.236	6	5.906	9.84	6	0.984	2.165	0.413
CAFR/L-6T25-250400	0.236	6	9.843	15.75	6	0.984	2.165	0.413

Metric	CW	DAXMIN	DAXX	Seat size	CDX	LF	WF (1)
CAFR/L-3T12-040055	3	40	55	3	12	45	10.4
CAFR/L-3T12-055075	3	55	75	3	12	45	10.4
CAFR/L-3T12-075100	3	75	100	3	12	45	10.4
CAFR/L-3T12-100140	3	100	140	3	12	45	10.4
CAFR/L-3T12-140200	3	140	200	3	12	45	10.4
CAFR/L-4T16-050070	4	50	70	4	16	45	10.5
CAFR/L-4T16-070100	4	70	100	4	16	45	10.5
CAFR/L-4T16-100150	4	100	150	4	16	45	10.5
CAFR/L-4T16-150250	4	150	250	4	16	45	10.5
CAFR/L-5T20-055080	5	55	80	5	20	49	10.5
CAFR/L-5T20-080120	5	80	120	5	20	49	10.5
CAFR/L-5T20-120180	5	120	180	5	20	49	10.5
CAFR/L-5T20-180300	5	180	300	5	20	49	10.5
CAFR/L-5T20-300000	5	300	∞	5	20	49	10.5
CAFR/L-6T25-060090	6	60	90	6	25	55	10.5
CAFR/L-6T25-090150	6	90	150	6	25	55	10.5
CAFR/L-6T25-150250	6	150	250	6	25	55	10.5
CAFR/L-6T25-250400	6	250	400	6	25	55	10.5

When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert.
Not compatible with TungModularSystem
(1) WF is calculated with the groove width CW in the above table.
(2) Not applicable to CAFR/L-3T12-040055
(3) Seat sizes of DTF are only 3 and 4.

SPARE PARTS

Designation	Clamping screw	Wrench
CAFR/L...	BHM6-20-A	P-4

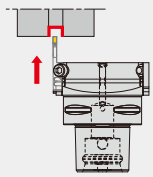
Insert	Groove width		Min. dia. for face grooving	
	CW (in)	CW (mm)	DAXMIN (in)	DAXMIN (mm)
DGM / DGS / SGN / DGL	0.118	3	3.622	92
DGM / DGS / SGN / DGL	0.157	4	1.457	37
DGM / DGS / DGL	0.197	5	2.362	60
DGM / DGS / DGL	0.236	6	2.244	57
DTE / DGG / DTM	0.118	3	2.441	62
DTE / DGG / DTM	0.157	4	1.654	42
DTE / DGG / DTM	0.197	5	2.520	64
DTE / DGG / DTM	0.236	6	2.402	61
DTR	0.118	3	1.732	44
DTR	0.157	4	1.260	32
DTR	0.197	5	1.890	48
DTR	0.236	6	1.890	48
DTX	0.118	3	0.748	19
DTX	0.157	4	0.787	20
DTX	0.197	5	0.787	20
DTX	0.236	6	0.906	23
DTF	0.118	3	0.748	19
DTF	0.157	4	0.787	20

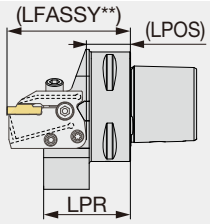
Reference pages: CAFR/L: Inserts → F178 -

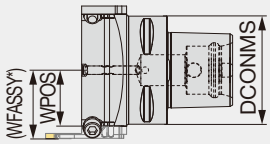
TUNGCAP
C-CHSN-CHP

TUNGCUT

Adapter for blades with high pressure coolant capability







Metric	DCONMS	LPR	LPOS	WPOS	Blade (Option)	Torque
C4CHSN21047-CHP	40	46.5	21.5	21	CAER/L...-CHP	5
C5CHSN26047-CHP	50	47	22.5	26	CAER/L...-CHP	5
C6CHSN33050-CHP	63	50	24.5	32.5	CAER/L...-CHP	5

When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert
*WFASSY :Shank (WPOS) + blade (WF) **LFASSY : Shank (LPOS) + blade (LF)
Torque: Recommended clamping torque: N·m
Applicable for 30 MPa coolant
See page **L043** for instructions on installing and removing the blade or the insert.

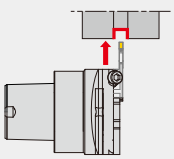
SPARE PARTS

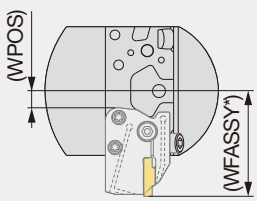
Designation	Clamping screw1	Clamping screw2	Clamping screw3	Wrench 1	Wrench 2	O-ring
C*CHSN...-CHP	SRM5-04451	SRM6X12DIN6912	SRM6X20-XT	T-20/5	HW5.0	OR5X1N

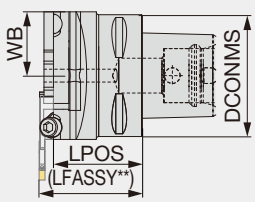
TUNGCAP
C-CHFVN-CHP

TUNGCUT

Adapter for blades with high pressure coolant capability







Metric	DCONMS	LPOS	WB	WPOS	Blade (Option)	Torque
C4CHFVN26046-CHP	40	46	26	1.5	CAER/L...-CHP	5
C5CHFVN26046-CHP	50	46	26	1.5	CAER/L...-CHP	5
C6CHFVN33046-CHP	63	46	33	8.5	CAER/L...-CHP	5

When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert
*WFASSY : Shank (WPOS) + blade (LF) **LFASSY : Shank (LPOS) + blade (WF)
Torque: Recommended clamping torque: N·m
Applicable for 30 MPa coolant
See page **L043** for instructions on installing and removing the blade or the insert.

SPARE PARTS

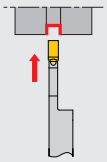
Designation	Clamping screw1	Clamping screw2	Clamping screw3	Wrench 1	Wrench 2	O-ring
C*CHFVN...-CHP	SRM5-04451	SRM6X12DIN6912	SRM6X20-XT	T-20/5	HW5.0	OR5X1N

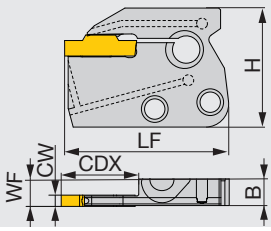
TUNGCAP

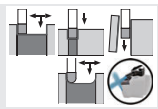
CAER/L-CHP

TUNGCUT

Modular-type external grooving and parting blade, with high pressure coolant capability







Insert
DGS,SGS,DGM, SGM,DTX,DTE, DGG,DTR,SGN, DTM,DGL

Right hand (R) shown.

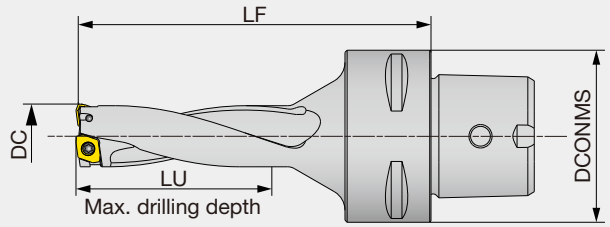
Inch	CW (in)	CW (mm)	Seat size	CDX	H	B	LF	WF(1)
CAER/L-2T16-CHP	0.079	2	2	0.63	1.299	0.283	1.634	0.287
CAER/L-2T20-CHP	0.079	2	2	0.787	1.299	0.283	1.791	0.287
CAER/L-3T16-CHP	0.118	3	3	0.63	1.299	0.283	1.634	0.291
CAER/L-3T20-CHP	0.118	3	3	0.787	1.299	0.283	1.791	0.295
CAER/L-4T16-CHP	0.157	4	4	0.63	1.299	0.283	1.634	0.303
CAER/L-4T20-CHP	0.157	4	4	0.787	1.299	0.283	1.791	0.303
CAER/L-5T20-CHP	0.197	5	5	0.787	1.299	0.283	1.823	0.307
CAER/L-6T20-CHP	0.236	6	6	0.787	1.299	0.283	1.823	0.307

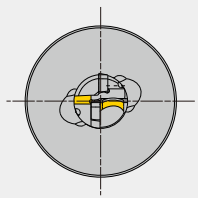
Metric	CW	Seat size	CDX	H	B	LF	WF(1)
CAER/L-2T16-CHP	2	2	16	33	7.2	41.5	7.3
CAER/L-2T20-CHP	2	2	20	33	7.2	45.5	7.3
CAER/L-3T16-CHP	3	3	16	33	7.2	41.5	7.4
CAER/L-3T20-CHP	3	3	20	33	7.2	45.5	7.5
CAER/L-4T16-CHP	4	4	16	33	7.2	41.5	7.7
CAER/L-4T20-CHP	4	4	20	33	7.2	45.5	7.7
CAER/L-5T20-CHP	5	5	20	33	7.2	46.3	7.8
CAER/L-6T20-CHP	6	6	20	33	7.2	46.3	7.8

When groove depth is larger than (insert length - 1.5 mm), please use 1-cornered insert.
(1) "WF" value is calculated with groove width "CW" shown in the table.

Reference pages: CAER/L-CHP: Inserts → F023 -

Indexable drill L/D=3





Metric	DC	DCONMS	LF	LU	Max. offset (radial)	Insert
C4TDX150L082-3	15	40	82	45.5	0.9	XPMT050204R-D*
C4TDX200L101-3	20	40	101	60.5	0.5	XPMT06X308R-D*
C4TDX250L125-3	25	40	125	75.6	0.4	XPMT07H308R-D*
C4TDX300L139-3	30	40	139	90.7	0.7	XPMT08T308R-D*
C6TDX200L101-3	20	63	101	60.5	0.5	XPMT06X308R-D*
C6TDX250L121-3	25	63	121	75.6	0.4	XPMT07H308R-D*
C6TDX300L139-3	30	63	139	90.7	0.7	XPMT08T308R-D*
C6TDX350L159-3	35	63	159	106.1	1.8	XPMT110412R-D*
C6TDX400L177-3	40	63	177	121.1	0.5	XPMT110412R-D*

Applicable for 14 MPa coolant

SPARE PARTS


Designation	Clamping screw	Wrench
C4TDX150L082-3	CSTB-2L040	T-6D
C4TDX200L101-3	CSTB-2.2R	T-7D
C4TDX250L125-3	CSTB-2.5	T-8D
C4TDX300L139-3	CSTB-3	T-9D
C6TDX200L101-3	CSTB-2.2R	T-7D
C6TDX250L121-3	CSTB-2.5	T-8D
C6TDX300L139-3	CSTB-3	T-9D
C6TDX350L159-3	CSTB-4	T-15D
C6TDX400L177-3	CSTB-4	T-15D

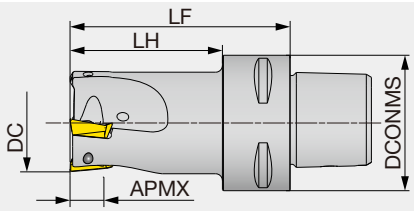
Reference pages: C-TDX: Inserts → J079 -

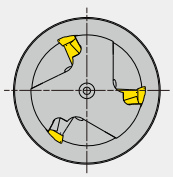
TUNGCAP

C-EPA

TUNG-TRI

Square shoulder milling





Metric	DC	APMX	DCONMS	CICT	LF	LH	Air hole	Insert
C4EPA10M032R03L065	32	10	40	3	65	45	with	TOMT1004...
C4EPA10M035R03L065	35	10	40	3	65	45	with	TOMT1004...
C6EPA15M040R03L080	40	15	63	3	80	58	with	TOMT1506...
C6EPA15M050R04L080	50	15	63	4	80	58	with	TOMT1506...

Applicable for 14 MPa coolant

SPARE PARTS



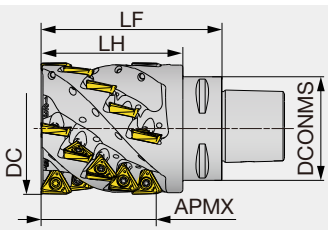
Designation	Clamping screw	Torx bit	Grip
C4EPA10M0**R03L065	SR14-562/S	BLDT10/S7	SW6-SD
C6EPA15M0**R0*L080	TS45120I	BT20S	H-TB2W

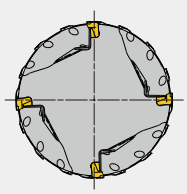
TUNGCAP

C-TLA

TUNG-TRI

Square shoulder milling (for large depth of cut)





Metric	DC	APMX	DCONMS	CICT	ZEFP	LF	LH	Air hole	Insert
C6TLA15M063R03L100	63	55	63	12	3	100	78	with	TOMT1506...
C6TLA15M080R04L110	80	70	63	20	4	110	86.2	with	TOMT1506...

Applicable for 14 MPa coolant

SPARE PARTS



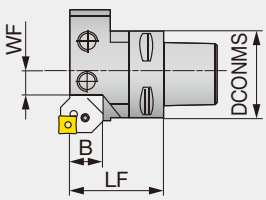
Designation	Clamping screw	Torx bit	Grip
C6TLA15M0**R0*L1**	TS45120I	BT20S	H-TB2W

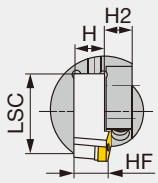
Reference pages: C-EPA, C-TLA: Inserts → H104

TUNGCAP

C-ADER/L

Adapter for square shank toolholders





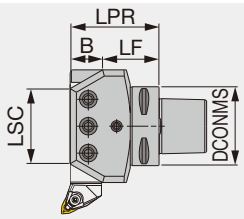
Left hand (L) shown.

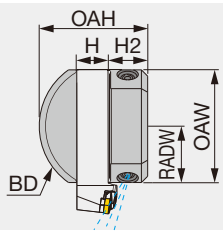
Metric	DCONMS	WF	LF	B	HF	H2	H	LSC
C3ADE-16R/L	32	17	45	16	16	26	16	45
C4ADE-20R/L	40	8	49.2	20	20	26	20	57
C5ADE-20R/L	50	8	55.2	20	20	20	20	57

Regular shank should be shortened.
Applicable for 10 MPa coolant

C-ASHA

Adapter for square shank toolholders





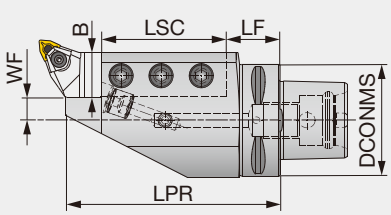
Metric	DCONMS	H	B	LPR	LSC	LF	RADW	OAW	H2	OAH	BD
C5ASHA20	50	20	20	58	46	38	38	76	31.5	76.5	90
C6ASHA20	63	20	20	60	46	40	38	76	31.5	76.5	90
C6ASHA25	63	25	25	71	61	46	45	90	31.6	86.5	110

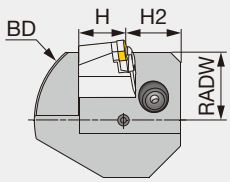
Applicable for 10 MPa coolant

TUNGCAP

C-ASHR/L

Adapter for square shank toolholders





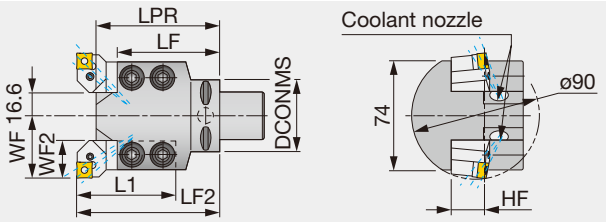
Left hand (L) shown.

Inch	DCONMS	LPR	LSC	LF	WF	H	B	H2	RADW	BD
C6 ASHR/L 3/4X1	2.480	3.937	2.5	1.044	0.4	0.75	0.8	1	1.181	3.543
C6 ASHR/L 1X1	2.480	4.724	2.8	1.181	0.5	1	1	1	1.496	3.937
C8 ASHR 1 1/4 1	3.150	5.512	3.74	1.378	0.325	1.25	1.25	1.26	1.575	4.331

Regular shank should be shortened.
Applicable for 10 MPa coolant

C-ADES

Adapter for square shank toolholders

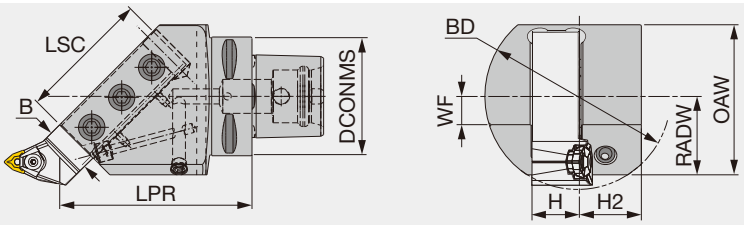


Metric	DCONMS	WF	LF2	LPR	LF	HF	WF2	L1
C4ADES-20	40	41.6	98	85	71	20	25	67
C5ADES-20	50	41.6	98	85	71	20	25	67

Regular shank should be shortened.
Applicable for 10 MPa coolant

C-ASHR/L-45

Adapter for square shank toolholders (with 45° slanted)



Right hand (R) shown.
Left hand (L) shown
for the turning holder.

Metric	DCONMS	H	B	LSC	LPR	H2	RADW	OAW	WF	BD
C5ASHR/L20-45	50	20	20	-	96.3	26	36	67.5	15	72
C6ASHR/L20-45	63	20	20	70	98.3	26	36	67.5	15	72
C6ASHR/L25-45	63	25	25	70	101.3	33	41.6	79.6	15	100

Regular shank should be shortened.
Applicable for 10 MPa coolant

C-ABB

Adapter for boring bars

Fig. 1

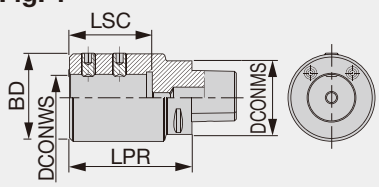
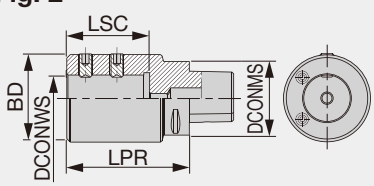


Fig. 2



Inch	DCONMS	DCONWS	BD	LPR	LSC	Fig.
C6ABB1X2.36	2.480	1.000	2.480	3.937	2.362	2
C6ABB1-1/2X2.75	2.480	1.500	2.953	4.134	2.756	1

Use the appropriate outlet screw according to the tool setup.
Applicable for 7 MPa coolant

SPARE PARTS

Designation	Clamp screw		Coolant outlet screw for internal supply	Coolant outlet screw for external supply
	Used on A-type sleeves	Used on B-type sleeves		
C6ABB1X2.36	SCREW1/2-20X.500EM	HSSS3/8-24X0.250CUP.P	SRM10X6DIN913	SRM6X8DIN913
C6ABB11/2X2.75	SCREW1/2-20X.500EM	HSSS1/2-20X1.251/2DOGP	SRM10X6DIN913	SRM6X8DIN913

SC

Sleeve for C-ABB adapter

Fig. A

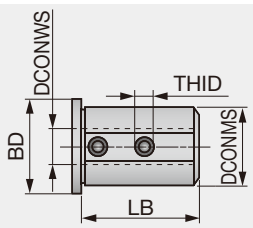
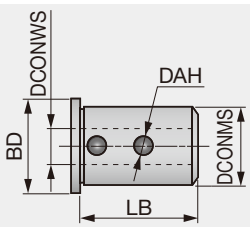


Fig. B

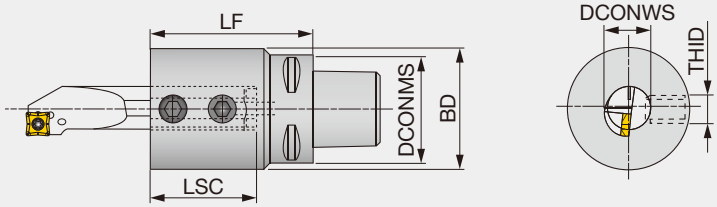


Inch	DCONMS	DCONWS	BD	LB	THID	DAH	Fig.
SC1-1/2T.250A	1.5	0.25	1.811	2.283	M6	-	A
SC1-1/2T.312A	1.5	0.312	1.811	2.283	M6	-	A
SC1-1/2T.375A	1.5	0.375	1.811	2.283	M8	-	A
SC1-1/2T.500A	1.5	0.5	1.811	2.283	M9	-	A
SC1-1/2T.625B	1.5	0.625	1.811	2.283	-	0.591	B
SC1-1/2T.750B	1.5	0.75	1.811	2.283	-	0.591	B
SC1-1/2T1.000B	1.5	1	1.811	2.283	-	0.591	B
SC1-1/2T1.250B	1.5	1.25	1.811	2.283	-	0.591	B

TUNGCAP

C-ADI

Adapter for boring bars

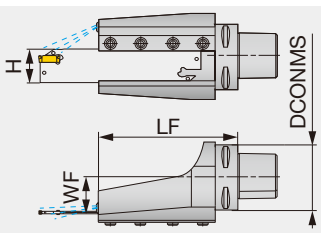


Metric	DCONMS	LF	LSC	DCONWS	BD	THID
C3ADI10	32	50	20	10	36	M6
C3ADI12	32	50	21.5	12	36	M8
C3ADI16	32	50	29.5	16	36	M8
C4ADI10	40	50	20	10	36	M6
C4ADI12	40	50	24	12	36	M8
C4ADI16	40	50	32	16	36	M8
C4ADI20	40	60	35	20	36	M10
C4ADI25	40	70	45	25	54	M12
C5ADI10	50	60	26	10	36	M6
C5ADI12	50	60	26	12	36	M8
C5ADI16	50	60	32	16	36	M8
C5ADI20	50	60	40	20	36	M10
C5ADI25	50	70	50	25	54	M12
C5ADI32	50	100	76	32	68	M12
C6ADI12	63	65	36	12	36	M8
C6ADI16	63	65	36	16	36	M8
C6ADI20	63	65	40	20	36	M10
C6ADI25	63	76	51	25	54	M12
C6ADI32	63	100	76	32	68	M12
C6ADI40	63	100	76	40	98	M12
C6ADI50	63	115	86	50	98	M12
C8ADI12	80	70	36	12	36	M8
C8ADI16	80	70	36	16	36	M8
C8ADI20	80	70	40	20	36	M10
C8ADI25	80	80	51	25	54	M12
C8ADI32	80	110	86	32	68	M12
C8ADI40	80	115	86	40	98	M12
C8ADI50	80	115	86	50	98	M12

Applicable for 7 MPa coolant

C-TBK-R/L

Adapter for parting blades

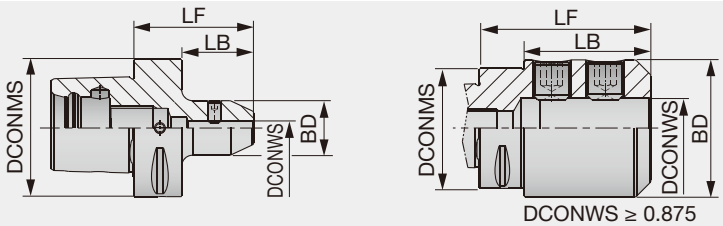


Right hand (R) shown.

Metric	DCONMS	WF	LF	H
C6TBK-32R/L	63	32	138	32

Applicable for 3 MPa coolant

Side-lock holder for weldon endmills (DIN1835 Form B)



Inch	DCONMS	DCONWS	BD	LF	LB
C6EM1/4X2.165	2.48	0.250	0.984	2.165	0.866
C6EM3/8X2.362	2.48	0.375	1.378	2.362	1.496
C6EM1/2X2.362	2.48	0.500	1.614	2.362	1.496
C6EM5/8X2.560	2.48	0.625	1.752	2.560	1.693
C6EM3/4X2.560	2.48	0.750	1.929	2.560	1.693

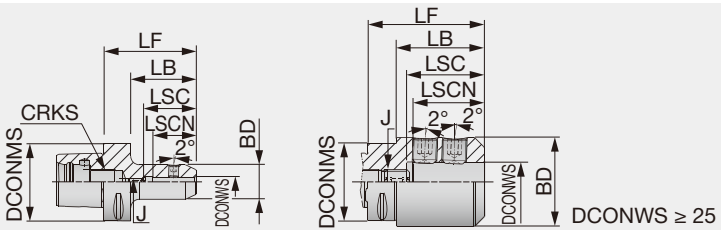
Inch	DCONMS	DCONWS	BD	LF	LB
C6EM7/8X3.189	2.48	0.875	2.047	3.189	2.480
C6EM1X3.347	2.48	1.000	2.559	3.347	2.480
C6EM1-1/4X3.500	2.48	1.250	2.795	3.500	2.634
C6EM1-1/2X3.500	2.48	1.500	2.992	3.500	2.634

Applicable for 7 MPa coolant

TUNGCAP

C-EM-E

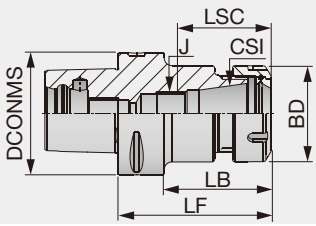
Side-lock holder for drills (DIN1835 Form E whistle notch)



Metric	DCONMS	DCONWS	BD	LF	LSCN	LSC	LB	J	CRKS
C3EM06X70E	32	6	25	70	30	35	50	5	M14
C3EM12X75E	32	12	42	75	44	49	55	10	M14
C4EM06X70E	40	6	25	70	30	35	50	M5	M14
C4EM08X70E	40	8	28	70	35	43	50	M6	M14
C4EM10X70E	40	10	35	70	39	45	50	M8	M14
C4EM12X75E	40	12	42	75	44	49	55	M10	M14
C4EM14X75E	40	14	44	75	44	49	55	M10	M14
C5EM10X70E	50	10	35	70	39	45	50	M8	M16
C5EM12X75E	50	12	42	75	44	49	55	M10	M16
C5EM14X75E	50	14	44	75	44	49	55	M10	M16
C5EM16X80E	50	16	48	80	47	52	60	M12	M16
C5EM18X80E	50	18	50	80	47	52	60	M12	M16
C5EM20X85E	50	20	52	85	49	55	65	M16	M16
C6EM06X75E	63	6	25	75	30	36	53	M5	M20
C6EM08X75E	63	8	28	75	35	43	53	M6	M20
C6EM10X75E	63	10	35	75	39	46	53	M8	M20
C6EM12X80E	63	12	42	80	44	49	58	M10	M20
C6EM14X80E	63	14	44	80	44	49	58	M10	M20
C6EM16X85E	63	16	48	85	47	52	63	M12	M20
C6EM18X85E	63	18	50	85	47	52	63	M12	M20
C6EM20X85E	63	20	52	85	49	55	63	M16	M20
C6EM25X90E	63	25	65	90	54	60	68	M20	M20
C6EM32X95E	63	32	72	95	58	63	73	M20	M20
C8EM08X65E	80	8	28	65	35	43	35	M6	M20
C8EM10X65E	80	10	35	65	39	46	35	M8	M20
C8EM12X70E	80	12	42	70	44	49	40	M10	M20
C8EM14X70E	80	14	44	70	44	49	40	M10	M20
C8EM16X75E	80	16	48	75	47	52	45	M12	M20
C8EM18X75E	80	18	50	75	47	52	45	M12	M20
C8EM20X80E	80	20	52	80	49	57	50	M16	M20
C8EM25X90E	80	25	65	90	54	60	60	M20	M20
C8EM32X95E	80	32	72	95	58	64	65	M20	M20

Applicable for 7 MPa coolant

ER collet chuck holder (DIN6499)



Inch	Range min.	Range max.	DCONMS	CSI	BD	LF	LB	J	LSC
C3ER16X45	0.039	0.394	1.26	ER16	1.102	1.772	0.984	-	1.535
C3ER20X45	0.039	0.512	1.26	ER20	1.339	1.772	1.181	-	1.567
C4ER16X70	0.039	0.394	1.575	ER16	1.102	2.756	1.969	M10	1.638
C4ER20X35*	0.039	0.512	1.575	ER20	1.339	1.378	1.063	-	1.567
C4ER20X52	0.039	0.512	1.575	ER20	1.339	2.047	1.26	-	1.539
C4ER25X38*	0.039	0.63	1.575	ER25	1.654	1.496	1.181	-	1.705
C4ER25X52	0.039	0.63	1.575	ER25	1.654	2.047	1.26	-	1.606
C4ER32X54	0.079	0.787	1.575	ER32	1.969	2.126	1.339	-	1.839
C5ER16X100	0.039	0.394	1.969	ER16	1.102	3.937	3.15	M10	2.425
C5ER16X130	0.039	0.394	1.969	ER16	1.102	5.118	4.331	M10	2.819
C5ER20X055	0.039	0.512	1.969	ER20	1.339	2.165	1.378	-	1.547
C5ER20X100	0.039	0.512	1.969	ER20	1.339	3.937	3.15	M12	2.067
C5ER20X130	0.039	0.512	1.969	ER20	1.339	5.118	4.331	M12	2.067
C5ER25X055	0.039	0.63	1.969	ER25	1.654	2.165	1.378	-	1.594
C5ER25X100	0.039	0.63	1.969	ER25	1.654	3.937	3.15	M16	2.559
C5ER32X057	0.079	0.787	1.969	ER32	1.969	2.244	1.417	-	1.858
C5ER32X100	0.079	0.787	1.969	ER32	1.969	3.937	1.417	M22X1.5	2.339
C6ER16X100	0.039	0.394	2.48	ER16	1.102	3.937	3.071	M10	2.425
C6ER16X130	0.039	0.394	2.48	ER16	1.102	5.118	4.252	M10	2.819
C6ER16X160	0.039	0.394	2.48	ER16	1.102	6.299	5.433	M10	2.819
C6ER20X060	0.039	0.512	2.48	ER20	1.339	2.362	1.496	-	1.555

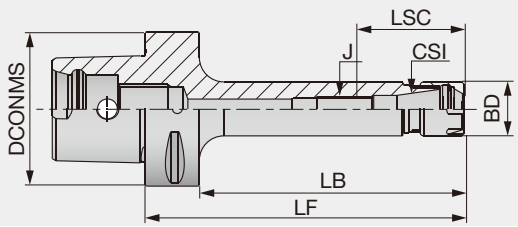
Inch	Range min.	Range max.	DCONMS	CSI	BD	LF	LB	J	LSC
C6ER20X100	0.039	0.512	2.48	ER20	1.339	3.937	3.071	M12	2.067
C6ER20X130	0.039	0.512	2.48	ER20	1.339	5.118	4.252	M12	2.067
C6ER20X160	0.039	0.512	2.48	ER20	1.339	6.299	5.433	M12	2.067
C6ER25X060	0.039	0.63	2.48	ER25	1.654	2.362	1.496	-	1.591
C6ER25X100	0.039	0.63	2.48	ER25	1.654	3.937	3.071	M16	2.559
C6ER25X130	0.039	0.63	2.48	ER25	1.654	5.118	4.252	M16	2.874
C6ER25X160	0.039	0.63	2.48	ER25	1.654	6.299	5.433	M16	2.874
C6ER32X060	0.079	0.787	2.48	ER32	1.969	2.362	1.417	-	1.882
C6ER32X100	0.079	0.787	2.48	ER32	1.969	3.937	3.071	M22X1.5	2.339
C6ER32X130	0.079	0.787	2.48	ER32	1.969	5.118	4.252	M22X1.5	2.732
C6ER32X160	0.079	0.787	2.48	ER32	1.969	6.299	5.433	M22X1.5	2.732
C6ER40X065	0.118	1.024	2.48	ER40	2.48	2.559	1.457	-	2.165
C6ER40X100	0.118	1.024	2.48	ER40	2.48	3.937	3.071	M28X1.5	2.362
C6ER40X130	0.118	1.024	2.48	ER40	2.48	5.118	4.252	M28X1.5	2.756
C8ER32X70	0.079	0.787	3.15	ER32	1.969	2.756	1.575	-	1.882
C8ER32X100	0.079	0.787	3.15	ER32	1.969	3.937	2.756	M22X1.5	2.378
C8ER32X160	0.079	0.787	3.15	ER32	1.969	6.299	5.118	M22X1.5	2.575
C8ER40X70	0.118	1.024	3.15	ER40	2.48	2.756	1.575	-	2.157
C8ER40X100	0.118	1.024	3.15	ER40	2.48	3.937	2.756	M28X1.5	2.362
C8ER40X160	0.118	1.024	3.15	ER40	2.48	6.299	5.118	M28X1.5	2.795

* Without V grooves, for manual use only.
Applicable for 10 MPa coolant

Option: Wrench for ER collet

TUNGCAP
C-ER-M

ER Mini collet chuck holder (DIN6499)



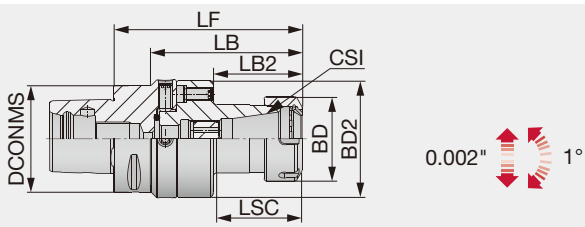
Inch	Range min	Range max	DCONMS	CSI	BD	LF	LB	J	LSC
C4ER16X70M	0.02	0.394	1.575	ER16	0.866	2.756	1.969	M10	1.614
C5ER16X100M	0.02	0.394	1.969	ER16	0.866	3.937	3.15	M10	1.811
C5ER16X130M	0.02	0.394	1.969	ER16	0.866	5.118	4.724	M10	1.811
C6ER16X100M	0.02	0.394	2.48	ER16	0.866	3.937	3.071	M10	1.811
C6ER16X130M	0.02	0.394	2.48	ER16	0.866	5.118	4.252	M10	1.811
C6ER16X160M	0.02	0.394	2.48	ER16	0.866	6.299	5.433	M10	1.811

Applicable for 10 MPa coolant

Option: Wrench for ER collet

TUNGCAP
ADJ C-ER

ER collet chuck with center alignment



Inch	DCONMS	CSI	Range min	Range max	BD2	BD	LF	LB	LB2	LSC
ADJC5ER32	1.969	ER32	0.079	0.787	2.756	1.969	4.528	3.74	2.067	2.244
ADJC6ER32	2.48	ER32	0.079	0.787	2.756	1.969	4.39	3.524	2.067	2.244

Applicable for 10 MPa coolant

Option: Wrench for ER collet

WRENCH-ER / ER DIN 6499

Fig. 1

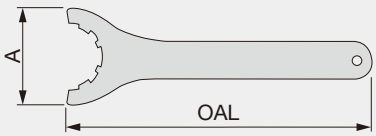


Fig. 2

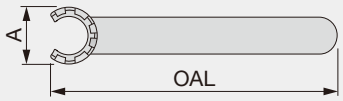
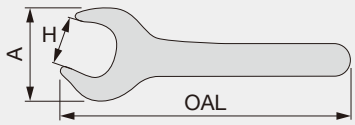


Fig. 3



Metric	A	H	OAL	Fig.
WRENCHER11MINI	16.8	-	95	2
WRENCHER11	32	17	95	3
WRENCHER16MINI	22.5	-	117	2
WRENCHER16	42.8	25	143	3
WRENCHER20MINI	28	-	128	2
WRENCHER20	53.5	30	172	3
WRENCHER25MINI	29	-	120	2
WRENCHER25	70	-	207	1
WRENCHER32	78	-	255	1
WRENCHER40	95	-	285	1
WRENCHER50	110	-	350	1
WRENCHER20SHORTRING22	48	22	260	3
WRENCHER32SHORT	75	36	303	3
WRENCHER40SHORT	94	46	378	3

PRESET ER-JET (Preset screw)

Fig. 1

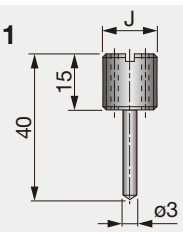
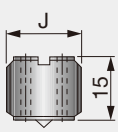
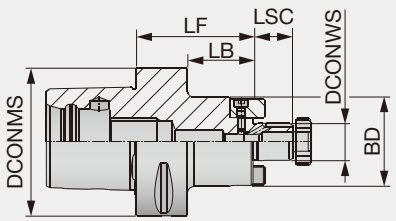


Fig. 2



Metric	J	Fig.
PRESETER-JET8X1	M8X1.0	2
PRESETER-JET8X1.25	M8X1.25	2
PRESETER-JET10X1.5	M10X1.5	2
PRESETER-JET12X1	M12X1.0	2
PRESETER-JET12X1.75L	M12X1.75	1
PRESETER-JET12X1.75	M12X1.75	2
PRESETER-JET14X1	M14X1.0	2
PRESETER-JET16X2	M16X2	2
PRESETER-JET16X2L	M16X2	1
PRESETER-JET18X1	M18X1.0	2
PRESETER-JET18X1.5	M18X1.5	2
PRESETER-JET18X1.5L	M18X1.5	1
PRESETER-JET22X1.5	M22X1.5	2
PRESETER-JET22X1.5L	M22X1.5	1
PRESETER-JET28X1.5	M28X1.5	2

TUNGCAP
C-SEM
Shell mill holder with coolant nozzle



Inch	DCONMS	DCONWS	BD	LF	LSC	LB	Width of key	Height of key
C6SEM3/4X1.377C	2.48	0.75	1.772	1.377	0.669	0.512	8	5
C6SEM3/4X3.937C	2.48	0.75	1.772	3.937	0.669	3.071	8	5
C6SEM1X1.457C	2.48	1.00	2.165	1.457	0.669	0.59	10	5.4

Inch	DCONMS	DCONWS	BD	LF	LSC	LB	Width of key	Height of key
C6SEM1X3.937C	2.48	1.00	2.165	3.937	0.669	3.071	12	6.3
C6SEM1-1/4X2.362C	2.48	1.25	2.519	2.362	0.669	1.496	12.7	6
C6SEM1-1/2X2.362C	2.48	1.50	3.070	2.362	0.937	1.496	14	7

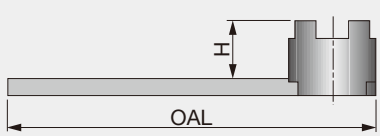
Metric	DCONMS	DCONWS	BD	LF	LSC	LB	Width of key	Height of key
C4SEM16X32C	40	16	38	32	12	17	8	5
C4SEM16X55C	40	16	38	55	35	17	8	5
C4SEM22X40C	40	22	47	40	20	19	10	5.4
C4SEM22X55C	40	22	47	55	35	19	10	5.4
C5SEM16X35C	50	16	38	35	17	15	8	5
C5SEM16X70C	50	16	38	70	17	50	8	5
C5SEM22X35C	50	22	47	35	19	15	10	5.4
C5SEM22X70C	50	22	47	70	19	50	10	5.4
C5SEM25.4X37C	50	25.4	55	37	22	-	9.525	4.6
C5SEM27X40C	50	27	58	40	21	20	12	6.3
C5SEM31.75X60C	50	31.75	64	60	30	-	12.7	6
C5SEM32X40C	50	32	63	40	24	20	14	7
C6SEM16X50C	63	16	38	50	17	28	8	5
C6SEM16X100C	63	16	38	100	17	78	8	5
C6SEM22X50C	63	22	47	50	19	28	10	5.4
C6SEM22X100C	63	22	47	100	19	78	10	5.4
C6SEM25.4X37C	63	25.4	55	37	22	15	9.525	4.6
C6SEM27X60C	63	27	58	60	21	38	12	6.3

Metric	DCONMS	DCONWS	BD	LF	LSC	LB	Width of key	Height of key
C6SEM27X100C	63	27	58	100	21	78	12	6.3
C6SEM31.75X60C	63	31.75	64	60	30	-	12.7	6
C6SEM32X60C	63	32	66	60	24	38	14	7
C6SEM38.1X60C	63	38.1	78	60	34	-	15.875	8
C6SEM40X60C	63	40	82	60	27	38	16	8
C8SEM16X50C	80	16	38	50	20	17	8	5
C8SEM16X100C	80	16	38	100	70	17	8	5
C8SEM22X50C	80	22	47	50	20	19	10	5.4
C8SEM22X100C	80	22	47	100	70	19	10	5.4
C8SEM25.4X50C	80	25.4	50	50	22	20	9.525	4.6
C8SEM27X50C	80	27	58	50	20	21	12	6.3
C8SEM27X100C	80	27	58	100	70	21	12	6.3
C8SEM31.75X50C	80	31.75	60	50	30	20	12.7	7
C8SEM32X50C	80	32	66	50	20	24	14	7
C8SEM32X100C	80	32	66	100	70	24	14	7
C8SEM38.1X50C	80	38.1	80	50	34	-	15.875	8
C8SEM40X60C	80	40	82	60	30	27	16	8

Applicable for 7 MPa coolant

Option: Wrench for lock screw

WRENCH SEMC / DIN6368

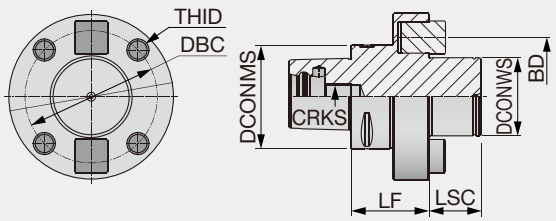


Metric	Arbor diameter of cutter body	Screw size	H	OAL
WRENCHM8SEMC16	16	M8	20	180
WRENCHM10SEMC22	22	M10	25	200
WRENCHM12SEMC27	25.4 / 27	M12	32	225
WRENCHM16SEMC32	31.75 / 32	M16	36	250
WRENCHM20SEMC40	38.1 / 40	M20	40	280
WRENCHM24SEMC50	50	M24	50	315

TUNGCAP

C-FM

Arbor for face mill



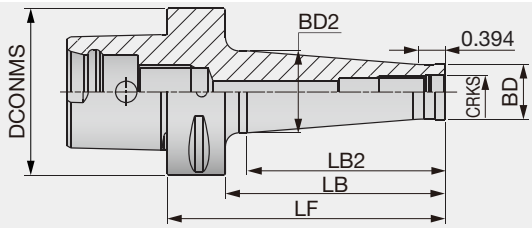
Metric	DCONMS	DCONWS	LSC	LF	BD	DBC	THID	CRKS	Width of key	Height of key
C8FM60X60	80	60	40	60	128	101.6	M16	M20	25.4	12.4

TUNGCAP

C-ODP

TUNGFLEX

Screw-clamp holder for modular heads



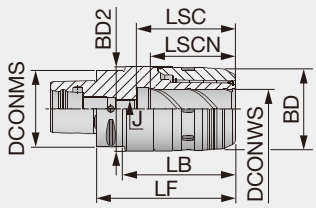
Inch	CRKS	DCONMS	BD	BD2	LF	LB	LB2
C4ODP10X53	M10	1.575	0.709	0.906	2.087	1.299	0.906
C4ODP12X53	M12	1.575	0.827	1.024	2.087	1.299	0.906
C4ODP16X53	M16	1.575	1.142	1.339	2.087	1.299	0.906
C5ODP10X53	M10	1.969	0.709	0.768	2.087	1.299	0.984
C5ODP10X103	M10	1.969	0.709	1.102	4.055	3.268	2.953
C5ODP12X53	M12	1.969	0.827	0.925	2.087	1.299	0.984
C5ODP12X103	M12	1.969	0.827	1.220	4.055	3.268	2.953
C5ODP16X53	M16	1.969	1.142	1.339	2.087	1.299	0.984
C5ODP16X103	M16	1.969	1.142	1.417	4.055	3.268	2.953
C6ODP10X55	M10	2.480	0.709	0.768	2.165	1.299	0.984
C6ODP10X105	M10	2.480	0.709	1.102	4.134	3.268	2.953
C6ODP10X130	M10	2.480	0.709	1.260	5.118	4.252	3.937
C6ODP12X55	M12	2.480	0.827	0.925	2.165	1.299	0.984
C6ODP12X105	M12	2.480	0.827	1.220	4.134	3.268	2.953
C6ODP12X130	M12	2.480	0.827	1.417	5.118	4.252	3.937
C6ODP16X55	M16	2.480	1.142	1.339	2.165	1.299	0.984
C6ODP16X105	M16	2.480	1.142	1.339	4.134	3.268	2.953
C6ODP16X130	M16	2.480	1.142	1.614	5.118	4.252	3.937

Applicable for 10 MPa coolant

TUNGCAP
C-TUNGMAX

TUNGMAX

Power chuck holder



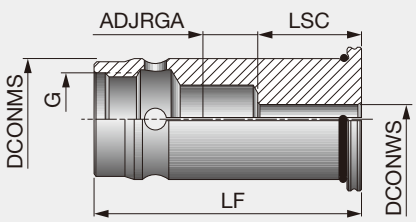
Inch	DCONMS	Range min	Range max	DCONWS	BD	BD2	LF	LB	LSCN	LSC	J
C6MAXIN3/4X3.74	2.48	0.250	0.750	0.750	2.000	2.087	3.780	2.913	2.15	2.64	M16
C6MAXIN1-1/4X4.448	2.48	0.250	1.250	1.250	2.717	2.756	4.528	3.622	2.76	3.23	M16

Applicable for 10 MPa coolant

Option : Wrench for TungMax collet

SC-SEAL

SC sealed straight collet

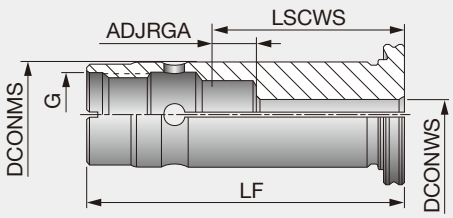


Inch	DCONWS	DCONMS	LF	LSC	ADJRGA	G
SC 3/4 SEAL 1/4	0.250	0.750	2.362	1.102	0.276	M16
SC 3/4 SEAL 5/16	0.313	0.750	2.362	1.102	0.276	M16
SC 3/4 SEAL 3/8	0.375	0.750	2.362	1.378	0.512	M16
SC 3/4 SEAL 7/16	0.438	0.750	2.362	1.575	0.315	M16
SC 3/4 SEAL 1/2	0.500	0.750	2.362	1.575	0.315	M16
SC 3/4 SEAL 5/8	0.625	0.750	2.362	1.543	0.354	M16
SC 1-1/4 SEAL 1/4	0.250	1.250	2.835	1.102	0.689	M2.4X1.5
SC 1-1/4 SEAL 5/16	0.313	1.250	2.835	1.102	0.689	M2.4X1.5
SC 1-1/4 SEAL 3/8	0.375	1.250	2.835	1.378	0.413	M2.4X1.5
SC 1-1/4 SEAL 1/2	0.500	1.250	2.835	1.575	0.217	M2.4X1.5
SC 1-1/4 SEAL 5/8	0.625	1.250	2.835	1.732	0.709	M2.4X1.5
SC 1-1/4 SEAL 3/4	0.750	1.250	2.835	1.811	0.63	M2.4X1.5
SC 1-1/4 SEAL 7/8	0.875	1.250	2.835	1.969	0.453	M2.4X1.5
SC 1-1/4 SEAL 1	1.000	1.250	2.835	2.008	0.453	M2.4X1.5

Applicable for 10 MPa coolant

SC-SPR

SC straight collet



Inch	DCONWS	DCONMS	LF	LSCWS	ADJRGA	G
SC 3/4 SPR 1/4	0.250	0.750	2.362	1.378	0.276	M16
SC 3/4 SPR 5/16	0.313	0.750	2.362	1.378	0.276	M16
SC 3/4 SPR 3/8	0.375	0.750	2.362	1.890	0.512	M16
SC 3/4 SPR 7/16	0.438	0.750	2.362	1.417	0.315	M16
SC 3/4 SPR 1/2	0.500	0.750	2.362	1.378	0.276	M16
SC 3/4 SPR 5/8	0.625	0.750	2.362	1.897	0.354	M16
SC 1-1/4 SPR 1/4	0.250	1.250	2.835	1.791	0.689	M2.4X1.5
SC 1-1/4 SPR 5/16	0.313	1.250	2.835	1.791	0.689	M2.4X1.5
SC 1-1/4 SPR 3/8	0.375	1.250	2.835	1.791	0.413	M2.4X1.5
SC 1-1/4 SPR 1/2	0.500	1.250	2.835	1.792	0.217	M2.4X1.5
SC 1-1/4 SPR 5/8	0.625	1.250	2.835	2.441	0.709	M2.4X1.5
SC 1-1/4 SPR 3/4	0.750	1.250	2.835	2.441	0.630	M2.4X1.5
SC 1-1/4 SPR 7/8	0.875	1.250	2.835	2.422	0.453	M2.4X1.5
SC 1-1/4 SPR 1	1.000	1.250	2.835	2.417	0.409	M2.4X1.5

PRESET SC CAP

Preset screw for SC collets

Fig. 1

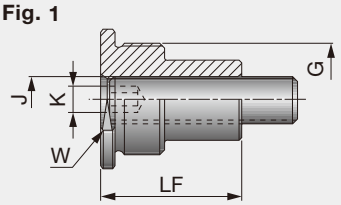
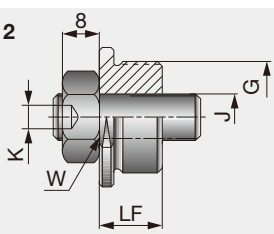
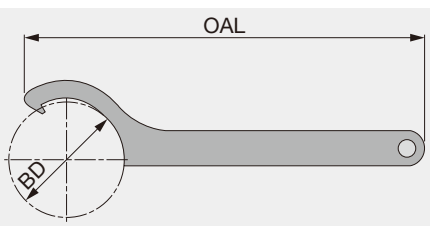


Fig. 2



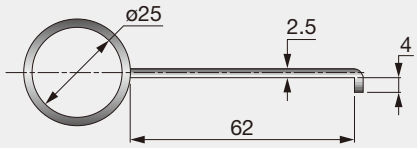
Metric	LF	W	J	G	Range	Key	Collet size	Fig.
PRESETSCCAP8X1.25L	28	16	M8x25	M16	6-8	4	SC20	1
PRESETSCCAP8X1.25	15	16	M8x25	M16	10-16	4	SC20	2
PRESETSCCAP10X1.5L	30	27	M10x30	M24x1.5	6-14	5	SC32	1
PRESETSCCAP10X1.5	13.5	27	M10x30	M24x1.5	16-25	5	SC32	2

Wrench



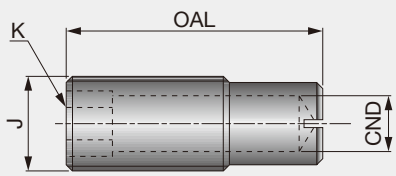
Metric	BD	OAL	Toolholder
WRENCHMAXIN20HOOK	26	205	MAXIN3/4
WRENCHMAXIN32HOOK	68	240	MAXIN11/4

SC collet extracting hook



Metric
EXTRACTORSCCOLLETS

Preset screw



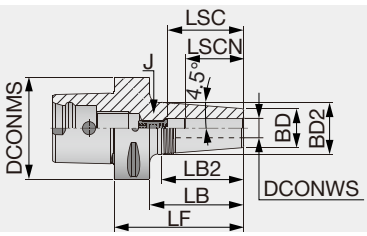
Metric	J	OAL	CND	K
PRESETMAXIN16X30	M16	30	8	8
PRESETMAXIN16X44	M16	44	8	8
PRESETMAXIN20X55	M20	55	12	12

TUNGCAP

C-SRKIN

TUNGSHRINK

Shrink holder

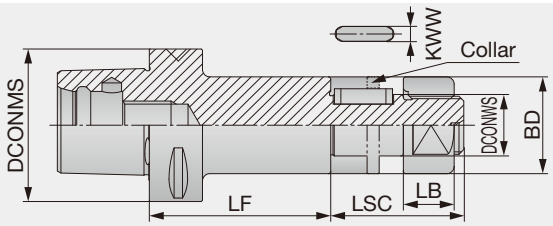


Inch	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J
C6SRKIN1/4X3.150	2.48	0.25	0.827	1.063	3.15	2.363	1.5	0.98	1.42	M5
C6SRKIN5/16X3.150	2.48	0.312	0.827	1.063	3.15	2.363	1.5	0.98	1.42	M6
C6SRKIN3/8X3.150	2.48	0.375	0.945	1.26	3.15	2.363	2	1.22	1.65	M8
C6SRKIN1/2X3.150	2.48	0.5	0.945	1.26	3.15	2.363	2	1.42	1.85	M10
C6SRKIN5/8X3.35	2.48	0.625	1.063	1.339	3.35	2.563	1.75	1.54	1.97	M12
C6SRKIN3/4X3.35	2.48	0.75	1.299	1.654	3.35	2.563	2.25	1.61	2.05	M16
C6SRKIN1X3.55	2.48	1	1.732	2.087	3.55	2.763	2.25	1.85	2.28	M16
C6SRKIN11/4X3.75	2.48	1.25	1.732	2.087	3.75	2.963	2.25	1.85	2.28	M16

Applicable for 10 MPa coolant

C-SCA

Slot milling holder

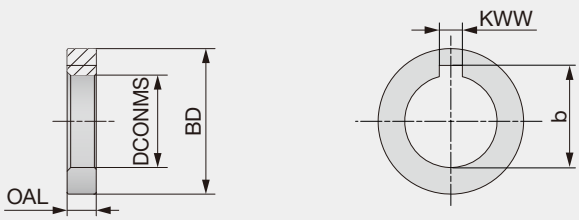


Metric	DCONMS	DCONWS	LF	BD	LSC	LB	Width of key KWM	Height of key
C6SCA25.4-075	63	25.4	75	40	55	21	6.35	2.38
C6SCA31.75-075	63	31.75	75	46	60	26	7.92	3.17
C8SCA25.4-090	80	25.4	90	40	55	21	6.35	2.38
C8SCA31.75-090	80	31.75	90	46	60	26	7.92	3.17

Collars for slot mills are not included

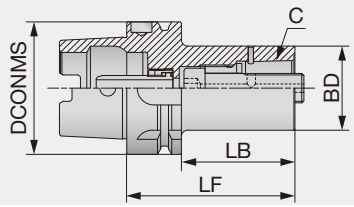
SCA

Collar for slot milling holders



Metric	BD	DCONMS	b	KWW	OAL
SCA25.4-02	40	25.4	28.1	6.35	3, 5, 7, 8, 10, 12, 14
SCA31.75-02	46	31.75	35.2	7.92	3, 5, 7, 8, 10, 12, 14

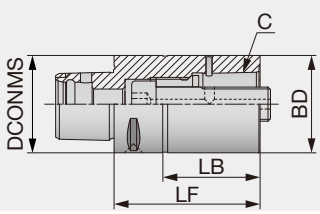
TUNGCAP
HSK-A-C/-T
Basic holder for HSK to PSC convertor



Metric	DCONMS	C	BD	LF	LB	Nm(1)	Wrench size
HSK63A-C4-080T (2)	63	C4	40	80	54	55	8
HSK63A-C5-090T (2)	63	C5	50	90	64	95	10
HSK63A-C6-110T (2)	63	C6	63	110	74	170	14
HSK100A-C6-110	100	C6	63	110	81	170	14
HSK100A-C8-120	100	C8	80	120	91	170	14

Applicable for 7 MPa coolant
Option: Cooling tube wrench
(1) Recommended clamping torque: N·m
(2) For HSK-T standard

TUNGCAP
C-EX
Extension adapter

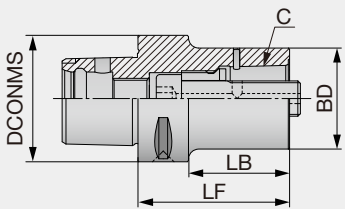


Metric	C	DCONMS	BD	LF	LB	Nm(1)	Wrench size
C4EX-060	C4	40	40	60	80	65	8
C4EX-080	C4	40	40	80	60	65	8
C5EX-080	C5	50	50	80	60	95	10
C5EX-100	C5	50	50	100	80	95	10
C6EX-100	C6	63	63	100	78	170	14
C6EX-140	C6	63	63	140	118	170	14
C8EX-100	C8	80	80	100	70	170	14
C8EX-160	C8	80	80	160	130	170	14

Applicable for 7 MPa coolant
(1) Recommended clamping torque: N·m

C-RE

Reduction adapter

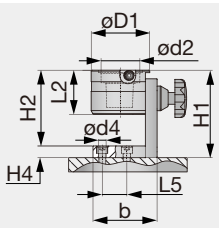


Metric	C	DCONMS	BD	LF	LB	Nm(1)	Wrench size
C5-C4RE-060	C4	50	40	60	40	55	8
C5-C4RE-080	C4	50	40	80	60	55	8
C6-C4RE-080	C4	63	40	80	58	55	8
C6-C5RE-080	C5	63	50	80	58	95	10
C6-C5RE-120	C5	63	50	120	98	95	10
C8-C4RE-070	C4	80	40	70	40	55	8
C8-C5RE-080	C5	80	50	80	50	95	10
C8-C6RE-080	C6	80	63	80	50	170	14
C8-C6RE-120	C6	80	63	120	90	170	14

Applicable for 7 MPa coolant
(1) Recommended clamping torque: N·m

MULTI CLAMP (TungCap)

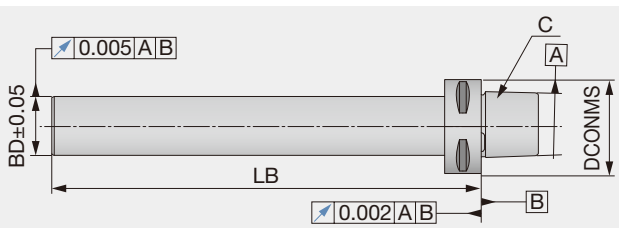
Multi-clamp fixture for TungCap



Metric	CSI	ød2	øD1	L2	H1	H2	H4	b	L5	ød4
MULTICLAMPC3	C3	32	70	64	128	109	19	104	40	12.5
MULTICLAMPC4	C4	40	78	67	137	118	19	104	40	12.5
MULTICLAMPC5	C5	50	85	72	142	123	19	104	40	12.5
MULTICLAMPC6	C6	63	95	72	142	123	19	104	40	12.5
MULTICLAMPC8	C8	80	130	90	178	159	19	144	85	12.5

TungCap Test bar

Test bar

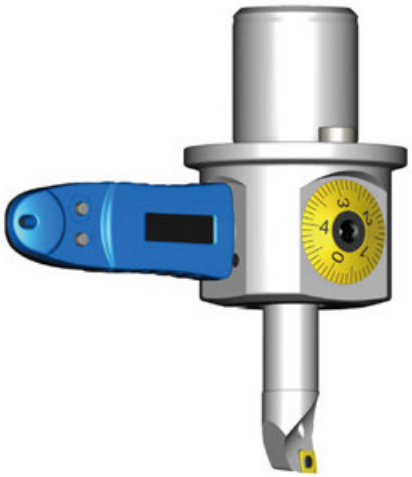


Metric	C	DCONMS	BD	LB
C3-TB-160	C3	32	25	160
C4-TB-160	C4	40	25	160
C5-TB-160	C5	50	30	180
C6-TB-220	C6	63	35	220
C8-TB-250	C8	80	40	250

TUNGCAP

SWISS TOOLS

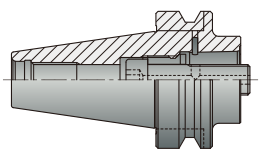
Fine boring heads with digital display



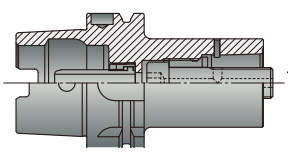
Fine boring head system makes **micron adjustment easy and simple in the machine**

- Easy and accurate adjustment: 1 µm accuracy is possible on the machine
- Digital display: the display unit is docked on the boring head for micron adjustment
- Economy: One digital unit can be used with all fine boring heads
- Internal coolant for smooth chip control
- Also available with TungCap connection, allowing it for use in multi-tasking machines

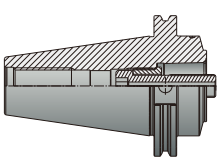
Digital display unit



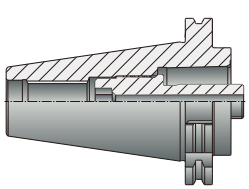
BT-FC (dual-contact BT2)



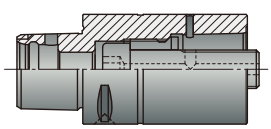
HSK-63A



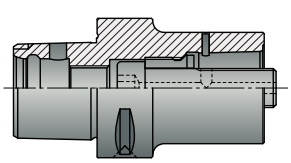
CAT



SK: DIN69871

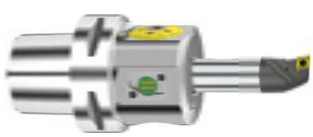


Extension adapter



Reduction adapter

ø23.9 - ø153.1

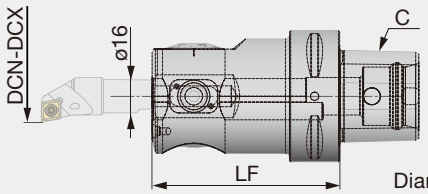


ø9.75 - ø88.1

Reference pages: K047 - K054

TungCap FBHO-DE

Fine boring head for digital display ø9.75 mm - ø88.1 mm



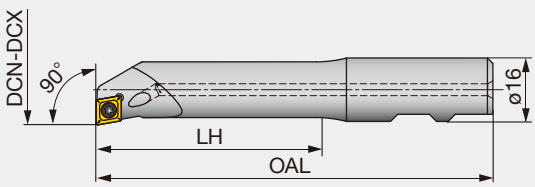
Diameter adjustment range 2.7mm

Metric	C	DCN	DCX	LF	Boring bar
BT4-FBHO-DE-1690	BT40	9.75	88.1	90	254.0**.006... / 256...
HA6-FBHO-DE-1695	HSK-A63	9.75	88.1	95	254.0**.006... / 256...
PSC63-FBHO-DE-1690	C6	9.75	88.1	90	254.0**.006... / 256...
PSC50-FBHO-DE-1670	C5	9.75	88.1	70	254.0**.006... / 256...
PSC40-FBHO-DE-1665	C4	9.75	88.1	65	254.0**.006... / 256...

Applicable for 7 MPa coolant

TungCap 254.0**.006.**

Boring bar



Metric	DCN	DCX	LH	OAL	Insert
254.010.006.075	9.75	15.1	30	75	CC**0602...
254.015.006.090	14.75	20.1	51	90	CC**0602...
254.020.006.105	19.75	25.1	72	105	CC**0602...
254.025.006.115	24.75	30.1	82	115	CC**0602...

Applicable for 7 MPa coolant

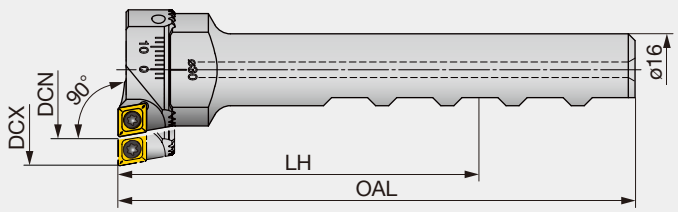
SPARE PARTS


Designation	Clamping screw	Wrench
254.0**.006.**	CSTB-2.5S	T-8F

Reference pages: 254.0**.006.**: Inserts → B111 -

TUNGCAP
TungCap 256.0**.0**.115

Boring bar



Metric (Shank)	Metric (Insert holder)	DCN	DCX	LH	OAL	Insert
256.030.048.115	256.030.006.012	29.75	48.1	85	115	CC**0602...
256.048.088.115	256.048.006.014	47.75	88.1	85	115	CC**0602...

Applicable for 7 MPa coolant

SPARE PARTS


Designation	Clamping screw	Wrench
256.0**.006.0**	CSTB-2.5S	T-8F

TUNGCAP
TungCap FBHS-DE

Fine boring head for digital display ø23.9 mm - ø153.1 mm

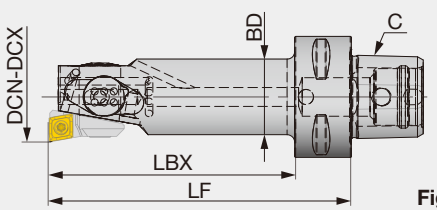


Fig. 1

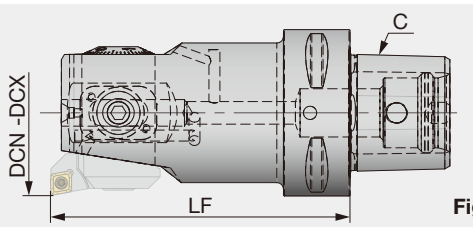


Fig. 2

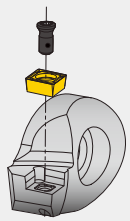
Metric	C	DCN	DCX	LF	LBX	BD	Fig.	Insert holder
PSC32-FBHS-DE-24	C3	23.9	31.1	80	65	20	1	314.011.024.006/007
PSC32-FBHS-DE-24	C3	29.9	37.1	80	65	20	1	314.011.030.006/007
PSC32-FBHS-DE-31	C3	30.9	40.1	90	75	25	1	314.013.031.006/007
PSC32-FBHS-DE-31	C3	37.5	47.1	90	75	25	1	314.013.038.006/007
PSC40-FBHS-DE-40	C4	39.9	51.1	90	70	32	1	314.017.040.006/007
PSC40-FBHS-DE-40	C4	47.5	59.1	90	70	32	1	314.017.048.006/007
PSC50-FBHS-DE-51	C5	50.9	67.1	90	-	-	2	314.022.051.006/007
PSC50-FBHS-DE-51	C5	64.9	81.1	90	-	-	2	314.022.065.006/007
PSC50-FBHS-DE-67	C5	66.9	87.1	100	-	-	2	314.030.067.009/011
PSC50-FBHS-DE-67	C5	84.9	105.1	100	-	-	2	314.030.085.009/011
PSC63-FBHS-DE-87	C6	86.9	116.1	120	-	-	2	314.030.067.009/011
PSC63-FBHS-DE-87	C6	104.9	134.1	120	-	-	2	314.030.085.009/011
PSC63-FBHS-DE-116	C6	115.9	153.1	150	-	-	2	314.030.067.009/011
PSC63-FBHS-DE-116	C6	133.9	171.1	150	-	-	2	314.030.085.009/011

Insert holders are sold separately.
Applicable for 7 MPa coolant

Reference pages: 256.0**.0**.115: Inserts → B111 -

TungCap 314.0**.0**.0**

Insert holder of fine boring head for digital display ø23.9 mm - ø153.1 mm



Metric (Insert holder)	Insert
314.011.024.006	CC**0602...
314.013.031.006	CC**0602...
314.017.040.006	CC**0602...
314.022.051.006	CC**0602...
314.030.067.009	CC**08T3..

SPARE PARTS

Designation	Clamping screw	Wrench
314.0**.0**.0**	CSTB-2.5S	T-8F

TungCap GH1-DA

Digital display unit

Metric
GH1-DA2.BG0.077

Nomenclature for clamping units

Clamping units

Clamping units for non-rotating and rotating tools, designed for turret lathes

- Clamping units for standard square and round shanks
- Clamping units for PSC Bolt-on clamp interface
- Clamping units for Vertical Disc Interface (VDI DIN69880)

Standard interface

PBI

VDI (DIN69880)

Clamping units

	For external (Tool setting direction cross X)	For internal (Tool setting direction straight Z)
Turning clamping unit	C*-DTO-*C-***-R/L	C*-DTI-*C-****-R/L
		
Driven clamping unit	C*-DDC-*C-****	C*-DDS-*C-****
		

Nomenclature for clamping units

Nomenclature for static clamping unit

C4 - DT I - IC - ABC401 - R

① ② ③ ④ ⑤ ⑥ ⑦

① PSC size	② Device	③ Motion	④ Application	⑤ Coolant	⑥ Unit number	⑦ Hand
C3	D	T Static (turning tool)	O For external turning	IC Internal	Manufacturer's symbol	R Right
C4			I For internal turning	OC External		L Left
C5			S Others			
C6						
C8						

Nomenclature for driven clamping unit

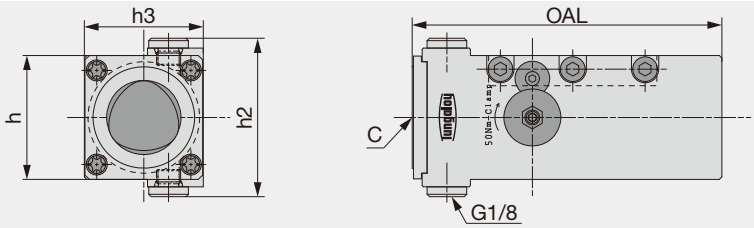
C5 - DDC - OC - ABC501

① ② ③ ④ ⑤ ⑥

① PSC size	② Device	③ Motion	④ Application	⑤ Coolant	⑥ Unit number
C3	D	D Driven (rotating tool)	S Straight: Z	OC External	Manufacturer's symbol
C4			C Cross: X	WC Internal / External	
C5			X Others		
C6					
C8					

C-DTOSR/L

Manual clamping unit, square shank

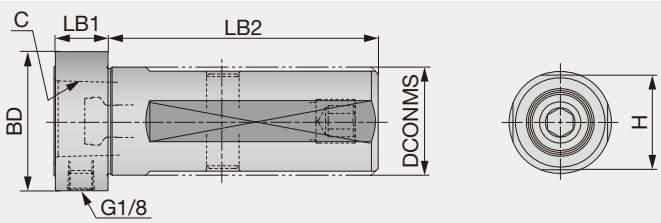


Metric	C	Turret size h	h3	h2	OAL	Torque
C3-DTOS4038R/L	C3	40	38	62	95	35
C4-DTOS5048R/L	C4	50	48	64	125	50
C5-DTOS6464R/L	C5	60	64	68	145	70

Applicable for 7 MPa coolant
Torque: Recommended clamping torque: N·m

C-DTIR

Manual clamping unit, round shank

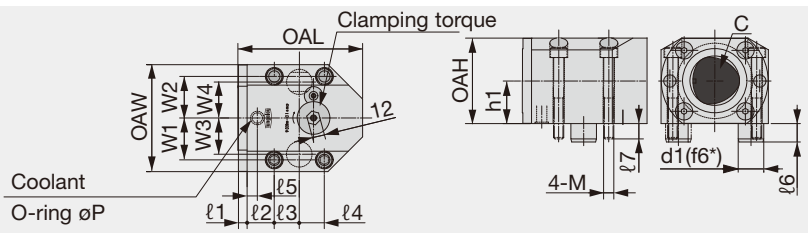


Metric	C	DCONMS	BD	H	LB2	LB1	Torque
C3-DTIR-08018-D32	C3	32	41.5	30	80	18	35
C4-DTIR-10020-D40	C4	40	51.5	37	100	20	50
C4-DTIR-12020-D50	C4	50	51.5	47	120	20	50
C5-DTIR-12024-D50	C5	50	61.5	47	120	24	70

Applicable for 7 MPa coolant
Torque: Recommended clamping torque: N·m

C-DTOFR/L

Manual clamping unit, fixed type



Metric	C	OAH	h1	OAL	OAW	W1 W2	W3 W4	ℓ1	ℓ2	ℓ3 ℓ4	ℓ5	ℓ6	ℓ7	d1(f6*)	P	M	Torque
C5-DTOFR/L32048	C5	64	32	100	92	35	31	8	19	21	7	11	15	20	P8	M10	70
C6-DTOFR/L42060	C6	84	42	122	105	41	35.5	9	26.5	24.5	10	18	15	25	P10	M10	90
C8-DTOFR/L50088	C8	100	50	146	133	55	46	12	33	43	13	19	20	32	P11	M12	130

Applicable for 7 MPa coolant
Torque: Recommended clamping torque: N·m

*f6 tolerance: *d*20 & 25 = -0.022 / -0.033, *d*32 = -0.025 / -0.041

Clamping units & tools for CNC lathes

Selection for External turning

Fig. 1

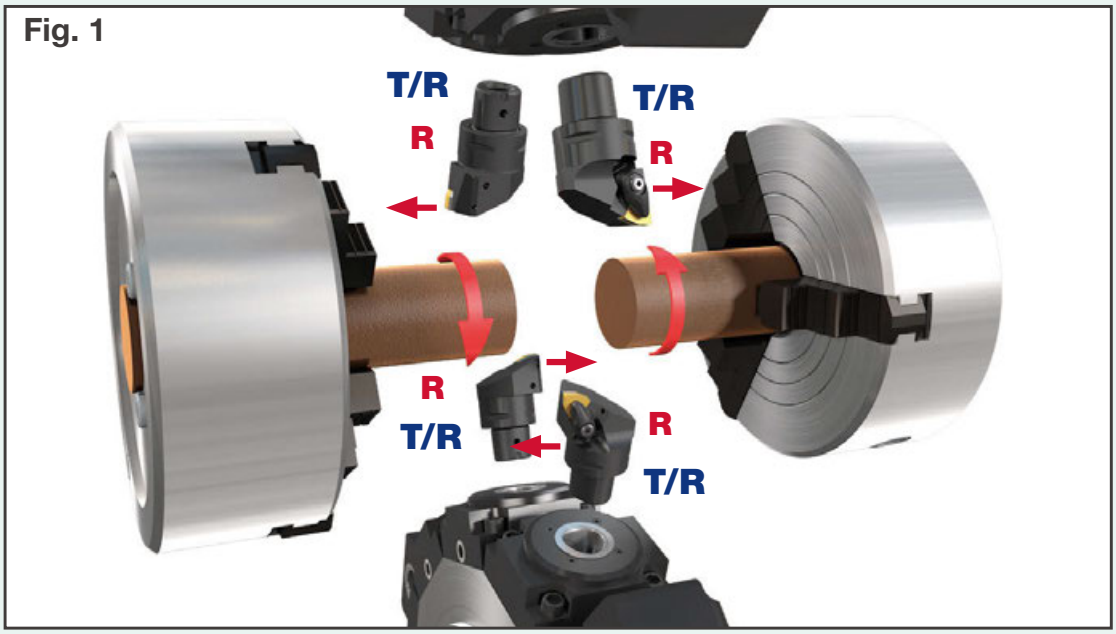
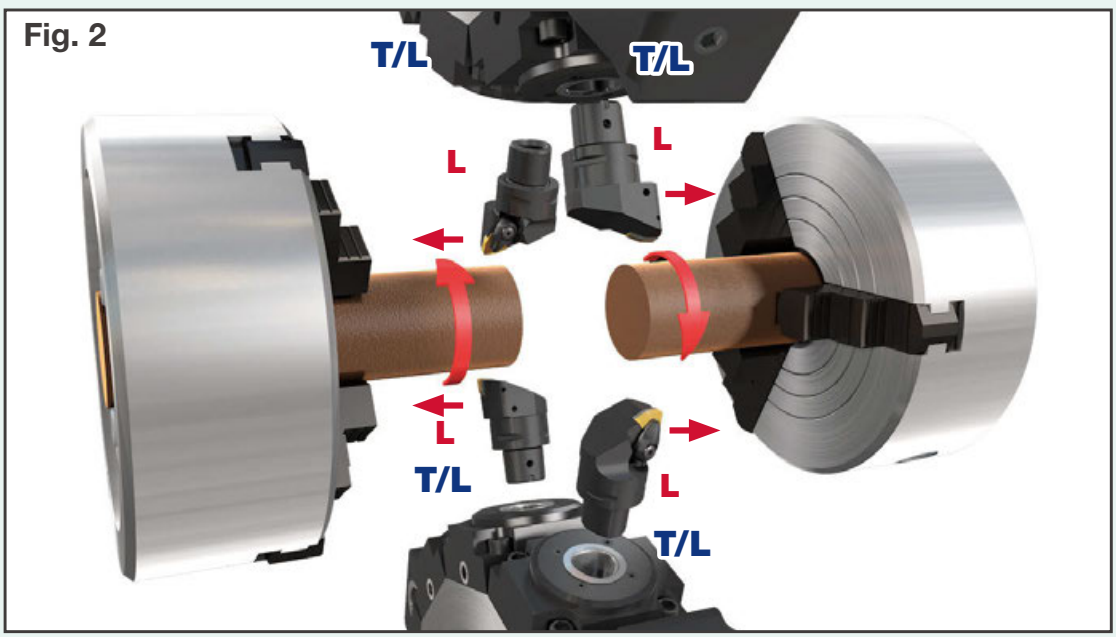


Fig. 2



R: Right hand cutting tool **L:** Left hand cutting tool
T/R: Right hand clamping unit **T/L:** Left hand clamping unit

Clamping units & tools for CNC lathes

Selection for Internal turning

Fig. 1

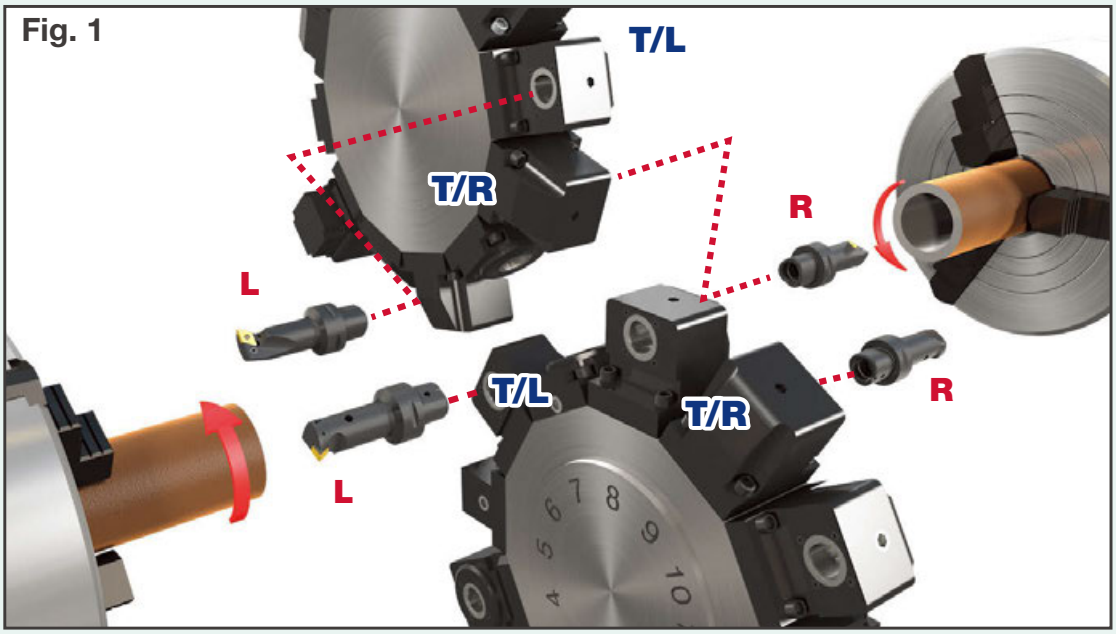
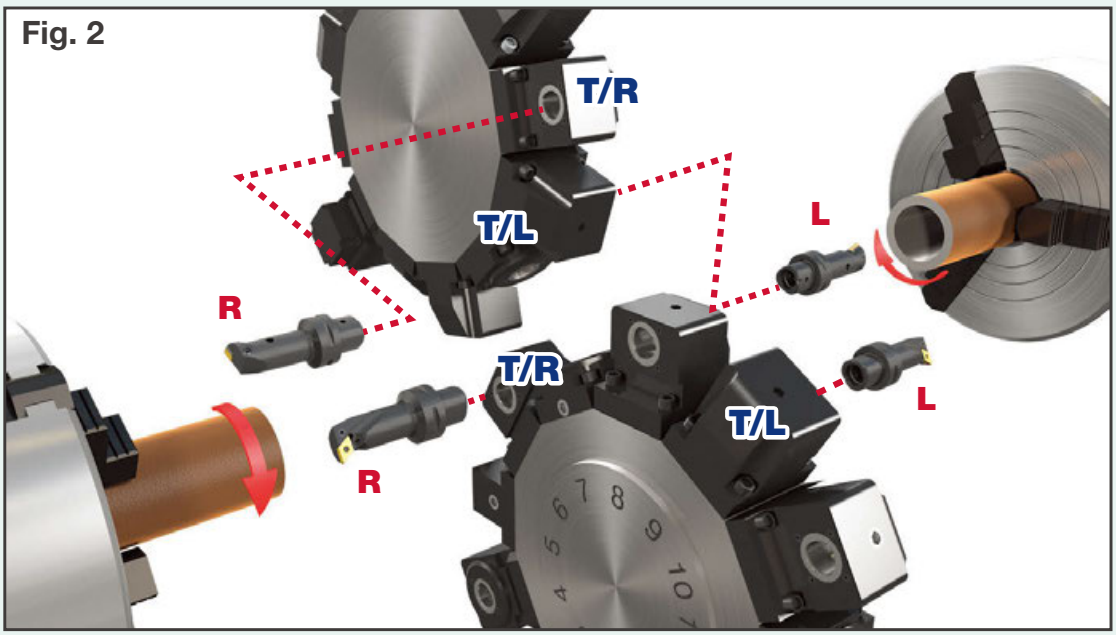


Fig. 2



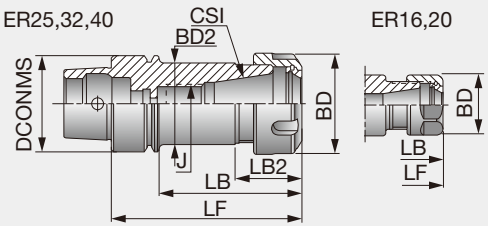
R: Right hand cutting tool **L:** Left hand cutting tool
T/R: Right hand clamping unit **T/L:** Left hand clamping unit

Clamping torque

PSC size	Tightening torque recommendation (N·m)	Clamping force (KN)	Torque wrench size	
			Static tool unit	Driven tool unit
C3	35	15	8	6
C4	50	20	10	8
C5	70 (75*)	25	12	10
C6	90 (110*)	30	12	12
C8	130	40	12	12

* Torque value for driven tool unit

ER collet chuck holder (HSK-E)



Metric	DCONMS	CSI	Range	LF	LB	LB2	BD	BD2	J
HSKE32ER16X60	32	ER16	0.5-10	60	40	21.5	28	22.4	-
HSKE32ER20X60	32	ER20	1-13	6	40	26	34	25.4	-
HSKE32ER25X65	32	ER25	1-16	65	45	30	42	25.8	-
HSKE40ER16X60	40	ER16	0.5-10	60	40	-	28	-	-
HSKE40ER16X80	40	ER16	0.5-10	80	60	-	28	-	M10
HSKE40ER20X80	40	ER20	1-13	80	60	-	34	-	M12
HSKE40ER25X80	40	ER25	1-16	80	60	28	42	34	M18X1.5
HSKE40ER32X80	40	ER32	2-20	80	60	31	50	40.1	M22X1.5
HSKE50ER16X100 (1)	50	ER16	0.5-10	100	74	-	28	-	M10
HSKE50ER16X100M (1)(3)	50	ER16	0.5-10	100	74	-	22	-	M10
HSKE50ER16X80 (1)	50	ER16	0.5-10	80	54	-	28	-	M10
HSKE50ER20X80 (1)	50	ER20	1-13	80	54	-	34	-	M10
HSKE50ER25X80 (1)	50	ER25	1-16	80	54	28	42	32.4	-
HSKE50ER32X80 (1)	50	ER32	2-20	80	54	31	50	40.4	-
HSKE50ER32X100 (1)	50	ER32	2-20	100	74	31	50	40.4	M22X1.5
HSKE63ER16X80 (2)	63	ER16	0.5-10	80	54	-	28	-	M10
HSKE63ER16X100 (2)	63	ER16	0.5-10	100	74	-	28	-	M10
HSKE63ER20X75 (2)	63	ER20	1-13	75	49	-	34	-	-
HSKE63ER32X100 (2)	63	ER32	2-20	100	75	-	50	-	M22X1.5

Applicable for 10 MPa coolant
Equipped with nut ER 16 MINI
(1) Balanced to G2.5 max.n: 35,000 min^{-1}
(2) Balanced to G2.5 max.n: 35,000 min^{-1}
(3) Balanced to G2.5 max.n: 30,000 min^{-1}

Option: Wrench for ER collet

Reference pages


ER collet K108


Nut K128


Preset screw K131

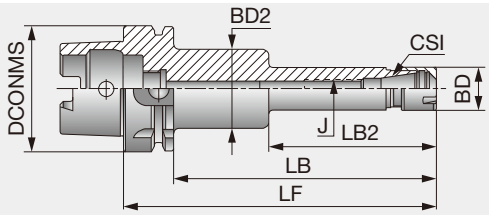

Wrench K130, K135


Cooling tube K134

TUNGHOLD

HSK A-ER M

ER Mini collet chuck holder (HSK-A)



Metric	DCONMS	CSI	Range	LF	LB	LB2	BD	BD2	J
HSKA63ER16X100M	63	ER16	0.5-10	100	74	-	22	-	M10
HSKA63ER16X120M	63	ER16	0.5-10	120	94	78	22	40	M10
HSKA63ER16X160M	63	ER16	0.5-10	160	134	85	22	40	M10
HSKA63ER20X100M	63	ER20	1-13	100	74	-	28	-	M12
HSKA63ER20X120M	63	ER20	1-13	120	94	-	28	-	M12
HSKA63ER20X160M	63	ER20	1-13	160	134	85	28	45	M12
HSKA100ER16X100M (1)	100	ER16	0.5-10	100	71	-	22	-	M10
HSKA100ER16X160M (1)	100	ER16	0.5-10	160	131	85	22	40	M10
HSKA100ER20X100M (1)	100	ER20	1-13	100	71	-	28	-	M12
HSKA100ER20X160M (1)	100	ER20	1-13	160	131	85	28	45	M12

Applicable for 10 MPa coolant

(1) Balanced to G6.3 max.n: 12,000 min^{-1}

Option: Wrench for ER collet

Reference pages

ER collet K108 | Nut K128 | Preset screw K131 | Wrench K130, K135 | Cooling tube K134

ER collet chuck holder (HSK-A)

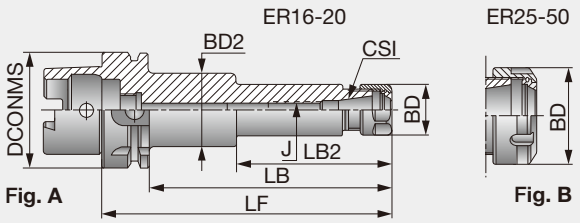


Fig. A Fig. B

Metric	DCONMS	CSI	Range	LF	LB	LB2	BD	BD2	J	Fig.
HSKA40ER16X60	40	ER16	0.5-10	60	40	-	28	-	M10	A
HSKA40ER16X80	40	ER16	0.5-10	80	60	-	28	-	M10	A
HSKA50ER20X100	50	ER20	1-13	100	74	-	34	-	M12	A
HSKA63ER16X100	63	ER16	0.5-10	100	74	-	28	-	M10	A
HSKA63ER16X120	63	ER16	0.5-10	120	94	-	28	-	M10	A
HSKA63ER16X160	63	ER16	0.5-10	160	134	85.6	28	40	M10	A
HSKA63ER20X100	63	ER20	1-13	100	74	-	34	-	M12	A
HSKA63ER20X120	63	ER20	1-13	120	94	-	34	-	M12	A
HSKA63ER20X160	63	ER20	1-13	160	134	85.0	34	45	M12	A
HSKA100ER16X100 (1)	100	ER16	0.5-10	100	71	-	28	-	M10	A
HSKA100ER16X160 (1)	100	ER16	0.5-10	160	131	85	28	40	M10	A
HSKA100ER20X100 (1)	100	ER20	1-13	100	71	-	34	-	M12	A
HSKA100ER20X160 (1)	100	ER20	1-13	160	131	85	34	45	M12	A
HSKA40ER25X80	40	ER25	1-16	80	60	28	42	32.4	M18x1.5	B
HSKA40ER25X100	40	ER25	1-16	100	80	28	42	32.4	M16	B
HSKA40ER32X100	40	ER32	2-20	100	80	31	50	40.4	M22x1.5	B
HSKA63ER25X80	63	ER25	1-16	80	54	-	42	-	M16	B
HSKA63ER25X100	63	ER25	1-16	100	74	-	42	-	M16	B
HSKA63ER25X120	63	ER25	1-16	120	94	-	42	-	M16	B
HSKA63ER25X160	63	ER25	1-16	160	134	-	42	-	M16	B
HSKA63ER32X80	63	ER32	2-20	80	54	31	50	40.4	M22x1.5	B
HSKA63ER32X100	63	ER32	2-20	100	74	-	50	-	M22x1.5	B
HSKA63ER32X120	63	ER32	2-20	120	94	-	50	-	M22x1.5	B
HSKA63ER32X140	63	ER32	2-20	140	114	-	50	-	M22x1.5	B
HSKA63ER32X160	63	ER32	2-20	160	134	-	50	-	M22x1.5	B
HSKA63ER40X80	63	ER40	3-26	80	54	34	63	50.4	-	B
HSKA63ER40X100	63	ER40	3-26	100	74	34	63	50.4	M28x1.5	B
HSKA63ER40X120	63	ER40	3-26	120	94	34	63	50.4	M28x1.5	B
HSKA100ER25X100	100	ER25	1-16	100	71	-	42	-	M16	B
HSKA100ER25X120	100	ER25	1-16	120	91	-	42	-	M16	B
HSKA100ER25X160	100	ER25	1-16	160	134	-	42	-	M16	B
HSKA100ER32X100	100	ER32	2-20	100	71	-	50	-	M22x1.5	B
HSKA100ER32X120	100	ER32	2-20	120	91	-	50	-	M22x1.5	B
HSKA100ER32X160	100	ER32	2-20	160	131	-	50	-	M22x1.5	B
HSKA100ER40X100	100	ER40	3-26	100	71	-	63	-	M28x1.5	B
HSKA100ER40X120	100	ER40	3-26	120	91	-	63	-	M28x1.5	B
HSKA100ER40X160	100	ER40	3-26	160	131	-	63	-	M28x1.5	B
HSKA100ER50X100	100	ER50	10-34	100	71	-	78	-	-	B

Applicable for 10 MPa coolant
(1) Balanced to G6.3 max.n: 12,000 min^{-1}

Option: Wrench for ER collet

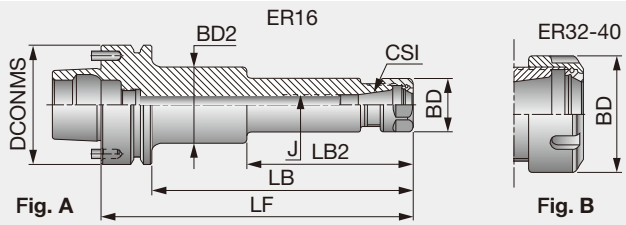
Reference pages

ER collet K108 | Nut K128 | Preset screw K131 | Wrench K130, K135 | Cooling tube K134

TUNGHOLD

HSK FM-ER

ER collet chuck holder (HSK-FM)



Metric	DCONMS	CSI	Range	LF	LB	LB2	BD	BD2	J	Fig.
HSKFM63ER16X80	63	ER16	0.5-10	80	54	-	28	-	M10	A
HSKFM63ER16X100	63	ER16	0.5-10	100	74	-	28	-	M10	A
HSKFM63ER16X120	63	ER16	0.5-10	120	94	-	28	-	M10	A
HSKFM63ER16X160	63	ER16	0.5-10	160	134	85.6	28	40	M10	A
HSKFM63ER32X80	63	ER32	2-20	80	54	-	50	-	-	B
HSKFM63ER32X100	63	ER32	2-20	100	74	-	50	-	M22x1.5	B
HSKFM63ER40X80	63	ER40	3-26	80	54	32	63	50	-	B
HSKFM63ER40X100	63	ER40	3-26	100	74	32	63	50	M28x1.5	B

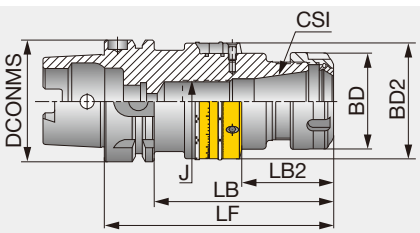
Applicable for 10 MPa coolant
The driving pins can be removed, turning the toolholder into a standard HSK F63 type.

Option: Wrench for ER collet

TUNGBALANCE

HSK A-ER BIN

ER collet chuck holder with adjustable dynamic balance (HSK-A)



Metric	DCONMS	CSI	Range	LF	LB	LB2	BD	BD2	J
HSKA63ER16X100BIN	63	ER16	0.5-10	100	74	45	28	44	M10
HSKA63ER25X100BIN	63	ER25	1-16	100	74	45.2	42	44	M16
HSKA63ER32X120BIN	63	ER32	2-20	120	94	48	50	60	M22x1.5

Applicable for 10 MPa coolant
(1) Balanced to G2.5 max.n: 20,000 min^{-1}

Option: Wrench for ER collet

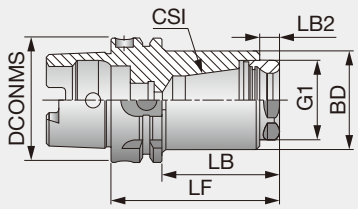
Reference pages

ER collet K108 | Nut K128 | Preset screw K131 | Wrench K130, K135 | Cooling tube K134 | Straight collet K117

TUNGSHORT

HSK A-SHORT

ER collet chuck holder, short type (HSK-A)



Metric	DCONMS	CSI	Range	LF	LB	LB2	BD	G1
HSKA63ER32SHORT	63	ER32	2-20	84.5	56.1	9.5	50	M40x1.5
HSKA100ER32SHORT	100	ER32	2-20	89.5	60.5	9.5	50	M40x1.5
HSKA100ER40SHORT	100	ER40	3-26	104.5	75.5	9.5	70	M50x1.5

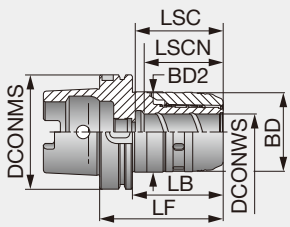
Applicable for 10 MPa coolant
Balanced to G6.3 max.n: 8,000 min^{-1}

Option: Wrench for ER collet

TUNGMAX

HSK A-TUNGMAX

Power chuck holder (HSK-A)



Metric	DCONMS	DCONWS	Range	LF	LB	LSCN	LSC	BD	BD2
HSKA63MAXIN20X95	63	20	6-20	95	69	56	66	51	53
HSKA63MAXIN32X113	63	32	6-32	113	87	70	85	69	70
HSKA100MAXIN20X115 (1)	100	20	6-20	115	86	56	69	51	53
HSKA100MAXIN32X135 (1)	100	32	6-32	135	106	71	87	69	70

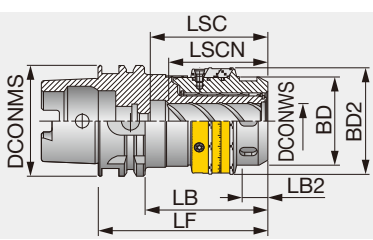
Applicable for 10 MPa coolant
(1) Balanced to G6.3 max.n: 8,000 min^{-1}

Option: Wrench for TungMax collet

TUNGBALANCE

HSK A-TUNGMAX BIN

Power chuck holder with adjustable dynamic balance (HSK-A)



Metric	DCONMS	DCONWS	Range	LF	LB	LB2	LSCN	LSC	BD	BD2
HSKA63MAXIN20X95BIN (1)	63	20	6-20	95	69	17.5	56	66	51	61
HSKA63MAXIN32X113BIN (1)	63	32	6-32	113	87	24.9	70	85	69	80

Applicable for 10 MPa coolant
(1) Chucks with taper size HSK A63 can be balanced by the balancing ring up to G2.5 at 20,000 min^{-1}.
(2) Chucks with taper size HSK A100 can be balanced by the balancing ring up to G2.5 at 18,000 min^{-1}.

Option: Wrench for TungMax collet

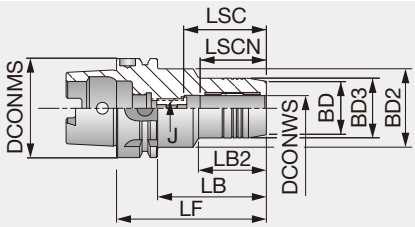
Reference pages

ER collet K108 | Nut K128 | Preset screw K131 | Wrench K130, K135 | Cooling tube K134 | Straight collet K117

TUNGHYDRO

HSK A-HYDRO

Hydraulic endmill chuck holder (HSK-A)



Metric	DCONMS	DCONWS	BD3	BD	BD2	LF	LB	LB2	LSCN	LSC	J
HSKA50HYDRO6X80	50	6	26	23	42	80	54	35	27	37	M5
HSKA50HYDRO8X80	50	8	28	25	42	80	54	36	27	37	M6
HSKA50HYDRO16X95	50	16	38	34	42	95	69	52	42	52	M12x1
HSKA50HYDRO20X100	50	20	42	38	42	100	74	74	42	52	M16x1
HSKA63HYDRO6X80	63	6	26	23	50	80	54	33	27	37	M5
HSKA63HYDRO8X80	63	8	28	25	50	80	54	33	27	37	M6
HSKA63HYDRO10X85	63	10	30	27	50	85	59	39	32	42	M8x1
HSKA63HYDRO12X90	63	12	32	29	50	90	64	44	37	47	M10x1
HSKA63HYDRO14X90	63	14	34	30	50	90	64	46	37	47	M10x1
HSKA63HYDRO16X95	63	16	38	34	50	95	69	52	42	52	M12x1
HSKA63HYDRO18X95	63	18	40	36	50	95	69	52	42	52	M12x1
HSKA63HYDRO20X100	63	20	42	38	50	100	74	58	42	52	M16x1
HSKA63HYDRO25X120	63	25	50	46	50	120	94	94	48	58	M16x1
HSKA63HYDRO32X125	63	32	60	56	53	125	99	83	52	62	M16x1
HSKA80HYDRO6X85	80	6	26	23	50	85	59	37	27	37	M5
HSKA80HYDRO14X95	80	14	34	30	50	95	69	47	37	47	M10x1
HSKA80HYDRO16X100	80	16	38	34	50	100	74	52	42	52	M12x1
HSKA80HYDRO18X100	80	18	40	36	50	100	74	52	42	52	M12x1
HSKA80HYDRO20X105	80	20	42	38	50	105	79	52	42	52	M16x1
HSKA80HYDRO25X115	80	25	50	46	50	115	89	58	48	58	M16x1
HSKA100HYDRO6X85	100	6	26	23	63	85	56	29	27	37	M5
HSKA100HYDRO8X85	100	8	28	25	63	85	56	29	27	37	M6
HSKA100HYDRO10X90	100	10	30	27	63	90	61	35	32	42	M8x1
HSKA100HYDRO12X95	100	12	32	29	63	95	66	40	37	47	M10x1
HSKA100HYDRO14X95	100	14	34	30	63	95	66	42	37	47	M10x1
HSKA100HYDRO16X100	100	16	38	34	63	100	71	47	42	52	M12x1
HSKA100HYDRO18X100	100	18	40	36	63	100	71	48	42	52	M12x1
HSKA100HYDRO20X105	100	20	42	38	63	105	76	54	42	52	M16x1
HSKA100HYDRO25X115	100	25	50	46	63	115	86	51	48	58	M16x1
HSKA100HYDRO32X120	100	32	60	56	63	120	91	59	52	62	M16x1

Applicable for 10 MPa coolant
Reduction sleeves are available for d = 12, 20, 25, and 32mm.
Chucking force will reduce when using a reduction sleeve.

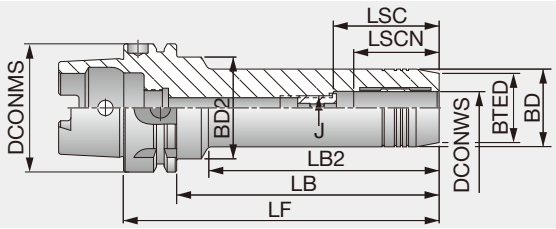
Option: Clamping wrench

Reference pages

Straight collet K120
Cooling tube K134
Wrench K135

HSK A-HYDRO

Hydraulic endmill chuck holder, long type (HSK-A)



Metric	DCONMS	DCONWS	BD	BTED	BD2	LF	LB	LB2	LSCN	LSC	J
HSKA63HYDRO6X150	63	6	26	23	50	150	124	103	27	37	M5
HSKA63HYDRO6X200	63	6	26	23	50	200	174	153	27	37	M5
HSKA63HYDRO8X150	63	8	28	25	50	150	124	104	27	37	M6
HSKA63HYDRO10X150	63	10	30	27	50	150	124	104	32	42	M8x1
HSKA63HYDRO10X200	63	10	30	27	50	200	174	154	32	42	M8x1
HSKA63HYDRO12X150	63	12	32	29	50	150	124	105	37	47	M10x1
HSKA63HYDRO12X200	63	12	32	29	50	200	174	155	37	47	M10x1
HSKA63HYDRO14X150	63	14	34	30	50	150	124	105	37	47	M10x1
HSKA63HYDRO16X150	63	16	38	34	50	150	124	106.5	42	52	M12x1
HSKA63HYDRO16X200	63	16	38	34	50	200	174	156.5	42	52	M12x1
HSKA63HYDRO20X150	63	20	42	38	50	150	124	108	42	52	M12x1
HSKA63HYDRO20X200	63	20	42	38	50	200	174	158	42	52	M12x1
HSKA63HYDRO25X150	63	25	50	46	50	150	124	-	48	58	M16x1
HSKA63HYDRO25X200	63	25	50	46	50	200	174	-	48	58	M16x1
HSKA100HYDRO6X150	100	6	26	23	50	150	124	94	27	37	M6
HSKA100HYDRO6X200	100	6	26	23	50	200	174	144	27	37	M6
HSKA100HYDRO8X150	100	8	28	25	50	150	124	94.5	27	37	M6
HSKA100HYDRO8X200	100	8	28	25	50	200	174	144.5	27	37	M6
HSKA100HYDRO10X150	100	10	30	27	50	150	124	95	32	42	M8x1
HSKA100HYDRO10X200	100	10	30	27	50	200	174	145	32	42	M8x1
HSKA100HYDRO12X150	100	12	32	29	50	150	124	95.5	37	47	M10x1
HSKA100HYDRO12X200	100	12	32	29	50	200	174	145.5	37	47	M10x1
HSKA100HYDRO14X150	100	14	34	30	50	150	124	97	37	47	M10x1
HSKA100HYDRO14X200	100	14	34	30	50	200	174	147	37	47	M10x1
HSKA100HYDRO16X150	100	16	38	34	50	150	124	97.5	42	52	M12x1
HSKA100HYDRO16X200	100	16	38	34	50	200	174	147.5	42	52	M12x1
HSKA100HYDRO18X150	100	18	40	36	50	150	124	98	42	52	M12x1
HSKA100HYDRO18X200	100	18	40	36	50	200	174	148	42	52	M12x1
HSKA100HYDRO20X150	100	20	42	38	50	150	124	99	42	52	M12x1
HSKA100HYDRO20X200	100	20	42	38	50	200	174	149	42	52	M12x1
HSKA100HYDRO25X200	100	25	50	46	50	200	174	-	48	58	M16x1
HSKA100HYDRO32X200	100	32	60	56	60	200	174	-	52	62	M16x1

Applicable for 10 MPa coolant
Reduction sleeves are available for d = 12, 20, 25, and 32mm.
Chucking force will reduce when using a reduction sleeve.

Option: Clamping wrench

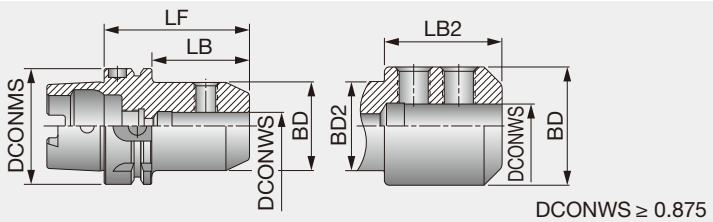
Reference pages

Straight collet K120
Cooling tube K134
Wrench K135

TUNGHOLD

HSK A-EM

Side lock holder for weldon endmills (HSK-A)



DCONWS ≥ 0.875

Inch	DCONMS (mm)	DCONWS	BD	BD2	LF	LB	LB2
HSKA50EM3/8X2.562	50	0.375	1.380	-	2.562	1.530	-
HSKA50EM1/2X3.125	50	0.500	1.610	-	3.125	2.100	-
HSKA50EM5/8X3.125	50	0.625	1.752	-	3.125	2.101	-
HSKA50EM3/4X3.125	50	0.750	1.937	-	3.125	2.101	-
HSKA50EM7/8X4.000	50	0.875	2.205	-	4.000	2.976	-
HSKA50EM1X4.250	50	1.000	2.563	-	4.250	3.226	-
HSKA63EM3/16X2.562	63	0.188	0.870	-	2.562	1.530	-
HSKA63EM1/4X2.562	63	0.250	1.000	-	2.562	1.530	-
HSKA63EM3/8X2.562	63	0.375	1.380	-	2.562	1.530	-
HSKA63EM1/2X3.125	63	0.500	1.610	-	3.125	2.100	-
HSKA63EM5/8X3.125	63	0.625	1.750	-	3.125	2.100	-
HSKA63EM3/4X3.150	63	0.750	1.940	-	3.150	2.100	-
HSKA63EM1X4.250	63	1.000	2.560	2.080	4.250	3.220	2.590
HSKA63EM1-1/4X4.250	63	1.250	2.810	2.080	4.250	3.220	2.590
HSKA100EM1/4X3.125	100	0.250	1.100	-	3.125	1.250	-
HSKA100EM3/8X3.125	100	0.375	1.380	-	3.125	1.980	-
HSKA100EM1/2X3.125	100	0.500	1.630	-	3.125	1.980	-
HSKA100EM5/8X4.000	100	0.625	1.750	-	4.000	2.850	-
HSKA100EM3/4X4.000	100	0.750	1.940	-	4.000	2.850	-
HSKA100EM7/8X4.000	100	0.875	2.210	-	4.000	2.850	-
HSKA100EM1X4.000	100	1.000	2.560	-	4.000	2.850	-
HSKA100EM1-1/4X4.000	100	1.250	2.810	-	4.000	2.850	-
HSKA100EM1-1/2X4.000	100	1.500	3.000	-	4.000	2.850	-

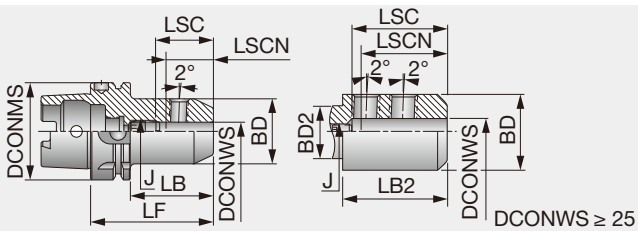
A cooling tube must be used with all coolant through HSK spindles (should be ordered separately).
Applicable for 7 MPa pressure coolant.

Reference pages

Wrench K135
Cooling tube K134
Clamping screw K133

HSK A-EM E

Side lock holder for whistle notch (HSK-A)



Metric	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench
HSKA63EM6X80E	63	6	25	-	80	54	-	32	40	M5	2
HSKA63EM8X80E	63	8	28	-	80	54	-	35	40	M6	3
HSKA63EM10X80E	63	10	35	-	80	54	-	39	44	M8	4
HSKA63EM12X90E	63	12	42	-	90	64	-	44	49	M10	5
HSKA63EM14X90E	63	14	44	-	90	64	-	44	49	M10	5
HSKA63EM16X100E	63	16	48	-	100	74	-	47	52	M12	6
HSKA63EM18X100E	63	18	50	-	100	74	-	47	55	M12	6
HSKA63EM20X100E	63	20	52	-	100	74	-	49	54	M16	8
HSKA63EM25X110E	63	25	65	52	110	84	65.5	54	61	M16	8
HSKA63EM32X110E	63	32	72	52	110	84	65.5	58	63	M20X1.5	10
HSKA100EM8X90E	100	8	28	-	90	61	-	35	40	M6	3
HSKA100EM12X100E	100	12	42	-	100	71	-	44	54	M10	5
HSKA100EM14X100E	100	14	44	-	100	71	-	44	54	M10	5
HSKA100EM16X100E	100	16	48	-	100	71	-	47	52	M12	6
HSKA100EM18X100E	100	18	50	-	100	71	-	47	52	M12	6
HSKA100EM20X110E	100	20	52	-	110	81	-	49	54	M16	8
HSKA100EM25X120E	100	25	65	-	120	91	-	54	61	M20X1.5	10
HSKA100EM32X120E	100	32	72	-	120	91	-	58	63	M20X1.5	10

Applicable for 7 MPa coolant
The adjustment screw has an internal coolant hole.

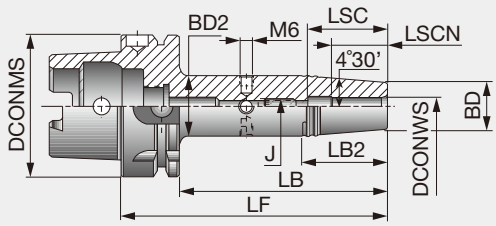
Reference pages

Wrench K135
Cooling tube K134
Clamping screw K133

TUNGSHRINK

HSK A-SRKIN

Thermal shrinking holder for carbide and HSS shanks (HSK-A)



Inch	DCONMS (mm)	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench*
HSKA63SRKIN1/4X3.150	63	0.250	0.827	1.060	3.150	2.126	1.500	0.980	1.420	M5	2.5
HSKA63SRKIN1/4X6.30	63	0.250	0.827	1.060	6.300	5.276	1.500	0.980	1.420	M5	2.5
HSKA63SRKIN5/16X3.150	63	0.313	0.827	1.060	3.150	2.217	1.500	0.980	1.420	M6	3
HSKA63SRKIN3/8X3.346	63	0.375	0.940	1.260	3.346	2.320	2.000	1.220	1.650	M8	4
HSKA63SRKIN3/8X6.30	63	0.375	0.940	1.260	6.300	5.276	2.000	1.220	1.650	M8	4
HSKA63SRKIN7/16X3.543	63	0.437	0.940	1.260	3.543	2.519	2.000	1.420	1.850	M10	5
HSKA63SRKIN1/2X3.543	63	0.500	0.940	1.260	3.543	2.519	2.000	1.420	1.850	M10	5
HSKA63SRKIN5/8X3.740	63	0.625	1.060	1.340	3.740	2.716	1.750	1.540	1.970	M12	6
HSKA63SRKIN5/8X6.30	63	0.625	1.060	1.340	6.300	5.276	1.750	1.540	1.970	M12	6
HSKA63SRKIN3/4X3.937	63	0.750	1.300	1.650	3.937	2.913	2.250	1.610	2.050	M16	8
HSKA63SRKIN3/4X6.30	63	0.750	1.300	1.650	6.300	5.276	2.250	1.610	2.050	M16	8
HSKA63SRKIN7/8X3.937	63	0.875	1.730	2.074	3.937	2.913	2.170	1.610	2.050	M16	8
HSKA63SRKIN1X4.528	63	1.000	1.730	2.074	4.528	3.504	2.170	1.850	2.280	M16	8
HSKA63SRKIN1-1/4X4.72	63	1.250	1.730	2.074	4.725	3.700	2.170	1.850	2.280	M16	8
HSKA100SRKIN1/4X3.500	100	0.250	0.827	1.060	3.500	2.358	1.500	0.980	1.420	M5	2.5
HSKA100SRKIN1/4X6.250	100	0.250	0.827	1.060	6.250	5.108	1.500	0.980	1.420	M5	2.5
HSKA100SRKIN5/16X3.500	100	0.313	0.827	1.060	3.500	2.358	1.500	0.980	1.420	M6	3
HSKA100SRKIN5/16X4.750	100	0.313	0.827	1.060	4.750	3.608	1.500	0.980	1.420	M6	3
HSKA100SRKIN5/16X6.250	100	0.313	0.827	1.060	6.250	5.108	1.500	0.980	1.420	M6	3
HSKA100SRKIN3/8X3.625	100	0.375	0.940	1.260	3.625	2.483	2.000	1.220	1.650	M8	4
HSKA100SRKIN3/8X6.250	100	0.375	0.940	1.260	6.250	5.108	2.000	1.220	1.650	M8	4
HSKA100SRKIN7/16X3.750	100	0.437	0.940	0.126	3.750	2.608	2.000	1.420	1.850	M10	5
HSKA100SRKIN7/16X6.250	100	0.437	0.940	1.260	6.250	5.108	2.000	1.420	1.850	M10	5
HSKA100SRKIN1/2X3.750	100	0.500	0.940	1.260	3.750	2.608	2.000	1.420	1.850	M10	5
HSKA100SRKIN1/2X5.000	100	0.500	0.940	1.260	5.000	3.858	2.000	1.420	1.850	M10	5
HSKA100SRKIN5/8X4.000	100	0.625	1.060	1.340	4.000	2.858	1.750	1.540	1.970	M12	6
HSKA100SRKIN5/8X5.000	100	0.625	1.060	1.340	5.000	3.858	1.750	1.540	1.970	M12	6
HSKA100SRKIN3/4X4.125	100	0.750	1.300	1.654	4.125	3.102	2.250	1.610	2.050	M12	6
HSKA100SRKIN3/4X6.250	100	0.750	1.300	1.650	6.250	5.108	2.250	1.610	2.050	M16	8
HSKA100SRKIN7/8X4.125	100	0.875	1.730	2.090	4.125	2.983	2.250	1.610	2.050	M12	6
HSKA100SRKIN1X4.500	100	1.000	1.730	2.090	4.500	3.358	2.250	1.850	2.280	M12	6
HSKA100SRKIN1-1/4X4.75	100	1.250	1.730	2.090	4.750	3.608	2.250	1.850	2.280	M12	6

* Wrench (metric size) for the rear stopper screw.
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).
Please use an induction heating unit for SRKIN holder
Applicable for 10 MPa coolant

Reference pages


Induction heating unit K125


Heating unit K125


Preset screw K133


Wrench K135


Cooling tube K134

Metric	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench
HSKA63SRKIN6X80	63	6	21	27	80	54	38	25	36	M5	2.5
HSKA63SRKIN6X120	63	6	21	27	120	94	38	25	36	M5	2.5
HSKA63SRKIN6X160	63	6	21	27	160	134	38	25	36	M5	2.5
HSKA63SRKIN8X80	63	8	21	27	80	54	38	25	36	M6	3
HSKA63SRKIN8X120	63	8	21	27	120	94	38	25	36	M6	3
HSKA63SRKIN8X160	63	8	21	27	160	134	38	25	36	M6	3
HSKA63SRKIN10X85	63	10	24	32	85	59	51	31	42	M8	4
HSKA63SRKIN10X120	63	10	24	32	120	94	51	31	42	M8	4
HSKA63SRKIN10X160	63	10	24	32	160	134	51	31	42	M8	4
HSKA63SRKIN12X90	63	12	24	32	90	64	51	36	42	M8	4
HSKA63SRKIN12X120	63	12	24	32	120	94	51	36	47	M10	5
HSKA63SRKIN12X160	63	12	24	32	160	134	51	36	47	M10	5
HSKA63SRKIN14X90	63	14	27	34	90	64	45	36	47	M10	5
HSKA63SRKIN14X120	63	14	27	34	120	94	45	36	47	M10	5
HSKA63SRKIN14X160	63	14	27	34	160	134	45	36	47	M10	5
HSKA63SRKIN16X75	63	16	27	34	75	49	-	39	50	-	-
HSKA63SRKIN16X95	63	16	27	34	95	69	44	39	50	M12	6
HSKA63SRKIN16X120	63	16	27	34	120	94	44	39	50	M12	6
HSKA63SRKIN16X160	63	16	27	34	160	134	44	39	50	M12	6
HSKA63SRKIN18X95	63	18	33	42	95	69	57	39	50	M12	6
HSKA63SRKIN18X120	63	18	33	42	120	94	57	39	50	M12	6
HSKA63SRKIN18X160	63	18	33	42	160	134	57	39	50	M12	6
HSKA63SRKIN20X75	63	20	33	41	75	49	-	41	50	-	-
HSKA63SRKIN20X100	63	20	33	42	100	74	57	41	52	M16	8
HSKA63SRKIN20X120	63	20	33	42	120	94	57	41	52	M16	8
HSKA63SRKIN20X160	63	20	33	42	160	134	57	41	52	M16	8
HSKA63SRKIN25X85	63	25	44	53	85	59	-	47	58	-	-
HSKA63SRKIN25X115	63	25	44	53	115	89	55	47	58	M16	8
HSKA63SRKIN32X85	63	32	44	53	85	59	-	47	58	-	-
HSKA63SRKIN32X120	63	32	44	53	120	94	55	47	58	M16	8
HSKA100SRKIN6X85	100	6	21	27	85	56	38	25	36	M5	2.5
HSKA100SRKIN6X120	100	6	21	27	120	91	38	25	36	M5	2.5
HSKA100SRKIN6X160	100	6	21	27	160	131	38	25	36	M6	3
HSKA100SRKIN8X85	100	8	21	27	85	56	38	25	36	M6	3
HSKA100SRKIN8X120	100	8	21	27	120	91	38	25	36	M6	3
HSKA100SRKIN8X160	100	8	21	27	160	131	38	25	36	M6	3
HSKA100SRKIN10X90	100	10	24	32	90	61	51	31	42	M8	4
HSKA100SRKIN10X120	100	10	24	32	120	91	51	31	42	M8	4
HSKA100SRKIN10X160	100	10	24	32	160	131	51	31	42	M8	4
HSKA100SRKIN12X95	100	12	24	32	95	66	51	36	47	M10	5
HSKA100SRKIN12X120	100	12	24	32	120	91	51	36	47	M10	5
HSKA100SRKIN12X160	100	12	24	32	160	131	51	36	47	M10	5
HSKA100SRKIN14X95	100	14	27	34	95	66	45	36	47	M10	5
HSKA100SRKIN14X120	100	14	27	34	120	91	45	36	47	M10	5
HSKA100SRKIN14X160	100	14	27	34	160	131	45	36	47	M10	5
HSKA100SRKIN16X100	100	16	27	34	100	71	45	39	50	M12	6
HSKA100SRKIN16X120	100	16	27	34	120	91	45	39	50	M12	6
HSKA100SRKIN16X160	100	16	27	34	160	131	45	39	50	M12	6
HSKA100SRKIN18X100	100	18	33	42	100	71	57	39	50	M12	6
HSKA100SRKIN18X160	100	18	33	42	160	131	57	39	50	M12	6
HSKA100SRKIN20X105	100	20	33	42	105	76	57	41	52	M16	8
HSKA100SRKIN20X160	100	20	33	42	160	131	57	41	52	M16	8
HSKA100SRKIN25X115	100	25	44	53	115	86	57	47	58	M16	8
HSKA100SRKIN32X120	100	32	44	53	120	91	57	47	58	M16	8

When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately). Please use an induction heating unit for SRKIN holder
Applicable for 10 MPa coolant

Reference pages


Induction heating unit
K125


Heating unit
K125


Preset screw
K133

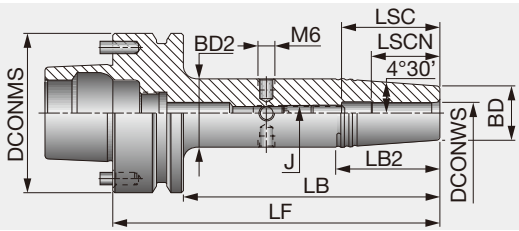

Wrench
K135


Cooling tube
K134

TUNGSHRINK

HSK FM-SRKIN

Thermal shrinking holder for carbide and HSS shanks (DIN69871)



Inch	DCONMS (mm)	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench*
HSKFM63SRKIN1/4X3.13	63	0.250	0.827	1.063	3.130	2.106	1.500	0.980	1.420	M5	2.5
HSKFM63SRKIN5/16X3.13	63	0.313	0.827	1.063	3.130	2.106	1.500	0.980	1.420	M6	3
HSKFM63SRKIN3/8X3.50	63	0.375	0.945	1.260	3.500	2.476	2.000	1.220	1.650	M8	4
HSKFM63SRKIN1/2X3.50	63	0.500	0.945	1.260	3.500	2.476	2.000	1.420	1.850	M8	4
HSKFM63SRKIN5/8X3.50	63	0.625	1.063	1.339	3.500	2.476	1.752	1.540	1.970	M8	4
HSKFM63SRKIN3/4X3.00	63	0.750	1.299	1.610	3.000	2.976	-	1.610	2.050	-	-
HSKFM63SRKIN3/4X3.75	63	0.750	1.299	1.654	3.750	2.726	2.250	1.610	2.050	M12	6
HSKFM63SRKIN1X3.00	63	1.000	1.732	2.075	3.000	2.976	-	1.850	2.130	-	-
HSKFM63SRKIN1X4.00	63	1.000	1.732	2.075	4.000	2.976	2.252	1.850	2.280	M16	8
HSKFM80SRKIN1/4X3.25	80	0.250	0.827	1.063	3.250	2.226	1.500	0.960	1.420	M5	2.5
HSKFM80SRKIN3/8X3.25	80	0.375	0.945	1.260	3.250	2.226	2.000	1.200	1.650	M8	4
HSKFM80SRKIN1/2X3.25	80	0.500	0.945	1.260	3.250	2.226	2.000	1.400	1.850	M10	5
HSKFM80SRKIN5/8X3.25	80	0.625	1.063	1.340	3.250	2.266	1.752	1.510	1.970	M12	6
HSKFM80SRKIN1X3.50	80	1.000	1.732	2.075	3.500	2.476	2.252	1.830	2.280	M16	8

* Wrench (metric size) for the rear stopper screw.
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately)
Please use an induction heating unit for SRKIN holder
The driving pins can be removed, turning the toolholder into a standard HSK F63 type.
Applicable for 10 MPa coolant

Metric	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench
HSKFM63SRKIN25X115	63	25	44	52.7	115	89	55	47	58	M16	8

When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately)
Please use an induction heating unit for SRKIN holder
The driving pins can be removed, turning the toolholder into a standard HSK F63 type.
Applicable for 10 MPa coolant

Reference pages

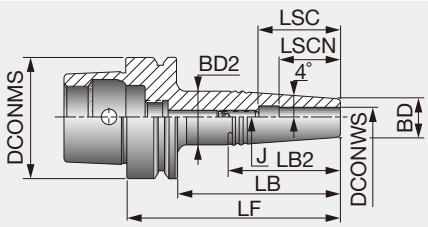
Induction heating unit K125
Heating unit K125
Preset screw K133
Wrench K135
Cooling tube K134

MEMO

TUNGSHRINK

HSK E-SRK

Thermal shrinking holder for carbide shank (HSK-E)



Inch	DCONMS (mm)	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench*
HSKE32SRK1/8X2.000	32	0.125	0.394	0.591	2.787	2.000	1.407	0.390	0.790	M4	2
HSKE32SRK3/16X2.000	32	0.187	0.394	0.591	2.787	2.000	1.407	0.590	0.980	M4	2
HSKE32SRK1/4X2.000	32	0.250	0.433	0.630	2.787	2.000	1.406	0.710	1.100	M4	2
HSKE32SRK5/16X2.000	32	0.312	0.551	0.787	2.787	2.000	1.406	0.980	1.380	M4	2
HSKE32SRK3/8X2.000	32	0.375	0.630	0.866	2.787	2.000	1.677	1.180	1.580	M4	2
HSKE32SRK1/2X2.000	32	0.500	0.787	0.984	2.787	2.000	1.392	1.260	1.580	M4	2
HSKE40SRK1/8X1.750	40	0.125	0.390	0.590	2.537	1.750	1.400	0.390	0.630	M5	2.5
HSKE40SRK1/8X3.000	40	0.125	0.390	0.748	3.787	3.000	2.526	0.390	0.630	M5	2.5
HSKE40SRK3/16X1.750	40	0.187	0.390	0.590	2.537	1.750	1.400	0.590	0.980	M4	2
HSKE40SRK3/16X3.000	40	0.187	0.390	0.748	3.787	3.000	2.526	0.590	0.980	M4	2
HSKE40SRK1/4X1.750	40	0.250	0.430	0.630	2.537	1.750	1.400	0.710	1.100	M5	2.5
HSKE40SRK1/4X3.000	40	0.250	0.430	0.787	3.787	3.000	2.524	0.710	1.100	M5	2.5
HSKE40SRK5/16X1.750	40	0.312	0.550	0.550	2.537	1.750	1.637	0.980	1.380	M5	2.5
HSKE40SRK5/16X3.000	40	0.312	0.550	0.905	3.787	3.000	2.518	0.980	1.380	M6	3
HSKE40SRK3/8X1.750	40	0.375	0.630	0.866	2.537	1.750	1.670	1.180	1.580	M5	2.5
HSKE40SRK3/8X3.000	40	0.375	0.630	0.965	3.787	3.000	2.373	1.180	1.580	M8	4
HSKE40SRK7/16X1.750	40	0.437	0.790	1.024	2.537	1.750	1.665	1.220	1.610	M5	2.5
HSKE40SRK7/16X3.000	40	0.437	0.790	1.102	3.787	3.000	2.229	1.220	1.610	M10	3
HSKE40SRK1/2X1.750	40	0.500	0.790	1.024	2.537	1.750	1.665	1.260	1.650	M5	2.5
HSKE40SRK1/2X3.000	40	0.500	0.790	1.102	3.787	3.000	2.229	1.260	1.650	M10	5
HSKE50SRK1/8X1.750	50	0.125	0.390	0.590	2.774	1.750	1.400	0.390	0.630	M5	2.5
HSKE50SRK1/8X3.000	50	0.125	0.390	0.748	4.024	3.000	2.526	0.390	0.630	M5	2.5
HSKE50SRK3/16X1.750	50	0.187	0.390	0.590	2.774	1.750	1.400	0.590	0.830	M6	3
HSKE50SRK3/16X3.000	50	0.187	0.390	0.748	4.024	3.000	2.526	0.590	0.830	M6	3
HSKE50SRK1/4X1.750	50	0.250	0.430	0.630	2.774	1.750	1.400	0.710	1.100	M5	2.5
HSKE50SRK1/4X3.000	50	0.250	0.430	0.787	4.024	3.000	2.524	0.710	1.100	M5	2.5
HSKE50SRK5/16X1.750	50	0.312	0.550	0.787	2.774	1.750	1.673	0.980	1.380	M6	3
HSKE50SRK5/16X3.000	50	0.312	0.550	0.905	4.024	3.000	2.518	0.980	1.380	M6	3
HSKE50SRK3/8X1.750	50	0.375	0.630	0.866	2.774	1.750	1.670	1.180	1.580	M6	3
HSKE50SRK3/8X3.000	50	0.375	0.630	0.965	4.024	3.000	2.373	1.180	1.580	M8	4
HSKE50SRK7/16X1.750	50	0.437	0.790	1.024	2.774	1.750	1.665	1.220	1.610	M6	3
HSKE50SRK1/2X1.750	50	0.500	0.790	1.024	2.774	1.750	1.665	1.260	1.650	M6	3
HSKE50SRK1/2X3.000	50	0.500	0.790	1.102	4.024	3.000	2.229	1.260	1.650	M10	5
HSKE63SRK1/8X2.000	63	0.125	0.390	0.669	3.024	2.000	1.927	0.390	0.630	M6	3
HSKE63SRK3/16X2.000	63	0.187	0.390	0.669	3.024	2.000	1.927	0.590	0.830	M6	3
HSKE63SRK3/16X3.000	63	0.187	0.390	0.748	4.024	3.000	2.526	0.590	0.830	M6	3
HSKE63SRK1/4X2.000	63	0.250	0.430	0.709	3.024	2.000	1.927	0.710	0.950	M8	4
HSKE63SRK1/4X3.000	63	0.250	0.430	0.787	4.024	3.000	2.524	0.710	0.950	M8	4
HSKE63SRK5/16X2.000	63	0.312	0.550	0.827	3.024	2.000	1.927	0.980	1.380	M6	3
HSKE63SRK5/16X3.000	63	0.312	0.550	0.905	4.024	3.000	2.518	0.980	1.380	M6	3
HSKE63SRK3/8X2.000	63	0.375	0.630	0.906	3.024	2.000	1.927	1.180	1.580	M8	4
HSKE63SRK3/8X3.000	63	0.375	0.630	1.000	4.024	3.000	2.373	1.180	1.580	M8	4
HSKE63SRK7/16X2.000	63	0.437	0.790	1.063	3.024	2.000	1.927	1.220	1.610	M8	4
HSKE63SRK7/16X3.000	63	0.437	0.790	1.102	4.024	3.000	2.229	1.220	1.610	M10	5
HSKE63SRK1/2X2.000	63	0.500	0.790	1.063	3.024	2.000	1.927	1.260	1.650	M8	4

* Wrench (metric size) for the rear stopper screw.
(1) Balanced to G2.5 max.n: 35,000 min^{-1}
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).
Applicable for 10 MPa coolant

Reference pages

Induction heating unit K125
Heating unit K125
Preset screw K133
Wrench K135
Cooling tube K134

Metric	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench
HSKE32SRK3X45	32	3	10	13	65	45	30	10	16	M4	2
HSKE32SRK4X45	32	4	10	15	65	45	35	12	18	M4	2
HSKE32SRK6X45	32	6	11	16	65	45	35	18	28	M4	2
HSKE32SRK10X45	32	10	16	22	65	45	42	30	40	M4	2
HSKE40SRK3X45	40	3	10	13	65	45	30	10	16	M5	2.5
HSKE40SRK3X80	40	3	10	19	100	80	64	10	16	M5	2.5
HSKE40SRK4X45	40	4	10	15	65	45	35	12	18	M5	2.5
HSKE40SRK4X80	40	4	10	19	100	80	64	12	18	M5	2.5
HSKE40SRK5X45	40	5	10	15	65	45	35	15	25	M4	2
HSKE40SRK5X80	40	5	10	19	100	80	64	15	25	M4	2
HSKE40SRK6X45	40	6	11	16	65	45	35	18	28	M5	2.5
HSKE40SRK6X80	40	6	11	20	100	80	64	18	28	M5	2.5
HSKE40SRK8X45	40	8	14	20	65	45	42	25	35	M5	2.5
HSKE40SRK8X80	40	8	14	23	100	80	64	25	35	M6	3
HSKE40SRK10X45	40	10	16	22	65	45	42	30	40	M5	2.5
HSKE40SRK10X80	40	10	16	24.5	100	80	60	30	40	M8	4
HSKE40SRK12X45	40	12	20	26	65	45	42	32	42	M5	2.5
HSKE40SRK12X80	40	12	20	28	100	80	56	32	42	M10	5
HSKE50SRK3X45 (1)	50	3	10	15	71	45	36	10	16	M5	2.5
HSKE50SRK3X80 (1)	50	3	10	19	106	80	64	10	16	M5	2.5
HSKE50SRK4X45 (1)	50	4	10	15	71	45	36	12	18	M5	2.5
HSKE50SRK4X80 (1)	50	4	10	19	106	80	64	12	18	M5	2.5
HSKE50SRK6X45 (1)	50	6	11	16	71	45	36	18	28	M5	2.5
HSKE50SRK6X80 (1)	50	6	11	20	106	80	64	18	28	M5	2.5
HSKE50SRK8X45 (1)	50	8	14	20	71	45	43	25	35	M6	3
HSKE50SRK8X80 (1)	50	8	14	23	106	80	64	25	35	M6	3
HSKE50SRK10X45 (1)	50	10	16	22	71	45	42	30	37	M6	3
HSKE50SRK10X80 (1)	50	10	16	24.5	106	80	60	30	40	M8	4
HSKE50SRK12X45 (1)	50	12	20	26	71	45	42	32	39	M6	3

(1) Balanced to G2.5 max.n: 35,000 min^{-1}
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).
Applicable for 10 MPa coolant

Reference pages


Induction heating unit
K125


Heating unit
K125

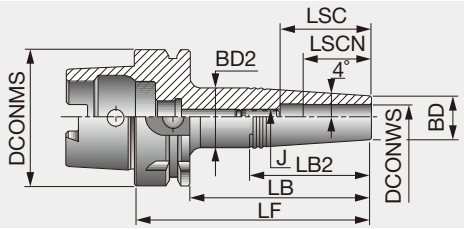

Preset screw
K133


Wrench
K135


Cooling tube
K134

TUNGSHRINK
HSK A-SRK

Thermal shrinking holder for carbide shank (HSK-A)



Inch	DCONMS (mm)	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench*
HSKA63SRK1/8X2.000	63	0.125	0.390	0.699	3.024	2.000	-	0.390	0.630	M6	3
HSKA63SRK1/8X3.250	63	0.125	0.390	0.823	4.274	3.250	3.098	0.390	0.630	M6	3
HSKA63SRK3/16X2.000	63	0.187	0.390	0.699	3.024	2.000	-	0.590	0.830	M6	3
HSKA63SRK3/16X3.250	63	0.187	0.390	0.823	4.274	3.250	3.098	0.590	0.830	M6	3
HSKA63SRK1/4X2.000	63	0.250	0.430	0.699	3.024	2.000	-	0.590	0.950	M8	4
HSKA63SRK1/4X3.250	63	0.250	0.430	0.866	4.274	3.250	3.098	0.710	0.950	M8	4
HSKA63SRK5/16X3.250	63	0.312	0.550	0.906	4.274	3.250	3.098	0.980	1.420	M6	3
HSKA63SRK3/8X2.000	63	0.375	0.630	0.787	3.024	2.000	1.693	1.180	1.610	M8	4
HSKA63SRK3/8X3.250	63	0.375	0.630	1.024	4.274	3.250	2.535	1.180	1.610	M8	4
HSKA63SRK7/16X2.000	63	0.437	0.790	1.067	3.024	2.000	-	1.220	1.650	M8	4
HSKA63SRK7/16X3.250	63	0.437	0.790	1.181	4.274	3.250	2.815	1.220	1.650	M10	5
HSKA63SRK1/2X2.000	63	0.500	0.790	1.063	3.024	2.000	-	1.260	1.690	M8	4
HSKA63SRK1/2X3.250	63	0.500	0.790	1.181	4.274	3.250	2.815	1.260	1.690	M10	5

* Wrench (metric size) for the rear stopper screw.
Applicable for 10 MPa coolant
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).

Metric	DCONMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	Wrench
HSKA63SRK3X50	63	3	10	17	76	50	-	10	16	M6	3
HSKA63SRK3X85	63	3	10	21	111	85	79	10	16	M6	3
HSKA63SRK4X50	63	4	10	17	76	50	-	12	18	M6	3
HSKA63SRK4X85	63	4	10	21	111	85	79	12	18	M6	3
HSKA63SRK5X50	63	5	10	17	76	50	-	15	21	M6	3
HSKA63SRK5X85	63	5	10	21	111	85	79	15	21	M6	3
HSKA63SRK6X50	63	6	11	18	76	50	-	18	24	M8	4
HSKA63SRK6X85	63	6	11	22	111	85	79	18	24	M8	4
HSKA63SRK8X50	63	8	14	20	76	50	43	25	36	M6	3
HSKA63SRK8X85	63	8	14	23	111	85	64	25	36	M6	3
HSKA63SRK10X50	63	10	16	23	76	50	-	30	41	M8	4
HSKA63SRK10X85	63	10	16	26	111	85	72	30	41	M8	4
HSKA63SRK12X50	63	12	20	27	76	50	-	32	43	M8	4
HSKA63SRK12X85	63	12	20	30	111	85	72	32	43	M8	4

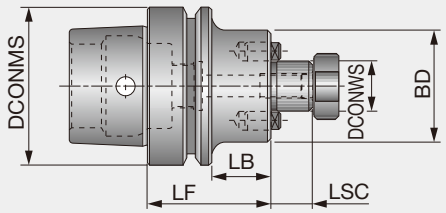
Applicable for 10 MPa coolant
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).

Reference pages

Induction heating unit K125
Heating unit K125
Preset screw K133
Clamping screw K132
Wrench K134, K135
Cooling tube K134

HSK E-SEM

Shell mill holder (HSK-E)



Inch	DCONMS (mm)	DCONWS	LSC	BD	LF	LB
HSKE40SEM3/4X2.000	40	0.750	0.669	1.771	2.000	1.213
HSKE63SEM1X2.375	63	1.000	0.669	2.079	2.375	1.351

Applicable for 7 MPa coolant
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).

Option: Wrench for center bolt

Reference pages

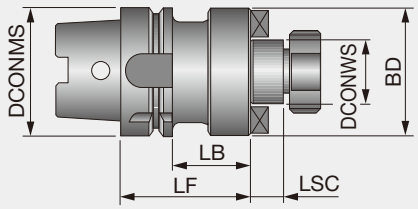

Preset screw K133


Clamping screw K132


Wrench K134, K135


Cooling tube K134

TUNGHOLD
HSK A-SEM
Shell mill holder (HSK-A)



Inch	DCONMS (mm)	DCONWS	LSC	BD	LF	LB
HSKA50SEM3/4X2.375*	50	0.750	0.669	1.770	2.375	1.351
HSKA63SEM3/4X2.375	63	0.750	0.669	1.770	2.375	1.351
HSKA63SEM1X1.750	63	1.000	0.669	2.086	1.750	0.726
HSKA63SEM1X4.000	63	1.000	0.669	2.086	4.000	2.984
HSKA63SEM1-1/4X2.375	63	1.250	0.669	2.510	2.375	1.351
HSKA63SEM1-1/2X2.375	63	1.500	0.940	3.070	2.375	1.351
HSKA100SEM3/4X3.000	100	0.750	0.669	1.770	3.000	1.858
HSKA100SEM1X2.375	100	1.000	0.669	2.165	2.375	1.233
HSKA100SEM1-1/4X1.875	100	1.250	0.669	2.500	1.875	0.733
HSKA100SEM1-1/2X1.875	100	1.500	0.940	3.071	1.875	0.733
HSKA100SEM2X2.375	100	2.000	0.940	3.881	2.375	1.233

* Requires a price and delivery time quotation.
Applicable for 7 MPa coolant
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately)

Option: Wrench for lock screw

Metric	DCONMS	DCONWS	LSC	BD	LF	LB
HSKA63SEM16X50	63	16	24	38	50	17
HSKA63SEM22X50	63	22	24	47	50	19
HSKA63SEM27X60	63	27	34	58	60	21
HSKA63SEM32X60	63	32	34	66	60	24
HSKA63SEM40X60	63	40	34	82	60	27
HSKA100SEM22X50 (1)	100	22	21	47	50	19
HSKA100SEM27X50 (1)	100	27	21	58	50	21
HSKA100SEM32X50 (1)	100	32	21	66	50	24
HSKA100SEM40X60 (1)	100	40	31	82	60	27
HSKA100SEM50X70 (1)	100	50	41	95	70	30

(1) Balanced to G6.3 max.n: 12,000 min^{-1}
Applicable for 7 MPa coolant
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately)

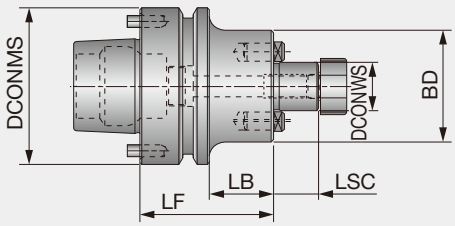
Option: Wrench for lock screw

Reference pages

Clamping screw K132
Wrench K134
Wrench K135
Cooling tube K134

HSK FM-SEM

Shell mill holder (HSK-FM)



Inch	DCONMS (mm)	DCONWS	LSC	BD	LF	LB
HSKFM63SEM3/4X3.00	63	0.750	0.669	1.772	3.000	1.976
HSKFM63SEM3/4X4.50	63	0.750	0.669	1.772	4.500	3.476
HSKFM63SEM1X2.375	63	1.000	0.669	2.079	2.375	1.351
HSKFM80SEM3/4X2.00	80	0.750	0.669	1.772	2.000	0.976
HSKFM80SEM3/4X4.00	80	0.750	0.669	1.772	4.000	2.976
HSKFM80SEM1X2.00	80	1.000	0.669	2.165	2.000	0.976
HSKFM80SEM1X4.00	80	1.000	0.669	2.165	4.000	2.976

Applicable for 7 MPa coolant
The specification is based on HSK63F type.
This item improves torque transmission with two drive pins.
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).

Option: Wrench for lock screw

Metric	DCONMS	DCONWS	LSC	BD	LF	LB
HSKFM63SEM22X60	63	22	19	47	60	34
HSKFM63SEM32X60	63	32	24	66	60	34
HSKFM63SEM3/4X3.00	63	19.05	17	45	76.2	50.2
HSKFM63SEM3/4X4.50	63	19.05	17	45	114.3	88.3
HSKFM63SEM1X2.375	63	25.4	17	52.8	60.3	34.3

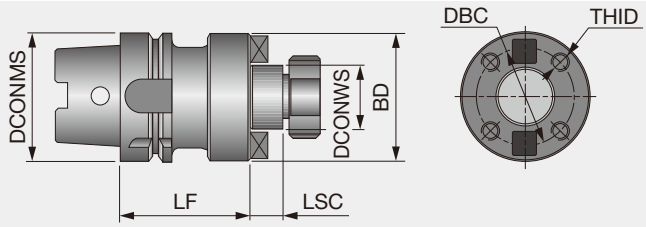
Applicable for 7 MPa coolant
The specification is based on HSK63F type.
This item improves torque transmission with two drive pins.
When using an HSK type holder with the capability of internal coolant supply, be sure to use a cooling tube (sold separately).

Option: Wrench for lock screw

Reference pages

Clamping screw K132
Wrench K134
Wrench K135
Cooling tube K134

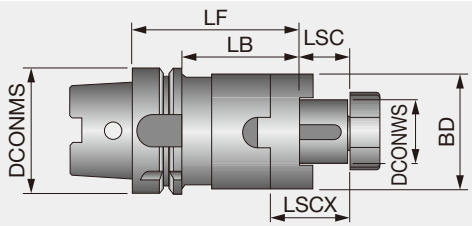
TUNGHOLD
HSK A-FM
Face mill holder (HSK-A)



Inch	DCONMS (mm)	DCONWS	LSC	BD	LF	DBC	THID
HSKA100FM2-1/2X2.875	100	2.500	1.122	4.881	2.875	4.000	5/8-11

Option: Wrench for lock screw

TUNGHOLD
HSK A-SEMC
Combination holder for slot mill and shell mill (HSK-A)



Metric	DCONMS	DCONWS	LSC	BD	LF	LB	LSCX
HSKA63SEMC16X60	63	16	17	32	60	34	21
HSKA63SEMC22X60	63	22	19	40	60	34	31
HSKA63SEMC27X60	63	27	21	48	60	34	33
HSKA63SEMC32X60	63	32	24	58	60	34	38
HSKA63SEMC40X70	63	40	27	70	70	44	41
HSKA100SEMC16X60	100	16	17	32	60	31	27
HSKA100SEMC22X60	100	22	19	40	60	31	31
HSKA100SEMC27X60	100	27	21	48	60	31	33
HSKA100SEMC32X60	100	32	24	58	60	31	38
HSKA100SEMC40X70	100	40	27	70	70	41	41
HSKA100SEMC50X80	100	50	30	90	80	51	46

Applicable for 7 MPa coolant

Option: Wrench for lock screw

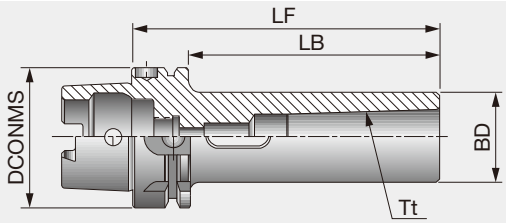
Reference pages

Clamping screw K132
Wrench K134
Wrench K135
Cooling tube K134

TUNGHOLD

HSK A-MT

Morse taper holder (HSK-A)

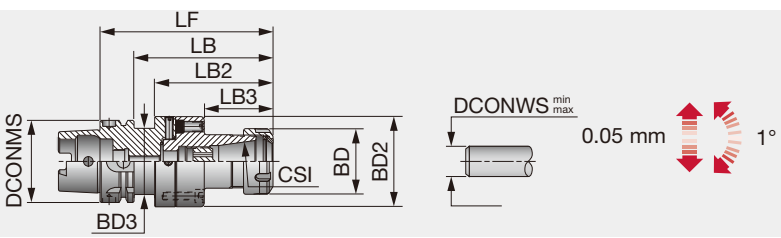


Metric	DCONMS	Tt	LF	BD	LB
HSKA63MT1X110	63	MT1	110	25	84
HSKA63MT2X120	63	MT2	120	32	94
HSKA63MT3X140	63	MT3	140	40	114
HSKA63MT4X160	63	MT4	160	48	134
HSKA100MT1X110	100	MT1	110	25	81
HSKA100MT2X120	100	MT2	120	32	91
HSKA100MT3X150	100	MT3	150	40	121
HSKA100MT4X170	100	MT4	170	48	141
HSKA100MT5X200	100	MT5	200	63	171

TUNGHOLD

ADJ HSK A-ER

ER collet chuck holder with center alignment (HSK-A)



Metric	DCONMS	CSI	Range	LF	LB	LB2	LB3	BD	BD2	BD3
ADJHSKA63D70ER32	63	ER32	2-20	134.5	108.5	82.5	52.5	50	70	46
ADJHSKA100D70ER32	100	ER32	2-20	129.5	108.5	-	52.5	50	70	-

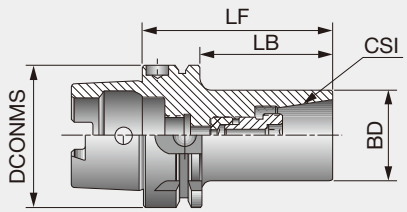
Applicable for 10 MPa coolant

Option: Wrench for ER collet

Reference pages

ER collet	Nut	Preset screw	Wrench	Cooling tube
K108	K128	K131	K130, K135	K134

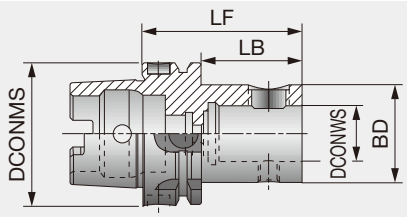
TUNGCLICK
HSK A-CLICKIN
Quick change holder (HSK-A)



Metric	DCONMS	CSI	BD	LF	LB
HSKA63ER32CLICK-IN	63	32SRF	41	85	59

Applicable for 10 MPa coolant
Clamping torque: 235 N·m

TUNGFIT
HSK A-CF
Quick change holder (HSK-A)



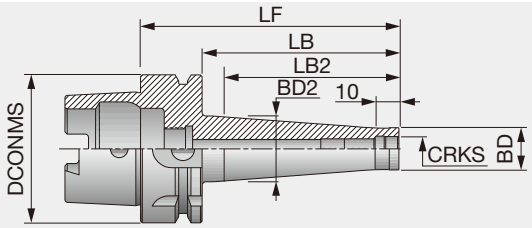
Metric	DCONMS	DCONWS	BD	LF	LB
HSKA63CF4-S	63	25	44.5	70	44
HSKA80CF4-S	80	25	44.5	73	47
HSKA100CF4-S	100	25	44.5	76	47

Applicable for 7 MPa coolant
Clamping torque: 58.8 N·m

Reference pages
Wrench K135
Cooling tube K134

TUNGFLEX
HSK A-ODP

Screw-clamp holder for modular heads (HSK-A)

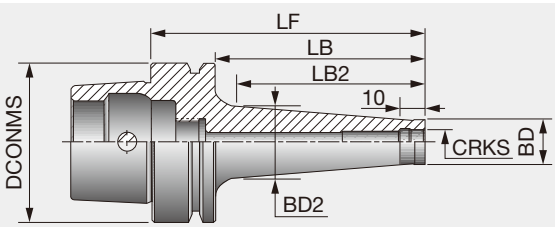


Metric	DCONMS	CRKS	BD	BD2	LF	LB	LB2
HSKA63ODP6X59	63	M6	9.7	10	59	33	25
HSKA63ODP6X109	63	M6	9.8	23	109	83	75
HSKA63ODP8X59	63	M8	13.1	15	59	33	25
HSKA63ODP8X109	63	M8	13.1	23	109	83	75
HSKA63ODP10X59	63	M10	18	20	59	33	25
HSKA63ODP10X109	63	M10	18	28	109	83	75
HSKA63ODP12X59	63	M12	21	24	59	33	25
HSKA63ODP12X109	63	M12	21	31	109	83	75
HSKA63ODP16X59	63	M16	29	34	59	33	25
HSKA63ODP16X109	63	M16	29	34	109	83	75
HSKA100ODP12X87 (1)	100	M12	23	30	87	58	50
HSKA100ODP12X137 (1)	100	M12	23	30	137	108	100
HSKA100ODP12X187 (1)	100	M12	23	40	187	158	150
HSKA100ODP12X237 (1)	100	M12	23	46	237	208	200
HSKA100ODP16X87 (1)	100	M16	29	31.5	87	58	50
HSKA100ODP16X137 (1)	100	M16	29	41.5	137	108	100
HSKA100ODP16X187 (1)	100	M16	29	55	187	158	150
HSKA100ODP16X237 (1)	100	M16	29	55	237	208	200

Applicable for 10 MPa coolant (1) Balanced to G6.5 max.n:12,000 min^{-1}

TUNGFLEX
HSK E-ODP

Screw-clamp holder for modular heads (HSK-E)



Metric	DCONMS	CRKS	BD	BD2	LF	LB	LB2
HSKE40ODP10X53	40	M10	18	20	53	33	25
HSKE40ODP10X103	40	M10	18	28	103	83	75
HSKE40ODP12X53	40	M12	21	24	53	33	25
HSKE40ODP12X103	40	M12	21	31	103	83	75
HSKE50ODP10X59 (1)	50	M10	18	20	59	33	25
HSKE50ODP10X109 (1)	50	M10	18	28	109	83	75
HSKE50ODP12X59 (1)	50	M12	21	24	59	33	25
HSKE50ODP16X59 (1)	50	M16	29	34	59	33	25
HSKE50ODP16X109 (1)	50	M16	29	34	109	83	75
HSKE63ODP10X59 (2)	63	M10	18	20	59	33	25
HSKE63ODP10X109 (2)	63	M10	18	28	109	83	75
HSKE63ODP12X59 (2)	63	M12	21	24	59	33	25
HSKE63ODP12X109 (2)	63	M12	21	31	109	83	75

Applicable for 10 MPa coolant (1) Balanced to G2.5 max.n: 35,000 min^{-1}. (2) Balanced to G2.5 max.n: 30,000 min^{-1}.

Reference pages

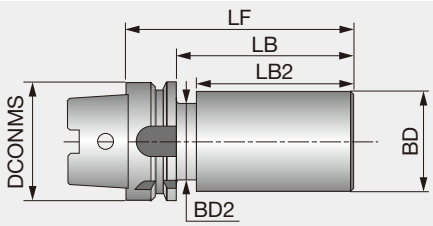
Wrench K135

Cooling tube K134

TUNGHOLD

HSK Blanks

Blank for holders (HSK)

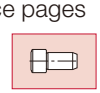


Metric	DCONMS	BD	BD2	LF	LB	LB2
HSKA63B16MN100	63	63	52.8	100	74	55.5
HSKA63B16MN200	63	63	52.8	200	174	155.5
HSKA100B16MN100	100	102	85	100	71	54.8
HSKA100B16MN200	100	102	85	200	171	154.8

Material: Case hardened alloy steel
Shank hardness: 58 HRC minimum
Nose hardness: 35-37 HRC

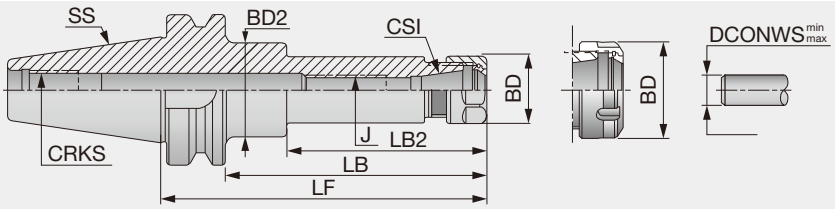
Reference pages


Wrench
K135


Cooling tube
K134

CAT-ER collet chuck

ER collet chucks with CAT shank



ER16-20 ER25-50

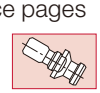
Inch	SS	CSI	Range	LF	LB	LB2	BD	BD2	J	CRKS
CAT30ER16X2.750 (1)	30	ER16	0.022 - 0.396	2.75	1.37	-	1.102	1.248	M10	1/2-13
CAT30ER20X2.562 (1)	30	ER20	0.041 - 0.514	2.562	1.102	-	1.248	1.248	M12	1/2-13
CAT30ER32X3.268 (1)	30	ER32	0.08 - 0.789	3.268	1.89	-	1.968	1.248	M18X1.5	1/2-13
CAT40ER16X3.937	40	ER16	0.022 - 0.396	3.937	1.37	-	1.102	1.752	M12	5/8-11
CAT40ER16X5.906	40	ER16	0.022 - 0.396	5.906	3.35	-	1.102	1.752	M12	5/8-11
CAT40ER20X3.937	40	ER20	0.041 - 0.514	3.937	2.56	-	1.339	1.752	M12	5/8-11
CAT40ER20X5.906	40	ER20	0.041 - 0.514	5.906	3.78	110	1.339	1.752	M12	5/8-11
CAT40ER25X2.562	40	ER25	0.041 - 0.632	2.562	1.18	-	1.654	1.752	M16	5/8-11
CAT40ER25X4.000	40	ER25	0.041 - 0.632	4	2.62	-	1.654	1.752	M16	5/8-11
CAT40ER25X6.000	40	ER25	0.041 - 0.632	6	4.62	-	1.654	1.752	M16	5/8-11
CAT40ER32X2.562	40	ER32	0.08 - 0.789	2.562	-	85	1.968	1.752	M22X1.5	5/8-11
CAT40ER32X4.000	40	ER32	0.08 - 0.789	4	-	-	1.968	1.752	M22X1.5	5/8-11
CAT40ER32X6.000	40	ER32	0.08 - 0.789	6	-	-	1.968	1.752	M22X1.5	5/8-11
CAT40ER40X3.359	40	ER40	0.12 - 1.025	3.359	-	-	2.48	1.752	M28X1.5	5/8-11
CAT40ER40X4.000	40	ER40	0.12 - 1.025	4	-	85	2.48	1.752	M28X1.5	5/8-11
CAT50ER16X3.937 (1)	50	ER16	0.022 - 0.396	3.937	2.56	85	1.102	2.752	M12	1-8
CAT50ER16X5.906 (1)	50	ER16	0.022 - 0.396	5.906	3.49	-	1.102	2.752	M12	1-8
CAT50ER16X8.000 (1)	50	ER16	0.022 - 0.396	8	2.98	-	1.102	2.752	M12	1-8
CAT50ER20X3.937 (1)	50	ER20	0.041 - 0.514	3.937	2.56	-	1.349	2.752	M16	1-8
CAT50ER20X5.906 (1)	50	ER20	0.041 - 0.514	5.906	4.53	-	1.349	2.752	M16	1-8
CAT50ER20X8.000 (1)	50	ER20	0.041 - 0.514	8	4.62	-	1.349	2.752	M16	1-8
CAT50ER25X4.000 (1)	50	ER25	0.041 - 0.632	4	2.58	-	1.654	2.752	M16	1-8
CAT50ER25X6.000 (1)	50	ER25	0.041 - 0.632	6	4.62	-	1.654	2.752	M16	1-8
CAT50ER25X8.000 (1)	50	ER25	0.041 - 0.632	8	6.58	-	1.654	2.752	M16	1-8
CAT50ER32X4.000 (1)	50	ER32	0.08 - 0.789	4	2.54	-	1.968	2.752	M22X1.5	1-8
CAT50ER32X6.000 (1)	50	ER32	0.08 - 0.789	6	4.58	-	1.968	2.752	M22X1.5	1-8
CAT50ER32X8.000 (1)	50	ER32	0.08 - 0.789	8	6.58	-	1.968	2.752	M22X1.5	1-8
CAT50ER40X4.000 (1)	50	ER40	0.12 - 1.025	4	2.62	-	2.48	2.752	M28X1.5	1-8
CAT50ER40X6.000 (1)	50	ER40	0.12 - 1.025	6	4.62	-	2.48	2.752	M28X1.5	1-8
CAT50ER40X8.000 (1)	50	ER40	0.12 - 1.025	8	6.58	-	2.48	2.752	M28X1.5	1-8
CAT50ER50X4.000 (1)	50	ER50	0.396 - 1.338	4	-	-	3.07	2.752	M36X1.5	1-8
CAT50ER50X6.000 (1)	50	ER50	0.396 - 1.338	6	-	-	3.07	2.752	M36X1.5	1-8

(1) Balanced to G6.3 at 12,000 min^{-1}.
(2) ER11 MINI Collet Chuck Spec.
Add B for coolant through the flange.
Wrench is not included.
Applicable for 10 MPa pressure coolant.

Option: Wrench for ER Collet

Reference pages


ER collet K108


Pull stud K127


Nut K128

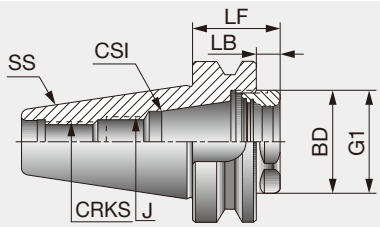

Wrench K130


Preset screw K131

TUNGSHORT

CAT-ER collet

TungShort collet chucks with CAT shank



Inch	SS	CSI	Range	LF	LB	BD	J	CRKS	G1
CAT40ER32SHORT	40	ER20	0.08 - 0.789	1.124	0.374	1.575	5/8X1 1	5/8X11	M40X1.5
CAT40ER32SHORTM	40	ER32	0.08 - 0.789	1.754	1	1.575	5/8X11	5/8X11	M40X1.5
CAT40ER40SHORT	40	ER32	0.12 - 1.025	2.124	1.37	1.969	5/8X11	5/8X11	M50X1.5
CAT50ER32SHORT	50	ER32	0.08 - 0.789	1.124	0.374	1.575	M22X1.5	1-8	M40X1.5
CAT50ER32SHORTM	50	ER32	0.08 - 0.789	1.754	1	1.575	M22X1.5	1-8	M40X1.5
CAT50ER40SHORT	50	ER40	0.12 - 1.025	1.124	0.374	1.969	M28X1.5	1-8	M50X1.5
CAT50ER40SHORTM	50	ER40	0.12 - 1.025	1.754	1	1.969	M28X1.5	1-8	M50X1.5

Add B for coolant through the flange.
Applicable for 10 MPa pressure coolant.

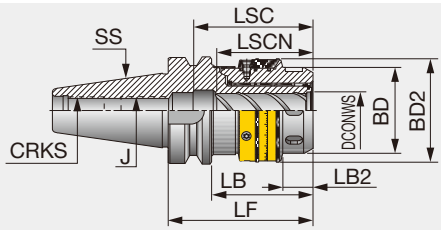
Option: Wrench for ER Collet

Reference pages

ER collet K108
Pull stud K127
Nut K128
Wrench K130
Preset screw K131

TUNGMAX
CAT-TUNGMAX BIN

TungMax adjustable dynamic balanceable endmill chuck holders with CAT shank



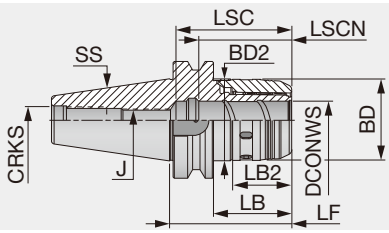
Inch	SS	DCONWS	Range	LF	LB	LB2	BD	BD2	LSCN	LSC	J	CRKS
CAT50TUNGMAX3/4X4.13BIN (1)	50	0.75	0.25 - 0.75	4.138	3.386	0.689	1.988	2.394	2.19	2.72	M16	1-8

(1) Balanced to G6.3 at 8,000 min^{-1}.
Applicable for 10 MPa pressure coolant.

Option: Wrench for TungMax collet

TUNGMAX
CAT-MAXIN

TungMax endmill chuck holders with CAT shank



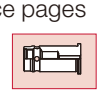
Inch	SS	DCONWS	Range	BD	BD2	LF	LB	LB2	LSCN	LSC	J	CRKS
CAT40MAXIN1-1/4X4.16	40	1.25	0.25 - 1.25	2.717	2.756	4.16	3.41	-	2.76	3.23	M16	5/8-11
CAT40MAXIN3/4X3.75	40	0.75	0.25 - 0.75	2	2.087	3.744	2.992	2.362	2.19	2.72	M16	5/8-11
CAT50MAXIN1-1/4X4.05	50	1.25	0.25 - 1.25	2.717	2.752	4.05	3.3	-	2.76	3.31	M20X2	1-8
CAT50MAXIN1-1/4X5.314	50	1.25	0.25 - 1.25	2.717	2.752	5.315	4.565	-	2.78	3.34	M20X2	1-8
CAT50MAXIN3/4X4.13	50	0.75	0.25 - 0.75	2	2.087	4.138	3.386	2.244	2.19	2.72	M16	1-8

(1) Chucks with taper size 40 can be balanced by the balancing ring up to G2.5 at 20,000 min^{-1}.
(2) Chucks with taper size 50 can be balanced by the balancing ring up to G2.5 at 18,000 min^{-1}.
Applicable for 10 MPa pressure coolant.

Option: Wrench for TungMax collet

Reference pages

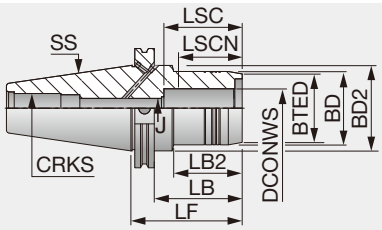

Pull stud K127


Straight collet K117


Wrench K130

TUNGHYDRO
CAT-HYDRO

TungHydro hydraulic endmill chuck holders with CAT shank

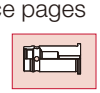


Inch	SS	DCONWS	BTED	BD	BD2	LF	LB	LB2	LSCN	LSC	J	CRKS
CAT40HYDRO1/4X2.677	40	0.25	0.906	1.023	1.75	2.677	1.927	1.299	1.06	1.46	M5	5/8"-11UNC
CAT40HYDRO3/8X2.835	40	0.375	1.063	1.181	1.75	2.834	2.083	1.456	1.26	1.65	M6	5/8"-11UNC
CAT40HYDRO1/2X3.031	40	0.5	1.142	1.259	1.75	3.031	2.279	1.653	1.46	1.85	M8X1	5/8"-11UNC
CAT40HYDRO5/8X3.149	40	0.625	1.339	1.496	1.75	3.149	2.397	1.692	1.65	2.05	M8X1	5/8"-11UNC
CAT40HYDRO3/4X3.228	40	0.75	1.496	1.653	1.75	3.228	2.476	1.85	1.65	2.05	M12X1	5/8"-11UNC
CAT40HYDRO1X3.228	40	1	1.811	1.968	1.75	3.228	2.476	2.007	1.89	2.28	M16X1	5/8"-11UNC
CAT40HYDRO1-1/4X4.331	40	1.25	2.205	2.559	1.75	4.331	2.832	2.204	2.05	2.44	M16X1	5/8"-11UNC
CAT50HYDRO1/4X2.677	50	0.25	0.906	1.023	2.75	2.667	1.925	1.299	1.06	1.46	M5	1"-8 UNC
CAT50HYDRO3/8X2.834	50	0.375	1.063	1.181	2.75	2.834	2.083	1.456	1.26	1.65	M6	1"-8 UNC
CAT50HYDRO1/2X3.228	50	0.5	1.142	1.259	2.75	3.228	2.476	1.653	1.46	1.85	M10	1"-8 UNC
CAT50HYDRO5/8X3.149	50	0.625	1.339	1.496	2.75	3.149	2.397	1.574	1.65	2.05	M8X1	1"-8 UNC
CAT50HYDRO3/4X3.228	50	0.75	1.496	1.653	2.75	3.228	2.476	1.79	1.65	2.05	M12X1	1"-8 UNC
CAT50HYDRO1X3.228	50	1	1.811	1.968	2.75	3.228	2.476	1.771	1.65	2.28	M16X1	1"-8 UNC
CAT50HYDRO1-1/4X3.583	50	1.25	2.205	2.362	2.75	3.583	2.83	2.204	2.05	2.52	M16X1	1"-8 UNC

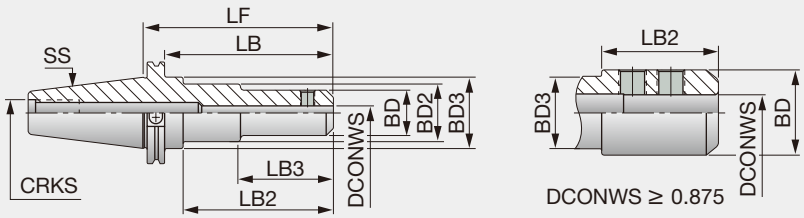
Chucking forces will be reduced by 25% if reduction sleeves are used.
Reduction sleeves are available for 3/4 and 1-1/4 " bore diameters (ordered separately).
The coolant passages in the B type flange are blocked with screws which can be removed when required.
Clamping wrench (WRENCH HYDRO HEX 4) and test bar should be ordered separately.
Applicable for 10 MPa pressure coolant.

Reference pages


Pull stud
K127


Straight collet
K120

Screw locking endmill holders with CAT shank



Inch	SS	DCONWS	BD	BD2	BD3	LF	LB	LB2	LB3	CRKS
CAT40EM3/16X2.500	40	0.187	0.866	-	1.752	2.5	1.75	1.121	-	5/8-11
CAT40EM1/4X2.500	40	0.25	1	-	1.752	2.5	1.75	1.121	-	5/8-11
CAT40EM3/8X1.750 (1)	40	0.375	1.5	-	1.752	1.75	1	-	-	5/8-11
CAT40EM3/8X2.500	40	0.375	1.248	-	1.752	2.5	1.75	1.121	-	5/8-11
CAT40EM3/8X2.500B (1)	40	0.375	1.248	-	1.752	2.5	1.75	1.121	-	5/8-11
CAT40EM1/2X1.750 (1)	40	0.5	1.5	-	1.752	1.75	1	-	-	5/8-11
CAT40EM1/2X2.625	40	0.5	1.752	-	1.752	2.625	1.875	-	-	5/8-11
CAT40EM1/2X2.625B (1)	40	0.5	1.752	-	1.752	2.625	1.875	-	-	5/8-11
CAT40EM5/8X1.750 (1)	40	0.625	1.5	-	1.752	1.75	1	-	-	5/8-11
CAT40EM5/8X3.750	40	0.625	1.752	-	1.752	3.75	3	-	-	5/8-11
CAT40EM5/8X3.750B (1)	40	0.625	1.752	-	1.752	3.75	3	-	-	5/8-11
CAT40EM3/4X1.750	40	0.75	1.75	-	1.752	1.75	1	-	-	5/8-11
CAT40EM3/4X3.750	40	0.75	1.752	-	1.752	3.75	3	-	-	5/8-11
CAT40EM3/4X3.750B (1)	40	0.75	1.752	-	1.752	3.75	3	-	-	5/8-11
CAT40EM7/8X4.000	40	0.875	2.047	-	1.752	4	3.25	2.62	-	5/8-11
CAT40EM1X1.750 (1)	40	1	2	-	1.752	1.75	1	-	-	5/8-11
CAT40EM1X1.750B (1)	40	1	2	-	1.752	1.75	1	-	-	5/8-11
CAT40EM1X4.000	40	1	2.559	-	1.752	4	3.25	2.62	-	5/8-11
CAT40EM1X4.000B (1)	40	1	2.559	-	1.752	4	3.25	2.62	-	5/8-11
CAT40EM1-1/4X2.000 (1)	40	1.25	2.25	-	1.752	2	1.25	-	-	5/8-11
CAT40EM1-1/4X4.250	40	1.25	2.752	-	1.752	4.25	3.5	2.87	-	5/8-11
CAT40EM1-1/4X4.250B (1)	40	1.25	2.752	-	1.752	4.25	3.5	2.87	-	5/8-11
CAT40EM1-1/2X4.625	40	1.5	3.15	-	1.752	4.625	3.875	3.245	-	5/8-11
CAT40EM1-1/2X4.625B (1)	40	1.5	3.15	-	1.752	4.625	3.875	3.245	-	5/8-11
CAT50EM1/4X2.500	50	0.25	1	-	2.752	2.5	1.75	1.12	-	1-8
CAT50EM1/4X4.500	50	0.25	1	-	2.752	4.5	3.75	3.15	-	1-8
CAT50EM1/4X6.250	50	0.25	1	1.969	2.752	6.25	5.5	4.87	2.756	1-8
CAT50EM3/8X2.500	50	0.375	1.248	-	2.752	2.5	1.75	1.12	-	1-8
CAT50EM3/8X2.500B (1)	50	0.375	1.248	-	2.752	2.5	1.75	1.12	-	1-8
CAT50EM3/8X4.500	50	0.375	1.248	-	2.752	4.5	3.75	3.12	-	1-8
CAT50EM3/8X6.500	50	0.375	1.248	1.969	2.753	6.5	5.5	5.12	3.13	1-8
CAT50EM3/8X6.500B (1)	50	0.375	1.248	1.969	2.753	6.5	5.5	5.12	3.13	1-8
CAT50EM1/2X2.625	50	0.5	1.752	-	2.752	2.625	1.875	1.245	-	1-8
CAT50EM1/2X2.625B (1)	50	0.5	1.752	-	2.752	2.625	1.875	1.245	-	1-8
CAT50EM1/2X4.625	50	0.5	1.752	-	2.752	4.625	3.875	3.245	-	1-8
CAT50EM1/2X4.625B (1)	50	0.5	1.752	-	2.752	4.625	3.875	3.245	-	1-8
CAT50EM1/2X6.625	50	0.5	1.752	2.205	2.752	6.625	5.875	5.245	3.248	1-8
CAT50EM1/2X6.625B (1)	50	0.5	1.752	2.205	2.752	6.625	5.875	5.245	3.248	1-8
CAT50EM5/8X3.750	50	0.625	1.752	-	2.752	3.75	3	2.37	-	1-8
CAT50EM5/8X3.750B (1)	50	0.625	1.752	-	2.752	3.75	3	2.37	-	1-8
CAT50EM5/8X5.750	50	0.625	1.752	-	2.752	5.75	5	4.37	-	1-8
CAT50EM5/8X5.750B (1)	50	0.625	1.752	-	2.752	5.75	5	4.37	-	1-8
CAT50EM5/8X7.750	50	0.625	1.752	2.165	2.753	7.75	7	6.37	4.39	1-8

Add B for coolant through the flange.
These tool holders can be used only on vertical machines with an umbrella type ATC. (They cannot be used with arm type ATC.)
Applicable for 7 MPa pressure coolant.

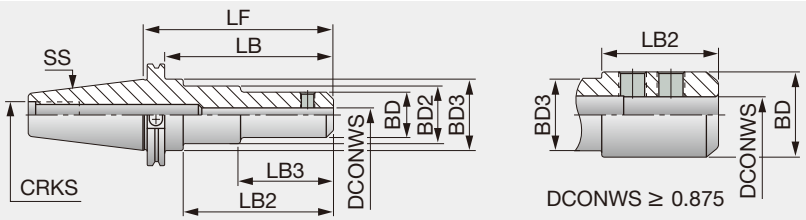
Reference pages

K127 K133

TUNGHOLD

CAT-EM

Screw locking endmill holders with CAT shank



Inch	SS	DCONWS	BD	BD2	BD3	LF	LB	LB2	LB3	CRKS
CAT50EM3/4X3.750	50	0.75	1.772	-	2.752	3.75	3	2.37	-	1-8
CAT50EM3/4X3.750B (1)	50	0.75	1.772	-	2.752	3.75	3	2.37	-	1-8
CAT50EM3/4X5.750	50	0.75	1.772	-	2.752	5.75	5	3.15	-	1-8
CAT50EM3/4X5.750B (1)	50	0.75	1.772	-	2.752	5.75	5	3.15	-	1-8
CAT50EM3/4X7.750	50	0.75	1.772	2.264	2.753	7.75	7	6.37	3.15	1-8
CAT50EM3/4X7.750B (1)	50	0.75	1.772	2.264	2.753	7.75	7	6.37	3.15	1-8
CAT50EM7/8X7.750	50	0.75	2.047	-	2.752	7.75	7	3.15	-	1-8
CAT50EM7/8X3.750	50	0.875	2.047	-	2.752	3.75	3	2.37	-	1-8
CAT50EM1X4.000	50	1	2.559	-	2.753	4	3.25	2.62	-	1-8
CAT50EM1X4.000B (1)	50	1	2.559	-	2.753	4	3.25	2.62	-	1-8
CAT50EM1X6.000	50	1	2.559	-	2.752	6	5.25	4.62	-	1-8
CAT50EM1X6.000B (1)	50	1	2.559	-	2.752	6	5.25	4.62	-	1-8
CAT50EM1X8.000	50	1	2.559	-	2.752	8	7.25	4.625	-	1-8
CAT50EM1-1/4X4.000	50	1.25	2.752	-	2.752	4	3.25	-	-	1-8
CAT50EM1-1/4X4.000B (1)	50	1.25	2.752	-	2.752	4	3.25	-	-	1-8
CAT50EM1-1/4X6.000	50	1.25	2.752	-	2.752	6	5.25	-	-	1-8
CAT50EM1-1/4X8.000	50	1.25	2.752	-	2.752	8	7.25	-	-	1-8
CAT50EM1-1/2X4.000	50	1.5	3.15	-	2.752	4	3.25	2.62	-	1-8
CAT50EM1-1/2X4.000B (1)	50	1.5	3.15	-	2.752	4	3.25	2.62	-	1-8
CAT50EM1-1/2X6.000	50	1.5	3.15	-	2.752	6	5.25	4.62	-	1-8
CAT50EM1-1/2X8.000	50	1.5	3.15	-	2.752	8	7.25	6.62	-	1-8
CAT50EM2X5.625	50	2	3.74	-	2.752	5.625	4.875	4.245	-	1-8

(1) Add B for coolant through the flange.
These tool holders can be used only on vertical machines with an umbrella type ATC. (They cannot be used with arm type ATC.)
Applicable for 7 MPa pressure coolant.

Reference pages

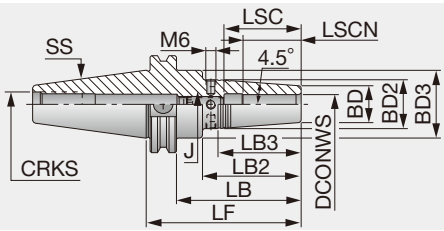
Pull stud K127

Clamping screw K133

TUNGSHRINK

CAT-SRKIN

TungShrink thermal shrinking holder for carbide and HSS with CAT shank



Inch	SS	DCONWS	BD	BD2	BD3	LF	LB	LB2	LB3	LSCN	LSC	J	CRKS	Wrench
CAT40SRKIN1/4X3.500	40	0.25	0.827	1.063	1.752	3.5	2.75	2.12	1.501	0.98	1.42	M5	5/8-11	0.098
CAT40SRKIN5/16X3.500	40	0.313	0.827	1.063	1.752	3.5	2.75	2.12	1.501	0.98	1.42	M6	5/8-11	0.118
CAT40SRKIN3/8X3.750	40	0.375	0.945	1.26	1.752	3.75	3	2.37	2	1.22	1.65	M8	5/8-11	0.157
CAT40SRKIN7/16X3.750	40	0.438	0.945	1.26	1.752	3.75	3	2.37	2.001	1.42	1.85	M10	5/8-11	0.197
CAT40SRKIN1/2X3.750	40	0.5	0.945	1.26	1.752	3.75	3	2.37	2.001	1.42	1.85	M10	5/8-11	0.197
CAT40SRKIN5/8X3.750	40	0.625	1.063	1.339	1.752	3.75	3	2.37	1.751	1.54	1.97	M12	5/8-11	0.236
CAT40SRKIN3/4X4.000	40	0.75	1.299	1.654	1.752	4	3.25	2.62	2.251	1.61	2.05	M16	5/8-11	0.315
CAT40SRKIN7/8X4.000	40	0.875	1.732	2.087	1.752	4	3.25	2.62	2.251	1.61	2.05	M16	5/8-11	0.315
CAT40SRKIN1X4.000	40	1	1.732	2.087	1.752	4	3.25	2.62	2.251	1.85	2.28	M16	5/8-11	0.315
CAT40SRKIN1-1/4X4.000	40	1.25	1.732	2.087	1.752	4	3.25	2.62	2.251	1.85	2.28	M16	5/8-11	0.315
CAT50SRKIN1/4X3.500 (1)	50	0.25	0.827	1.063	2.752	3.5	2.75	2.12	1.501	0.98	1.42	M5	1-8	0.098
CAT50SRKIN5/16X3.500 (1)	50	0.313	0.827	1.063	2.752	3.5	2.7	2.12	1.501	0.98	1.42	M6	1-8	0.118
CAT50SRKIN3/8X3.750 (1)	50	0.375	0.945	1.26	2.752	3.75	3	2.37	2	1.22	1.65	M8	1-8	0.157
CAT50SRKIN7/16X3.750 (1)	50	0.438	0.945	1.26	2.752	3.75	3	2.37	2.001	1.42	1.85	M10	1-8	0.197
CAT50SRKIN1/2X3.750 (1)	50	0.5	0.945	1.26	2.752	3.75	3	2.37	2.001	1.42	1.85	M10	1-8	0.197
CAT50SRKIN5/8X3.750 (1)	50	0.625	1.063	1.339	2.752	3.75	3	2.62	1.751	1.54	1.97	M12	1-8	0.236
CAT50SRKIN3/4X4.000 (1)	50	0.75	1.299	1.654	2.752	4	3.25	2.62	2.251	1.61	2.05	M16	1-8	0.315
CAT50SRKIN7/8X4.000 (1)	50	0.875	1.732	2.087	2.752	4	3.25	2.62	2.251	1.61	2.05	M16	1-8	0.315
CAT50SRKIN1X4.000 (1)	50	1	1.732	2.087	2.752	4	3.25	2.62	2.251	1.85	2.28	M16	1-8	0.315
CAT50SRKIN1-1/4X4.000 (1)	50	1.25	1.732	2.087	2.752	4	3.25	2.62	2.251	1.85	2.28	M16	1-8	0.315

(1) Balanced to G2.5 20.000 min^{-1}
Use only inductive heating device for SRKIN holders.
Add B for coolant through the flange.
Applicable for 10 MPa pressure coolant.

Reference pages


Pull stud K127


Induction heating unit K125

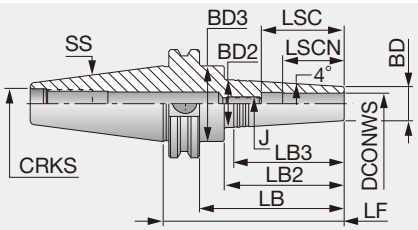

Heating unit K125


Preset screw K133

TUNGSHRINK

CAT-SRK

TungShrink thermal shrinking holder for carbide shank with CAT shank



Inch	SS	DCONWS	BD	BD2	BD3	LF	LB	LB2	LB3	LSCN	LSC	J	CRKS	Wrench
CAT40SRK1/8X2.000	40	0.125	0.394	0.591	1.752	3.38	2.63	2	1.4	0.39	0.63	M6	5/8-11	0.118
CAT40SRK1/8X3.250	40	0.125	0.394	0.748	1.752	4.63	2.88	3.25	2.526	0.39	0.63	M6	5/8-11	0.118
CAT40SRK3/16X2.000	40	0.188	0.394	0.591	1.752	3.38	2.63	2	1.4	0.59	0.83	M6	5/8-11	0.118
CAT40SRK3/16X3.250	40	0.188	0.394	0.748	1.752	4.963	2.88	3.25	2.526	0.59	0.83	M6	5/8-11	0.118
CAT40SRK1/4X2.000	40	0.25	0.433	0.63	1.752	3.38	2.63	2	1.398	0.71	0.95	M8	5/8-11	0.157
CAT40SRK1/4X3.250	40	0.25	0.433	0.787	1.752	4.63	2.88	3.25	2.524	0.71	0.95	M8	5/8-11	0.157
CAT40SRK5/16X2.000	40	0.313	0.551	0.787	1.752	3.38	2.63	2	1.673	0.98	1.22	M10	5/8-11	0.197
CAT40SRK5/16X3.250	40	0.313	0.551	0.906	1.752	4.63	2.88	3.25	2.518	0.98	1.22	M10	5/8-11	0.197
CAT40SRK3/8X2.000	40	0.375	0.63	0.866	1.752	3.38	2.63	2	1.669	1.18	1.42	M12	5/8-11	0.236
CAT40SRK3/8X3.250	40	0.375	0.63	0.965	1.752	4.63	2.88	3.25	2.373	1.18	1.42	M12	5/8-11	0.236
CAT40SRK7/16X2.000	40	0.438	0.787	1.024	1.752	3.38	2.63	2	1.665	1.22	1.61	M10	5/8-11	0.197
CAT40SRK7/16X3.250	40	0.438	0.787	1.102	1.752	4.63	2.88	3.25	2.228	1.22	1.61	M10	5/8-11	0.197
CAT40SRK1/2X2.000	40	0.5	0.787	1.024	1.752	3.38	2.63	2	1.665	1.26	1.65	M10	5/8-11	0.197
CAT40SRK1/2X3.250	40	0.5	0.787	1.102	1.752	4.63	3.25	3.25	2.228	1.26	1.65	M10	5/8-11	0.197

Applicable for 10 MPa pressure coolant.

Reference pages


Pull stud K127

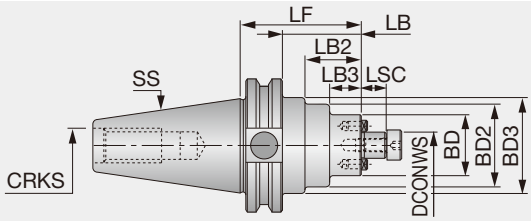

Induction heating unit K125


Heating unit K125


Preset screw K133

CAT-SEM

Shell mill holder with CAT shank



Inch	SS	DCONWS	BD	BD2	BD3	LF	LB	LB2	LB3	LSC	CRKS
CAT40SEM1/2X1.500	40	0.5	-	1.378	1.75	1.5	0.75	0.102	-	0.57	5/8-11
CAT40SEM3/4X1.375	40	0.75	-	-	1.752	1.375	0.625	-	-	0.669	5/8-11
CAT40SEM1X2.062	40	1	-	2.165	1.752	2.062	1.312	0.682	-	0.669	5/8-11
CAT40SEM1-1/4X2.125	40	1.25	-	2.752	1.752	2.125	1.375	0.745	-	0.669	5/8-11
CAT40SEM1-1/2X2.406	40	1.5	-	3.071	1.752	2.406	1.656	1.026	-	0.938	5/8-11
CAT50SEM3/4X1.500	50	0.75	-	1.772	2.752	1.5	0.75	0.12	-	0.669	1-8
CAT50SEM3/4X1.920X8.00	50	0.75	-	1.92	2.752	8	7.25	6.583	-	0.669	1-8
CAT50SEM3/4X3.500	50	0.75	-	1.772	2.752	3.5	0.75	2.102	-	0.669	1-8
CAT50SEM3/4X5.500	50	0.75	1.772	2.362	2.752	5.5	4.75	4.13	2.48	0.669	1-8
CAT50SEM1X2.000	50	1	-	2.165	2.752	2	1.25	0.62	-	0.669	1-8
CAT50SEM1X2.42X12.00	50	1	-	2.42	2.752	12	11.25	10.583	-	0.669	1-8
CAT50SEM1X4.000	50	1	-	2.165	2.752	4	3.25	0.728	-	0.669	1-8
CAT50SEM1X6.000	50	1	-	2.165	2.752	6	5.25	2.657	-	0.669	1-8
CAT50SEM1-1/4X1.500	50	1.25	-	-	1.752	1.5	0.75	-	-	0.669	1-8
CAT50SEM1-1/4X2.92X13.0	50	1.25	-	2.921	2.752	13	12.25	11.62	-	0.669	1-8
CAT50SEM1-1/4X3.500	50	1.25	-	-	2.752	3.5	2.75	-	-	0.669	1-8
CAT50SEM1-1/4X4.000	50	1.25	-	-	2.752	4	-	-	-	0.669	1-8
CAT50SEM1-1/4X6.000	50	1.25	-	-	2.752	6	-	-	-	0.669	1-8
CAT50SEM1-1/2X2.406	50	1.5	-	3.071	2.752	2.406	1.656	1.026	-	0.938	1-8
CAT50SEM1-1/2X4.000	50	1.5	-	3.071	2.752	4	3.25	2.62	-	0.938	1-8
CAT50SEM1-1/2X6.000	50	1.5	-	3.071	2.752	6	5.25	4.62	-	0.938	1-8
CAT50SEM2X2.406	50	2	-	3.858	2.752	2.406	1.656	1.026	-	0.938	1-8
CAT50SEM2X4.000	50	2	-	3.858	2.752	4	3.25	2.62	-	0.938	1-8

CAT40 = Balanced to G2.5 20,000 min^{-1}
CAT50 = Balanced to G2.5 15,000 min^{-1}

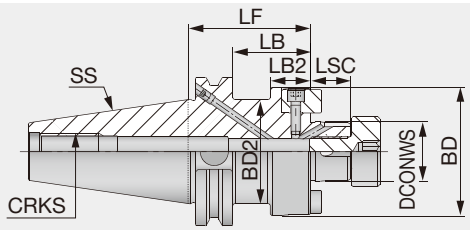
Reference pages

Pull stud K127
Clamping screw K132
Wrench K134

TUNGHOLD

CAT-SEM-C

Shell mill holder with coolant hole for CAT shank



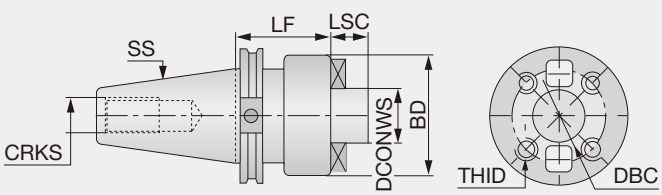
Inch	SS	DCONWS	BD	BD2	LF	LB	LB2	LSC	CRKS
CAT40SEM1/2X2.000C	40	0.5	1.475	1.752	2	1.25	-	0.57	5/8-11
CAT40SEM3/4X1.375C	40	0.75	-	1.752	1.375	0.625	-	0.669	5/8-11
CAT40SEM1X2.062C	40	1	2.165	1.752	2.062	1.312	0.682	0.669	5/8-11
CAT40SEM1-1/4X2.125C	40	1.25	2.752	1.752	2.125	1.375	0.745	0.669	5/8-11
CAT40SEM1-1/2X2.406C	40	1.5	3.071	1.752	2.406	1.656	1.026	0.937	5/8-11
CAT50SEM1/2X3.500C	50	0.5	1.475	2.752	3.5	2.75	-	0.57	1-8
CAT50SEM3/4X2.000C	50	0.75	1.772	2.752	2	1.25	0.62	0.669	1-8
CAT50SEM3/4X3.500C	50	0.75	1.772	2.752	3.5	2.75	2.12	0.669	1-8
CAT50SEM3/4X5.500C	50	0.75	1.772	2.752	5.5	4.75	4.12	0.669	1-8
CAT50SEM1X2.000C	50	1	2.165	2.752	2	1.25	0.62	0.669	1-8
CAT50SEM1X4.000C	50	1	2.165	2.752	4	3.25	2.62	0.669	1-8
CAT50SEM1-1/4X2.000C	50	1.25	-	2.752	2	1.25	0.62	0.669	1-8
CAT50SEM1-1/4X3.500C	50	1.25	-	2.752	3.5	2.75	2.12	0.669	1-8
CAT50SEM1-1/2X2.500C	50	1.5	3.071	2.752	2.5	1.75	1.12	0.937	1-8
CAT50SEM1-1/2X4.000C	50	1.5	3.071	2.752	4	3.25	2.62	0.937	1-8

CAT40 = Balanced to G2.5 20,000 min^{-1}
CAT50 = Balanced to G2.5 15,000 min^{-1}
Applicable for 7 MPa pressure coolant.

TUNGHOLD

CAT-FM

Face mill holder with CAT shank



Inch	SS	DCONWS	BD	DBC	LF	LSC	CRKS	THID
CAT50FM2-1/2X2.875	50	2.500	4.881	4	2.875	1.125	1-8	5/8-11

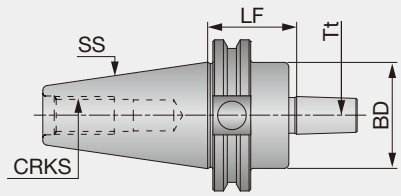
Reference pages

Pull stud K127
Clamping screw K132
Wrench K134

TUNGHOLD

CAT-DC

Jacobs taper holder with CAT shank

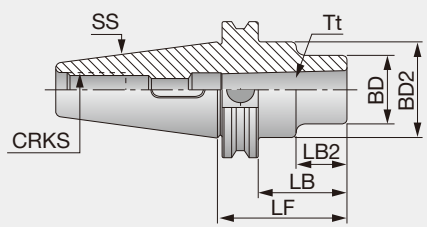


Inch	SS	Tt	LF	BD	CRKS
CAT40DCJ2X1.500	40	J2	1.5	1.752	5/8-11
CAT40DCJ3X1.500	40	J3	1.5	1.75	5/8-11
CAT40DCJ4X1.500	40	J4	1.5	1.752	5/8-11
CAT40DCJ6X1.500	40	J6	1.5	1.752	5/8-11
CAT40DCJ33X1.500	40	J33	1.5	1.752	5/8-11
CAT50DCJ3X1.656	50	J3	1.656	2.752	1-8
CAT50DCJ4X1.500	50	J4	1.5	2.752	1-8
CAT50DCJ5X1.625	50	J5	1.625	2.752	1-8
CAT50DCJ6X1.500	50	J6	1.5	2.752	1-8
CAT50DCJ33X1.500	50	J33	1.5	2.752	1-8

TUNGHOLD

CAT-MT

Morse taper holder with CAT shank



Inch	SS	Tt	LF	LB	LB2	BD	BD2	CRKS
CAT40MT1X1.750	40	MT1	1.75	1	0.37	1	1.752	5/8-11
CAT40MT2X2.250	40	MT2	2.25	1.5	0.87	1.26	1.752	5/8-11
CAT40MT3X2.765	40	MT3	2.765	2.015	-	-	1.752	5/8-11
CAT40MT4X3.625	40	MT4	3.625	2.875	2.245	2.008	1.752	5/8-11
CAT50MT1X1.500	50	MT1	1.5	0.75	0.12	1	2.752	1-8
CAT50MT2X2.000	50	MT2	2	1.25	0.62	1.26	2.752	1-8
CAT50MT3X2.500	50	MT3	2.5	1.75	1.12	1.575	2.752	1-8
CAT50MT4X3.375	50	MT4	3.375	2.625	1.995	1.969	2.752	1-8
CAT50MT5X3.750	50	MT5	3.75	3	-	-	2.752	1-8

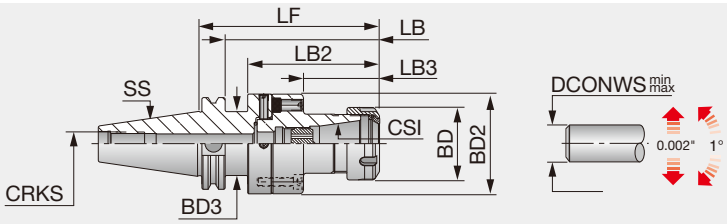
Reference pages

Pull stud
K127

TUNGFINE

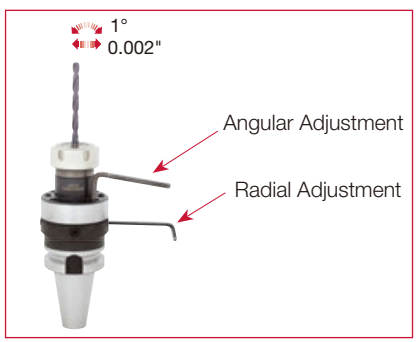
ADJ CAT-ER

ER Collet Chucks with Center Alignment and CAT Shanks



Inch	SS	CSI	Range	LF	LB	LB2	LB3	BD	BD2	BD3	CRKS
ADJCAT40D2.756ER32	40	ER32	0.08 - 0.789	4.902	4.152	3.522	2.067	1.969	2.756	1.752	5/8-11
ADJCAT50D2.756ER32	50	ER32	0.08 - 0.789	4.902	4.152	-	2.067	1.969	2.756	-	1-8

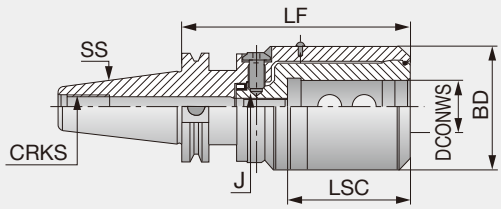
Applicable for 10 MPa pressure coolant.



Reference pages

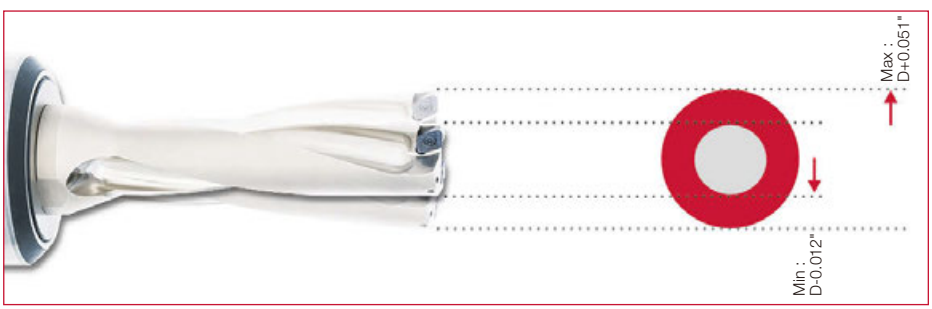
Pull stud K127
ER collet K108
Nut K128
Wrench K130
Preset screw K131

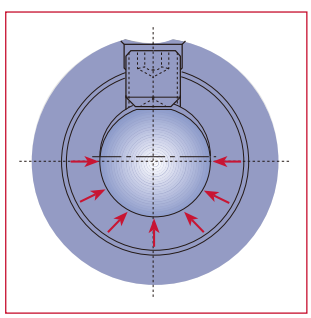
TungBore adjustable drilling dia. holder with CAT shank



Inch	SS	BD	DCONWS	LF	LSC	J	CRKS
TUNGBORE-CAT40EM1ADB	40	2.835	1	5.338	2.795	M10	5/8-11
TUNGBORE-CAT40EM1-1/4ADB	40	2.835	1.25	5.338	2.795	M10	5/8-11
TUNGBORE-CAT40EM1-1/2ADB	40	2.835	1.5	5.338	2.795	M10	5/8-11
TUNGBORE-CAT50EM3/4ADB	50	2.835	0.75	5.177	2.795	M10	1-8
TUNGBORE-CAT50EM1ADB	50	2.835	1	5.177	2.795	M10	1-8
TUNGBORE-CAT50EM1-1/4ADB	50	2.835	1.25	5.177	2.795	M10	1-8
TUNGBORE-CAT50EM1-1/2ADB	50	2.835	1.5	5.177	2.795	M10	1-8

Applicable for 10 MPa pressure coolant.





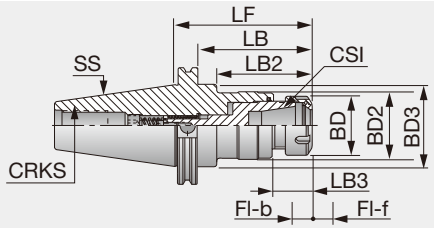
The bore's section is actually made from two shifted circular sections. The clamping screw pushes the drill shank through a narrowed opening, forcing elastic deformation of the holder. Contact is made around more than 180°, providing a high clamping force.

Pull stud
K127

TUNGGTI

GTI-CAT

TungGTI tapping attachment with CAT shank



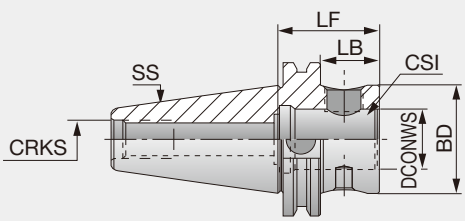
Inch	SS	CSI	Tap min	Tap max	LF	LB	LB2	LB3	BD	BD2	BD3	Fl-f	Fl-b	CRKS
GTICAT40ER16	40	ER16	#6	3/8	3.203	2.453	1.823	0.969	1.102	1.161	1.752	0.32	0.12	5/8-11
GTICAT40ER32	40	ER32	1/4	3/4	4.439	3.689	3.059	1.299	1.969	2.224	1.752	0.36	0.16	5/8-11
GTICAT40ER40	40	ER40	1/4	1-1/8	5.148	4.398	3.768	2.008	2.480	2.224	1.752	0.36	0.16	5/8-11
GTICAT50ER16	50	ER16	#6	3/8	4.213	3.463	2.833	0.969	1.102	1.161	2.752	0.32	0.12	1-8
GTICAT50ER32	50	ER32	1/4	3/4	4.543	3.793	3.163	1.299	1.969	2.224	2.752	0.36	0.16	1-8
GTICAT50ER40	50	ER40	1/4	1-1/8	5.252	4.502	3.872	2.008	2.480	2.224	2.752	0.36	0.16	1-8

Applicable for 10 MPa pressure coolant.

TUNGFIT

CAT-CF

TungFit quick change style modular tooling system with CAT shank

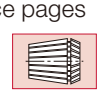


Inch	SS	CSI	LF	LB	DCONWS	BD	CRKS
CAT40CF4-L	40	CF4	4.000	3.252	0.984	1.752	5/8-11
CAT40CF4-S	40	CF4	1.750	1.000	0.984	1.752	5/8-11
CAT50CF4-L	50	CF4	4.000	3.252	0.984	1.752	1-8
CAT50CF4-S	50	CF4	1.750	1.000	0.984	1.752	1-8

Tightening torque: 43.4 lb·ft
Add B for coolant through the flange.
Applicable for 10 MPa pressure coolant.

Reference pages


Pull stud K127


ER collet K108


Nut K128

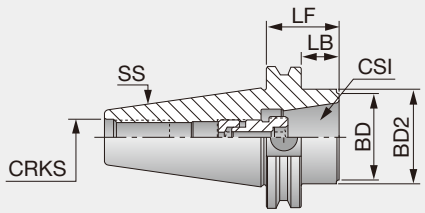

Wrench K130


Preset screw K131

TUNGCLICK

CAT-CLICK

TungClick quick change tooling system with CAT shank



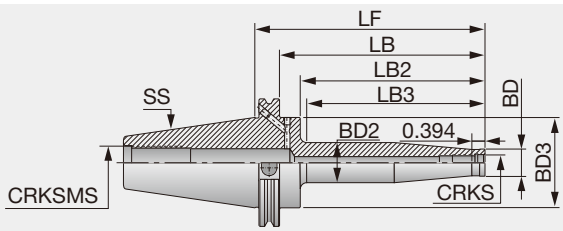
Inch	SS	CSI	LF	LB	BD	BD2	CRKS
CAT40ER32CLICK-IN	40	32SRF	0.789	-	1.614	-	5/8X11
CAT50ER32CLICK-INM	50	32SRF	1.419	0.669	1.614	2.752	1-8

Tightening torque: 235 N·m
Applicable for 10 MPa pressure coolant.

TUNGFLEX

CAT-ODP

TungFlex modular tooling system with CAT shank

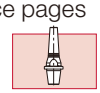


Inch	SS	CRKS	BD	BD2	BD3	LF	LB	LB2	LB3	CRKSMS
CAT40ODPM6X2.000	40	M6	0.380	0.511	-	2.000	0.935	-	0.935	5/8-11
CAT40ODPM6X4.000	40	M6	0.380	0.725	-	4.000	2.935	-	2.935	5/8-11
CAT40ODPM8X2.000	40	M8	0.510	0.580	-	2.000	0.944	-	0.944	5/8-11
CAT40ODPM8X4.000	40	M8	0.510	0.790	-	4.000	2.913	-	2.913	5/8-11
CAT40ODPM10X2.000	40	M10	0.710	0.780	-	2.000	1.062	-	1.062	5/8-11
CAT40ODPM10X4.000	40	M10	0.710	0.990	-	4.000	3.149	-	3.149	5/8-11
CAT40ODPM12X4.000	40	M12	0.830	1.110	-	4.000	3.149	-	3.149	5/8-11
CAT40ODPM12X6.000	40	M12	0.830	1.310	-	6.000	5.118	-	5.118	5/8-11
CAT40ODPM16X4.000	40	M16	1.140	1.420	-	4.000	3.149	-	3.149	5/8-11
CAT40ODPM16X6.000	40	M16	1.140	1.620	-	6.000	5.118	-	5.118	5/8-11
CAT50ODPM8X5.000 (1)	50	M8	0.516	0.906	2.752	5.000	4.232	3.602	3.405	1-8
CAT50ODPM10X3.000 (1)	50	M10	0.709	0.693	2.752	3.000	2.232	1.602	1.405	1-8
CAT50ODPM10X7.000 (1)	50	M10	0.709	1.102	2.752	7.000	6.232	5.602	5.405	1-8
CAT50ODPM12X3.000 (1)	50	M12	0.827	0.811	2.752	3.000	2.232	1.602	1.405	1-8
CAT50ODPM12X7.000 (1)	50	M12	0.827	1.220	2.752	7.000	6.232	5.602	5.405	1-8
CAT50ODPM16X3.000 (1)	50	M16	1.142	1.126	2.752	3.000	2.232	1.602	1.405	1-8
CAT50ODPM16X7.000 (1)	50	M16	1.142	1.339	2.752	7.000	6.232	5.602	5.405	1-8

(1) Balanced to G2.5 12,000 min^{-1}
Applicable for 10 MPa pressure coolant.

Reference pages

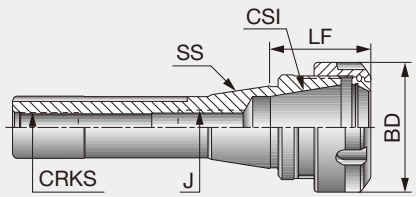

Pull stud
K127


ER 32 ODP
K122

TUNGHOLD

R-8 ER

ER collet chuck holder (R-8 Bridgeport)



Metric	SS	CSI	Range	LF	BD	J	CRKS
R-8ER16X38	R-8	ER16	0.5-10	38	28	M10	7/16-20
R-8ER32X40	R-8	ER32	2-20	40	50	M12	7/16-20
R-8ER40X72	R-8	ER40	3-26	72	63	M12	7/16-20

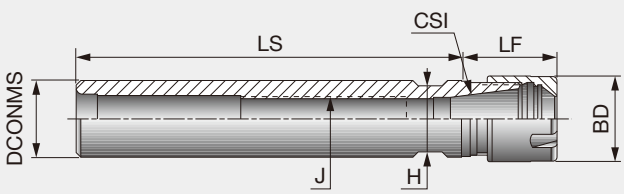
Applicable for 10 MPa coolant

Option: Wrench for ER collet

TUNGHOLD

ST-ER-M

ER Mini collet chuck holder (straight shank)



Metric	DCONMS	CSI	Range	LS	LF	J	BD	H
ST12X80ER11M	12	ER11	0.5-7	80	26.5	-	16	11
ST16X50ER11MF	16	ER11	0.5-7	50	18.5	M8	16	13
ST16X100ER11M	16	ER11	0.5-7	100	18.5	M8	16	13
ST16X150ER11M	16	ER11	0.5-7	150	18.5	M8	16	13
ST12X80ER16M	12	ER16	0.5-10	80	36.5	-	22	17
ST20X100ER16M	20	ER16	0.5-10	100	25	M12	22	17
ST20X150ER16M	20	ER16	0.5-10	150	25	M12	22	17
ST20X100ER20M	20	ER20	1-13	100	40	M12	28	21
ST20X150ER20M	20	ER20	1-13	150	40	M12	28	21

Applicable for 10 MPa coolant
F indicates a flat on the shank.

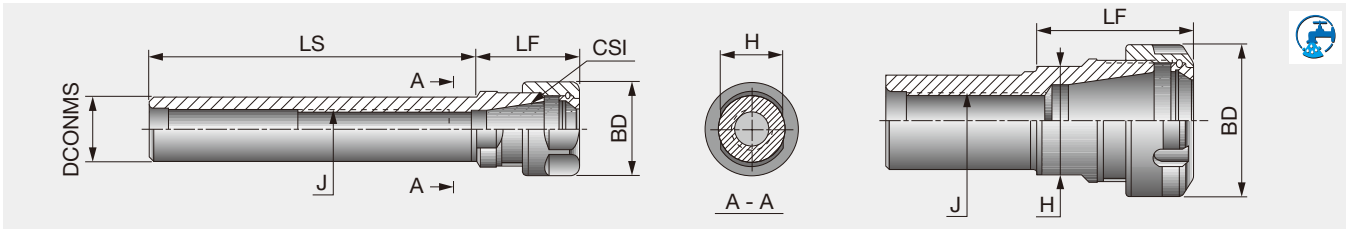
Option: Wrench for ER collet

Reference pages

ER collet K108
Nut K128
Wrench K130
Preset screw K131

ST-ER

ER collet chuck holder (Straight shank)

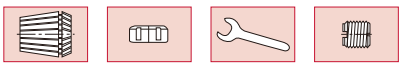


Metric	DCONMS	CSI	Range	LS	LF	J	BD	H
ST16X50ER11F	16	ER11	0.5-7	50	18.5	M8	19	13
ST20X50ER11F	20	ER11	0.5-7	50	18.5	M10	19	17
ST20X100ER11	20	ER11	0.5-7	100	18.5	M10	19	17
ST20X150ER11	20	ER11	0.5-7	150	18.5	M10	19	17
ST20X50ER16F	20	ER16	0.5-10	50	32.3	M12	28	19
ST20X100ER16	20	ER16	0.5-10	100	30	M12	28	19
ST20X150ER16	20	ER16	0.5-10	150	30	M12	28	19
ST20X50ER20F	20	ER20	1-13	50	42.5	M12	34	22
ST25X100ER20	25	ER20	1-13	100	36	M16	34	22
ST25X150ER20	25	ER20	1-13	150	36	M16	34	22
ST20X50ER25F	20	ER25	1-16	50	46	M12	42	28
ST20X100ER25	20	ER25	1-16	100	46	M12	42	28
ST20X50ER32F	20	ER32	2-20	50	54	M12	50	36
ST20X100ER32	20	ER32	2-20	100	54	M12	50	36
ST25X50ER25F	25	ER25	1-16	50	46	M16	42	28
ST25X100ER25	25	ER25	1-16	100	46	M16	42	28
ST25X50ER32F	25	ER32	2-20	50	52	M16x2	50	36
ST25X50ER40F	25	ER40	3-26	50	60	M16x2	63	45
ST30X50ER32F	30	ER32	2-20	50	52	M18x1.5	50	36
ST30X50ER40F	30	ER40	3-26	50	60	M18x1.5	63	45
ST32X50ER32F	32	ER32	2-20	50	52	M18x1.5	50	36
ST32X150ER32	32	ER32	2-20	150	52	M18x1.5	50	36
ST32X50ER40F	32	ER40	3-26	50	60	M18x1.5	63	45
ST40X75ER32F	40	ER32	2-20	75	46	M22x1.5	50	44
ST40X75ER40F	40	ER40	3-26	75	55	M22x1.5	63	45
ST50X80ER40F	50	ER40	3-26	80	60	M28x1.5	63	54
ST50X80ER50F	50	ER50	10-34	80	77	M36x1.5	78	58

Applicable for 10 MPa coolant
F indicates a flat on the shank.

Option: Wrench for ER collet

Reference pages

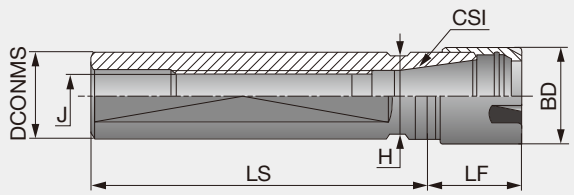


K108 K128 K130 K131

TUNGHOLD

ST-ER-MF

ER Mini collet chuck holder, with flat, for Swiss machines



Metric	DCONMS	CSI	Range	LS	LF	J	BD	H	Machine
ST16X35ER16MF	16	ER16	0.5-10	35	36	M8X1	22	17	Tsugami
ST16X38ER11MF	16	ER11	0.5-7	38	18.5	M8X1	16	14	Tsugami
ST16X140ER11MF	16	ER11	0.5-7	140	18.5	M8X1	16	14	-
ST20X70ER16MF	20	ER16	0.5-10	70	26	M12X1	22	17	Tsugami, Citizen
ST20X120ER16MF	20	ER16	0.5-10	120	26	M12X1	22	17	Tsugami, Citizen
ST20X140ER16MF	20	ER16	0.5-10	140	26	M12X1	22	17	Tsugami, Citizen
ST22X38ER16MF	22	ER16	0.5-10	38	26	M12X1	22	19	Star
ST22X70ER16MF	22	ER16	0.5-10	70	26	M12X1	22	19	Star
ST22X70ER25MF	22	ER25	0.5-16	70	47	M12X1	35	27	Star
ST22X80ER20MF	22	ER20	1-13	80	39	M12X1	28	21	Star
ST22X100ER16MF	22	ER16	1-16	100	28	M12X1	22	19	Star
ST25X65ER16MF	25	ER16	0.5-10	65	28	M12X1	22	22	Citizen
ST25X75ER25MF	25	ER25	1-16	75	48	M14X1	35	27	Manurhin
ST25X100ER20MF	25	ER20	1-13	100	28	M14X1	28	22	Tornos
ST25X145ER25MF	25	ER25	1-16	145	36	M14X1	35	27	Tornos
ST25X154ER20MF	25	ER20	1-13	154	28	M14X1	28	22	Tornos
ST32X70ER25MF	32	ER25	1-16	70	30	M18X1	35	27	Schuette

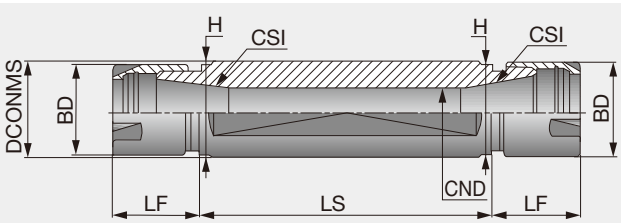
Applicable for 10 MPa coolant

Option: Wrench for ER collet

TUNGHOLD

ST-ER-MF-D

ER Mini collet chuck holder, double end type



Metric	DCONMS	CSI	Range	LS	LF	BD	CND	H	Machine
ST16X50ER11MFD	16	ER11	0.5-7	50	18.5	16	7.5	14	-
ST20X30ER11MFD	20	ER11	0.5-7	30	18.5	16	7.5	17	Tsugami
ST20X50ER11MFD	20	ER11	0.5-7	50	18.5	16	7.5	17	Tsugami
ST20X55ER16MFD	20	ER16	0.5-10	55	25	22	10.5	17	Tsugami
ST22X55ER16MFD	22	ER16	0.5-10	55	28	22	10.5	19	Star
ST22X75ER16MFD	22	ER16	0.5-10	75	28	22	10.5	19	Star
ST25X62ER16MFD	25	ER16	0.5-10	62	28	22	10.5	22	-
ST32X55ER20MFD	32	ER20	1-13	55	28	28	13.5	27	Star
ST32X75ER20MFD	32	ER20	1-13	75	28	28	13.5	27	Star

Applicable for 10 MPa coolant

Option: Wrench for ER collet

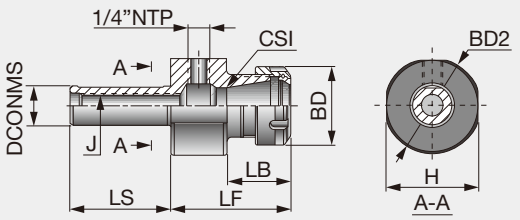
Reference pages

ER collet K108
Nut K128
Wrench K130
Preset screw K131

TUNGHOLD

ST-ER-S

ER collet chuck holder, with the capability of internal coolant supply



Metric	DCONMS	CSI	Range	LS	LF	LB	J	BD	BD2	H
ST20X65ER20S	20	ER20	1-13	65	63	31	M12	34	40	34
ST20X65ER25S	20	ER25	1-16	65	72	32	M12	42	54	51
ST20X65ER32S	20	ER32	2-20	65	77	41	M12	50	63	59
ST32X65ER32S	32	ER32	2-20	65	77	41	M18x1.5	50	63	59
ST40X75ER32S	40	ER32	2-20	75	77	41	M22x1.5	50	63	59

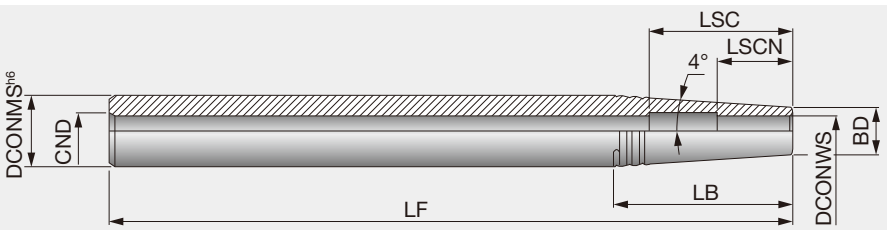
Applicable for 10 MPa coolant

Option: Wrench for ER collet

TUNGSHRINK

ST-SRK

Thermal shrinking holder for carbide shank (straight shank)



Metric	DCONMS	DCONWS	BD	CND	LF	LB	LSCN	LSC
ST12X160SRK3	12	3	10	4	160	14.3	10	-
ST12X160SRK4	12	4	10	4	160	14.3	12	27
ST16X160SRK3	16	3	10	6	160	43	10	-
ST16X160SRK4	16	4	10	6	160	43	12	-
ST16X160SRK5	16	5	10	6	160	43	15	-
ST16X160SRK6	16	6	11	6	160	35.5	18	35
ST20X200SRK5	20	5	10	6	200	71.5	15	-
ST20X200SRK6	20	6	11	6	200	64.5	18	40
ST20X200SRK8	20	8	14	6	200	43	25	40
ST25X200SRK6	25	6	11	8	200	100	18	35
ST25X200SRK8	25	8	14	8	200	78.6	25	40
ST25X200SRK10	25	10	16	8	200	64.3	30	50
ST25X200SRK12	25	12	20	8	200	35.7	32	52

Applicable for 10 MPa coolant

Option: Wrench for ER collet

Reference pages


ER collet K108


Nut K128

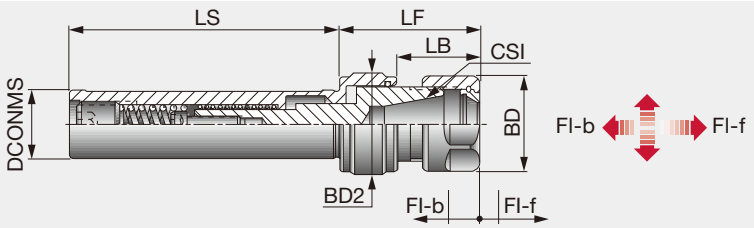

Wrench K130


Preset screw K131

TUNGGTI

GTI-ER-ST

Tapping holder (straight shank)

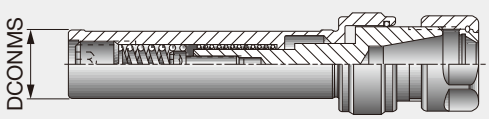


Metric	DCONMS	CSI	Tap min	Tap max	Range	BD	BD2	LB	LF	LS	Fl-f	Fl-b
GTIER11ST16X150M	16	ER11	M2	M7	0.5-7	16	-	19	-	150	6	3
GTIER16ST20X80	20	ER16	M3	M10	0.5-10	28	29.5	24.6	41.6	80	8	3
GTIER20ST20X80	20	ER20	M4	M14	1-13	34	33.5	28	49	80	8	3
GTIER25ST25X80	25	ER25	M5	M16	1-16	42	40.5	32	53	80	9	4
GTIER32ST25X80	25	ER32	M6	M20	1-16	50	56.5	32	77.2	80	9	4
GTIER40ST32X80	32	ER40	M6	M27	2-20	63	56.5	51	95.2	80	9	4

Option: Wrench for ER collet

KIT GTI-ER-ST

ER tapping holder and spring collets (straight shank)



Metric	Collet size	DCONMS	Qty	Range
KITGTIER16ST20X804	ER16	20	4	4,5,6,7
KITGTIER20ST20X804	ER20	20	4	5,6,7,8
KITGTIER25ST25X805	ER25	25	5	6,7,9,11,12
KITGTIER32ST25X806	ER32	25	6	6,7,9,11,12,16
KITGTIER40ST32X806	ER40	32	6	9,11,14,16,18,20

Includes GTI collets and wrench

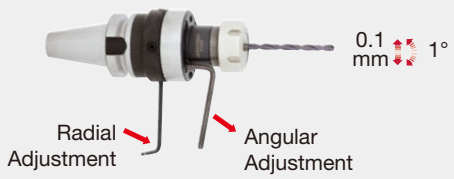
Reference pages

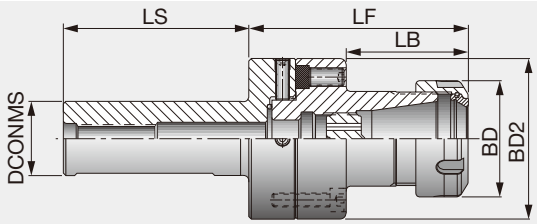
ER collet K108
Nut K128
Wrench K130
Preset screw K131

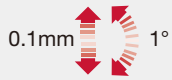
TUNGFINE

ADJ ST-ER

ER collet chuck holder with center alignment







Metric	Range	LF	LB	LS	BD	BD2	DCONMS
ADJST25D70ER32	2-20	94.5	52.5	80	50	70	25
ADJST32D70ER32	2-20	94.5	52.5	80	50	70	32

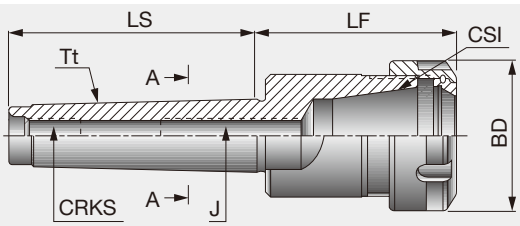
Applicable for 10 MPa coolant

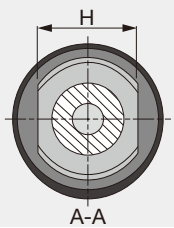
Option: Wrench for ER collet

TUNGHOLD

MT-ER

ER collet chuck holder with Morse taper





Metric	Tt	CSI	Range	LF	LS	BD	J	CRKS	H
MT2ER20X48.5	MT 2	ER20	1-13	48.5	64	34	M10	M10	22
MT2ER25X52	MT 2	ER25	1-16	52	64	42	M10	M10	28
MT3ER32X69	MT 3	ER32	2-20	69	81	50	M12	M12	24
MT3ER40X79	MT 3	ER40	3-26	79	81	63	M12	M12	24
MT4ER32X61	MT 4	ER32	2-20	60.5	102.5	50	M16	M16	32
MT4ER40X82	MT 4	ER40	3-26	81.5	102.5	63	M16	M16	32
MT4ER50X108	MT 4	ER50	10-34	107.5	102.5	78	M16	M16	32
MT5ER40X82	MT 5	ER40	3-26	82	129.5	63	M28x1.5	M20	45
MT5ER50X85	MT 5	ER50	10-34	85	129.5	78	M28x1.5	M20	45

Applicable for 3 MPa coolant

Option: Wrench for ER collet

Reference pages


ER collet K108


Nut K128

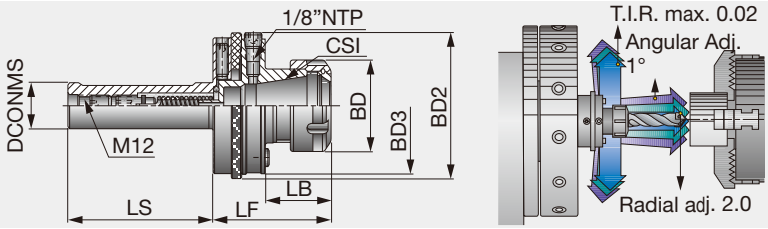

Wrench K130


Preset screw K131

TUNGGYRO

GYRO ST-ER TungGYRO

Collet chuck holder with center alignment, for lathes



Metric	DCONMS	CSI	Range	LF	LB	LS	BD	BD3	BD2
GYROST25ER25	25	ER25	1-16	65.65	35.5	80	42	74	79
GYROST40ER32	40	ER32	2-20	66.65	36.5	80	50	74	79

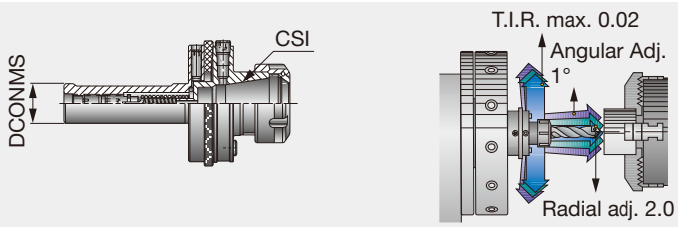
Applicable for 3 MPa coolant
For the alignment, first-time users should purchase a TungGyro kit which includes a test bar and a bushing.

Option: Wrench for ER collet

TUNGGYRO

KIT GYRO-ST-ER

Kit for holders with center alignment (straight shank)



Inch	DCONMS	CSI	Range
KITGYROST1-1/4XER32	1.25	ER32	0.080 - 0.789

Metric	DCONMS	CSI	Range
KITGYROST20ER25	20	ER25	1-16
KITGYROST25ER25	25	ER25	1-16
KITGYROST40ER32	40	ER32	2-20

Applicable for 3 MPa coolant
Kit includes TungGyro holder, test bar, and bushing.

Option: Wrench for ER collet

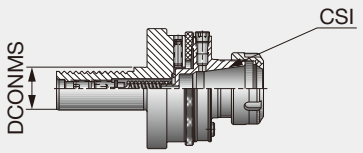
Reference pages

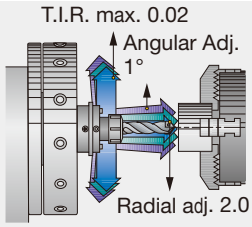
ER collet K108
Nut K128
Wrench K130
Preset screw K131

TUNGGYRO

KIT GYRO-DIN69880-ER

Kit for holders with center alignment (DIN69880)





Metric	DCONMS	CSI	Range
KITGYRO30D69880ER25	30	ER25	1-16
KITGYRO30D69880ER32	30	ER32	2-20
KITGYRO40D69880ER32	40	ER32	2-20
KITGYRO50D69880ER32	50	ER32	2-20

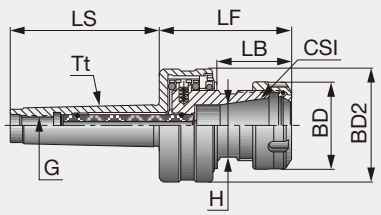
Applicable for 3 MPa coolant
Kit includes TungGyro holder, test bar, and bushing.

Option: Wrench for ER collet

Reference pages

ER collet	Nut	Wrench	Preset screw
K108	K128	K130	K131

TUNGGFI
GFI-MT-ER
Floating reamer collet chuck

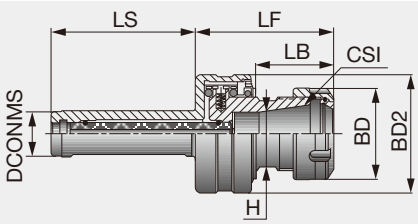


Metric	Tt	CSI	Range	LS	LF	LB	BD	BD2	Radial float	H	G
GFIMT2ER20	MT 2	ER20	1-13	64	60.5	34.5	34	50	1	22	M10
GFIMT3ER32	MT 3	ER32	2-20	81	81.9	45.9	50	65	1.6	36	M12

Applicable for 3 MPa coolant
Maximum 2000 min^{-1}

Option: Wrench for ER collet

TUNGGFI
GFI-ST-ER
Floating reamer collet chuck



Metric	DCONMS	CSI	Range	LS	LF	LB	BD	BD2	Radial float	H
GFIST20ER20	20	ER20	1-13	65	55.5	34.5	34	50	1	22
GFIST25ER32	25	ER32	2-20	80	76.9	45.9	50	65	1.6	36

Applicable for 3 MPa coolant
Maximum 2000 min^{-1}

Option: Wrench for ER collet

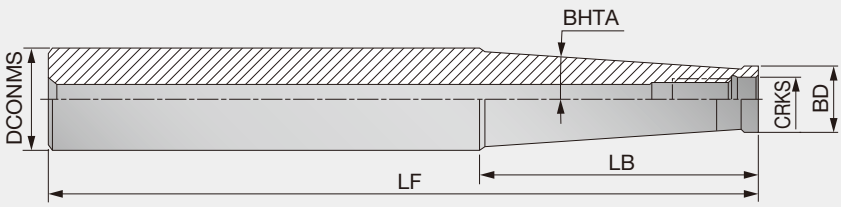
Reference pages

ER collet K108
Nut K128
Wrench K130
Preset screw K131

TUNGFLEX

S M TungFlex-straight shank

Screw-clamp holder for modular heads (straight shank)



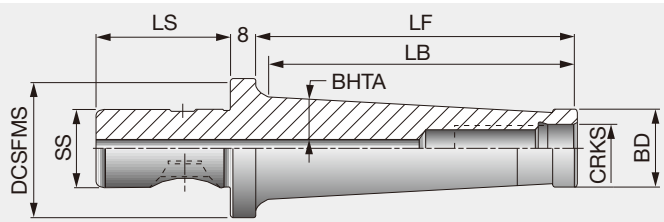
Metric	DCONMS	BD	LF	LB	BHTA	CRKS
SM06-L60C10	10	9.7	60	20	0°	M6
SM06-L105-C12	12	9.7	105	60	1.2°	M6
SM06-L125-C16	16	9.7	125	60	3.3°	M6
SM08-L73C16	16	13	73	25	0°	M8
SM08-L128-C16	16	13	128	80	0.9°	M8
SM08-L170-C20	20	13	170	66.8	3.3°	M8
SM10-L80C20	20	18	80	30	0°	M10
SM10-L130-C20	20	18	130	80	0.6°	M10
SM10-L200-C25	25	19	200	57.2	3.3°	M10
SM12-L86-C25	25	21	86	30	5.1°	M12
SM12-L200-C32	32	21	200	78	4.4°	M12
SM16-L95-C32	32	29	95	35	1.7°	M16
SM16-L230-C32	32	29	230	50	1.8°	M16

Applicable for 10 MPa coolant
A coolant hole with all types of shanks

TUNGFIT TUNGFLEX

S M-CF4 TungFit adapter

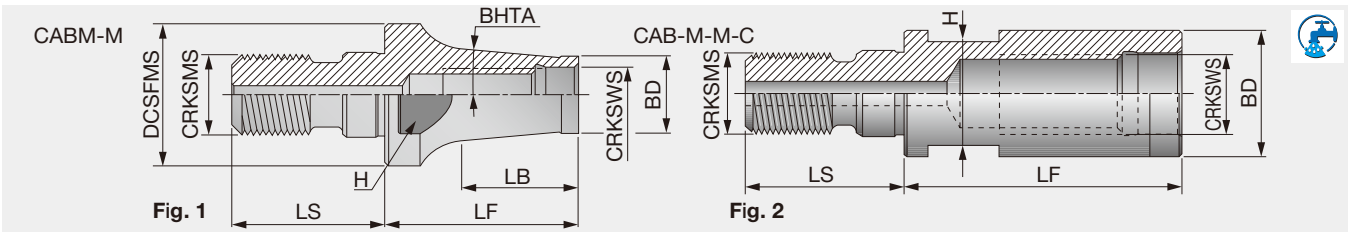
TungFlex - TungFit conversion adapter



Metric	BD	LF	LB	BHTA	SS	DCSFMS	LS	CRKS
SM12-L85/3.30-CF4	21	93	81.3	4.4°	CF4	44	42	M12
SM16-L130/5.11-CF4	29	138	126.8	2.6°	CF4	44	42	M16
SM12-L140/5.50-CF4	21	148	139.1	4.4°	CF4	44	42	M12
SM16-L170/6.70-CF4	29	178	168.6	2°	CF4	44	42	M16

Applicable for 10 MPa coolant

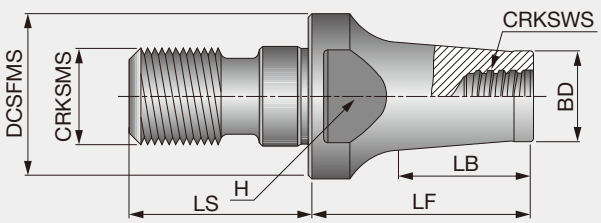
TUNGFLEX
CAB M-M
Reducer and extension



Metric	CRKSMS	BHTA	BD	LF	LB	DCSFMS	LS	H	CRKSWS	Fig.
CABM06M08	M8	5.7°	9.7	30	24.8	13	17.5	9.5	M6	1
CABM08M08-C (1)	M8	0°	13	30	-	-	17.5	9.6	M8	2
CABM08M10	M10	5.2°	13	40	33.4	18	20	15	M8	1
CABM10M10-C (1)	M10	0°	18	35	-	-	20	15	M10	2
CABM10M12	M12	2.5°	18	45	36.4	21	22	17	M10	1
CABM12M12-C (1)	M12	0°	21	40	-	-	22	17	M12	2
CABM12M16	M16	6.3°	21	50	42.5	29	25	25	M12	1
CABM16M16-C (1)	M16	0°	29	40	-	-	25	25	M16	2

Applicable for 10 MPa coolant
(1) With coolant hole

TUNGFLEX
VAD**-M...
TungFlex - TungMeister connection adapter



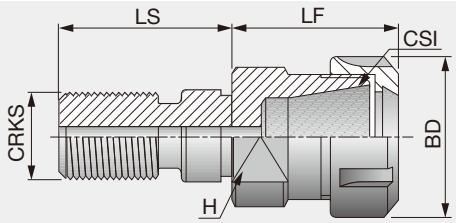
CRKS = TungMeister connection screw size

Metric	BD	DCSFMS	LF	LS	LB	CRKSWS	CRKSMS	H
VAD130L016S08-S-M8	11.7	13	16	17.5	6	S08	M8	11
VAD130L025S08-S-M8	11.7	13	25	17.5	20	S08	M8	11
VAD180L020S08-S-M10	11.7	18	20	20	12	S08	M10	13
VAD180L025S08-S-M10	11.7	18	25	20	15	S08	M10	11
VAD210L020S08-S-M12	11.7	21	20	20	10	S08	M12	12.75
VAD210L025S08-S-M12	11.7	21	25	20	13	S08	M12	12.75

Wrenches are sold separately.
Do not apply lubricant to the threaded connection.

TUNGFLEX
CDP-ER-M

ER collet chuck holder



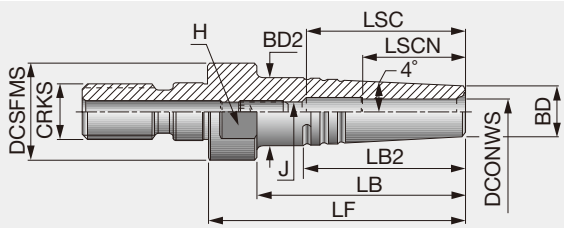
Metric	CRKS	CSI	Range	LF	LS	BD	H
CDPER11M10M	M10	ER11	0.5-7	27	20	16	15
CDPER16M10M	M10	ER16	0.5-10	38.1	20	22	17
CDPER11M12M	M12	ER11	0.5-7	27	22	16	17
CDPER16M12M	M12	ER16	0.5-10	37.1	22	22	17
CDPER16M16	M16	ER16	0.5-10	36.6	25	28	25
CDPER20M16	M16	ER20	1-13	45.5	25	34	25
CDPER25M16	M16	ER25	1-16	44.5	25	42	28

Applicable for 10 MPa coolant

Option: Wrench for ER collet

TUNGFLEX
CDP-M-SRK

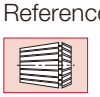
Thermal shrinking holder for carbide shank



Metric	CRKS	DCSFMS	DCONWS	BD	BD2	LF	LB	LB2	LSCN	LSC	J	H	Wrench
CDPM10SRK3X40	M10	18	3	10	14	40	31.5	28.4	10	16	M4	15	2
CDPM10SRK4X40	M10	18	4	10	14	40	31.5	28.4	12	19	M4	15	2
CDPM10SRK5X40	M10	18	5	10	14	40	31.5	28.4	15	25	M4	15	2
CDPM12SRK3X45	M12	21	3	10	14	45	36.5	28.8	10	16	M5	18	2.5
CDPM12SRK4X45	M12	21	4	10	14	45	36.5	28.8	12	18	M5	18	2.5
CDPM12SRK5X45	M12	21	5	10	14	45	36.5	28.8	15	25	M5	18	2.5
CDPM12SRK6X45	M12	21	6	11	15	45	36.5	28.4	18	28	M5	18	2.5
CDPM12SRK8X45	M12	21	8	14	18	45	36.5	28.8	25	35	M5	18	2.5
CDPM12SRK10X45	M12	21	10	16	21	45	-	35.6	30	40	M5	18	2.5
CDPM12SRK12X45	M12	21	12	20	25	45	-	36.0	32	42	M5	18	2.5

Applicable for 10 MPa coolant

Reference pages


ER collet K108


Nut K128


Wrench K130

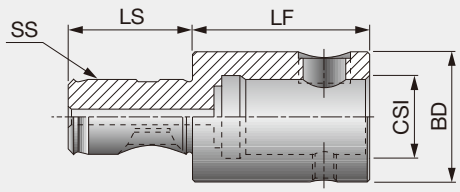

Preset screw K131


Induction heating unit K125


Heating unit K125


Preset screw K133

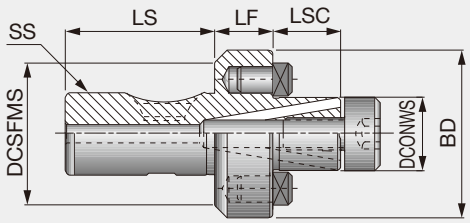
TUNGFIT
EX-CF
Extension adapter



Metric	SS	LS	LF	CSI	BD
EXCF4-S	CF4	42	60	CF4	44
EXCF4-L	CF4	42	100	CF4	44

Applicable for 10 MPa coolant
Tightening torque: 58.8 N·m

TUNGFIT
SEM-CF
Shell mill adapter

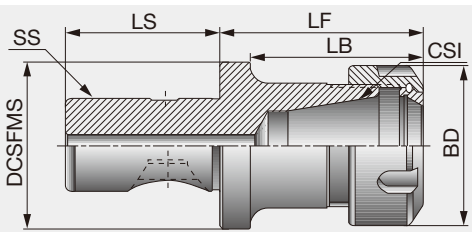


Metric	SS	DCONWS	DCSFMS	BD	LF	LSC	LS
SEM22CF4C	CF4	22	44	47	16	19	42

Applicable for 10 MPa coolant
Tightening torque: 58.8 N·m

Option: Wrench for Lock Screw

TUNGFIT
ER-CF
ER collet chuck adapter



Metric	SS	CSI	Range	LF	LB	LS	BD	DCSFMS
ER11CF4-S	CF4	ER11	0.5-7	55	47	42	19	44
ER16CF4-L	CF4	ER16	0.5-10	100	92	42	28	44
ER16CF4-S	CF4	ER16	0.5-10	55	47	42	28	44
ER20CF4-S	CF4	ER20	1-13	55	92	42	34	44
ER32CF4-L	CF4	ER32	2-20	100	92	42	50	44
ER32CF4-S	CF4	ER32	2-20	55	47	42	50	44

Applicable for 10 MPa coolant
Tightening torque: 58.8 N·m

Option: Wrench for Lock Screw

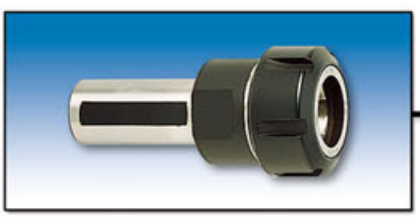
Reference pages

ER collet K108
Nut K128
Wrench K130

Shanks

CAT MAS-403, DIN69871

ST Straight Shank

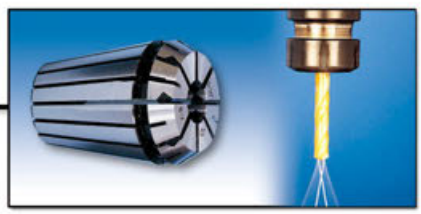


MT Morse Taper

Collet Options

ER-SPR (ER Spring Collet)

ER-SEAL
(ER SEAL Collet for Internal coolant)



ER-SEAL JET2
(ER SEAL Collet for External coolant)

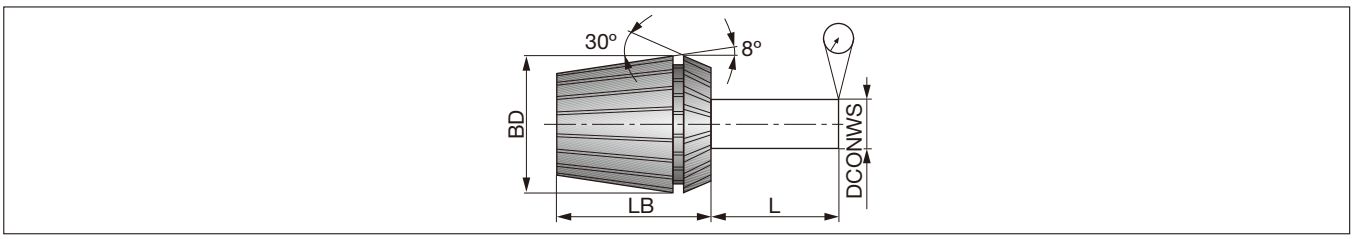
ER-SRK
(ER Collet with SHRINK Holder)

ER GTI
(ER Collet with Tapping Holder)

ER-ODP
(ER Collet with Indexable Modular System)

TUNGHOLD ER Collet

ER Collet standard DIN6499



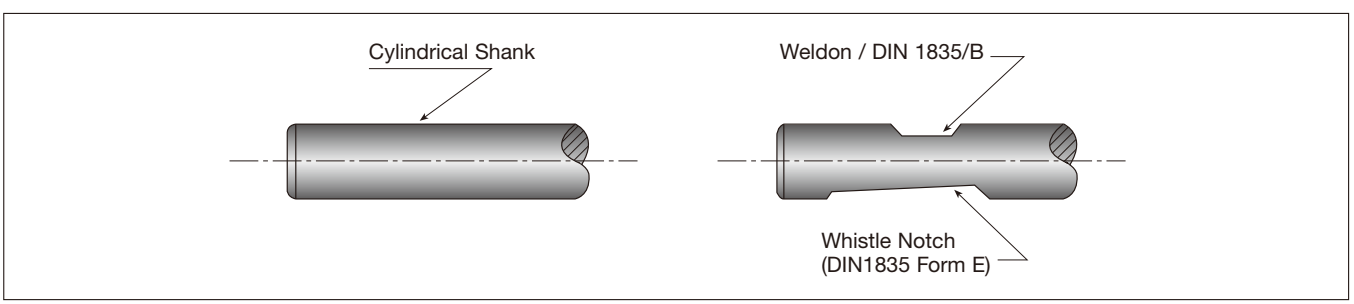
Collet size	BD	LB	L	DCONWS	T.I.R. Precision		DIN6499
					Standard type	AA ultra precision type	
ER11	11.5	18	6	1-1.6	0.01	0.005	-
ER16	17	27	10	1.6-3	0.01	0.005	0.015
ER20	21	31	16	3-6	0.01	0.005	0.015
ER25	26	35	25	6-10	0.01	0.005	0.015
ER32	33	40	40	10-18	0.01	0.005	0.020
ER40	41	46	50	18-26	0.01	0.005	0.020
ER50	52	60	60	26-34	0.01	-	0.025

ER - Coolit Sealed Collet

For internal coolant holders
Sealed Collet
- JET
For straight shank cutting tools with internal coolant supply.

For External coolant holders
Sealed Collet
- JET2
With angular double nozzles. Coolant flow is direct to the cutting edge - for use with standard straight shank cutting tools (without coolant hole)

Standard Shank which can be used in Sealed Collets

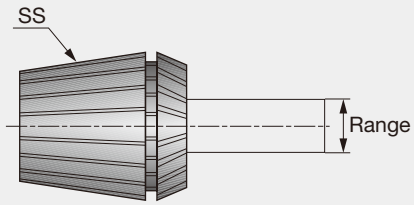


Note: The front end of the sealed collet should be located beyond Weldon or the whistle notch.

ER-SPR

ER spring collet (DIN6499)

0.0004"



Metric	SS	Range
ER11SPR0.5-1	ER11	0.5-1
ER11SPR1-2	ER11	1-2
ER11SPR2-3	ER11	2-3
ER11SPR3-4	ER11	3-4
ER11SPR4-5	ER11	4-5
ER11SPR5-6	ER11	5-6
ER11SPR6-7	ER11	6-7
ER16SPR0.5-1	ER16	0.5-1
ER16SPR1-2	ER16	1-2
ER16SPR2-3	ER16	2-3
ER16SPR3-4	ER16	3-4
ER16SPR4-5	ER16	4-5
ER16SPR5-6	ER16	5-6
ER16SPR6-7	ER16	6-7
ER16SPR7-8	ER16	7-8
ER16SPR8-9	ER16	8-9
ER16SPR9-10	ER16	9-10
ER20SPR1-2	ER20	1-2
ER20SPR2-3	ER20	2-3
ER20SPR3-4	ER20	3-4
ER20SPR4-5	ER20	4-5
ER20SPR5-6	ER20	5-6
ER20SPR6-7	ER20	6-7
ER20SPR7-8	ER20	7-8
ER20SPR8-9	ER20	8-9
ER20SPR9-10	ER20	9-10
ER20SPR10-11	ER20	10-11
ER20SPR11-12	ER20	11-12
ER20SPR12-13	ER20	12-13
ER25SPR1-2	ER25	1-2
ER25SPR2-3	ER25	2-3
ER25SPR3-4	ER25	3-4
ER25SPR4-5	ER25	4-5
ER25SPR5-6	ER25	5-6
ER25SPR6-7	ER25	6-7
ER25SPR7-8	ER25	7-8
ER25SPR8-9	ER25	8-9
ER25SPR9-10	ER25	9-10
ER25SPR10-11	ER25	10-11
ER25SPR11-12	ER25	11-12
ER25SPR12-13	ER25	12-13
ER25SPR13-14	ER25	13-14
ER25SPR14-15	ER25	14-15
ER25SPR15-16	ER25	15-16
ER32SPR2-3	ER32	2-3
ER32SPR3-4	ER32	3-4
ER32SPR4-5	ER32	4-5
ER32SPR5-6	ER32	5-6
ER32SPR6-7	ER32	6-7
ER32SPR7-8	ER32	7-8

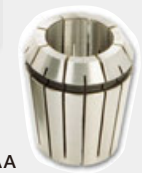
Metric	SS	Range
ER32SPR8-9	ER32	8-9
ER32SPR9-10	ER32	9-10
ER32SPR10-11	ER32	10-11
ER32SPR11-12	ER32	11-12
ER32SPR12-13	ER32	12-13
ER32SPR13-14	ER32	13-14
ER32SPR14-15	ER32	14-15
ER32SPR15-16	ER32	15-16
ER32SPR16-17	ER32	16-17
ER32SPR17-18	ER32	17-18
ER32SPR18-19	ER32	18-19
ER32SPR19-20	ER32	19-20
ER40SPR3-4	ER40	3-4
ER40SPR4-5	ER40	4-5
ER40SPR5-6	ER40	5-6
ER40SPR6-7	ER40	6-7
ER40SPR7-8	ER40	7-8
ER40SPR8-9	ER40	8-9
ER40SPR9-10	ER40	9-10
ER40SPR10-11	ER40	10-11
ER40SPR11-12	ER40	11-12
ER40SPR12-13	ER40	12-13
ER40SPR13-14	ER40	13-14
ER40SPR14-15	ER40	14-15
ER40SPR15-16	ER40	15-16
ER40SPR16-17	ER40	16-17
ER40SPR17-18	ER40	17-18
ER40SPR18-19	ER40	18-19
ER40SPR19-20	ER40	19-20
ER40SPR20-21	ER40	20-21
ER40SPR21-22	ER40	21-22
ER40SPR22-23	ER40	22-23
ER40SPR23-24	ER40	23-24
ER40SPR24-25	ER40	24-25
ER40SPR25-26	ER40	25-26
ER50SPR10-12	ER50	10-12
ER50SPR12-14	ER50	12-14
ER50SPR14-16	ER50	14-16
ER50SPR16-18	ER50	16-18
ER50SPR18-20	ER50	18-20
ER50SPR20-22	ER50	20-22
ER50SPR22-24	ER50	22-24
ER50SPR24-26	ER50	24-26
ER50SPR26-28	ER50	26-28
ER50SPR28-30	ER50	28-30
ER50SPR30-32	ER50	30-32
ER50SPR32-34	ER50	32-34

TUNGHOLD

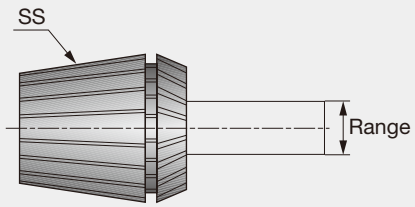
ER-SPR-AA

AA ultra precision ER spring collet (DIN6499)

0.0002"



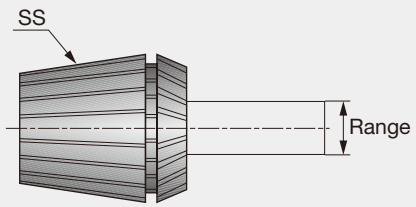
ULTRA PRECISION AA



Metric	SS	Range
ER11SPR0.5-1AA	ER11	0.5-1
ER11SPR1-2AA	ER11	1-2
ER11SPR2-3AA	ER11	2-3
ER11SPR3-4AA	ER11	3-4
ER11SPR4-5AA	ER11	4-5
ER11SPR5-6AA	ER11	5-6
ER11SPR6-7AA	ER11	6-7
ER16SPR0.5-1AA	ER16	0.5-1
ER16SPR1-2AA	ER16	1-2
ER16SPR2-3AA	ER16	2-3
ER16SPR3-4AA	ER16	3-4
ER16SPR4-5AA	ER16	4-5
ER16SPR5-6AA	ER16	5-6
ER16SPR6-7AA	ER16	6-7
ER16SPR7-8AA	ER16	7-8
ER16SPR8-9AA	ER16	8-9
ER16SPR9-10AA	ER16	9-10
ER20SPR2-3AA	ER20	2-3
ER20SPR3-4AA	ER20	3-4
ER20SPR4-5AA	ER20	4-5
ER20SPR5-6AA	ER20	5-6
ER20SPR6-7AA	ER20	6-7
ER20SPR7-8AA	ER20	7-8
ER20SPR8-9AA	ER20	8-9
ER20SPR9-10AA	ER20	9-10
ER20SPR1-2AA	ER20	1-2
ER20SPR10-11AA	ER20	10-11
ER20SPR11-12AA	ER20	11-12
ER20SPR12-13AA	ER20	12-13
ER25SPR1-2AA	ER25	1-2
ER25SPR2-3AA	ER25	2-3
ER25SPR3-4AA	ER25	3-4
ER25SPR4-5AA	ER25	4-5
ER25SPR5-6AA	ER25	5-6
ER25SPR6-7AA	ER25	6-7
ER25SPR7-8AA	ER25	7-8
ER25SPR8-9AA	ER25	8-9
ER25SPR9-10AA	ER25	9-10
ER25SPR10-11AA	ER25	10-11
ER25SPR11-12AA	ER25	11-12
ER25SPR12-13AA	ER25	12-13
ER25SPR13-14AA	ER25	13-14
ER25SPR14-15AA	ER25	14-15
ER25SPR15-16AA	ER25	15-16
ER32SPR2-3AA	ER32	2-3
ER32SPR3-4AA	ER32	3-4
ER32SPR4-5AA	ER32	4-5
ER32SPR5-6AA	ER32	5-6
ER32SPR6-7AA	ER32	6-7
ER32SPR7-8AA	ER32	7-8

Metric	SS	Range
ER32SPR8-9AA	ER32	8-9
ER32SPR9-10AA	ER32	9-10
ER32SPR10-11AA	ER32	10-11
ER32SPR11-12AA	ER32	11-12
ER32SPR12-13AA	ER32	12-13
ER32SPR13-14AA	ER32	13-14
ER32SPR14-15AA	ER32	14-15
ER32SPR15-16AA	ER32	15-16
ER32SPR16-17AA	ER32	16-17
ER32SPR17-18AA	ER32	17-18
ER32SPR18-19AA	ER32	18-19
ER32SPR19-20AA	ER32	19-20
ER40SPR3-4AA	ER40	3-4
ER40SPR4-5AA	ER40	4-5
ER40SPR5-6AA	ER40	5-6
ER40SPR6-7AA	ER40	6-7
ER40SPR7-8AA	ER40	7-8
ER40SPR8-9AA	ER40	8-9
ER40SPR9-10AA	ER40	9-10
ER40SPR10-11AA	ER40	10-11
ER40SPR11-12AA	ER40	11-12
ER40SPR12-13AA	ER40	12-13
ER40SPR13-14AA	ER40	13-14
ER40SPR14-15AA	ER40	14-15
ER40SPR15-16AA	ER40	15-16
ER40SPR16-17AA	ER40	16-17
ER40SPR17-18AA	ER40	17-18
ER40SPR18-19AA	ER40	18-19
ER40SPR19-20AA	ER40	19-20
ER40SPR20-21AA	ER40	20-21
ER40SPR21-22AA	ER40	21-22
ER40SPR22-23AA	ER40	22-23
ER40SPR23-24AA	ER40	23-24
ER40SPR24-25AA	ER40	24-25
ER40SPR25-26AA	ER40	25-26

ER COOLIT, sealed spring collet, internal coolant supply (DIN6499)



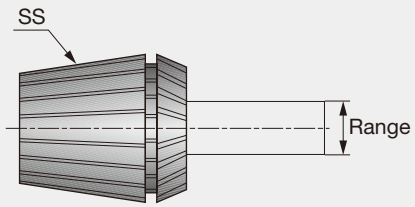
Metric	SS	Range
ER16SEAL3-4	ER16	3-4
ER16SEAL4-5	ER16	4-5
ER16SEAL5-6	ER16	5-6
ER16SEAL6-7	ER16	6-7
ER16SEAL7-8	ER16	7-8
ER16SEAL8-9	ER16	8-9
ER16SEAL9-10	ER16	9-10
ER20SEAL3-4	ER20	3-4
ER20SEAL4-5	ER20	4-5
ER20SEAL5-6	ER20	5-6
ER20SEAL6-7	ER20	6-7
ER20SEAL7-8	ER20	7-8
ER20SEAL8-9	ER20	8-9
ER20SEAL9-10	ER20	9-10
ER20SEAL10-11	ER20	10-11
ER20SEAL11-12	ER20	11-12
ER20SEAL12-13	ER20	12-13
ER25SEAL3-4	ER25	3-4
ER25SEAL4-5	ER25	4-5
ER25SEAL5-6	ER25	5-6
ER25SEAL6-7	ER25	6-7
ER25SEAL7-8	ER25	7-8
ER25SEAL8-9	ER25	8-9
ER25SEAL9-10	ER25	9-10
ER25SEAL10-11	ER25	10-11
ER25SEAL11-12	ER25	11-12
ER25SEAL12-13	ER25	12-13
ER25SEAL13-14	ER25	13-14
ER25SEAL14-15	ER25	14-15
ER25SEAL15-16	ER25	15-16
ER32SEAL3-4	ER32	3-4
ER32SEAL4-5	ER32	4-5
ER32SEAL5-6	ER32	5-6
ER32SEAL6-7	ER32	6-7
ER32SEAL7-8	ER32	7-8
ER32SEAL8-9	ER32	8-9
ER32SEAL9-10	ER32	9-10
ER32SEAL10-11	ER32	10-11
ER32SEAL11-12	ER32	11-12
ER32SEAL12-13	ER32	12-13
ER32SEAL13-14	ER32	13-14
ER32SEAL14-15	ER32	14-15
ER32SEAL15-16	ER32	15-16
ER32SEAL16-17	ER32	16-17
ER32SEAL17-18	ER32	17-18
ER32SEAL18-19	ER32	18-19
ER32SEAL19-20	ER32	19-20
ER40SEAL3-4	ER40	3-4
ER40SEAL4-5	ER40	4-5
ER40SEAL5-6	ER40	5-6

Metric	SS	Range
ER40SEAL6-7	ER40	6-7
ER40SEAL7-8	ER40	7-8
ER40SEAL8-9	ER40	8-9
ER40SEAL9-10	ER40	9-10
ER40SEAL10-11	ER40	10-11
ER40SEAL11-12	ER40	11-12
ER40SEAL12-13	ER40	12-13
ER40SEAL13-14	ER40	13-14
ER40SEAL14-15	ER40	14-15
ER40SEAL15-16	ER40	15-16
ER40SEAL16-17	ER40	16-17
ER40SEAL17-18	ER40	17-18
ER40SEAL18-19	ER40	18-19
ER40SEAL19-20	ER40	19-20
ER40SEAL20-21	ER40	20-21
ER40SEAL21-22	ER40	21-22
ER40SEAL22-23	ER40	22-23
ER40SEAL23-24	ER40	23-24
ER40SEAL24-25	ER40	24-25
ER40SEAL25-26	ER40	25-26

TUNGHOLD

ER-SEAL-JET2

ER COOLIT, sealed spring collet, external coolant supply (DIN6499)



Metric	SS	Range
ER16SEAL3-4JET2	ER16	3-4
ER16SEAL4-5JET2	ER16	4-5
ER16SEAL5-6JET2	ER16	5-6
ER16SEAL6-7JET2	ER16	6-7
ER16SEAL7-8JET2	ER16	7-8
ER16SEAL8-9JET2	ER16	8-9
ER16SEAL9-10JET2	ER16	9-10
ER20SEAL3-4JET2	ER20	3-4
ER20SEAL4-5JET2	ER20	4-5
ER20SEAL5-6JET2	ER20	5-6
ER20SEAL6-7JET2	ER20	6-7
ER20SEAL7-8JET2	ER20	7-8
ER20SEAL8-9JET2	ER20	8-9
ER20SEAL9-10JET2	ER20	9-10
ER20SEAL10-11JET2	ER20	10-11
ER20SEAL11-12JET2	ER20	11-12
ER20SEAL12-13JET2	ER20	12-13
ER25SEAL3-4JET2	ER25	3-4
ER25SEAL4-5JET2	ER25	4-5
ER25SEAL5-6JET2	ER25	5-6
ER25SEAL6-7JET2	ER25	6-7
ER25SEAL7-8JET2	ER25	7-8
ER25SEAL8-9JET2	ER25	8-9
ER25SEAL9-10JET2	ER25	9-10
ER25SEAL10-11JET2	ER25	10-11
ER25SEAL11-12JET2	ER25	11-12
ER25SEAL12-13JET2	ER25	12-13
ER25SEAL13-14JET2	ER25	13-14
ER25SEAL14-15JET2	ER25	14-15
ER25SEAL15-16JET2	ER25	15-16
ER32SEAL3-4JET2	ER32	3-4
ER32SEAL4-5JET2	ER32	4-5
ER32SEAL5-6JET2	ER32	5-6
ER32SEAL6-7JET2	ER32	6-7
ER32SEAL7-8JET2	ER32	7-8
ER32SEAL8-9JET2	ER32	8-9
ER32SEAL9-10JET2	ER32	9-10
ER32SEAL10-11JET2	ER32	10-11
ER32SEAL11-12JET2	ER32	11-12
ER32SEAL12-13JET2	ER32	12-13
ER32SEAL13-14JET2	ER32	13-14
ER32SEAL14-15JET2	ER32	14-15
ER32SEAL15-16JET2	ER32	15-16
ER32SEAL16-17JET2	ER32	16-17
ER32SEAL17-18JET2	ER32	17-18
ER32SEAL18-19JET2	ER32	18-19
ER32SEAL19-20JET2	ER32	19-20
ER40SEAL3-4JET2	ER40	3-4
ER40SEAL4-5JET2	ER40	4-5
ER40SEAL5-6JET2	ER40	5-6

Metric	SS	Range
ER40SEAL6-7JET2	ER40	6-7
ER40SEAL7-8JET2	ER40	7-8
ER40SEAL8-9JET2	ER40	8-9
ER40SEAL9-10JET2	ER40	9-10
ER40SEAL10-11JET2	ER40	10-11
ER40SEAL11-12JET2	ER40	11-12
ER40SEAL12-13JET2	ER40	12-13
ER40SEAL13-14JET2	ER40	13-14
ER40SEAL14-15JET2	ER40	14-15
ER40SEAL15-16JET2	ER40	15-16
ER40SEAL16-17JET2	ER40	16-17
ER40SEAL17-18JET2	ER40	17-18
ER40SEAL18-19JET2	ER40	18-19
ER40SEAL19-20JET2	ER40	19-20
ER40SEAL20-21JET2	ER40	20-21
ER40SEAL21-22JET2	ER40	21-22
ER40SEAL22-23JET2	ER40	22-23
ER40SEAL23-24JET2	ER40	23-24
ER40SEAL24-25JET2	ER40	24-25
ER40SEAL25-26JET2	ER40	25-26

TUNGHOLD
SET ER-SPR

Set of ER spring collets (DIN6499)

Metric	Collet size	Qty	Range
SETER11SPR7	ER11	7	0.5-7
SETER16SPR10	ER16	10	0.5-10
SETER20SPR12	ER20	12	1-13
SETER25SPR15	ER25	15	1-16
SETER32SPR18	ER32	18	2-20
SETER40SPR23	ER40	23	3-26
SETER50SPR12	ER50	12	10-34

TUNGHOLD
SET ER-SPR-AA

Set of AA ultra precision ER spring collets (DIN6499)

Metric	Collet size	Qty	Range
SETER11SPR7AA	ER11	7	0.5-7
SETER16SPR10AA	ER16	10	0.5-10
SETER20SPR12AA	ER20	12	1-13
SETER25SPR15AA	ER25	15	1-16
SETER32SPR18AA	ER32	18	2-20
SETER40SPR23AA	ER40	23	3-26

TUNGHOLD
SET ER-SEAL

Set of ER spring collets, for internal coolant supply (DIN6499)

Metric	Collet size	Qty	Range
SETER16SEAL7	ER16	7	3-10
SETER20SEAL10	ER20	10	3-13
SETER25SEAL13	ER25	13	3-16
SETER32SEAL17	ER32	17	3-20
SETER40SEAL23	ER40	23	3-26

TUNGHOLD
SET ER-SEAL-JET2

Set of ER spring collets, for external coolant supply (DIN6499)

Metric	Collet size	Qty	Range
SETER16SEAL7JET2	ER16	7	3-13
SETER25SEAL13JET2	ER25	13	3-20
SETER32SEAL17JET2	ER32	17	3-26
SETER40SEAL23JET2	ER40	23	3-26

TUNGHOLD
SET ER SPR-EM

Set of ER spring collets, for endmills (DIN6499)

Metric	Collet size	Qty	Range
SETER16SPR8EM	ER16	8	3,4,5,6,7,8,9,10
SETER20SPR5EM	ER20	5	4,6,8,10,12
SETER25SPR6EM	ER25	6	4,6,8,10,12,16
SETER32SPR6EM	ER32	6	6,8,10,12,16,20
SETER40SPR7EM	ER40	7	6,8,10,12,16,20,25

Contains popular endmill sizes only.

TUNGHOLD
SET-ER SEAL-EM

Set of ER spring collets, for internal coolant supply, for endmills (DIN6499)

Metric	Collet size	Qty	Range
SETER16SEAL5EM	ER16	5	4,5,6,8,10
SETER20SEAL5EM	ER20	5	4,6,8,10,12
SETER25SEAL6EM	ER25	6	4,6,8,10,12,16
SETER32SEAL6EM	ER32	6	6,8,10,12,16,20
SETER40SEAL7EM	ER40	7	6,8,10,12,16,20,25

Contains popular endmill sizes only.

TUNGHOLD
SET ER-SEAL-EM JET2

Set of ER spring collets, for external coolant supply, for endmills (DIN6499)

Metric	Collet size	Qty	Range
SETER25SEAL6EMJET2	ER25	6	4,6,8,10,12,16
SETER32SEAL6EMJET2	ER32	6	6,8,10,12,16,20
SETER40SEAL7EMJET2	ER40	7	6,8,10,12,16,20,25

Contains popular endmill sizes only.

TUNGHOLD
KIT R-8-ER

Kit for ER collet chuck and spring collets (R-8 Bridgeport)

Metric	Collet size	Qty	Range
KITR-810ER16	ER16	10	0.5-10
KITR-818ER32	ER32	18	2-20

Each kit has one collet chuck, a full set of ER collets, and a wrench.

TUNGHOLD
KIT DIN2080-ER

Kit for ER collet chuck and spring collets (DIN2080)

Metric	Collet size	Qty	Range
KITDIN20803018ER32	ER32	18	2-20
KITDIN20804018ER32	ER32	18	2-20
KITDIN20804023ER40	ER40	23	3-26
KITDIN20805023ER40	ER40	23	3-26

Each kit has one collet chuck, a full set of ER collets, and a wrench.

TUNGHOLD
KIT MT-ER

Kit for ER collet chuck and spring collets (Morse taper)

Metric	Collet size	Qty	Range
KITMT318ER32	ER32	18	2-20
KITMT423ER40	ER40	23	3-26

Each kit has one collet chuck, a full set of ER collets, and a wrench.

TUNGHOLD
KIT ST-ER-Mini

Kit for ER Mini collet chuck and spring collets (cylindrical shank)

Metric	Collet size	Qty	Range
KITST12X807ER11M	ER11	7	0.5-7
KITST12X8010ER16M	ER16	10	0.5-10
KITST16X507ER11MF	ER11	7	0.5-7
KITST16X1007ER11M	ER11	7	0.5-7
KITST16X1507ER11M	ER11	7	0.5-7
KITST20X10010ER16M	ER16	10	0.5-10
KITST20X15010ER16M	ER16	10	0.5-10
KITST20X10012ER20M	ER20	12	1-12
KITST20X15012ER20M	ER20	12	1-12

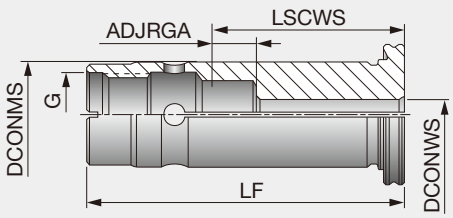
Each kit contains one collet chuck, a full set of ER collets and a wrench. F indicates a flat on the shank.

TUNGHOLD
KIT ST-ER

Kit for ER collet chuck and spring collets (cylindrical shank)

Metric	Collet size	Qty	Range
KITST16X507ER11F	ER11	7	0.5-7
KITST20X1007ER11	ER11	7	0.5-7
KITST20X1507ER11	ER11	7	0.5-7
KITST20X5010ER16F	ER16	10	0.5-10
KITST20X10010ER16	ER16	10	0.5-10
KITST20X15010ER16	ER16	10	0.5-10
KITST20X5012ER20F	ER20	12	1-12
KITST25X10012ER20	ER20	12	1-12

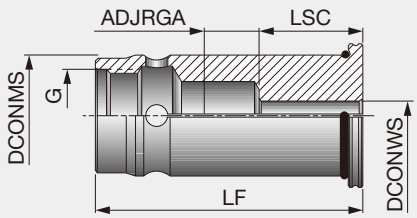
Each kit contains one collet chuck, a full set of ER collets and a wrench. F indicates a flat on the shank.



Inch	DCONWS	DCONMS	LF	LSCWS	ADJRGA	G
SC3/4SPR1/4	0.250	0.750	2.362	1.378	0.276	M16
SC3/4SPR5/16	0.313	0.750	2.362	1.378	0.276	M16
SC3/4SPR3/8	0.375	0.750	2.362	1.890	0.512	M16
SC3/4SPR7/16	0.438	0.750	2.362	1.417	0.315	M16
SC3/4SPR1/2	0.500	0.750	2.362	1.378	0.276	M16
SC3/4SPR5/8	0.625	0.750	2.362	1.897	0.354	M16
SC1-1/4SPR1/4	0.250	1.250	2.835	1.791	0.689	M2.4X1.5
SC1-1/4SPR5/16	0.313	1.250	2.835	1.791	0.689	M2.4X1.5
SC1-1/4SPR3/8	0.375	1.250	2.835	1.791	0.413	M2.4X1.5
SC1-1/4SPR1/2	0.500	1.250	2.835	1.792	0.217	M2.4X1.5
SC1-1/4SPR5/8	0.625	1.250	2.835	2.441	0.709	M2.4X1.5
SC1-1/4SPR3/4	0.750	1.250	2.835	2.441	0.630	M2.4X1.5
SC1-1/4SPR7/8	0.875	1.250	2.835	2.422	0.453	M2.4X1.5
SC1-1/4SPR1	1.000	1.250	2.835	2.417	0.409	M2.4X1.5

Metric	DCONWS	DCONMS	LF	LSCWS	ADJRGA	G
SC20SPR6	6	20	60	35	7	M16
SC20SPR8	8	20	60	35	7	M16
SC20SPR10	10	20	60	48	13	M16
SC20SPR12	12	20	60	48	8	M16
SC20SPR14	14	20	60	48	8	M16
SC20SPR15	15	20	60	48	8	M16
SC20SPR16	16	20	60	48	9	M16
SC32SPR6	6	32	72	45	17	M24X1.5
SC32SPR8	8	32	72	45	17	M24X1.5
SC32SPR10	10	32	72	48	13	M24X1.5
SC32SPR12	12	32	72	45	5	M24X1.5
SC32SPR14	14	32	72	45	5	M24X1.5
SC32SPR15	15	32	72	59.5	19.5	M24X1.5
SC32SPR16	16	32	72	61.5	17.5	M24X1.5
SC32SPR18	18	32	72	61.5	17.5	M24X1.5
SC32SPR19	19	32	72	61.5	17.5	M24X1.5
SC32SPR20	20	32	72	61.5	15.5	M24X1.5
SC32SPR24	24	32	72	55.5	10.5	M24X1.5
SC32SPR25	25	32	72	61.5	10.5	M24X1.5

TUNGMAX
SC-SEAL
Sealed collet



Inch	DCONWS	DCONMS	LF	LSC	ADJRGA	G
SC3/4SEAL1/4	0.250	0.750	2.362	1.102	0.276	M16
SC3/4SEAL5/16	0.313	0.750	2.362	1.102	0.276	M16
SC3/4SEAL3/8	0.375	0.750	2.362	1.378	0.512	M16
SC3/4SEAL7/16	0.438	0.750	2.362	1.575	0.315	M16
SC3/4SEAL1/2	0.500	0.750	2.362	1.575	0.315	M16
SC3/4SEAL5/8	0.625	0.750	2.362	1.543	0.354	M16
SC1-1/4SEAL1/4	0.250	1.250	2.835	1.102	0.689	M2.4X1.5
SC1-1/4SEAL5/16	0.313	1.250	2.835	1.102	0.689	M2.4X1.5
SC1-1/4SEAL3/8	0.375	1.250	2.835	1.378	0.413	M2.4X1.5
SC1-1/4SEAL1/2	0.500	1.250	2.835	1.575	0.217	M2.4X1.5
SC1-1/4SEAL5/8	0.625	1.250	2.835	1.732	0.709	M2.4X1.5
SC1-1/4SEAL3/4	0.750	1.250	2.835	1.811	0.63	M2.4X1.5
SC1-1/4SEAL7/8	0.875	1.250	2.835	1.969	0.453	M2.4X1.5
SC1-1/4SEAL1	1.000	1.250	2.835	2.008	0.453	M2.4X1.5

Metric	DCONWS	DCONMS	LF	LSC	ADJRGA	G
SC20SEAL6	6	20	60	28	7	M16
SC20SEAL8	8	20	60	28	7	M16
SC20SEAL10	10	20	60	35	13	M16
SC20SEAL12	12	20	60	40	8	M16
SC20SEAL14	14	20	60	40	8	M16
SC20SEAL15	15	20	60	40	8	M16
SC20SEAL16	16	20	60	39	9	M16
SC32SEAL6	6	32	72	28	17	M24X1.5
SC32SEAL8	8	32	72	28	17	M24X1.5
SC32SEAL10	10	32	72	35	13	M24X1.5
SC32SEAL12	12	32	72	40	5	M24X1.5
SC32SEAL14	14	32	72	40	5	M24X1.5
SC32SEAL15	15	32	72	40	5	M24X1.5
SC32SEAL16	16	32	72	44	17.5	M24X1.5
SC32SEAL18	18	32	72	44	17.5	M24X1.5
SC32SEAL19	19	32	72	44	17.5	M24X1.5
SC32SEAL20	20	32	72	46	15.5	M24X1.5
SC32SEAL24	24	32	72	46	15.5	M24X1.5
SC32SEAL25	25	32	72	51	10.5	M24X1.5

TUNGMAX
PRESET SC-CAP
Preset screw housing for SC-SPR collets

Fig. 1

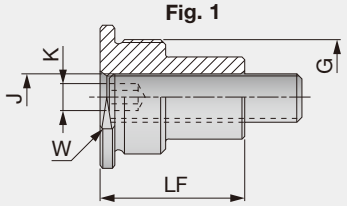
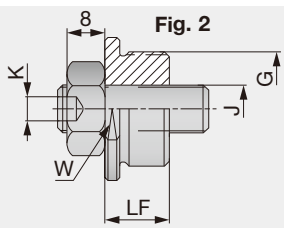


Fig. 2



Metric	LF	W	J	G	Fig.	Range	Key size K	Collet size
PRESETSCCAP8X1.25L	28	16	M8X25	M16	1	6-8	4	SC20
PRESETSCCAP8X1.25	15	16	M8X25	M16	2	10-16	4	SC20
PRESETSCCAP10X1.5L	30	27	M10X30	M24X1.5	1	6-14	5	SC32
PRESETSCCAP10X1.5	13.5	27	M10X30	M24X1.5	2	16-25	5	SC32

TUNGHYDRO
KIT CAT-HYDRO

Kit for hydraulic chucks (MAS-CAT Form A/B)

Inch	CAT size	DCONWS	Qty	Range
KITCAT40HYDRO20X73	40	20	5	8,10,12,14,16
KITCAT40HYDRO32X110	40	32	7	6,8,10,12,16,20,25

Each kit has one HYDROFIT chuck, a set of SC...HYDRO sealed reducers and a clamping wrench. (Unit: mm)

TUNGHYDRO
KIT DIN69871-HYDRO

Kit for hydraulic chucks (DIN69871)

Metric	SK size	DCONWS	Qty	Range
KITDIN6987140HYDRO20X65	40	20	5	8,10,12,14,16
KITDIN6987140HYDRO32X117	40	32	7	6,8,10,12,16,20,25

Each kit has one HYDROFIT chuck, a set of SC...HYDRO sealed reducers and a clamping wrench.

TUNGHYDRO
KIT HSK A-HYDRO

Kit for hydraulic chucks (HSK)

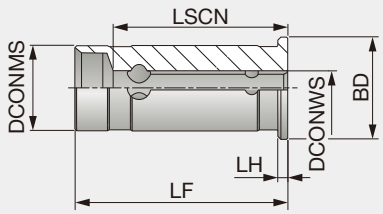
Metric	HSK size	DCONWS	Qty	Range
KITHSKA63HYDRO20X100	63	20	5	8,10,12,14,16
KITHSKA63HYDRO32X125	63	32	7	6,8,10,12,16,20,25

Each kit has one HYDROFIT chuck, a set of SC...HYDRO sealed reducers and a clamping wrench.

TUNGHYDRO

SC-HYDRO

Sealed reduction sleeve for hydraulic chucks

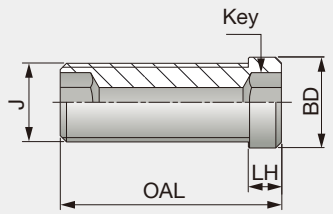


Inch	DCONMS	DCONWS	LSCN	LF	BD	LH
SC3/4SHYDRO1/8	0.750	0.125	1.180	1.965	0.945	0.080
SC3/4SHYDRO1/4	0.750	0.250	1.180	1.965	0.945	0.080
SC3/4SHYDRO5/16	0.750	0.313	1.180	1.965	0.945	0.080
SC3/4SHYDRO3/8	0.750	0.375	1.180	1.965	0.945	0.080
SC3/4SHYDRO1/2	0.750	0.500	1.450	1.965	0.945	0.080
SC3/4SHYDRO5/8	0.750	0.625	1.450	1.965	0.945	0.080
SC1-1/4SHYDRO1/4	1.250	0.250	0.980	2.598	1.400	0.160
SC1-1/4SHYDRO5/16	1.250	0.313	0.980	2.598	1.400	0.160
SC1-1/4SHYDRO3/8	1.250	0.375	0.980	2.598	1.400	0.160
SC1-1/4SHYDRO1/2	1.250	0.500	1.380	2.598	1.400	0.160
SC1-1/4SHYDRO5/8	1.250	0.625	1.380	2.598	1.400	0.160
SC1-1/4SHYDRO3/4	1.250	0.750	1.970	2.598	1.400	0.160
SC1-1/4SHYDRO1"	1.250	1.000	2.600	2.598	1.400	0.160

Metric	DCONMS	DCONWS	LSCN	LF	BD	LH
SC12SHYDRO3	12	3	19	46.5	16	2
SC12SHYDRO4	12	4	24	46.5	16	2
SC12SHYDRO5	12	5	28	46.5	16	2
SC12SHYDRO6	12	6	33	46.5	16	2
SC12SHYDRO8	12	8	39	46.5	16	2
SC20SHYDRO3	20	3	20	53	24	2
SC20SHYDRO4	20	4	25	53	24	2
SC20SHYDRO5	20	5	27	53	24	2
SC20SHYDRO6	20	6	34	53	24	2
SC20SHYDRO8	20	8	39	53	24	2
SC20SHYDRO10	20	10	40	53	24	2
SC20SHYDRO12	20	12	41	53	24	2
SC20SHYDRO14	20	14	44	53	24	2
SC20SHYDRO16	20	16	44	53	24	2
SC25SHYDRO6	25	6	37	60	30	4
SC25SHYDRO8	25	8	37	60	30	4
SC25SHYDRO10	25	10	40	60	30	4
SC25SHYDRO12	25	12	44	60	30	4
SC25SHYDRO14	25	14	46	60	30	4
SC25SHYDRO16	25	16	48	60	30	4
SC25SHYDRO18	25	18	50	60	30	4
SC25SHYDRO20	25	20	50	60	30	4
SC32SHYDRO6	32	6	33	66	40	4
SC32SHYDRO8	32	8	38	66	40	4
SC32SHYDRO10	32	10	39	66	40	4
SC32SHYDRO12	32	12	42	66	40	4
SC32SHYDRO14	32	14	44	66	40	4
SC32SHYDRO16	32	16	44	66	40	4
SC32SHYDRO18	32	18	44	66	40	4
SC32SHYDRO20	32	20	49	66	40	4
SC32SHYDRO25	32	25	66	66	40	4

TUNGHYDRO
PRESET SCREW HYDRO

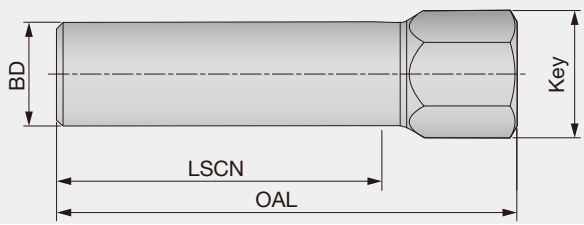
Preset screw for hydraulic collet chucks



Metric	BD	J	OAL	LH	Wrench
PRESETSCREWHYDROM5	5	M5	14	1	2.5
PRESETSCREWHYDROM6	6	M6	14	1.5	3
PRESETSCREWHYDROM8	8	M8X1	14	2	4
PRESETSCREWHYDROM10	10	M10X1	17	2	5
PRESETSCREWHYDROM16	14	M16X1	20	2	8

TUNGHYDRO
TEST BAR HYDRO

Torque test bar for hydraulic chucks



Metric	BD	OAL	Wrench	LSCN(1)	Torque
TESTBARHYDRO6	6	53	10	27	15
TESTBARHYDRO8	8	53	10	27	25
TESTBARHYDRO10	10	56	10	32	50
TESTBARHYDRO12	12	62	10	37	110
TESTBARHYDRO14	14	62	10	37	120
TESTBARHYDRO16	16	71	17	37	180
TESTBARHYDRO18	18	71	17	42	230
TESTBARHYDRO20	20	71	17	42	250
TESTBARHYDRO25	25	79	17	48	310
TESTBARHYDRO32	32	87	17	52	450

(1) Minimum holding length
Torque: Recommended clamping torque: N·m

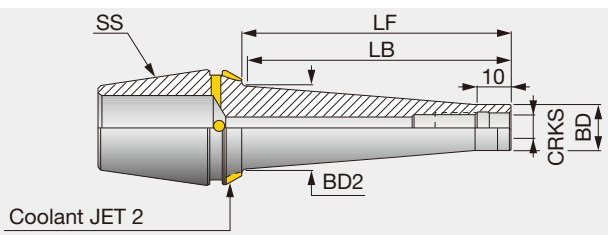
TUNGMAX
SET SC-SPR
Set of SC collets

Metric	Collet size	Qty	Range
SETSC20SPR6	20	6	6,8,10,12,14,16
SETSC32SPR9	32	9	6,8,10,12,14,16,18,20,25

TUNGMAX
SET SC-SEAL
Set of SC collets with coolant hole

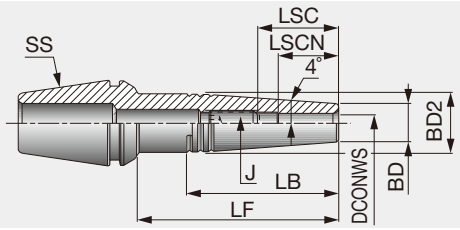
Metric	Collet size	Qty	Range
SETSC20SEAL6	20	6	6,8,10,12,14,16
SETSC32SEAL9	32	9	6,8,10,12,14,16,18,20,25

TUNGFLEX
ER-ODP
Threaded connector for ER collet chucks



Metric	CRKS	SS	BD	BD2	LF	LB
ER32ODPM6X25	M6	ER32	9.8	14	25	22
ER32ODPM6X50	M6	ER32	9.8	20	50	48
ER32ODPM6X75	M6	ER32	9.8	23	75	74
ER32ODPM8X25	M8	ER32	13.1	15	25	22
ER32ODPM8X50	M8	ER32	13.1	23	50	49
ER32ODPM8X75	M8	ER32	13.1	23	75	74
ER32ODPM10X25	M10	ER32	18	20	25	23
ER32ODPM10X50	M10	ER32	18	24	50	49
ER32ODPM12X25	M12	ER32	21	24	25	24
ER32ODPM12X50	M12	ER32	21	24	50	49

TungShrink, ER collet type

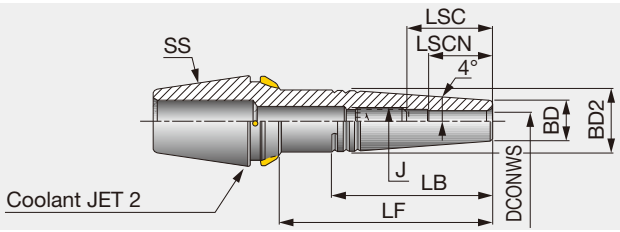


Inch	SS	DCONWS	BD	BD2	LF	LB	LSCN	LSC	J	Wrench
ER20SRK1/8X1.500	ER20	0.125	0.394	0.53	1.5	0.97	0.39	0.63	M6	0.118
ER20SRK1/8X2.500	ER20	0.125	0.394	0.53	2.5	0.97	0.39	0.63	M6	0.118
ER25SRK1/8X1.500	ER25	0.125	0.394	0.55	1.5	1.11	0.39	0.63	M6	0.118
ER25SRK1/8X2.500	ER25	0.125	0.394	0.63	2.5	1.71	0.39	0.63	M6	0.118
ER32SRK1/8X1.500	ER32	0.125	0.394	0.55	1.5	1.1	0.39	0.63	M6	0.118
ER32SRK1/8X2.500	ER32	0.125	0.394	0.68	2.5	2.0	0.39	0.63	M6	0.118
ER32SRK1/8X3.500	ER32	0.125	0.394	0.82	3.5	3.0	0.39	0.63	M6	0.118
ER20SRK3/16X2.500	ER20	0.187	0.394	0.53	2.5	0.97	0.59	0.83	M6	0.118
ER20SRK3/16X1.500	ER20	0.187	0.394	0.53	1.5	0.97	0.59	0.83	M6	0.118
ER25SRK3/16X1.500	ER25	0.187	0.394	0.55	1.5	1.11	0.59	0.83	M6	0.118
ER25SRK3/16X2.500	ER25	0.187	0.394	0.63	2.5	1.71	0.59	0.83	M6	0.118
ER32SRK3/16X1.500	ER32	0.187	0.394	0.55	1.5	1.11	0.59	0.83	M6	0.118
ER32SRK3/16X2.500	ER32	0.187	0.394	0.66	2.5	1.9	0.59	0.83	M6	0.118
ER32SRK3/16X3.500	ER32	0.187	0.394	0.80	3.5	2.9	0.59	0.83	M6	0.118
ER20SRK1/4X1.500	ER20	0.25	0.433	0.59	1.5	1.14	0.71	0.95	M8	0.157
ER20SRK1/4X2.500	ER20	0.25	0.433	0.62	2.5	1.31	0.71	0.95	M8	0.157
ER25SRK1/4X1.500	ER25	0.25	0.433	0.59	1.5	1.14	0.71	0.95	M8	0.157
ER25SRK1/4X2.500	ER25	0.25	0.433	0.70	2.5	1.9	0.71	0.95	M8	0.157
ER32SRK1/4X1.500	ER32	0.25	0.433	0.59	1.5	1.14	0.71	0.95	M8	0.157
ER32SRK1/4X2.500	ER32	0.25	0.433	0.7	2.5	1.91	0.71	0.97	M8	0.157
ER32SRK1/4X3.500	ER32	0.25	0.433	0.84	3.5	2.9	0.71	1.02	M8	0.157
ER32SRK5/16X1.500	ER32	0.313	0.551	0.76	1.5	1.44	0.98	1.22	M1	0.197
ER32SRK5/16X2.500	ER32	0.313	0.551	0.82	2.5	1.91	0.98	1.22	M10	0.197
ER32SRK5/16X3.500	ER32	0.313	0.551	0.93	3.5	2.71	0.98	1.22	M10	0.197
ER25SRK5/16X1.500	ER25	0.313	0.551	0.71	1.5	1.08	0.98	1.22	M10	0.197
ER25SRK5/16X2.500	ER25	0.313	0.551	0.79	2.5	1.71	0.98	1.22	M10	0.197
ER32SRK3/8X1.500	ER32	0.375	0.629	0.84	1.5	1.46	1.18	1.38	M12	0.236
ER32SRK3/8X2.500	ER32	0.375	0.629	0.90	2.5	1.9	1.18	1.42	M12	0.236
ER32SRK3/8X3.500	ER32	0.375	0.629	0.93	3.5	2.12	1.18	1.42	M12	0.236
ER32SRK7/16X1.500	ER32	0.437	0.787	0.94	1.5	1.11	1.22	1.42	M14	0.236
ER32SRK7/16X2.500	ER32	0.437	0.787	0.94	2.5	1.11	1.22	1.46	M14	0.236
ER32SRK7/16X3.500	ER32	0.437	0.787	0.94	3.5	1.11	1.22	1.46	M14	0.236
ER32SRK1/2X1.500	ER32	0.500	0.787	0.94	1.5	1.1	1.26	1.46	M14	0.236
ER32SRK1/2X2.500	ER32	0.500	0.787	0.94	2.5	1.1	1.26	1.5	M14	0.236
ER32SRK1/2X3.500	ER32	0.500	0.787	0.94	3.5	1.41	1.26	1.5	M14	0.236

TUNGSHRINK

ER-SRK JET2

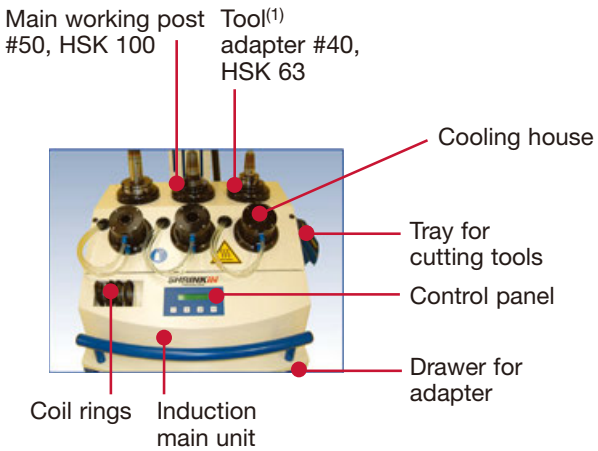
TungShrink, ER collet type, for external coolant supply



Metric	SS	DCONWS	BD	BD2	LF	LB	LSCN	LSC	J	Wrench
ER20SRK3X35JET2	ER20	3	10	13.5	35	24.5	10	16	M6	3
ER20SRK5X35JET2	ER20	5	10	13.5	35	24.5	15	21	M6	3
ER20SRK6X35JET2	ER20	6	11	14.7	35	25.5	18	24	M8	4
ER25SRK3X35JET2	ER25	3	10	13.5	35	24.5	10	16	M6	3
ER25SRK3X60JET2	ER25	3	10	16.3	60	44.5	10	16	M6	3
ER25SRK4X35JET2	ER25	4	10	13.5	35	24.5	12	18	M6	3
ER25SRK4X60JET2	ER25	4	10	16.3	60	44.5	12	18	M6	3
ER25SRK5X35JET2	ER25	5	10	13.5	35	24.5	15	21	M6	3
ER25SRK5X60JET2	ER25	5	10	16.3	60	44.5	15	21	M6	3
ER25SRK6X35JET2	ER25	6	11	14.7	35	26	18	24	M8	4
ER25SRK6X60JET2	ER25	6	11	17.3	60	44.5	18	24	M8	4
ER25SRK8X35JET2	ER25	8	14	17.8	35	26.5	25	30	M10	5
ER25SRK8X60JET2	ER25	8	14	19.7	60	39.5	25	31	M10	5
ER32SRK3X35JET2	ER32	3	10	13.2	35	22.5	10	16	M6	3
ER32SRK3X60JET2	ER32	3	10	16.3	60	44.5	10	16	M6	3
ER32SRK3X85JET2	ER32	3	10	19.8	85	70	10	16	M6	3
ER32SRK4X35JET2	ER32	4	10	13.4	35	23.5	12	18	M6	3
ER32SRK4X60JET2	ER32	4	10	16.3	60	44.5	12	18	M6	3
ER32SRK4X85JET2	ER32	4	10	19.8	85	70	12	18	M6	3
ER32SRK5X35JET2	ER32	5	10	13.5	35	24.5	15	21	M6	3
ER32SRK5X60JET2	ER32	5	10	16.3	60	44.5	15	21	M6	3
ER32SRK5X85JET2	ER32	5	10	19.8	85	70	15	21	M6	3
ER32SRK6X35JET2	ER32	6	11	14.7	35	25.5	18	24	M8	4
ER32SRK6X60JET2	ER32	6	11	17.3	60	45	18	24	M8	4
ER32SRK6X85JET2	ER32	6	11	20.8	85	69.5	18	26	M8	4
ER32SRK8X35JET2	ER32	8	14	18.8	35	33	25	31	M10	5
ER32SRK8X60JET2	ER32	8	14	20.4	60	45	25	31	M10	5
ER32SRK8X85JET2	ER32	8	14	23.2	85	65	25	31	M10	5
ER32SRK10X35JET2	ER32	10	16	20.8	35	34	30	35	M12	6
ER32SRK10X60JET2	ER32	10	16	22.4	60	44.5	30	36	M12	6
ER32SRK10X85JET2	ER32	10	16	23	85	49.5	30	36	M12	6
ER32SRK12X35JET2	ER32	12	20	24	35	28	32	-	-	-
ER32SRK12X60JET2	ER32	12	20	24	60	28	32	38	M14	6
ER32SRK12X85JET2	ER32	12	20	24	85	28	32	38	M14	6

TUNGSHRINK
IND SHRINKIN UNIT

SHRINKIN Induction heating unit for shrink tool chucking



Inch	Machine
IND SHRINK IN UNIT USA	3-380-500V 50/60HZ

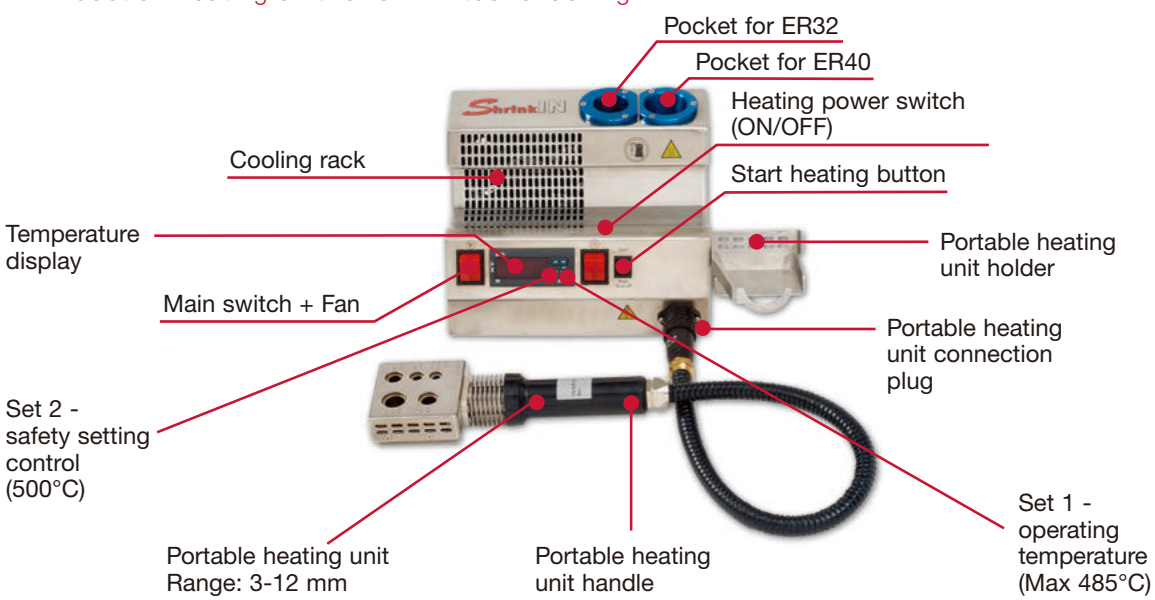
TUNGSHRINK
IND SHRINK START UNIT

SHRINKIN Induction heating unit for shrink tool chucking

Inch	Machine
IND SHRINK START UNIT USA	3-380-500V 50/60HZ

TUNGSHRINK
SHRINKIN UNIT V2

SHRINKIN Induction heating unit for shrink tool chucking



Inch	Machine
SHRINKIN UNIT V2 USA	220V 50/60HZ

TUNGSHRINK

SET ER-SRK

Set of ER collets with thermal shrink chucks

Inch	Collet size	Qty	Range
SETER32SRKS6USA	32	6	0.187, 0.25, 0.312, 0.375, 0.437, 0.5
SETER32SRKM6USA	32	6	0.187, 0.25, 0.312, 0.375, 0.437, 0.5
SETER32SRKL6USA	32	6	0.187, 0.25, 0.312, 0.375, 0.437, 0.5

SC

Sleeve for C-ABB adapter

Fig. A

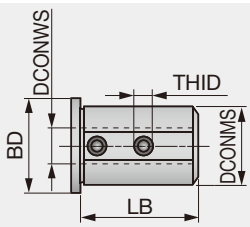
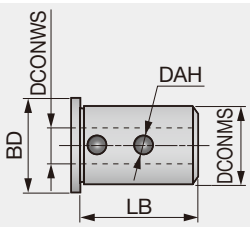


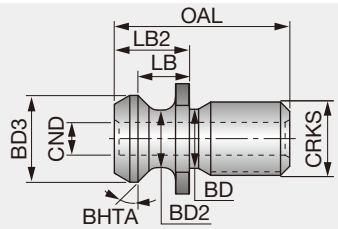
Fig. B



Inch	DCONMS	DCONWS	BD	LB	THID	DAH	Fig.
SC1-1/2T.250A	1.5	0.25	1.811	2.283	M6	-	A
SC1-1/2T.375A	1.5	0.375	1.811	2.283	M8	-	A
SC1-1/2T.500A	1.5	0.5	1.811	2.283	M9	-	A
SC1-1/2T.625B	1.5	0.625	1.811	2.283	-	0.591	B
SC1-1/2T.750B	1.5	0.75	1.811	2.283	-	0.591	B
SC1-1/2T1.000B	1.5	1	1.811	2.283	-	0.591	B

TUNGHOLD
PS CAT-ANSI

Pull Stud CAT ANSI Retention Knobs



Inch	CRKS	BD3	BD2	BD	CND	LB	OAL	LB2	BHTA
PSCAT40455/8ANSI	5/8-11	0.74	0.49	0.49	-	0.439	1.5	0.64	45°
PSCAT40455/8ANSIB	5/8-11	0.74	0.49	0.49	0.28	0.439	1.5	0.64	45°
PSCAT50451ANSIB	1-8	1.14	0.82	0.82	0.315	0.703	2.3	1	45°
PSCAT50451ANSI	1-8	1.14	0.82	0.82	-	0.703	2.3	1	45°

Coolant holes only in items with a "B" suffix.

TUNGHOLD
PS CAT-MAS

Caterpillar Pull Studs with MAS Retention Knobs

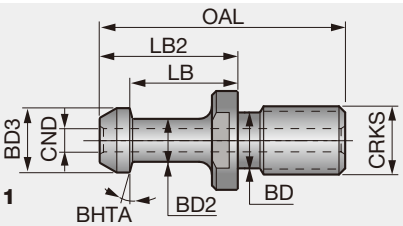


Fig. 1

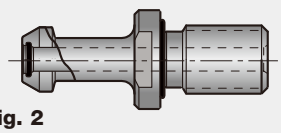


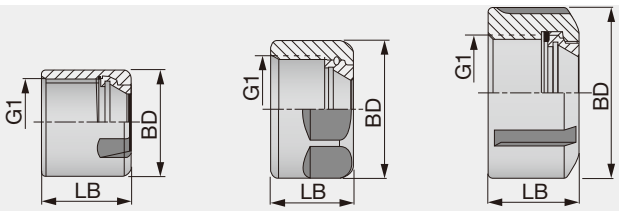
Fig. 2

Inch	CRKS	BD3	BD2	BD	CND	LB	OAL	LB2	BHTA	Fig
PSCAT4045M16MAS1	M16	0.606	0.394	0.512	0.217	0.995	2.25	1.274	45°	1
PSCAT4045M16MAS1B	M16	0.606	0.394	0.512	0.217	0.995	2.25	1.274	45°	1
PSCAT40455/8MAS1	5/8-11	0.59	0.39	0.512	-	0.99	2.25	1.266	45°	1
PSCAT40455/8MAS1B	5/8-11	0.59	0.39	0.512	0.217	0.99	2.25	1.266	45°	1
PSCAT40605/8MAS2	5/8-11	0.59	0.39	0.512	-	0.99	2.25	1.266	60°	1
PSCAT40605/8MAS2B	5/8-11	0.59	0.39	0.512	0.217	0.99	2.25	1.266	60°	1
PSCAT40905/8MAS3	5/8-11	0.59	0.39	0.512	-	0.99	2.25	1.266	90°	1
PSCAT40905/8MAS3B	5/8-11	0.59	0.39	0.512	0.217	0.99	2.25	1.266	90°	1
PSCAT50451"MAS1	1-8	0.906	0.67	0.827	-	1.378	3.346	1.772	45°	1
PSCAT50451"MAS1B	1-8	0.906	0.67	0.827	0.236	1.378	3.346	1.772	45°	1
PSCAT50451"MAS1OBO	1-8	0.906	0.67	0.827	0.236	1.378	3.346	1.772	45°	2
PSCAT50601"MAS2	1-8	0.906	0.67	0.827	-	1.378	3.346	1.772	60°	1
PSCAT50601"MAS2B	1-8	0.906	0.67	0.827	0.236	1.378	3.346	1.772	60°	1
PSCAT50901"MAS3	1-8	0.906	0.67	0.827	-	1.378	3.346	1.772	90°	1
PSCAT50901"MAS3B	1-8	0.906	0.67	0.827	0.236	1.378	3.346	1.772	90°	1

Fig 1: Coolant holes only in items with a "B" suffix.
Fig 2: With external and internal O-rings.

TUNGHOLD
NUT ER-TOP

Nut for ER collet chucks (DIN6499)

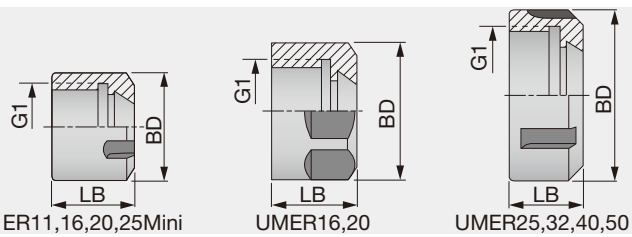


Metric	BD	LB	G1	Torque
NUTER16TOP	28	17	M22X1.5	68.7
NUTER20TOP	34	19	M25X1.5	117.7
NUTER25TOP	42	20	M32X1.5	196.1
NUTER32TOP	50	22	M40X1.5	215.7
NUTER40TOP	63	25	M50X1.5	245.1

Torque: Recommended clamping torque: N·m

TUNGHOLD
NUT ER-UM/MINI

UM/Mini nut for ER collet chucks (DIN6499)



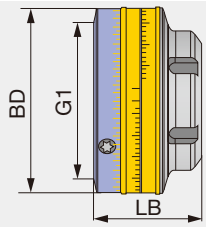
Metric	BD	LB	G1	Torque
NUTER11GHS (1)	16	11.5	M13X0.75	-
NUTER11MINI	16	10.8	M13X0.75	29.4
NUTER11UM	19	11.3	M14X0.75	49
NUTER16MINI	22	18	M19X1.0	39.2
NUTER16UM	28	17	M22X1.5	68.7
NUTER20MINI	28	19	M24X1.0	78.5
NUTER20UM	34	19	M25X1.5	117.7
NUTER25MINI	35	20	M30X10	98
NUTER25UM	42	20	M32X1.5	196.1
NUTER32UM	50	22	M40X1.5	215.7
NUTER40UM	63	25	M50X1.5	245.1
NUTER50UM	78	35	M64X2.0	343.2

(1) To be used only for SpinJet spindles
Torque: Recommended clamping torque: N·m

TUNGBALANCE

NUT ER-BALANCE

Balanceable nut for ER collet chucks (DIN6499)



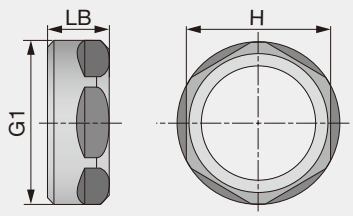
Metric	BD	LB	G1	Torque
NUTER16TOPBIN	36	44	M22X1.5	68.7
NUTER25TOPBIN	37.5	58	M32X1.5	196.1

Torque: Recommended clamping torque: N·m

TUNGSHORT

NUT ER-SHORT

Nut for ER collet chucks (TungShort)

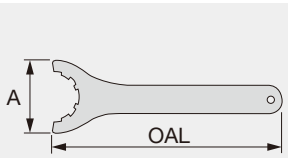


Metric	H	LB	G1	Torque
NUTER20SHORT	22	10.7	M25X1.5	117.7
NUTER32SHORT	36	15	M40X1.5	215.7
NUTER40SHORT	46	16	M50X1.5	245.1

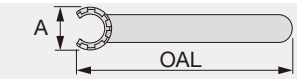
Torque: Recommended clamping torque: N·m

TUNGHOLD
WRENCH ER

Wrench for ER nut (DIN6499)



Wrench ER 25,32,40,50



Wrench ER 11,16,20,25 Mini

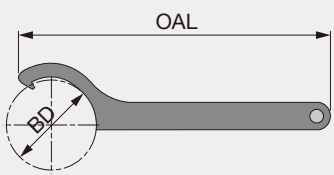
Wrench ER 11,16,20,TungShort,TungClick

Metric	A	H	OAL
WRENCHER11SMS (1)	16	-	95
WRENCHER11MINI	16.8	-	95
WRENCHER11	32	17	95
WRENCHER16MINI	22.5	-	117
WRENCHER16	42.5	25	143
WRENCHER20MINI	28	-	128
WRENCHER20	53.5	30	172
WRENCHER25MINI	29	-	120
WRENCHER25	70	-	207
WRENCHER32	78	-	255
WRENCHER40	95	-	285
WRENCHER50	110	-	350
WRENCHER20SHORTRING22	48	22	260
WRENCHER32SHORT	75	36	303
WRENCHER40SHORT	94	46	378
WRENCHER32CLICKIN27	57	27	239
WRENCHER32CLICKIN32	67	32	273

(1) Use SpinJet spindle only.

TUNGMAX
WRENCH

Wrench for TungMax collets

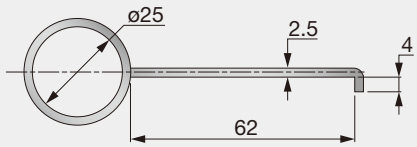


Metric	BD	OAL
WRENCHMAXIN20HOOK	26	205
WRENCHMAXIN32HOOK	68	240

TUNGHOLD

SC

SC collet extracting hook



Metric
EXTRACTOR SC COLLETS

TUNGHOLD

PRESET ER-JET

Preset screw for ER collet chucks

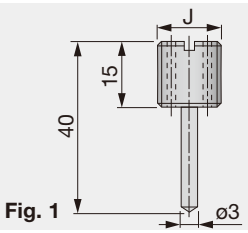


Fig. 1

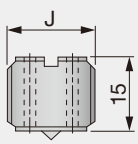


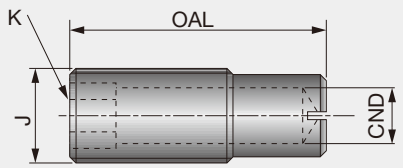
Fig. 2

Metric	J	Fig.
PRESETER-JET8X1	M8X1.0	2
PRESETER-JET8X1.25	M8X1.25	2
PRESETER-JET10X1.5	M10X1.5	2
PRESETER-JET12X1	M12X1.0	2
PRESETER-JET12X1.75L	M12X1.75	1
PRESETER-JET12X1.75	M12X1.75	2
PRESETER-JET14X1	M14X1.0	2
PRESETER-JET16X2	M16X2	2
PRESETER-JET16X2L	M16X2	1
PRESETER-JET18X1	M18X1.0	2
PRESETER-JET18X1.5	M18X1.5	2
PRESETER-JET18X1.5L	M18X1.5	1
PRESETER-JET22X1.5	M22X1.5	2
PRESETER-JET22X1.5L	M22X1.5	1
PRESETER-JET28X1.5	M28X1.5	2

TUNGMAX

Preset Screw

Preset screw for SC-SPR

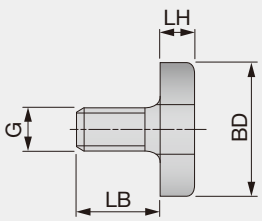


Metric	J	OAL	CND	K
PRESETMAXIN16X30	M16	30	8	8
PRESETMAXIN16X44	M16	44	8	8
PRESETMAXIN20X55	M20	55	12	12

TUNGHOLD

SCREW-SEM

Lock screw for shell mill holders



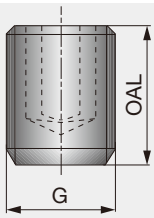
Metric	G	BD	LH	LB
M8CLAMPSCREWSEM16	M8	20	6	16
M10CLAMPSCREWSEM22	M10	28	7	18
M12CLAMPSCREWSEM27	M12	35	8	22
M16CLAMPSCREWSEM32	M16	42	9	26
M20CLAMPSCREWSEM40	M20	52	10	30
M24CLAMPSCREWSEM50	M24	63	12	36

STANDARD CENTER BOLT

Inch	G	BD	LH	LB	Torque
SCREW1/4-28SEM1/2	1/4-28 UNF-2A	0.65	0.315	0.709	6
SCREW3/8-24SEM3/4	3/8-24 UNF-2A	0.886	0.394	0.709	25
SCREW1/2-20SEM1	1/2-20 UNF-2A	1.181	0.472	0.874	50
SCREW5/8-18SEM1-1/4	5/8-18 UNF-2A	1.496	0.512	1.000	75
SCREW3/4-16SEM1-1/2	3/4-16 UNF-2A	1.87	0.512	1.161	100
SCREW1-14SEM2	1-14 UNS-2A	2.48	0.512	1.25	110

TUNGHOLD
SCREW-EM

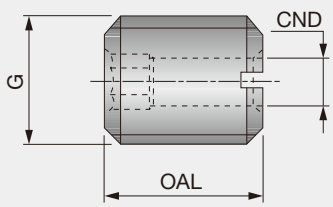
Lock screw for endmill holders



Metric	G	OAL	Applicable shank diameter
SRM6X10DIN1835B	M6	10	6
SRM8X10DIN1835-B	M8	10	8
SRM10X12DIN1835-B	M10	12	10
SRM12X16DIN1835-B	M12	16	12,14
SRM14X16DIN1835-B	M14	16	14,16
SRM16X16DIN1835-B	M16	16	20
SRM18X2X20DIN1835-B	M18X2	20	25,32
SRM20X2X20DIN1835-B	M20X2	20	40
SRM24X2X25DIN1835-B	M24X2	25	50
SRM16X10.3EMSHORT	M16	10.3	20
SRM18X2X10EMSHORT	M18X2	10	2

TUNGHOLD
PRESET SCREW

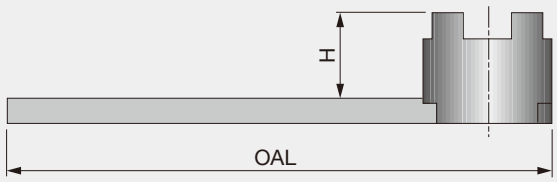
Preset screw with coolant hole for EME/SRKIN holders



Metric	G	OAL	CND	Applicable shank	Wrench
PRESETSCREWM6X20B	M6X1	20	2.5	EME/SRKIN	3
PRESETSCREWM8X20B	M8X1.25	20	3.5	EME/SRKIN	4
PRESETSCREWM10X18B	M10X1.5	18	4.5	EME/SRKIN	5
PRESETSCREWM12X18B	M12X1.75	18	5.5	EME/SRKIN	6
PRESETSCREWM16X20B	M16X2	20	7.5	EME/SRKIN	6
PRESETSCREWM16X25B	M16X2	25	7.5	SRKIN	6

TUNGHOLD
WRENCH SEMC

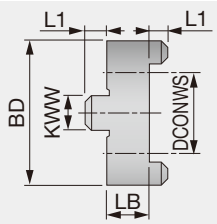
Wrench for face mill and shell mill combination type holders (DIN6368)



Metric	Clamping bore dia.	G	H	OAL
WRENCHM8SEMC16	16	M8	20	180
WRENCHM10SEMC22	22	M10	25	200
WRENCHM12SEMC27	25.4,27	M12	32	225
WRENCHM16SEMC32	31.75,32	M16	36	250
WRENCHM20SEMC40	38.1,40	M20	40	280
WRENCHM24SEMC50	50,50.8	M24	50	315

TUNGHOLD
DRIVING RING SEMC

Driving ring for face mill and shell mill combination type holders (DIN6366/1)

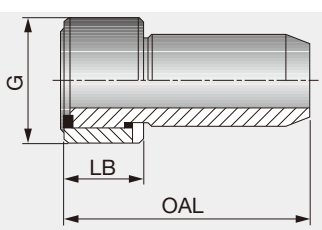


Metric	DCONWS	BD	LB	L1	KWW
16D.RINGSEMC	16	32	10	8	5
22D.RINGSEMC	22	40	12	10	6
27D.RINGSEMC	27	48	12	12	6.3
32D.RINGSEMC	32	58	14	14	7
40D.RINGSEMC	40	70	14	16	8
50D.RINGSEMC	50	90	16	18	9

Should be used with WRENCH SEMC.

TUNGHOLD
COOLING TUBE-HSK

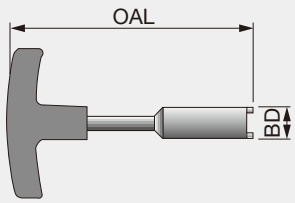
Cooling tube for HSK shank



Metric	HSK size	OAL	LB	G
COOLINGTUBEHSKA40	40	29.1	7.5	M12X1
COOLINGTUBEHSKA50	50	32.7	9.5	M16X1
COOLINGTUBEHSKA63	63	36	11.5	M18X1
COOLINGTUBEHSKA80	80	36.6	13.5	M20X1.5
COOLINGTUBEHSKA100	100	43.6	15.5	M24X1.5

TUNGHOLD
WRENCH

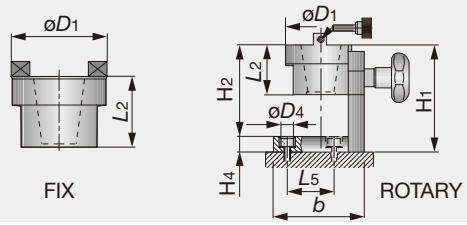
Wrench for HSK cooling tube



Metric	HSK size	BD	OAL
WRENCHCOOLTUBEHSK40	40	11	120
WRENCHCOOLTUBEHSK50	50	15	120
WRENCHCOOLTUBEHSK63	63	17	122
WRENCHCOOLTUBEHSK80	80	18.5	186
WRENCHCOOLTUBEHSK100	100	22	141

TUNGHOLD
TOOL CLAMP

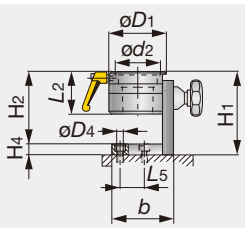
Tool clamp fixture for ISO, DIN69871, and BT MAS-403 BT shanks



Metric	CSI	øD1	L2	H1	H2	H4	b	L5	øD4
TOOLCLAMP30ROTARY	ROTARY	70	56	128	109	19	104	40	12.5
TOOLCLAMP40ROTARY	ROTARY	82	56	128	109	19	104	40	12.5
TOOLCLAMP50ROTARY	ROTARY	103	71	170	151	19	144	85	12.5
TOOLCLAMP30FIX	FIX	82	58	-	-	-	-	-	-
TOOLCLAMP40FIX	FIX	82	58	-	-	-	-	-	-
TOOLCLAMP50FIX	FIX	103	71	-	-	-	-	-	-

TUNGHOLD
MULTI CLAMP (HSK)

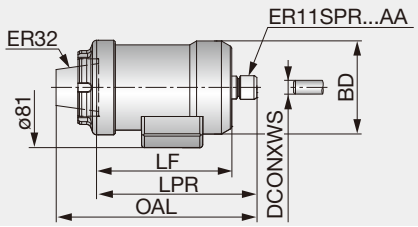
Multi-clamp rotary fixture for HSK shank



Metric	CSI	ød2	øD1	L2	H1	H2	H4	b	L5	øD4
MULTICLAMP32E/F	HSK A/C50	32	113.2	70	133	114	19	144	40	12.5
MULTICLAMP40E/F	HSK A/C63	40	113.2	70	133	114	19	144	40	12.5
MULTICLAMP63E/F	HSK E/F32	63	113.2	70	133	114	19	144	40	12.5
MULTICLAMP50A/C	HSK E/F40	50	82	72	142	123	19	104	40	12.5
MULTICLAMP63A/C	HSK E/F50	63	95	72	142	123	19	104	40	12.5
MULTICLAMP100A/C	HSK E/F63	100	130	90	178	159	19	144	85	12.5

SPINJET
TJS-ER32

Coolant driven high speed compact spindle for ER32 collet chuck



Metric	LF	LPR	OAL	BD	DCONXWS(1)	WT(kg)
TJSGJETER32	92	109	136	63	7	1.3

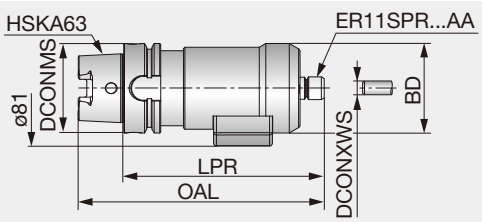
Coolant pressure through machine spindle: Min. 2 MPa / Max. 4 MPa
Min. flow rate: 12 l/min
(1) Max. tool shank diameter: ø7 mm

SPARE PARTS

Designation	Nut	Wrench for nut	Shaft lock key	Display (Optional)
TJSGJETER32	NUTER11GHS	WRENCHER11SMS	TJSSHAFTLOCKKEYGJET	TJSTSDDISPLAY***

SPINJET
TJS-HSK A63

Coolant driven high speed compact spindle with HSK A63 shank



Metric	DCONMS	LPR	OAL	BD	DCONXWS(1)	WT(kg)
TJSGJETHSKA63	63	141	173	63	7	1.8

Coolant pressure through machine spindle: Min. 2 MPa / Max. 4 MPa
Min. flow rate: 12 l/min
(1) Max. tool shank diameter: ø7 mm

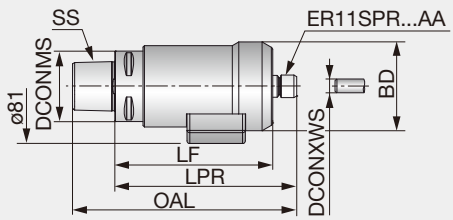
SPARE PARTS

Designation	Nut	Wrench for nut	Shaft lock key	Display (Optional)
TJSGJETHSKA63	NUTER11GHS	WRENCHER11SMS	TJSSHAFTLOCKKEYGJET	TJSTSDDISPLAY***

SPINJET

TJS-C

Coolant driven high speed compact spindle with TungCap PSC shank



Metric	SS	DCONMS	LF	LPR	OAL	BD	DCONXWS(1)	WT(kg)
TJSGJETC5	C5	50	112	129	159	63	7	1.5
TJSGJETC6	C6	63	102	119	157	63	7	1.6

Coolant pressure through machine spindle: Min. 2 MPa / Max. 4 MPa
Min. flow rate: 12 l/min
(1) Max. tool shank diameter: ø7 mm

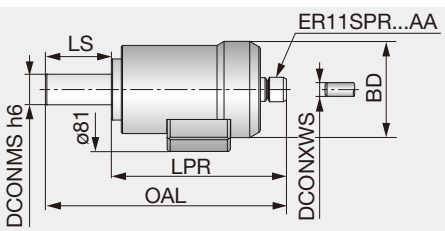
SPARE PARTS

Designation	Nut	Wrench for nut	Shaft lock key	Display (Optional)
TJSGJETC...	NUTER11GHS	WRENCHER11SMS	TJSSHAFTLOCKKEYGJET	TJSTSDDISPLAY***

SPINJET

TJS-ST

Coolant driven high speed compact spindle with straight (cylindrical) shank



Metric	DCONMS	LS	LPR	OAL	BD	DCONXWS(1)	WT(kg)
TJSGJETST20	20	43	115	158	63	7	1.2

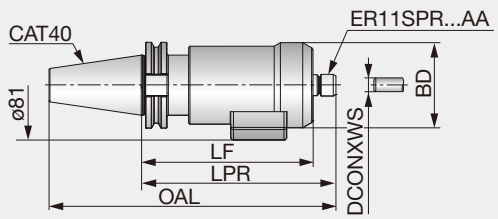
Coolant pressure through machine spindle: Min. 2 MPa / Max. 4 MPa
Min. flow rate: 12 l/min
(1) Max. tool shank diameter: ø7 mm

SPARE PARTS

Designation	Nut	Wrench for nut	Shaft lock key	Display (Optional)
TJSGJETST20	NUTER11GHS	WRENCHER11SMS	TJSSHAFTLOCKKEYGJET	TJSTSDDISPLAY***

SPINJET
TJS-CAT

Coolant driven high speed compact spindle with CAT shank



Metric	LF	LPR	OAL	BD	DCONXWS(1)	WT(kg)
TJSGJETCAT40	127	144	212	63	7	2

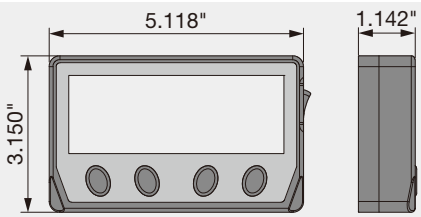
Coolant pressure through machine spindle: Min. 2 MPa / Max. 4 MPa
Min. flow rate: 12 l/min
(1) Max. tool shank diameter: ø7 mm

SPARE PARTS

Designation	Nut	Wrench for nut	Shaft lock key	Display (Optional)
TJSGJETCAT40	NUTER11GHS	WRENCHER11SMS	TJSSHAFTLOCKKEYGJET	TJSTSDDISPLAY***

SPINJET
Wireless RPM speed display

RPM speed display (SpinJet)



Inch		Adaptive product
TJSTSDDISPLAYUSA	(for the United States and Japan)	TJS spindles

Including plug adapter

- Plug adapter for wireless RPM speed display

Type	TJSTSDDISPLAYUSA
Designation	TJSDISP.POWERSUPP-USA
Appearance	 Plug adapter for the United States and Japan

Plug adapter is also sold separately.

New and old product comparison table

New models ⟷ **Discontinued models**

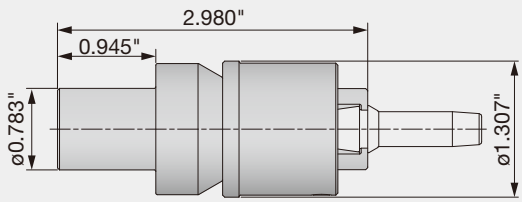
Alternative designation	Discontinued designation
-	TJS20KBT30L
TJSGJETBT30	TJS20KBT30R
-	TJS30KBT30L
TJSGJETBT30	TJS30KBT30R
-	TJS40KBT30L
TJSGJETBT30	TJS40KBT30R
-	TJS20KBT40L
TJSGJETBT40	TJS20KBT40R
-	TJS30KBT40L
TJSGJETBT40	TJS30KBT40R
-	TJS40KBT40L
TJSGJETBT40	TJS40KBT40R
-	TJS20KCAT40L
TJSGJETCAT40	TJS20KCAT40R
-	TJS30KCAT40L
TJSGJETCAT40	TJS30KCAT40R
-	TJS40KCAT40L
TJSGJETCAT40	TJS40KCAT40R
-	TJS20KC5L
TJSGJETC5	TJS20KC5R
-	TJS30KC5L
TJSGJETC5	TJS30KC5R
-	TJS40KC5L
TJSGJETC5	TJS40KC5R
-	TJS20KC6L
TJSGJETC6	TJS20KC6R
-	TJS30KC6L
TJSGJETC6	TJS30KC6R

Alternative designation	Discontinued designation
-	TJS40KC6L
TJSGJETC6	TJS40KC6R
-	TJS20KER32L
TJSGJETER32	TJS20KER32R
-	TJS30KER32L
TJSGJETER32	TJS30KER32R
-	TJS40KER32L
TJSGJETER32	TJS40KER32R
-	TJS20KHSKA63L
TJSGJETHSKA63	TJS20KHSKA63R
-	TJS30KHSKA63L
TJSGJETHSKA63	TJS30KHSKA63R
-	TJS40KHSKA63L
TJSGJETHSKA63	TJS40KHSKA63R
-	TJS20KDIN698714
-	TJS20KDIN6987140R
-	TJS30KDIN698714
-	TJS30KDIN6987140R
-	TJS40KDIN698714
-	TJS40KDIN6987140R
-	TJS20KST20L
TJSGJETST20	TJS20KST20R
-	TJS30KST20L
TJSGJETST20	TJS30KST20R
-	TJS40KST20L
TJSGJETST20	TJS40KST20R

As of December 28, 2018, all orders for discontinued models are not accepted. As of December 31, 2020, all services and support including repairs and spare part sales will end.

ER-SRK Shrink collet adapter

ER11 shrink collet adapter for induction heating device

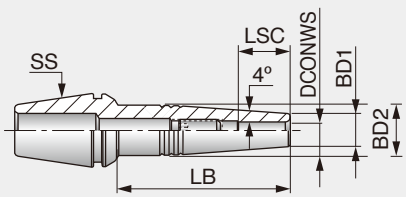


Inch	Adaptive product
INDER11TOOLADAPTER	TJS spindles

SPINJET

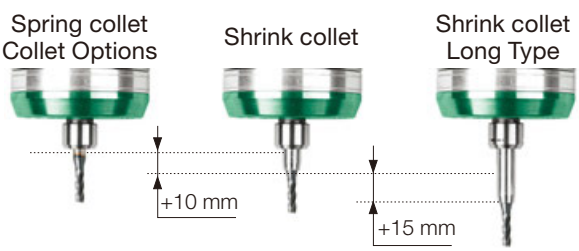
ER-SRK Shrink collet

ER11 shrink collet for induction heating device

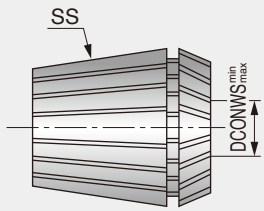


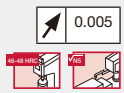
Metric	SS	DCONWS	LB	LSC	BD2	BD1
ER11SRK3X10	ER11	3	10	9.5	8.5	7.6
ER11SRK3X25	ER11	3	25	11.5	8.5	7.6
ER11SRK4X10	ER11	4	10	9.5	8.5	7.6
ER11SRK4X25	ER11	4	25	11.5	8.5	7.6

For carbide tools only



ER11 AA collet

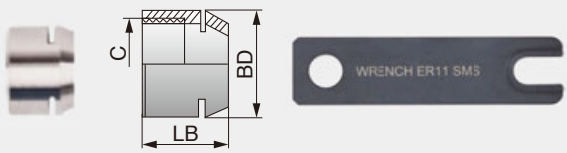




Metric	SS	DCONWS min	DCONWS max
ER11SPR0.5-1AA	ER11	0.5	1
ER11SPR1-2AA	ER11	1	2
ER11SPR2-3AA	ER11	2	3
ER11SPR3-4AA	ER11	3	4
ER11SPR4-5AA	ER11	4	5
ER11SPR5-6AA	ER11	5	6
ER11SPR6-7AA	ER11	6	7

AA collet run-out: 0.005 mm

Nut and wrench for collets



Metric	BD	LB	C	Wrench for nut
NUTER11GHS	16	11.5	M13X0.75	WRENCHER11SMS

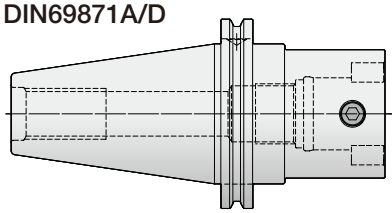
Shaft lock key

Metric
TJSSHAFTLOCKKEYGJET

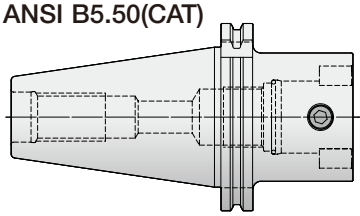
SWISSBORE SWISS TOOLS

Wide range of variation quick change system

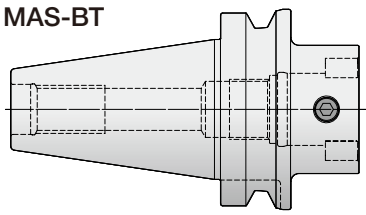
DIN69871A/D



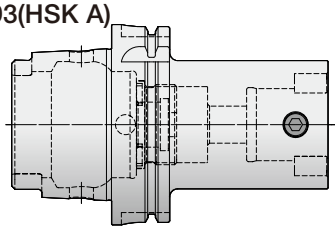
ANSI B5.50(CAT)



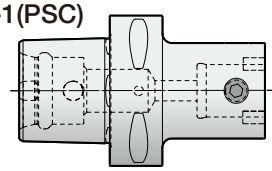
MAS-BT



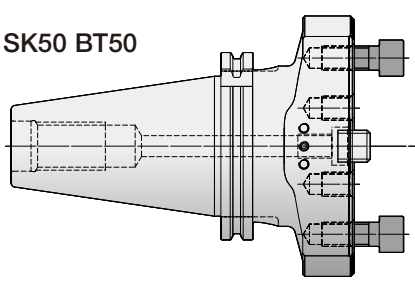
DIN69893(HSK A)



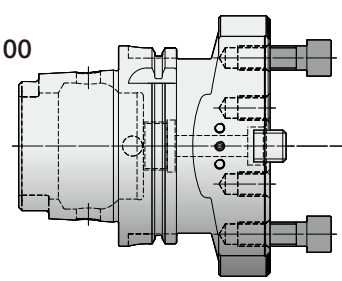
ISO26623-1(PSC)



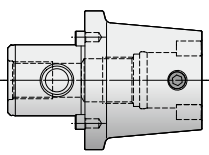
SK50 BT50



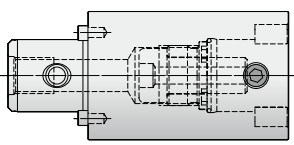
HSK-A100



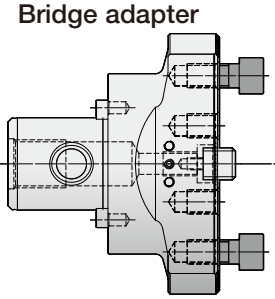
Reduction



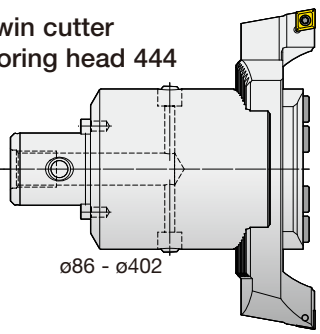
Extension



Bridge adapter

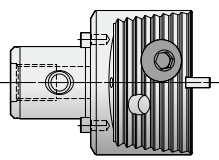


Twin cutter
Boring head 444



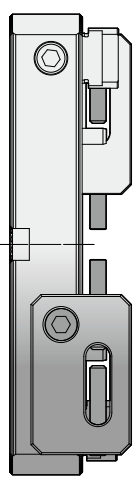
ø86 - ø402

Twin cutter
Boring head 404



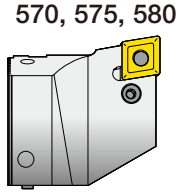
ø23.5 - ø153

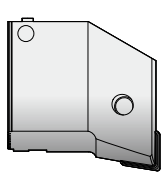
Extension
Bridge



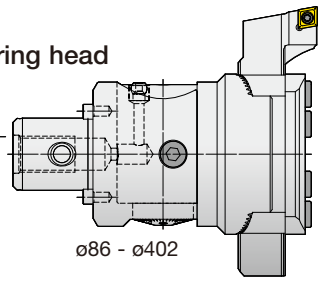
ø150 - ø2205

Boring head
570, 575, 580





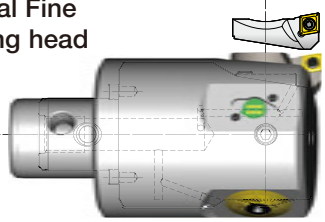
Fine boring head
354



ø86 - ø402

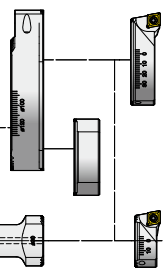
Digital display
unit

Digital Fine
Boring head
305

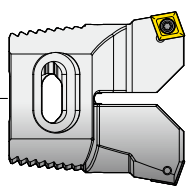


ø23.9 - ø203.1

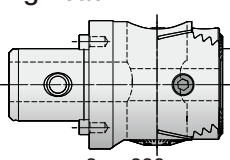
Boring holder



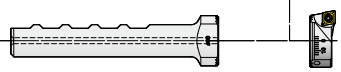
Insert holder
70° 424



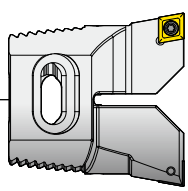
Fine boring head
210



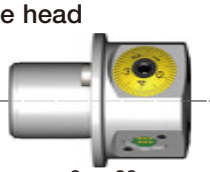
ø3 - ø320



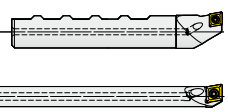
Insert holder
90° 414, 434

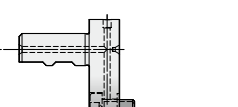


Digital fine head
206



ø3 - ø88

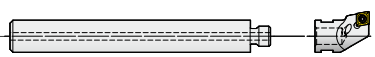




Digital boring head
591

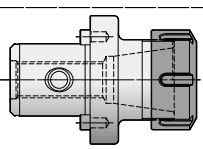
Digital micro boring
head 206

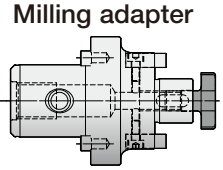
ø0.3 - ø19.1



Milling adapter

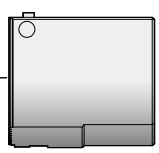
Collet chuck adapter



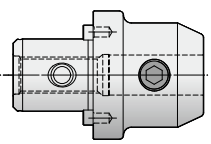


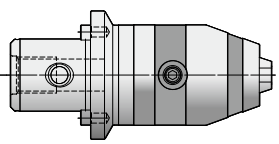
NC drill chuck

Counter weight



Endmill adapter





SWISSBORE

GH1-DA

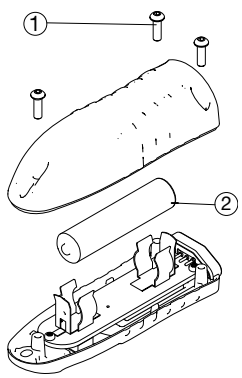
Digital display unit

Metric
GH1-DA2.BG0.077

- High precision display unit with accuracy of 0.001 mm in diameter.
- Display unit features direct measurement system with no backlash.
- The illuminated display can be rotated 180 degrees to apply any measuring situation.
- Option: mm or inch
- Standard AAA battery installed.
- Magnet attachment

SPARE PARTS

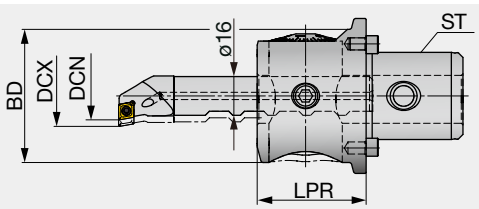
Designation	Clamping screw ①	Screw wrench	Battery ②
GH1-DA2.BG0.077	900.309.022.008	900.308.011.045	AAA



SWISSBORE

SwissBore206

Digital fine boring head ø9.75 - ø88.1

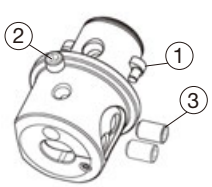


Radius adjustment range: 2.7 mm

Metric	ST	BD	DCN	DCX	LPR
206.064.025.045	ST6	55	9.75	88.1	45

SPARE PARTS

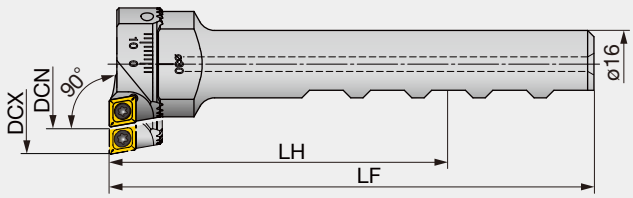
Designation	Drive pin ①	Clamping screw ②	Fastening screw ③
206.***.025.***	900.102.064.000	900.204.010.008	900.204.010.008



Boring bars 254,256
Option :Display unit GH1-DA2.BG0.077

SWISSBORE
SwissBore256

Boring bar ø29.75 - ø88.1

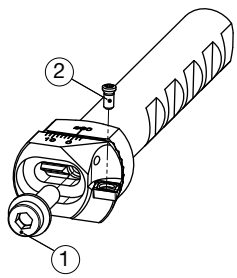


Metric (Shank)	Metric (Insert holder)	DCN	DCX	LH	LF	Insert
256.030.048.115	256.030.006.012	29.75	48.1	85	115	CC**0602...
256.048.088.115	256.048.006.014	47.75	88.1	85	115	CC**0602...

Applicable for 7 MPa pressure coolant

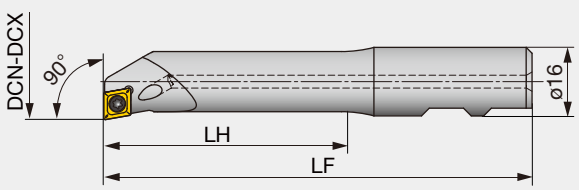
SPARE PARTS

Designation	Clamping screw ①	Clamping screw ②	Wrench
256.0**.0**.***	900.256.005.016	CSTB-2.5S	T-8F



SWISSBORE
SwissBore254

Boring bar ø9.75 - ø30.1



Metric	DCN	DCX	LH	LF	Insert
254.010.006.075	9.75	15.1	30	75	CC**0602...
254.015.006.090	14.75	20.1	51	90	CC**0602...
254.020.006.105	19.75	25.1	72	105	CC**0602...
254.025.006.115	24.75	30.1	82	115	CC**0602...

Applicable for 7 MPa pressure coolant

SPARE PARTS

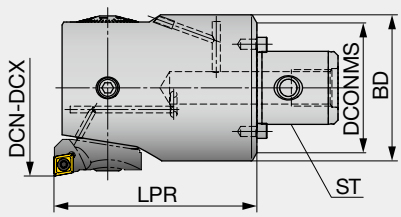
Designation	Clamping screw	Screw wrench
254.0**.006.***	CSTB-2.5S	T-8F

Reference pages: Inserts → B111 -, CBN → B182 -, PCD → B196 -

SWISSBORE

SwissBore305

Digital fine boring head ø23.9 - ø203.1

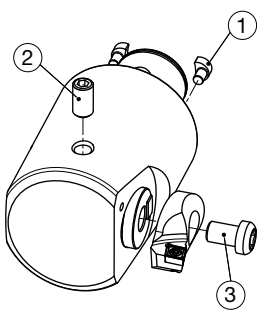


Metric	ST	DCN	DCX	DCONMS	BD	LPR	Insert holder
305.020.024.035	ST1	23.9	31.1	19.6	22.5	35.5	314.011.024.006/007
305.020.024.035	ST1	29.9	37.1	19.6	22.5	35.5	314.011.030.006/007
305.025.031.040	ST2	30.9	40.1	25	29	40	314.013.031.006/007
305.025.031.040	ST2	37.9	47.1	25	29	40	314.013.038.006/007
305.032.040.047	ST3	39.9	51.1	31.4	37	47	314.017.040.006/007
305.032.040.047	ST3	47.9	59.1	31.4	37	47	314.017.048.006/007
305.039.051.057	ST4	50.9	67.1	39	47	57	314.022.051.006/007
305.039.051.057	ST4	64.9	81.1	39	47	57	314.022.065.006/007
305.050.067.080	ST5	66.9	87.1	50	59	80	314.030.067.009/011
305.050.067.080	ST5	84.9	105.1	50	59	80	314.030.085.009/011
305.064.087.100	ST6+	86.9	116.1	64	72	100	314.030.067.009/011
305.064.087.100	ST6+	104.9	134.1	64	72	100	314.030.085.009/011
305.090.116.130	ST7+	115.9	153.1	90	94	130	314.030.067.009/011
305.090.116.130	ST7+	133.9	171.1	90	94	130	314.030.085.009/011
305.090.116.130	ST7+	153.9	191.1	90	94	130	314.726.003.009/011
305.090.116.130	ST7+	165.9*	203.1*	90	94	130	-

*Option : insert holder (314.726.003.009 or 314.726.003.011) & adapter (900.803.001.006)
Applicable for 7 MPa pressure coolant

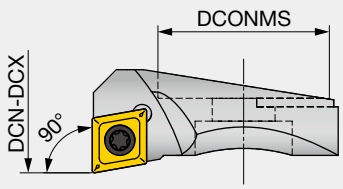
SPARE PARTS

Designation	Drive pin ①	Clamping screw ②	Fastening screw ③
305.020.024.035	900.102.020.000	900.304.004.003	900.314.004.006
305.025.031.040	900.102.025.000	900.304.005.004	900.314.005.008
305.032.040.047	900.102.032.000	900.304.006.005	900.314.006.010
305.039.051.057	900.102.039.000	900.304.008.006	900.314.008.012
305.050.067.080	900.102.050.000	900.304.010.010	900.314.010.016
305.064.087.100	900.102.064.000	900.304.010.018	900.314.010.016
305.090.116.130	900.102.090.000	900.304.010.030	900.314.010.016



Reference pages: SwissBore305: Insert Holder → K147

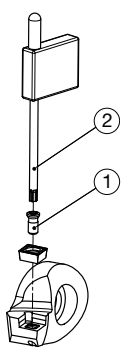
Insert holder 90°corner for CC**insert



Metric	DCN	DCX	DCONMS	Insert	Boring head
314.011.024.006	23.9	31.1	11	CC**0602**	305.020.024.035
314.011.030.006	29.9	37.1	11	CC**0602**	305.020.024.035
314.013.031.006	30.9	40.1	13	CC**0602**	305.025.031.040
314.013.038.006	37.9	47.1	13	CC**0602**	305.025.031.040
314.017.040.006	39.9	51.1	17	CC**0602**	305.032.040.047
314.017.048.006	47.9	59.1	17	CC**0602**	305.032.040.047
314.022.051.006	50.9	67.1	22	CC**0602**	305.039.051.057
314.022.065.006	64.9	81.1	22	CC**0602**	305.039.051.057
314.030.067.009	66.9	87.1	30	CC**09T3**	305.050.067.080
314.030.085.009	84.9	105.1	30	CC**09T3**	305.050.067.080
314.030.067.009	86.9	116.1	30	CC**09T3**	305.064.087.100
314.030.085.009	104.9	134.1	30	CC**09T3**	305.064.087.100
314.030.067.009	115.9	153.1	30	CC**09T3**	305.090.116.130
314.030.085.009	133.9	171.1	30	CC**09T3**	305.090.116.130
314.726.003.009	153.9	191.1	30	CC**09T3**	305.090.116.130

SPARE PARTS


Designation	Clamping screw ①	Wrench ②
314.***.***006	CSTB-2.5S	T-8F
314.***.***009	CSTB-4S	T-15F

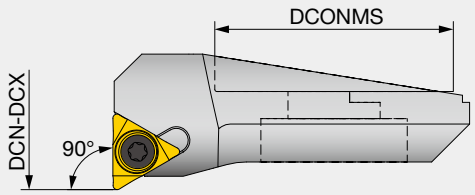


Reference pages: SwissBore314: Inserts → B111 -, CBN → B182 -, PCD → B196 -
Boring Head → K146

SWISSBORE

SwissBore314

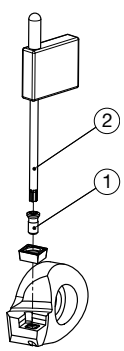
Insert holder 90°corner for TP**insert



Metric	DCN	DCX	DCONMS	Insert	Boring head
314.011.024.007	23.9	31.1	11	TP**0701**	305.020.024.035
314.011.030.007	29.9	37.1	11	TP**0701**	305.020.024.035
314.013.031.007	30.9	40.1	13	TP**0701**	305.025.031.040
314.013.038.007	37.9	47.1	13	TP**0701**	305.025.031.040
314.017.040.007	39.9	51.1	17	TP**0701**	305.032.040.047
314.017.048.007	47.9	59.1	17	TP**0701**	305.032.040.047
314.022.051.007	50.9	67.1	22	TP**0701**	305.039.051.057
314.022.065.007	64.9	81.1	22	TP**0701**	305.039.051.057
314.030.067.011	66.9	87.1	30	TP**1102**	305.050.067.080
314.030.085.011	84.9	105.1	30	TP**1102**	305.050.067.080
314.030.067.011	86.9	116.1	30	TP**1102**	305.064.087.100
314.030.085.011	104.9	134.1	30	TP**1102**	305.064.087.100
314.030.067.011	115.9	153.1	30	TP**1102**	305.090.116.130
314.030.085.011	133.9	171.1	30	TP**1102**	305.090.116.130
314.726.003.011	153.9	191.1	30	TP**1102**	305.090.116.130

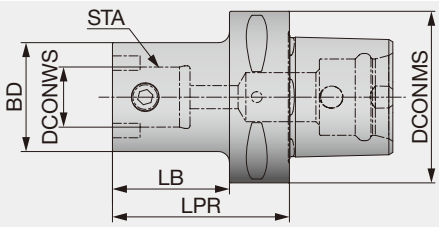
SPARE PARTS


Designation	Clamping screw ①	Wrench ②
314.***.***007	CSTB-2.2L038	T-7F
314.***.***011	CSTB-2.5S	T-8F



Reference pages: SwissBore314: Inserts → B144 -, CBN → B188 -, PCD → B198
Boring Head → K146

Master shanks to ISO 26623-1

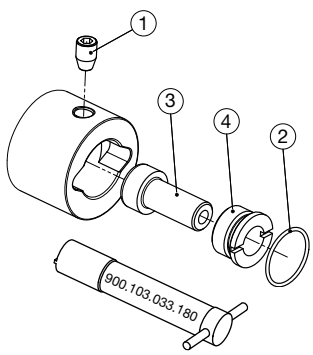


Inch	DCONMS	STA	BD	DCONWS	LPR	LB
154.806.020.065	2.480	ST1	0.787	0.433	2.559	1.693
154.806.025.065	2.480	ST2	0.984	0.551	2.559	1.693
154.806.032.065	2.480	ST3	1.260	0.709	2.559	1.693
154.806.039.058	2.480	ST4	1.535	0.866	2.283	1.417
154.806.050.048	2.480	ST5	1.969	1.102	1.890	1.024
154.806.064.059	2.480	ST6	2.520	1.417	2.323	1.457
154.806.064.094	2.480	ST6+	2.520	1.417	3.701	2.835

SPARE PARTS



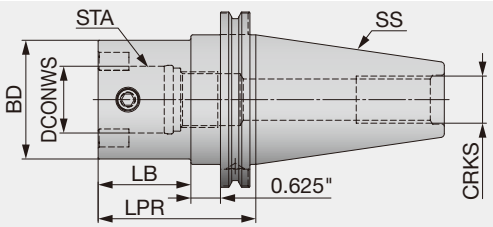

Clamping size	Clamping screw ①	O-ring ②	Tension screw ③	Threaded ring ④
ST1	900.100.004.005	900.101.008.002	-	-
ST2	900.100.005.006	900.101.011.002	-	-
ST3	900.100.006.008	900.101.015.002	-	-
ST4	900.100.008.011	900.101.019.002	-	-
ST5	900.100.010.012	900.101.025.002	-	-
ST6	900.100.012.018	900.101.032.002	-	-
ST6+	900.100.012.018	900.101.032.002	900.102.018.040	900.103.030.020



SWISSBORE

SwissBore104

Master shanks to ANSI B5.50

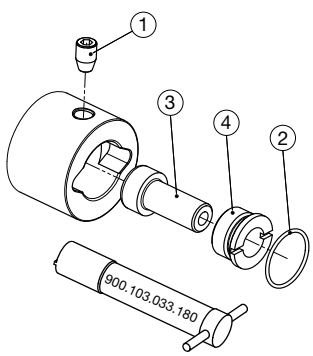


Inch	SS	STA	BD	DCONWS	LPR	LB	CRKS
104.340.020.051	CAT40	ST1	0.787	0.433	2.008	0.630	5/8"-11
104.340.025.056	CAT40	ST2	0.984	0.551	2.205	0.827	5/8"-11
104.340.032.056	CAT40	ST3	1.260	0.709	2.205	0.827	5/8"-11
104.340.039.059	CAT40	ST4	1.535	0.866	2.323	0.945	5/8"-11
104.340.050.059	CAT40	ST5	1.969	1.102	2.323	0.945	5/8"-11
104.340.064.075	CAT40	ST6+	2.520	1.417	2.953	1.575	5/8"-11
104.350.020.061	CAT50	ST1	0.787	0.433	2.402	1.024	1"-8
104.350.025.066	CAT50	ST2	0.984	0.551	2.598	1.220	1"-8
104.350.032.066	CAT50	ST3	1.260	0.709	2.598	1.220	1"-8
104.350.039.069	CAT50	ST4	1.535	0.866	2.717	1.339	1"-8
104.350.050.069	CAT50	ST5	1.969	1.102	2.717	1.339	1"-8
104.350.064.085	CAT50	ST6+	2.520	1.417	3.346	1.969	1"-8
104.350.090.085	CAT50	ST7+	3.543	1.811	3.346	1.969	1"-8

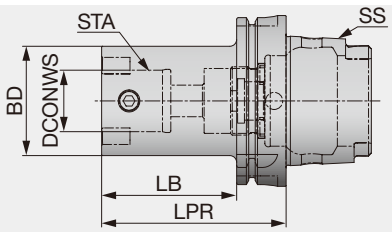
SPARE PARTS




Clamping size	Clamping screw ①	O-ring ②	Tension screw ③	Threaded ring ④
ST1	900.100.004.005	900.101.008.002	-	-
ST2	900.100.005.006	900.101.011.002	-	-
ST3	900.100.006.008	900.101.015.002	-	-
ST4	900.100.008.011	900.101.019.002	-	-
ST5	900.100.010.012	900.101.025.002	-	-
ST6	900.100.012.018	900.101.032.002	-	-
ST6+	900.100.012.018	900.101.032.002	900.102.018.040	900.103.030.020
ST7+	900.100.020.029	900.101.043.002	900.102.024.045	900.103.040.020



Master shank holders DIN 69893



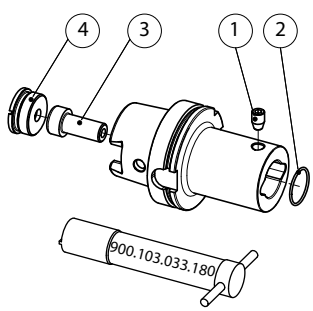
Inch	SS	STA	BD	DCONWS	LPR	LB
144.806.020.042	HSK A 63	ST1	0.787	0.433	1.654	0.630
144.806.025.042	HSK A 63	ST2	0.984	0.551	1.654	0.630
144.806.032.044	HSK A 63	ST3	1.260	0.709	1.732	0.709
144.806.039.048	HSK A 63	ST4	1.535	0.866	1.890	0.866
144.806.050.059	HSK A 63	ST5	1.969	1.102	2.323	1.299
144.806.064.070	HSK A 63	ST6	2.520	1.417	2.756	1.732
144.806.064.100	HSK A 63	ST6+	2.520	1.417	3.937	2.913
144.810.020.055	HSK A 100	ST1	0.787	0.433	2.165	1.024
144.810.025.055	HSK A 100	ST2	0.984	0.551	2.165	1.024
144.810.032.057	HSK A 100	ST3	1.260	0.709	2.244	1.102
144.810.039.061	HSK A 100	ST4	1.535	0.866	2.402	1.260
144.810.050.072	HSK A 100	ST5	1.969	1.102	2.835	1.693
144.810.064.078	HSK A 100	ST6	2.520	1.417	3.071	1.929
144.810.064.108	HSK A 100	ST6+	2.520	1.417	4.252	3.110
144.810.090.127	HSK A 100	ST7+	3.543	1.811	5.000	3.858

Option : Tension screw & Threading ring of ST+ type

SPARE PARTS



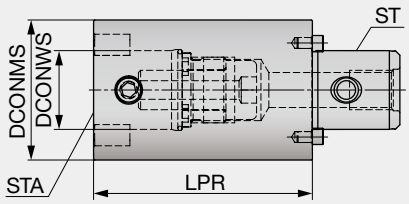

Clamping size	Clamping screw ①	O-ring ②	Tension screw ③	Threaded ring ④
ST1	900.100.004.005	900.101.008.002	-	-
ST2	900.100.005.006	900.101.011.002	-	-
ST3	900.100.006.008	900.101.015.002	-	-
ST4	900.100.008.011	900.101.019.002	-	-
ST5	900.100.010.012	900.101.025.002	-	-
ST6	900.100.012.018	900.101.032.002	-	-
ST6+	900.100.012.018	900.101.032.002	900.102.018.040	-
ST7+	900.100.020.029	900.101.043.002	900.102.024.045	-
HSK A 63	-	-	-	900.104.030.014
HSK A 100	-	-	-	900.104.040.020



SWISSBORE

SwissBore164

Extension adapter



Metric	ST	STA	DCONMS	DCONWS	LPR
164.020.020.020	ST1	ST1	20	11	20
164.020.020.030	ST1	ST1	20	11	30
164.025.025.030	ST2	ST2	25	14	30
164.025.025.045	ST2	ST2	25	14	45
164.032.032.030	ST3	ST3	32	18	30
164.032.032.045	ST3	ST3	32	18	45
164.039.039.040	ST4	ST4	39	22	40
164.039.039.060	ST4	ST4	39	22	60
164.050.050.060	ST5	ST5	50	28	60
164.050.050.090	ST5	ST5	50	28	90
164.064.064.060	ST6+	ST6+	64	36	60
164.064.064.100	ST6+	ST6+	64	36	100
164.090.090.100	ST7+	ST7+	90	46	100
164.090.090.160	ST7+	ST7+	90	46	160

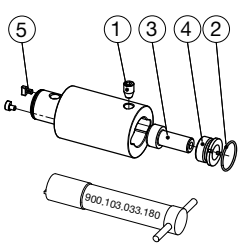
Option : Tension screw & Threading ring of ST+ type

SPARE PARTS

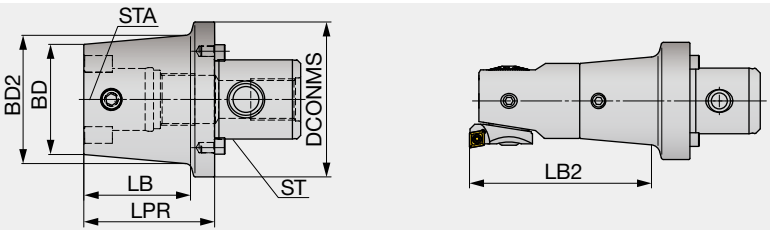




Clamping size	Clamping screw ①	O-ring ②	Tension screw ③	Threaded ring ④	Drive pin ⑤
ST1	900.100.004.005	900.101.008.002	-	-	900.102.020.000
ST2	900.100.005.006	900.101.011.002	-	-	900.102.025.000
ST3	900.100.006.008	900.101.015.002	-	-	900.102.032.000
ST4	900.100.008.011	900.101.019.002	-	-	900.102.039.000
ST5	900.100.010.012	900.101.025.002	-	-	900.102.050.000
ST6	900.100.012.018	900.101.032.002	-	-	900.102.064.000
ST6+	900.100.012.018	900.101.032.002	900.102.018.040	900.103.030.020	900.102.064.000
ST7+	900.100.020.029	900.101.043.002	900.102.024.045	900.103.040.020	900.102.090.000



Reduction adapter

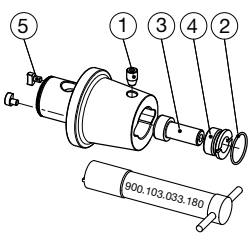


Metric	ST	STA	DCONMS	BD	BD2	LPR	LB	LB2
184.025.020.036	ST2	ST1	25	20	23	36	25	60.5
184.032.025.034	ST3	ST2	32	25	29	34.5	20	60
184.039.032.047	ST4	ST3	39	32	38	47	35	82
184.050.039.040	ST5	ST4	50	39	48	40	25.5	82.5
184.064.050.039	ST6+	ST5	64	50	60	39	24	104

LB2 : Max boring depth with twin cutter or fine boring head
Option : Tension screw & Threading ring of ST+ type

SPARE PARTS

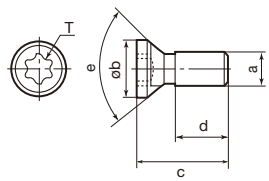
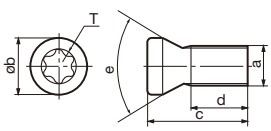
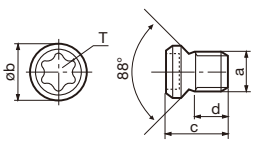
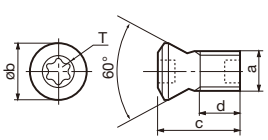
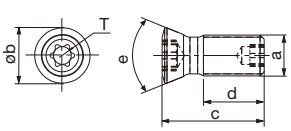
Clamping size	Clamping screw ①	O-ring ②	Tension screw ③	Threaded ring ④	Drive pin ⑤
ST1	900.100.004.005	900.101.008.002	-	-	900.102.020.000
ST2	900.100.005.006	900.101.011.002	-	-	900.102.025.000
ST3	900.100.006.008	900.101.015.002	-	-	900.102.032.000
ST4	900.100.008.011	900.101.019.002	-	-	900.102.039.000
ST5	900.100.010.012	900.101.025.002	-	-	900.102.050.000
ST6	900.100.012.018	900.101.032.002	-	-	900.102.064.000
ST6+	900.100.012.018	900.101.032.002	900.102.018.040	900.103.030.020	900.102.090.000



User's Guide

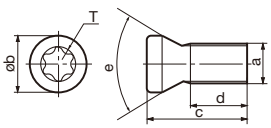
User's Guide - Parts for Tools

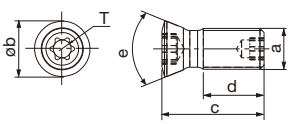
Screws

Shape	Designation	Dimension (in)						Torque (lbs·ft)
		a	øb	c	d	e	T / *f*	
	**CSTA-NO2**	#2-56UNC	0.157	0.236	0.157	82°	T8	0.96
	CSTA-NO2S			0.197	0.118			
	CSTA-NO2L			0.315	0.236			
	CSTA-NO3	#3-48UNC	0.169	0.276	0.157		T9	1.70
	CSTA-NO5	#5-40UNC	0.197	0.315	0.197			
	CSTA-1.6	M1.6x0.35	0.098	0.122	0.035		T6	0.44
	CSTA-4	M4x0.7	0.276	0.394	0.303		T15	2.58
	CSTA-5	M5x0.8	0.283	0.591	0.433			
	CSTA-5S			0.472	0.315			
	CSTA-5SS			0.374	0.217			
	CSTA-5ST25			0.472	0.315		T25	3.69
	CSPA-5IP15		0.280	0.591	0.433		15IP	2.58
	CSPA-5SIP15			0.472	0.315			
	CSPA-5IP20			0.591	0.433		20IP	3.69
(Steel)	**CSPA-5SIP20**			0.472	0.315			
	**CSP-2L033**	M2x0.4	0.102	0.130	0.075	88°	6IP	0.52
	CSTB-2		0.106	0.130	0.055	60°	T6	0.52
	CSTB-2L			0.205	0.130			
	CSTB-2L040			0.157	0.083			
	CSTB-2.2	M2.2x0.45	0.138	0.240	0.138		T7	0.74
	CSTB-2.2L038			0.150	0.087			
	CSTB-2.2S			0.181	0.079			
	CSTB-2.2R		0.122	0.240	0.146			
	CSTB-2.5	M2.5x0.45	0.138	0.236	0.134		T8	0.96
	CSTB-2.5L080			0.315	0.213			
	CSTB-2.5B			0.217	0.102			
	CSTB-2.5S			0.189	0.087			
	**CSTB-3**	M3x0.5	0.161	0.315	0.177		T9	1.70
	CSTB-3L042			0.165	0.028			
	CSTB-3L050			0.197	0.079			
	CSTB-3L081			0.165	0.319	0.185	T8	0.96
CSP-2L033 type shown	**CSTB-3S**			0.161	0.236	0.098	T9	1.70
	CSTB-3.5ST	M3.5x0.6	0.209	0.492	0.157		T15	2.58
	CSTB-3.5H		0.205	0.256	0.122			
	CSTB-3.5		0.217	0.331	0.169			
	CSTB-3.5T		0.256	0.394	0.217		T20	3.69
	CSTB-3.5TS			0.335	0.157			
	**CSTB-3.5D**		0.185	0.331	0.193		T9	1.70
	CSTB-3.5L110		0.217	0.433	0.295		T15	2.58
	CSTB-3.5L115		0.189	0.453	0.276		T10	1.84
CSTB-4SD type shown	**CSTB-3.5L115-S**		0.189	0.453	0.256			2.58
	CSTB-3.5L		0.209	0.492	0.331		T15	2.58
	CSTB-4	M4x0.7	0.217	0.449	0.291			
	CSTB-4L060			0.236	0.079			
	CSTB-4L085			0.334	0.137			
	CSTB-4L090			0.224	0.354	0.217		
	**CSTB-4L115-S**			0.217	0.453	0.256		4.06
	CSTB-4S			0.217	0.315	0.157		2.58
	CSTB-4ST	M4x0.5	0.252	0.579				
	CSTB-4SD	M4x0.7	0.217	0.315			T8	0.96
CSTC-4L type shown	**CSTB-4M**			0.374	0.217		T15	2.58
	CSTB-4F	M4x0.5	0.276	0.579	0.343			
	CSTB-4TS	M4x0.7	0.256	0.354	0.177		T20	3.69
	CSTB-5	M5x0.8	0.276	0.472	0.295			
	CSTB-5S			0.374	0.197			
	CSTB-5L105			0.413	0.240			
	CSTB-5L120			0.472	0.256			
	CSTB-5L159		0.283	0.626	0.441			
(Steel)	**CSTB-5L163-S**		0.272	0.642	0.445			4.43

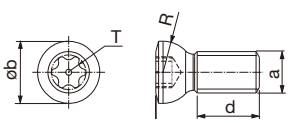
Screws

Shape	Designation	Dimension (in)						Torque (lbs·ft)
		a	øb	c	d	e / R	T / f	
	CSTC-4L055DR	M4x0.5	0.213	0.217	0.079	44°	T8/T10	0.96/1.84
	CSTC-4L055DL	M4x0.5	0.213	0.217	0.079		T8/T10	0.96/1.84
	CSTC-4L100DR	M4x0.7	0.213	0.394	0.234		T8/T10	0.96/1.84
	CSTC-4L100DL	M4x0.7	0.213	0.394	0.234		T8/T10	0.96/1.84
	CSPB-2L043	M2x0.4	0.106	0.169	0.098	60°	6IP	0.52
	CSPB-2H		0.102	0.134	0.063			
	CSPB-2.2	M2.2x0.45	0.118	0.236	0.154		7IP	0.74
	CSPB-2.2SH			0.157	0.079			0.81
	CSPB-2.5	M2.5x0.45	0.138	0.236	0.138		8IP	0.96
	CSPB-2.5S			0.165	0.067			
	CSPB-2.5SH		0.130	0.205	0.130		7IP	0.81
	CSPB-3.5	M3.5x0.6	0.205	0.354	0.220		15IP	2.58
	CSPB-3.5S	M3.5x0.6	0.205	0.256	0.122	60°	15IP	2.58
	CSPB-4	M4x0.7	0.217	0.457	0.291			
	CSPB-4S			0.323	0.157			
	CSPB-5	M5x0.8	0.276	0.472	0.295		20IP	3.69
	VX040024A	M4	0.215	0.354	0.236		T15	3.32
	VX040028A	M4	0.205	0.382	0.185	44°	T15	3.32
	SR14-500/L5.1	M4	0.217	0.201	0.091	60°	T15	2.58
	SR14-500-L7.0	M4	0.217	0.276	0.165		T15	2.58
	SR14-562	M3.5	0.189	0.344	0.219		T10	2.58
	SR14-562/S	M3.5	0.189	0.256	0.130		T10	2.58
	SR14-591	M5x0.8	0.260	0.531	0.299		T20	3.69
	SR34-508	M2.2x0.45	0.124	0.181	0.105		T7	0.66
	SR34-514	M2.5x0.45	0.130	0.205	0.126		T7	0.66
	SR76-943	M6	0.378	0.787	0.394	90°	T20	3.69
	SR76-961	M5	0.260	0.531	0.289	61°	T15	2.58
	SR76-963	M5	0.339	0.787	0.378	91°	T15	2.58
	SR-10503833-S	M2.5X0.45	0.128	0.150	0.069	60°	T7	-
	SR 114-018-L3.40	M2.5	0.142	0.132	0.079	56°	T6	0.52
	SM40-143-H0	M4X0.7	0.220	0.563	0.331	61°	T15	2.58
	TS25F080A	M2.25X0.35	0.146	0.272	0.083	60°	T8	0.96
	TS25064I	M2.5X0.45	0.138	0.252	0.150	50°	T8	0.96
	TS30F100A	M3X0.35	0.181	0.327	0.087	60°	T10	1.84
	TS30085I/HG	M3X0.5	0.169	0.335	0.220		T9	1.70
	TS30C72I	M3X0.5	0.165	0.283	0.177		T9	1.70
	TS40085I/HG	M4	0.224	0.335	0.177		T15	2.58
	TS35085I/HG	M3X0.6	0.209	0.335	0.169		T15	2.58
	TS40093I/HG	M4	0.224	0.366	0.169		T15	2.58
	TS40B100I	M4	0.236	0.394	0.236	R = 3.0	T15	2.58
	TS40F120A	M4X0.5	0.236	0.417	0.118	60°	T15	2.58
	TS45120I	M4.5	0.272	0.472	0.295	R = 3.5	T20	3.69
	TS50115I	M5	0.276	0.447	0.252	60°	T20	3.69
	TS50230D3	M5X0.8	0.276	0.906	0.531		T20	-
	TS50250D35	M5X0.8	0.295	0.984	0.571		T25	-
	TS50F160A	M5X0.5	0.276	0.547	0.138		T20	3.69
	TS60265D4	M6X1.0	0.315	1.043	0.610		T25	-
	TS60285D42	M6X1.0	0.335	1.122	0.657		T25	-
	TS60320D5	M6X1.0	0.374	1.220	0.709		T25	-
	TS60F200A	M6X0.75	0.323	0.657	0.177		T20	5.16
	TS70F250A	M7X0.75	0.394	0.827	0.220		T25	5.16
	TS80340D6	M8X1.25	0.394	1.339	0.787		T25	-
(Steel)	**TS80F300A**	M8X1.0	0.472	0.984	0.287		T30	7.38





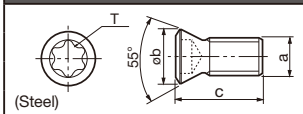
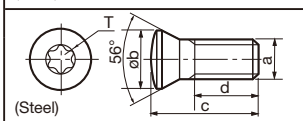
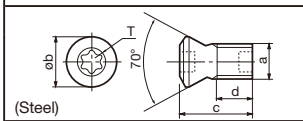
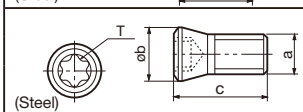
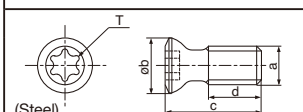
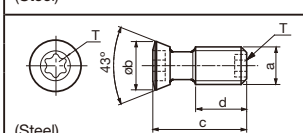
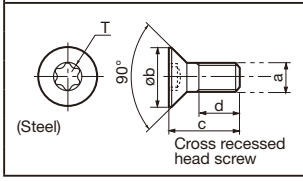
SCREW TORX M4 L=9.5MM type shown



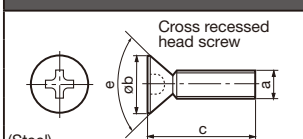
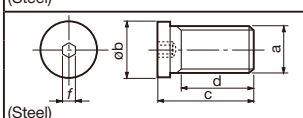
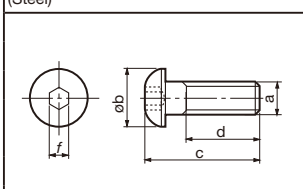
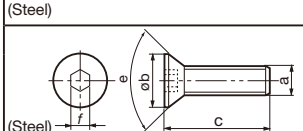
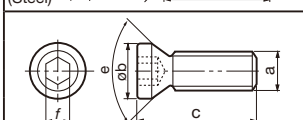
TS40B100I, TS45120I shown

User's Guide - Parts for Tools

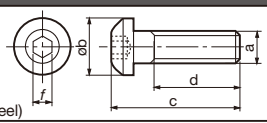
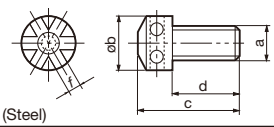
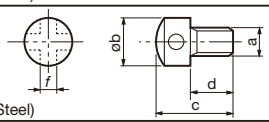
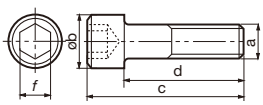
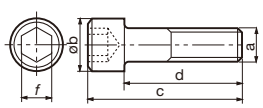
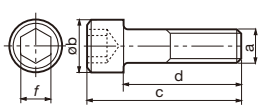
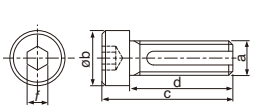
Screws

Shape	Designation	Dimension (in)						Torque (lbs·ft)
		a	øb	c	d	e	T / f	
 (Steel)	**CSPD-1.8S**	M1.8x0.35	0.094	0.130	0.055	55°	6IP	0.52
	CSTD-3T	M3x0.5	0.169	0.276	0.177		T10	1.84
	CSPD-3				0.165		10IP	1.84
 (Steel)	**CSTB-4.5L110P**	M4.5X0.75	0.260	0.461	0.276	56°	T15	2.58
 (Steel)	**SRM5X0.8IP20X+ACROLYTE**	M5X0.8	0.362	0.591	0.386	70°	20IP	5.53
 (Steel)	**CSTC-2**	M2x0.4	0.122	0.201	-	-	T6	0.52
 (Steel)	**CSTR-4L100**	M4x0.7	0.224	0.394	0.217	-	T15	2.58
 (Steel)	**SR16-212-01397**	M5x0.8	0.252	0.492	0.268	43°	T20/T10	1.84
	SR16-212-01397L							
 (Steel) Cross recessed head screw	**CST-3.5**	M3.5X0.6	0.236	0.189	-	90°	T9	1.70
	CST-3.5S			0.138	-			
	CST-5	M5x0.8	0.394	0.709	0.512		T25	3.69
	CST-5S			0.472	0.276			
	CSTF-2L055-S	M2x0.4	0.106	0.217	0.150		T6	0.52

Screws

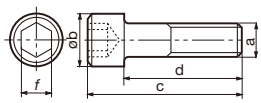
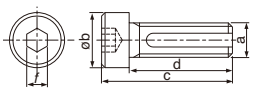
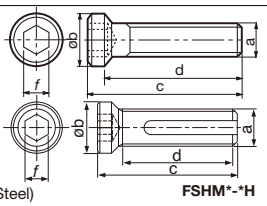
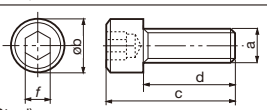
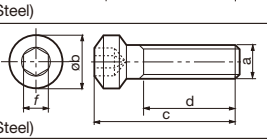
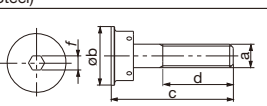
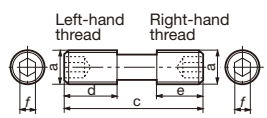
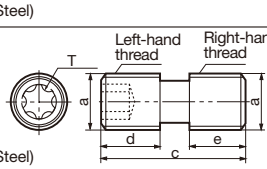
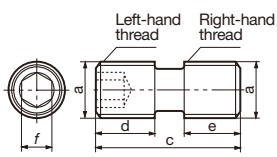
Shape	Designation	Dimension (in)						Torque (lbs·ft)
		a	øb	c	d	T / f	e	
 (Steel) Cross recessed head screw	**SM2.5×0.45×8**	M2.5x0.45	0.197	0.315	-	-	90°	-
	SM2.5×0.5×8	M2.5x0.5	0.197	0.315	-	-	90°	-
	SM3×0.5×6	M3x0.5	0.236	0.236	-	-	90°	-
	SM3×0.5×8			0.315	-	-	90°	-
	SM3×0.5×10			0.394	-	-	90°	-
 (Steel)	**MSP-5**	M5x0.8	0.240	0.311	0.193	0.079		1.11
	MSP-6.3	M6.3x1	0.303	0.500	0.390	0.098		2.21
 (Steel)	**BHM3-8**	M3x0.5	0.217	0.394	0.315	0.079		1.11
	BHM4-8	M4x0.7	0.276	0.417		0.098		1.62
	BHM4-10			0.496	0.394			
	BHM5-14	M5x0.8	0.354	0.693	0.551	0.118		2.21
	BHM6-20-A	M6x1.0	0.413	0.945	0.787	0.157		3.69
	BHM8-25U	M8	0.551	1.154	0.984	0.197		6.27
	BHM8-30U			1.350	1.181			
 (Steel)	**CSHM-3-8**	M3	0.236	0.315	-	0.079	90°	1.11
 (Steel)	**CSHB-4-A**	M4	0.217	0.433		T15	60°	1.48
	CSHB-6	M6	0.335	0.748	-	0.157	60°	3.69
	CSHB-6-A	M6	0.335	0.748				3.69

Screws

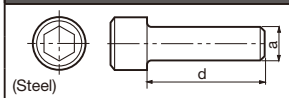
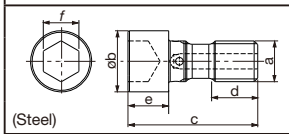
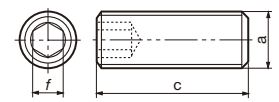
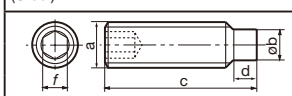
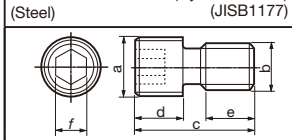
Shape	Designation	Dimension (in)						Torque (lbs·ft)
		a	øb	c	d	T / f		
 (Steel)	**RT-1**	M6	0.394	0.886	0.551	0.157		3.69
	RT-2	M8	0.512	1.220	0.787	0.197		6.27
 (Steel)	**ASM6**	M6	0.394	0.709	0.472	0.118		-
	AJM5F	M5x0.5	0.354	0.512	0.315	0.079		-
	AJM5	M5x0.8	0.354	0.512	0.315	0.079		-
 (Steel)	**ASM34S**	M3	0.189	0.315	0.197	0.079		-
	ASM34L			0.433	0.315			-
	ASM54	M5x0.8	0.354	0.551	0.354	0.118		-
 (Steel)	**CHHM3.5-10**	M3.5x0.6	0.236	0.531	0.394	0.118		2.21
	CHHM4-10	M4x0.7	0.276	0.551				
	CHHM5-14	M5x0.8	0.335	0.748	0.551	0.157		3.69
	CHHM5-18			0.906	0.709			
	CHHM6-15	M6	0.394	0.827	0.591	0.197		6.27
	CHHM6-20			-	0.787			
	CHHM6-25			1.220	0.984			
 Hex. socket head screw (JISB1176) (Steel)	**CM3X0.5X6**	M3x0.5	0.217	0.354	0.236	0.098		1.62
	CM3X0.5X10			0.512	0.394			
	CM4X0.7X10	M4x0.7	0.276	0.551		0.118		2.21
	CM4X0.7X12			0.630	0.472			
	CM4X0.7X14			0.709	0.551			
	CM4X0.7X15			0.748	0.591			
	CM4X0.7X20			0.945	0.787			
	CM4X0.7X20-M0-A		0.236	0.945	0.787			
	CM5X0.8X8	M5x0.8	0.335	0.512	0.315	0.157		3.69
	CM5X0.8X10-A			0.591	0.394			
	CM5X0.8X12			0.669	0.472			
	CM5X0.8X12-A			0.669	0.472			
	CM5X0.8X14			0.709	0.551			
	CM5X0.8X16			0.827	0.630			
	CM5X0.8X16-A			0.827	0.630			
	CM5X0.8X18			0.906	0.709			
	CM5X0.8X20-A			0.984	0.787			
	CM5X0.8X25-A			1.181	0.984			
	CM5X15	M5		0.787	0.591			
 Hex. socket head screw (JISB1176)	**CM6X1X16-A**	M6x1.0	0.394	0.866	0.630	0.197		6.27
	CM6X1X20-A			1.024	0.787			
	CM6X1X25-A			1.220	0.984			
	CM6X1.0X40-A			1.811	1.575			
	CM6X10	M6		0.630	0.394			
	CM6X15			0.827	0.591			
	CM6X16			0.866	0.630			
	CM6X20			1.024	0.787			
	CM6X25			1.220	0.984			
	CM6X30-S	M6x1.0	0.394	1.406	1.102			
 CM***H	**CM8X1.25X20-A**	M8x1.25	0.512	1.102	0.787	0.236		18.44
	CM8X1.25X25-A			1.299	0.984			
	CM8X30H			1.417	1.181	0.197		
	CM10X30	M10x1.5	0.630	1.181	0.787	0.315		29.50
	CM10X30H		0.630	1.496	1.181	0.236		29.50
	CM12X30H	M12x1.75	0.709	1.575		0.315		51.63
	CM16X40H	M16x2	0.945	2.126	1.575	0.394		73.75
	CM16x75	M16	0.945	2.953	2.008	0.551		73.75
	CM16x120	M16	0.945	4.724	3.780	0.551		73.75
	CM16x140	M16	0.945	5.512	4.567	0.551		73.75

User's Guide - Parts for Tools

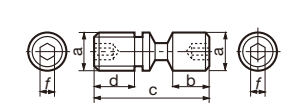
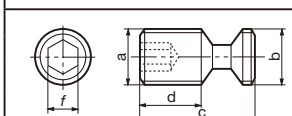
Screws

Shape	Designation	Dimension (in)							Torque (lbs·ft)
		a	øb	c	d	e	T / f		
 Hex. socket head screw (JISB1176)	**CM20x80**	M20	1.181	3.150	1.969		0.669		110.63
	CM20x120	M20	1.181	4.724	3.543		0.669		110.63
	CM20x150	M20	1.181	5.906	4.724		0.669		110.63
	CAP-CM12x1.75x50	M12	0.709	1.969	1.496		0.394		51.63
	CAP-CM16X2.0X55	M16	0.945	2.165	1.535		0.551		29.50
	CAP-CM20X2.5X50	M20	1.181	1.969	1.181		0.669		73.75
	C0.375X1.125H	3/8-24UNF	0.562	1.500	1.125		0.219		25.81
	C0.500X1.375H	1/2-20UNF	0.750	1.875	1.375		0.313		51.63
	SD06-A3	M10x1.5	0.630	2.756	2.362		0.315		29.50
	SRM6X16DIN912-12.9	M6x1	0.394	0.866	0.555		0.197		
 CM***H	**VC00TEDI12040F**	M12	1.024	2.008	1.575		0.315		44.25
	VC00TEDI20040F	M20	1.929	1.969	1.358		0.472		110.63
	VC00TANG16040F	M16	1.811	1.831	1.299		0.394		44.25
	SD08-98	M12x1.75	0.709	3.031	2.559		0.394		51.63
	LHM12x1.75x30-C	M12	0.709	1.453	1.181		0.315		51.63
	VC004762I10035F	M10	0.630	1.772	1.358		0.315		44.25
(Steel)	**FCS3**	M3x0.5	0.217	0.630	0.472		0.098		
	FCS6	M6x1	0.394	1.024	0.787		0.197		
 (Steel) FSHM*-*H	**FSHM8-30**	M8x1.25	0.433	1.181	1.063		0.197		18.44
	FSHM8-30H								18.44
	FSHM10-40	M10	0.551	1.575	1.437		0.236		29.50
	FSHM10-40H								29.50
 (Steel)	**SHCM4-10**	M4x0.7	0.236	0.551	0.394		0.118		2.21
	SHCM4-12			0.630	0.472				
	SHCM4-16			0.787	0.630				
 (Steel)	**CTS-M6**	M6x1	0.394	0.984	0.646		0.157		3.69
 (Steel)	**RSFTS-050M**	M10	0.984	2.047	1.673	0.827	0.236		
 (Steel)	**MCS520-2.5**	M5×0.8		0.787	0.276	0.236	0.098		2.21
	MCS620-3	M6×1				0.276	0.118		4.43
	MCS625-3			0.984	0.394	0.315			
	MCS825-4	M8×1			0.492	0.256	0.157		5.90
	MCS828-4			1.122	0.472	0.413			
	NDS-8A			1.181	0.453	0.453			
	NDS-8S	M8×1.25		0.787	0.315	0.315			
	RSRGR5M40	M4		0.354	0.144	0.164	T8		
	SR PS 118-0273	M10		1.575	0.650	0.591	0.197		29.50
	SR 5/16-32UNEF_3/8-24UNF	5/16-32UNEF-2A		1.260	0.394	0.453	0.156		
 (Steel)	**DS-5T**	M5×0.8		0.472	0.197	0.197	T10		2.58
	DS-6T	M6		0.591	0.236	0.236	T15		2.58
	DS-6P	M6×1		0.827	0.276	0.276	15IP		4.43
	FDS-8ST	M8×1		0.787	0.315	0.315	T27		7.38
	FDS-8ST-18			0.709		0.236			
 (Steel)	**DS-6**	M6×1		0.591	0.236	0.236	0.118		4.43
	DS-8	M8×1.25		0.630	0.276	0.276	0.157		5.90
	DS-8S			0.512	0.217	0.217			
	DS-10	M10×1.5		1.024	0.394	0.472	0.197		5.90
	FDS-6Z	M6×0.75		0.807		0.217	0.118		4.43
	FDS-8	M8×1		1.024		0.394	0.157		5.90
	FDS-8S			0.787	0.315	0.315			
	FDS-8SS			0.728		0.256			

Screws

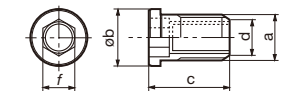
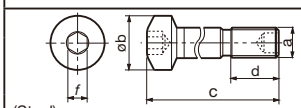
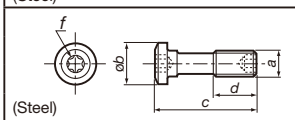
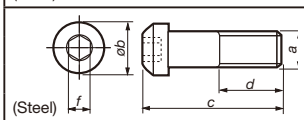
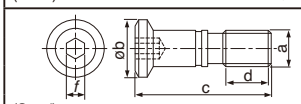
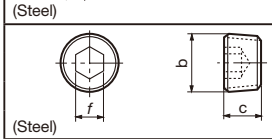
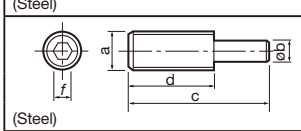
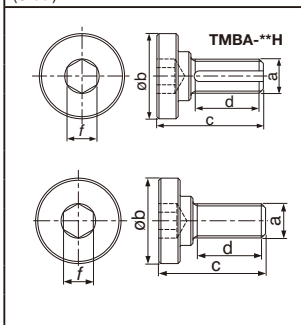
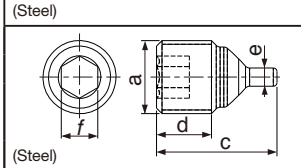
Shape	Designation	Dimension (in)						Torque (lbs·ft)
		a	øb	c	d	e	T / f	
 (Steel)	**SS100**	1/4-20UNC			0.750			
	S-412	10-32UNF			0.750			
 (Steel)	**SHM8x1.25x35-C**	M8	0.512	1.693	0.906	0.315	0.236	18.44
	SHM10x1.5x30-C	M10	0.630	1.575	0.669	0.394	0.315	29.50
	SHM16x2x35-C	M16	0.945	2.008	0.709	0.630	0.551	73.75
	SHM20x2.5x40-C	M20	1.181	2.283	0.787	0.709	0.669	110.63
 Hex. socket screw (Flat end)(JISB1177) (Steel)	**SSHM2.5-3**	M2.5		0.118			0.059	0.74
	SSHM3-3	M3		0.118				
	SSHM3-4			0.157				
	SSHM3-6			0.236				
	SSHM4-4	M4		0.157			0.079	1.11
	SSHM4-5			0.197				
	SSHM4-6			0.236				
	SSHM4-8			0.315				
	SSHM4-10			0.394				
	SSHM4-14			0.551				
	SSHM5-6	M5		0.236			0.098	1.48
	SSHM5-10			0.394				
	SSHM5-16			0.630				
	SSHM6-12	M6		0.472			0.118	2.21
	SSHM6-16			0.630				
	SSHM6-18			0.709				
	SSHM6-20			0.787				
	SSHM8-8	M8		0.315			0.157	3.69
	SSHM8-10			0.394				
	SSHM8-12			0.472				
	SSHM8-14			0.551				
	SSHM8-16			0.630				
	SSHM8-18			0.709				
 Hex. socket screw (Cylindrical end) (JISB1177) (Steel)	**M5×7**	M5	0.138	0.276	0.049		0.098	1.48
	M5×8			0.315				
	M5×10			0.394				
	M6×30	M6	0.157	1.181	0.059	-	0.118	2.21
 (Steel)	**JDS-3525**	M3.5x0.35	M2.5 x0.45	0.295	0.118	0.098	0.079	0.74
	JDS-5040	M5x0.5	M4 x0.7	0.394	0.157	0.157	0.098	0.74

Screws

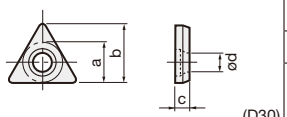
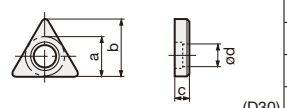
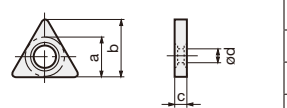
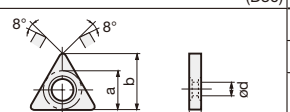
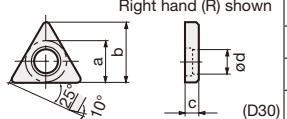
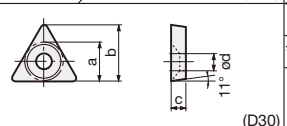
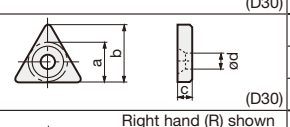
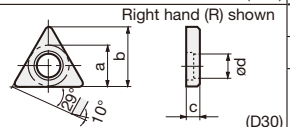
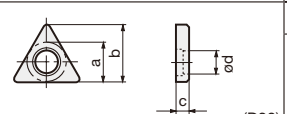
Shape	Designation	Dimension (in)						Torque (lbs·ft)
		a	b	c	d	e	T / f	
 LCS2 has a hex. socket in threaded end only. (Steel)	**LCS2**	M5	0.197	0.551			0.079	1.11
	LCS3	M6	0.236	0.669	0.256		0.098	1.48
	LCS3B			0.591				
	LCS4	M8	0.315	0.827			0.118	2.21
	LCS4K				0.378			
	LCS4CA			0.689	0.256			
	LCS5			0.984	0.335			
	LCS5CA			0.807				
	LCS6	M10	0.386	1.071	0.390		0.157	3.69
	LCS8	M12	0.465	1.417	0.504		0.197	5.90
	LCS8C	M10	0.386	1.189	0.524		0.157	3.69
 (Steel)	**LCS22**	M5	M5	0.394	0.185		0.079	1.11
	LCS22A	M6	M6	0.421				
	LCS23A	M5	M5	0.516	0.201		0.098	1.48
	LCS33	M5	M5	0.472	0.244		0.079	1.11
	LCS43	M6	M6	0.531	0.287		0.098	1.48

User's Guide - Parts for Tools

Screws

Shape	Designation	Dimension (in)						Torque (lbs·ft)
		a	b	c	d	e	T / f	
 (Steel)	**DTS5-3.5**	M5	0.248	0.341	M3.5		0.138	2.95
	DTS5-3.5SS			0.268				
	DTS5-3.5S			0.276				
	DTS6-4	M6	0.303	0.402	M4		0.157	3.69
	DTS6-4.5		0.295	0.394	M4.5		0.177	3.69
 (Steel)	**DLCS33**	M5	0.354	1.240	0.394		0.118	2.21
	DLCS43	M6	0.472	1.339	0.374		0.157	3.69
	DLCS54	M8x1	0.551	1.614	0.433			5.16
	DLCS64	M10x1	0.630	1.969	0.591		0.197	5.90
 (Steel)	**ACS-5W**	M5	0.315	0.787	0.335		T15	2.95
	ACS-6W	M6	0.394	1.024	0.476		T20	4.72
 (Steel)	**ACS3**	M5x0.8	0.295	1.010	12-15 (mm)		0.118	2.95
	ACS4	M6x1	0.354	1.090	14-17 (mm)		0.157	5.16
 (Steel)	**WCS3**	M6	0.374	0.886	0.315		0.118	2.21
 (Steel)	**PT1/4GN**		0.519	0.394	-		0.236	7.01
	1/8-28		0.383	0.276	-		0.197	5.90
 (Steel)	**LS-8**	M8	0.236	1.299	0.787		0.157	3.69
 (Steel)	**TMBA-M10**	M10x1.5	1.063	1.181	0.827		0.315	29.50
	TMBA-M12	M12x1.75	1.299	1.417	1.024		0.394	51.63
	TMBA-M12H	M12x1.75		1.358			0.315	
	TMBA-M16	M16x2	1.575	1.969	1.575		0.551	73.75
	TMBA-M16H	M16x2						
	TMBA-M20	M20x2.5	1.969	2.205	1.654		0.669	110.63
	TMBA-M20H	M20x2.5						
	TMBA-M24	M24x3	2.559	2.717	2.165		0.748	110.63
	TMBA-M24H	M24x3						
	TMBA-0.500H	1/2-20UNF	1.299	1.335	1.000		0.313	51.63
	TMBA-0.750H	3/4-16UNF	1.969	2.294	1.861		0.500	110.63
	TMBA-0.750S.375H	3/4-16UNF	1.875	1.700	1.310		0.375	75.00
 (Steel)	**SR-10400611**	M4X0.5		0.260	0.118	0.039	0.079	

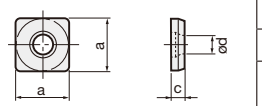
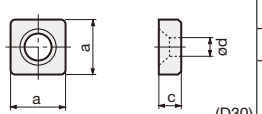
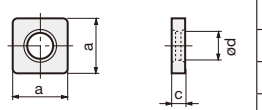
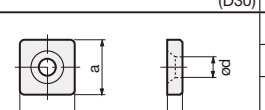
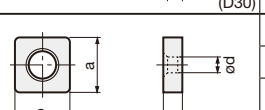
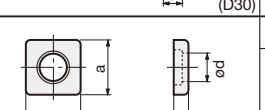
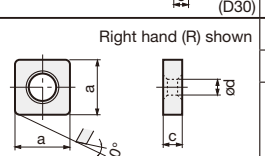
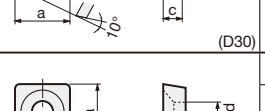
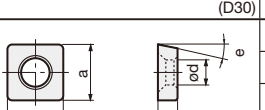
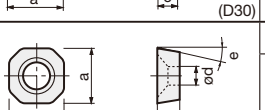
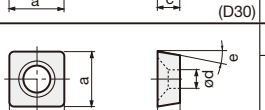
Shims

Shape	Designation	Dimension (in)				
		a	b	c	ød	
 (D30)	**AST322**	0.366	0.520	0.126	0.173	
	AST422	0.492	0.709			
 (D30)	**MST-322**	0.358	0.508	0.128	0.228	
	MST-432	0.492	0.705	0.189	0.287	
	MST-533	0.614	0.874		0.382	
	MST-644	0.740	1.047	0.252	0.445	
 (D30)	**LST317**	0.366	0.520	0.106	0.197	
	LST42	0.492	0.709	0.126	0.264	
	LST53	0.618	0.878	0.189	0.303	
	LST42K	0.429	0.614	0.126	0.264	
 (D30)	**LST317CA**	0.366	0.520	0.106	0.197	
	LST42CA	0.492	0.709	0.126	0.264	
Right hand (R) shown  (D30)	**ELST42**	0.453	0.650	0.126	0.256	
	ELST317	0.335	0.472	0.106	0.193	
	ELST317BR					
	ELST317BL					
 (D30)	**PAT-32**	0.323	0.461	0.126	0.138	
	***PAT-53**	0.528	0.780	0.189	0.197	
 (D30)	**NAT-32**	0.374	0.528	0.126	0.138	
	NAT-42E	0.488	0.701		0.122	
Right hand (R) shown  (D30)	**LST317BR**	0.366	0.520	0.106	0.197	
	LST317BL					
 (D30)	**SST32**	0.335	0.469	0.126	0.213	

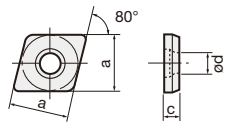
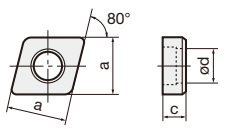
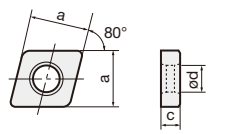
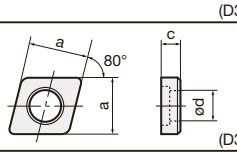
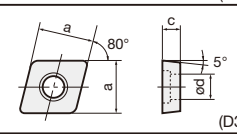
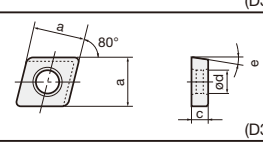
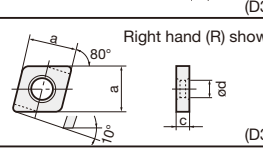
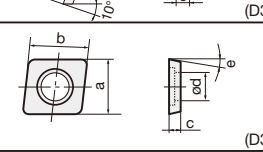
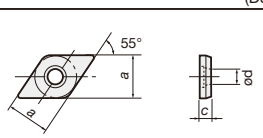
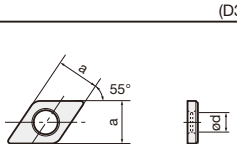
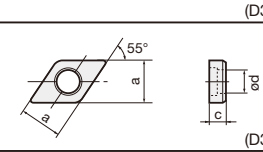
Note: * marked shims are made of steel.

User's Guide - Parts for Tools

Shims

Shape	Designation	Dimension (in)				
		a	b	c	ød	e
 (D30)	**ASS422**	0.492		0.126	0.173	
	CS44-A			0.185		
 (D30)	**ASS533**	0.618		0.189	0.217	
	ASS634	0.744				
 (D30)	**ELSS32**	0.335		0.126	0.193	
	LSS33	0.366		0.169	0.197	
	ELSS42	0.461		0.126	0.256	
	LSS42	0.492			0.264	
	ELSS53	0.579		0.189	0.315	
	LSS53	0.618			0.303	
	ELSS63	0.705			0.382	
	LSS63	0.744				
	ELSS84	0.953		0.252	0.508	
	LSS84	0.992			0.516	
 (D30)	**NAS-42**	0.500		0.126	0.138	
	NAS-04	1.240		0.252	0.358	
 (D30)	**MSS-432**	0.492		0.189	0.287	
	MSS-442			0.252		
 (D30)	**SSS32**	0.335		0.126	0.213	
Right hand (R) shown  (D30)	**LSS42BR**	0.492		0.126	0.264	
	LSS42BL					
 (D30)	**PAS-32**	0.323		0.126	0.118	
	PAS-42	0.449			0.138	
	***PAS-63**	0.669		0.189	0.197	
 (D30)	**LSS42CA**	0.492		0.126	0.264	8°
	LSS53CA	0.618		0.189	0.303	10°
 (D30)	**FSSA1102**	0.457		0.079	0.217	13°
 (D30)	**FSSP1102**	0.433		0.079	0.217	17°

Note: * marked shims are made of steel.

Shape	Designation	Dimension (in)				
		a	b	c	ød	e
 (D30)	**ASC322**	0.366		0.126	0.173	
	ASC422	0.492				
	ASC533	0.618		0.189	0.217	
	ASC634	0.744				
	CC44-A	0.492		0.185		
 (D30)	**MSC-432**	0.492		0.189	0.287	
	MSC-442			0.252		
	MSC-533	0.614		0.189	0.382	
	MSC-543			0.252		
	MSC-634	0.740			0.445	
 (D30)	**ELSC32**	0.335		0.126	0.244	
	LSC42	0.492			0.256	
	ELSC42	0.461				
	LSC53	0.618		0.189	0.303	
	ELSC53	0.579			0.319	
	ELSC63	0.705			0.382	
	LSC63	0.744				
	LSC317	0.366		0.106	0.197	
 (D30)	**SSC32**	0.335		0.126	0.213	
	SSC4T3	0.449		0.157	0.260	
 (D30)	**SSC4T3-P**	0.449		0.157	0.260	5°
	SSC54-P	0.528				5°
 (D30)	**LSC42CA**	0.492		0.126	0.264	8°
	LSC53CA	0.618		0.189	0.303	10°
Right hand (R) shown  (D30)	**LSC42BR**	0.492		0.126	0.264	
	LSC42BL					
 (D30)	**ZSA1102**	0.413	0.433	0.079	0.216	11°
	ZSA1502	0.614	0.488		0.236	11°
 (D30)	**ASD322**	0.366		0.126	0.173	
	ASD423	0.492		0.126	0.173	
	ASD432	0.492		0.189	0.173	
	CD44-A	0.492		0.185		
 (D30)	**ELSD32**	0.335		0.126	0.193	
	ELSD42	0.461			0.256	
	LSD42	0.492			0.264	
	LSD42A					
	LSD43			0.189		
	LSD43A					
 (D30)	**MSD-322**	0.366		0.126	0.228	
	MSD-432	0.492		0.189	0.287	
	MSD-442			0.252		

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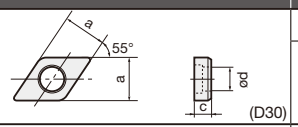
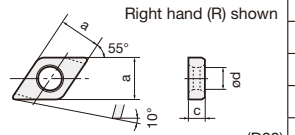
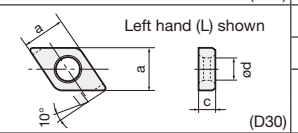
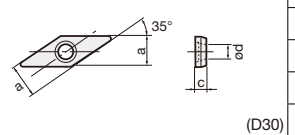
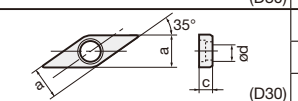
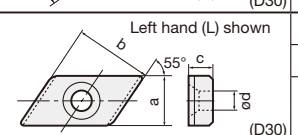
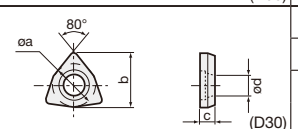
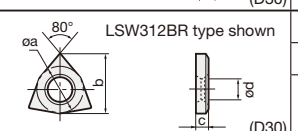
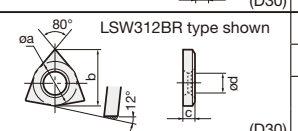
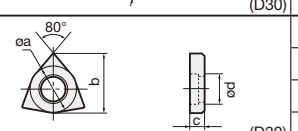
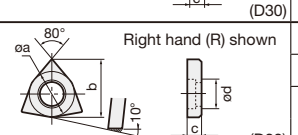
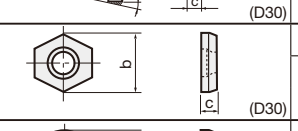
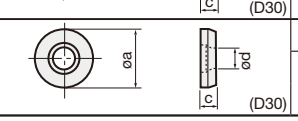
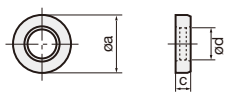
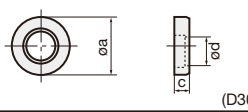
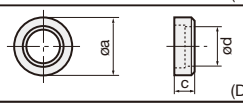
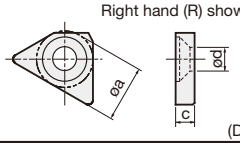
Shims

Shape	Designation	Dimension (in)				
		a	b	c	ød	
 (D30)	**SSD32**	0.335		0.126	0.213	
Right hand (R) shown  (D30)	**ELSD317BR**	0.335		0.106	0.193	
	ELSD317BL					
	LSD42BR	0.492		0.126	0.264	
	LSD42BL					
Left hand (L) shown  (D30)	**LSZ42BR**	0.492		0.126	0.264	
	LSZ42BL					
 (D30)	**ASV222**	0.274		0.125	0.130	
	ASV322	0.366		0.126	0.173	
	CV34-A	0.366		0.185		
	LSV212	0.281		0.087	0.195	
 (D30)	**MSV-322**	0.365		0.126	0.228	
	SSV32	0.331			0.213	
	SSV42	0.433			0.248	
Left hand (L) shown  (D30)	**CSK54R**	0.370	0.583	0.189	0.138	
	CSK54L					
 (D30)	**ASW322**	0.367	0.453	0.126	0.173	
	ASW422	0.492	0.598			
LSW312BR type shown  (D30)	**LSW312**	0.367	0.453	0.106	0.197	
	LSW42	0.492	0.610	0.126	0.264	
LSW312BR type shown  (D30)	**LSW312BR**	0.367	0.453	0.106	0.197	
	LSW312BL					
 (D30)	**MSW-432**	0.504	0.622	0.189	0.287	
	MSW-533	0.630	0.776		0.382	
	MSW-633	0.756	0.933		0.445	
Right hand (R) shown  (D30)	**MSW-432BR**	0.504	0.622	0.189	0.287	
	MSW-432BL					
 (D30)	**CH44-A**		0.492	0.185		
 (D30)	**ASR420**	0.492		0.126	0.173	

Shims

Shape	Designation	Dimension (in)				
		øa	b	c	ød	
 (D30)	**LSR32**	0.350		0.126	0.197	
	LSR32C	0.331				
	LSR42	0.476			0.264	
	LSR42C	0.390			0.197	
	LSR53C	0.551		0.189	0.264	
	LSR63C	0.677			0.323	
	LSR84C	0.862		0.252	0.382	
 (D30)	**MSR-43**	0.492		0.189	0.287	
	MSR-44			0.252		
 (D30)	**SSR32**	0.343		0.125	0.205	
Right hand (R) shown  (D30)	**G16EL/IR**	0.374		0.126	0.157	
	G16ER/IL			0.126		
	G16EL/IR-DT			0.156	0.213	
	G16ER/IL-DT			0.156		

Shims

Shape	Designation	Dimension (in)		
		øa	ℓ	Lead angle
 (D30)	**AE16-4DT**	0.374	0.213	4°
	AE16-3DT		0.213	3°
	AE16-2DT		0.213	2°
	A16-1DT		0.213	1°
	AE16-0DT		0.213	0°
	AE16-99DT		0.213	-1°
	AE16-98DT		0.213	-2°
	AE16-4		0.157	4°
	AE16-3		0.157	3°
	AE16-2		0.157	2°
	A16-1		0.169	1°
	AE16-0		0.157	0°
	AE16-99		0.157	-1°
	AE16-98		0.157	-2°
	AN16-4DT	0.374	0.213	4°
	AN16-3DT		0.213	3°
	AN16-2DT		0.213	2°
	AN16-0DT		0.213	0°
	AN16-99DT		0.213	-1°
	AN16-98DT		0.213	-2°
	AN16-4		0.157	4°
	AN16-3		0.157	3°
	AN16-2		0.157	2°
	AN16-0		0.157	0°
	AN16-99		0.157	-1°
	AN16-98		0.157	-2°

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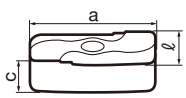
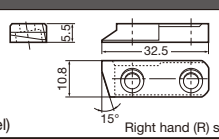
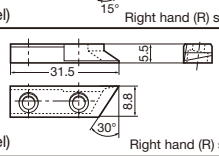
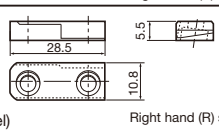
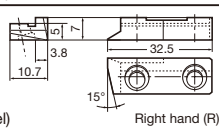
Shims

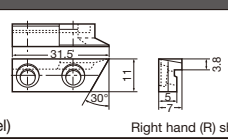
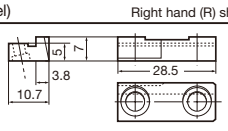
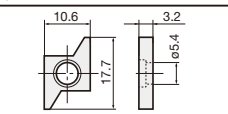
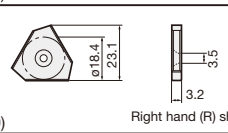
Shape	Designation	Dimension (in)		
		øa	ℓ	Lead angle
	**GXE16-98**	0.374	0.157	-2°
	GXE16-98DT		0.213	-2°
	GXE16-99		0.157	-1°
	GXE16-99DT		0.213	-1°
	GXE16-0		0.157	0°
	GXE16-0DT		0.213	0°
	GXE16-1		0.169	1°
	GX16-1DT		0.213	1°
	GXE16-2		0.157	2°
	GXE16-2DT		0.213	2°
	GXE16-3		0.157	3°
	GXE16-3DT		0.213	3°
	GXE16-4		0.157	4°
	GXE16-4DT		0.213	4°
	GXE22-98DT	0.500	0.260	-2°
	GXE22-99DT			-1°
	GXE22-0DT			0°
	GX22-1DT			1°
	GXE22-2DT			2°
	GXE22-3DT			3°
	GXE22-4DT			4°
	GXN16-98	0.374	0.157	-2°
	GXN16-98DT		0.213	-2°
	GXN16-99		0.157	-1°
	GXN16-99DT		0.213	-1°
	GXN16-0		0.157	0°
	GXN16-0DT		0.213	0°
	GXN16-1		0.169	1°
	GXN16-2		0.157	2°
	GXN16-2DT		0.213	2°
	GXN16-3		0.157	3°
	GXN16-3DT		0.213	3°
	GXN16-4		0.157	4°
	GXN16-4DT		0.213	4°
	GXN22-98DT	0.500	0.260	-2°
	GXN22-99DT			-1°
	GXN22-0DT			0°
	GXN22-2DT			2°
	GXN22-3DT			3°
	GXN22-4DT			4°

Shims

Shape	Designation	Dimension (in)				
		a	øa	ℓ	c	Lead angle
	**NXE22-98**		0.500	0.157		-2°
	NXE22-99					-1°
	NXE22-0					0°
	NXE22-1			0.177		1°
	NXE22-2			0.157		2°
	NXE22-3					3°
	NXE22-4					4°
	NXE27-98		0.626	0.157		-2°
	NXE27-99					-1°
	NXE27-0					0°
	NXE27-1			0.177		1°
	NXE27-2			0.157		2°
	NXE27-3					3°
	NXE27-4					4°
	NXN22-98		0.500	0.157		-2°
	NXN22-99					-1°
	NXN22-0					0°
	NXN22-1			0.177		1°
	NXN22-2			0.157		2°
	NXN22-3					3°
	NXN22-4					4°
	NXN27-98		0.626	0.157		-2°
	NXN27-99					-1°
	NXN27-0					0°
	NXN27-1			0.177		1°
	NXN27-2			0.157		2°
	NXN27-3					3°
(D30)	**NXN27-4**					4°
	**TSL12R**	0.472		0.185	0.177	4.5°
	TSL12L	0.472		0.185	0.177	4.5°
	TSL16R	0.626		0.252	0.197	5°
	TSL16L	0.626		0.252	0.197	5°
	TSL24R	0.937		0.370	0.280	7°
	TSL24L	0.937		0.370	0.280	7°
	TSL12RI	0.421		0.185	0.177	4.5°
	TSL12LI	0.421		0.185	0.177	4.5°
	TSL16RI	0.740		0.252	0.197	5°
(D30)	**TSL16LI**	0.740		0.252	0.197	5°

Shape	Designation
 (Steel) Right hand (R) shown	**SL-1R**
	SL-1L
 (Steel) Right hand (R) shown	**SL-2R**
	SL-2L
 (Steel) Right hand (R) shown	**SL-3R**
	SL-3L
 (Steel) Right hand (R) shown	**SL-6R**
	SL-6L

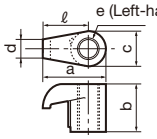
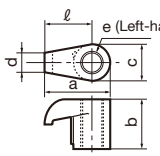
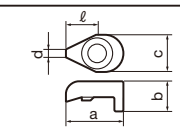
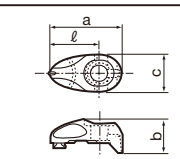
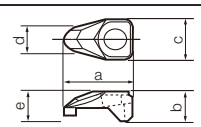
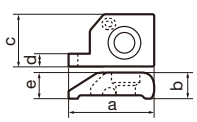
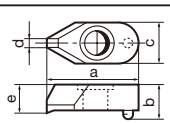
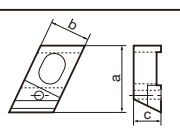
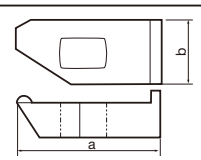
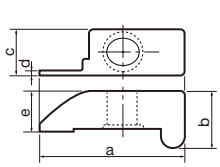
(Unit: mm)

Shape	Designation
 (Steel) Right hand (R) shown	**SL-7R**
	SL-7L
 (Steel) Right hand (R) shown	**SL-8R**
	SL-8L
 (D30) Right hand (R) shown	**SGSR151**
	SGSL151
 (D30) Right hand (R) shown	**STN62R**
	STN62L

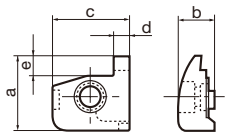
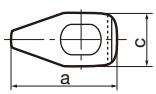
(Unit: mm)

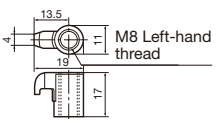
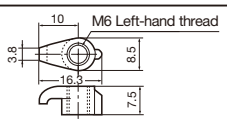
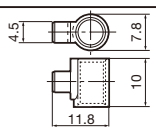
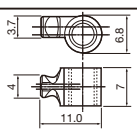
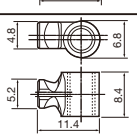
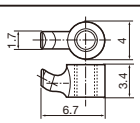
User's Guide - Parts for Tools

Clamps

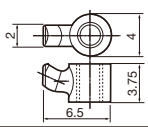
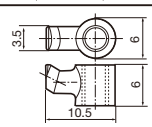
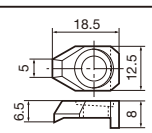
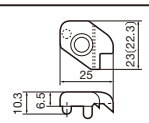
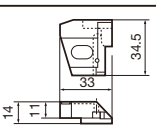
Shape	Designation	Dimension (in)					
		a	b	c	d	e	ℓ
 (Steel)	**MCL-5M**	0.579	0.433	0.307	0.157	M5	0.425
	MCL-6	0.732	0.453	0.374		M6	0.543
	MCL-8S	0.752	0.531	0.429	0.197	M8	0.535
	MCL-8M	0.886					0.669
	MCL-8L	1.004	0.571		0.157		0.787
 (Steel)	**MCPM-6**	0.579	0.441	0.311	0.157	M5	0.425
	MCPM-9	0.752	0.661	0.429	0.197	M8×1	0.535
	MCPM-12	0.886					0.669
	MCPM-20	0.732	0.374	0.374	0.157	M6	0.543
	MCPM-21		0.480				
	MCPM-22	0.846	0.520				0.657
	MCPM-30	1.004	0.661	0.429	0.197	M8×1	0.787
 (Steel)	**DCPM-33**	0.630	0.366	0.413	0.094		0.335
	DCPM-43	0.835	0.453	0.531	0.118		0.520
	DCPM-54	1.016	0.600	0.551	0.138		
	DCPM-64	1.118	0.610	0.630	0.157		
 (Steel)	**ACP3S**	0.898	0.374	0.394			0.591
	ACP3S-E	0.854	0.374	0.394			0.547
	ACP3L-3	1.038	0.472	0.512			0.723
	ACP4S	1.012	0.472	0.512			0.697
	ACP5S	1.185	0.508	0.591	-	-	0.815
	ACP6S	1.315	0.504	0.650	-	-	0.945
 (Steel)	**ACP3**	0.705	0.394	0.394	0.256	0.248	
	ACP4	1.020	0.547	0.472	0.276	0.425	
 (Steel) Right hand (R) shown	**CTC-3R**	1.142	0.346	0.630	0.087	0.315	
	CTC-3L						
	CTC-4R			0.669	0.126		
	CTC-4L						
	CTC-5R			0.709	0.165		
	CTC-5L						
 (Steel)	**CP81A**	1.102	0.413	0.472	0.138	0.315	
	CP81B						
 (Steel) TC-3 type shown, TC-4 : Left-hand thread	**TC-3**	0.748	0.492	0.327			
	TC-4	0.850		0.315			
 (Steel)	**TF-72**	0.866	0.445				
	TF-73	0.866	0.445				
	TF-184	0.866	0.445				
	TF-185	0.866	0.445				
 (Steel)	**CCR2**	1.366	0.587	0.421	0.047	0.413	
	CCL2						
	CCR3				0.087		
	CCL3						
	CCR4				0.110		
	CCL4						
	CCR5				0.126		
	CCL5						
	CCR6				0.154		
	CCL6						
	CCR8				0.193		
	CCL8						

Clamps

Shape	Designation	Dimension (in)					
		a	b	c	d	e	
 Right hand (R) shown (Steel)	CFG-3SR	0.866	0.433	0.909	0.079	0.236	
	CFG-3SL						
	CFG-4SR				0.118		
	CFG-4SL						
	CFG-4DR	1.260				0.630	
	CFG-4DL						
	CFG-5SR	0.866			0.157	0.236	
	CFG-5SL						
	CFG-5DR	1.260				0.630	
	CFG-5DL						
	CFG-6SR	0.906			0.197	0.276	
	CFG-6SL						
	CFG-6DR	1.299				0.669	
	CFG-6DL						
	CFG-8SR	1.102		1.067	0.276	0.315	
	CFG-8SL						
	CFG-8DR	1.496				0.709	
	CFG-8DL						
 (Steel)	CCP4-A	1.146		0.551			

Shape	Designation
 (Steel)	NF-84A
 (Steel)	CP536
 (Steel)	CP91
 (Steel)	CP900
 (Steel)	CP910
 (Steel)	JCP-1

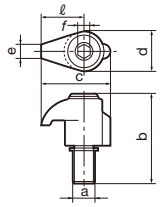
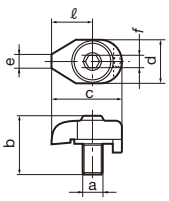
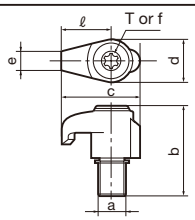
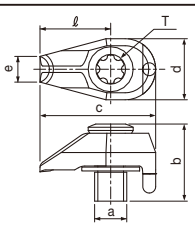
(Unit: mm)

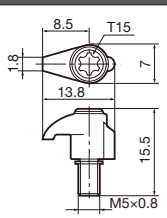
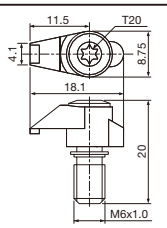
Shape	Designation
 (Steel)	JCP-2
 (Steel)	JCP-3 JCP-3N
 (Steel)	CQ-1
 Right hand (R) shown (Steel)	CPK5R CPK5L
 Right hand (R) shown (Steel)	C11R-5 C11L-5

(Unit: mm)

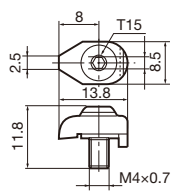
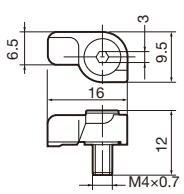
User's Guide - Parts for Tools

Clamp Sets

Shape	Designation	Dimension (in)						
		a	b	c	d	e	ℓ	T / f
 (Steel)	**CSG-5S**	M5×0.8	0.531	0.543	0.276	0.071	0.335	0.098
	CSG-5		0.610					
	CSG-6S	M6×1		0.642	0.335	0.098	0.394	0.118
	CSG-6		0.709					
	CSG-6L		0.846					
	CSG-8S	M8×1	0.827	0.807	0.433	0.138	0.492	0.157
	CSG-8		0.925					
 (Steel)	**CSW-00**	M4×0.7	0.453	0.472	0.315	0.079	0.295	0.098
	CSW-1	M5×0.8	0.650	0.650	0.374	0.157	0.394	0.118
	CSW-0	M4×0.7	0.453	0.543	0.335	0.098	0.315	0.098
	CSW-2	M6×1	0.787	0.807	0.433	0.236	0.512	0.157
	CSW-40	M4×0.7	0.472	0.520	0.315	0.079	0.295	0.098
	CSW-50	M5×0.8	0.591	0.665	0.394		0.374	0.118
 (Steel)	**CSP16**	M5×0.8	0.610	0.567	0.272	0.126	0.358	T15
	CSP22	M6×1	0.787	0.713	0.350	0.165	0.453	T20
	CSP27	M8×1.25	0.925	0.961	0.469	0.154	0.614	0.157
 (Steel)	**CSY-15**	M4×0.7	0.457	0.453	0.276	0.118	0.236	15IP
	CSY-20	M5×0.8	0.472	0.709	0.374	0.157	0.433	20IP

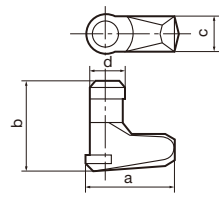
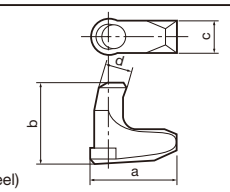
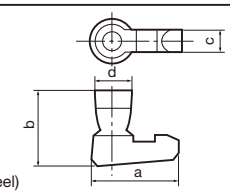
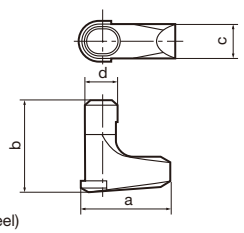
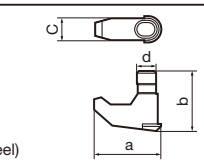
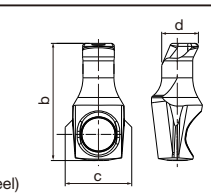
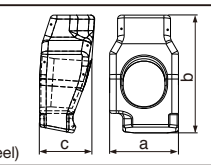
Shape	Designation
 (Steel)	**CSG-5T**
 (Steel)	**CSX20**

(Unit: mm)

Shape	Designation
 (Steel)	**CSW-0T**
 (Steel)	**CSL-4**

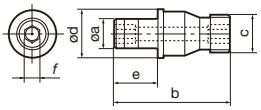
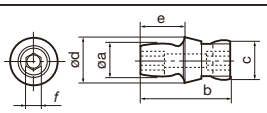
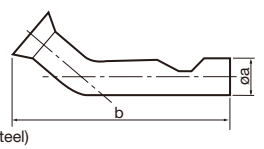
(Unit: mm)

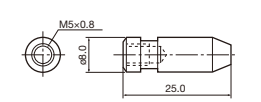
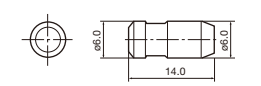
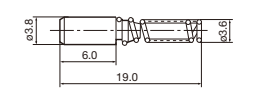
Levers

Shape	Designation	Dimension (in)				
		a	b	c	d	
 (Steel)	**LCL3**	0.394	0.472	0.146	0.142	
	LCL4	0.575	0.551	0.185	0.185	
	LCL5	0.673	0.669	0.236	0.236	
	LCL6	0.807	0.827	0.295	0.295	
	LCL8	1.000	1.000	0.339	0.339	
 (Steel)	**LCL3C**	0.425	0.465	0.134	0.118	
	LCL4C	0.512	0.528	0.146	0.134	
	LCL5C	0.732	0.697	0.185	0.177	
	LCL6C	0.807	0.748	0.236	0.224	
	LCL8C	0.953	0.925	0.295	0.244	
 (Steel)	**LCL22N**	0.295	0.256	0.102	0.081	
	LCL32N	0.394	0.307	0.126	0.126	
	LCL33NL	0.453	0.374	0.122	0.142	
	LCL33N	0.394	0.370	0.126	0.126	
	LCL43N	0.528	0.394	0.185	0.185	
 (Steel)	**LCL23**	0.307	0.335	0.102	0.083	
	LCL33	0.398	0.476	0.142	0.146	
	LCL33L	0.472	0.453	0.122	0.142	
	LCL43S	0.531	0.520	0.185	0.185	
	LCL43M					
	LCL44	0.634	0.575	0.185	0.185	
	LCL54	0.650	0.677	0.240	0.236	
 (Steel)	**DLCL43**	0.612	0.551	0.197	0.185	
	DLCL54	0.752	0.752	0.240	0.236	
	DLCL64	0.846	0.827	0.295	0.295	
 (Steel)	**SLLV-1**		0.305	0.134	0.096	
	SLLV-2		0.305	0.134	0.108	
 (Steel)	**FCL4**	0.197	0.306	0.150		
	FCL8	0.394	0.563	0.212		

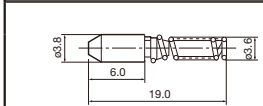
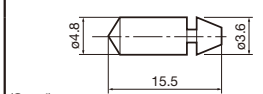
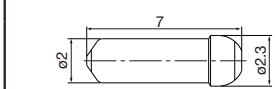
User's Guide - Parts for Tools

Pins

Shape	Designation	Dimension (in)					
		øa	b	øc	ød	e	*f*
 (Steel)	**MLP32L**	0.154	0.346	M5×0.8	0.220	0.138	0.079
	MLP33	0.146					
	MLP34L	0.146	0.516		0.244	0.197	
	MLP46	0.197	0.677	M6.3×1	0.307	0.217	0.098
	MLP46L		0.732			0.272	
	MLP58	0.244	0.862	M8×1	0.406		0.118
	MLP68	0.307		M10×1	0.469		0.157
	MLP68L		0.949			0.358	
 (Steel)	**MLP44**	0.197	0.520	M6.3×1	0.280	0.217	0.098
	MLP33L	0.146	0.409	M5×0.8	0.220	0.201	0.079
 (Steel)	**SW99**	0.315	1.870				

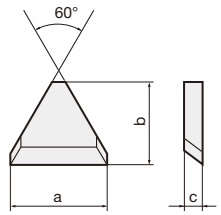
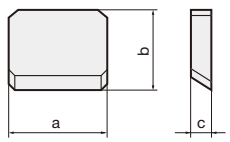
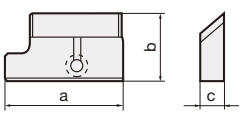
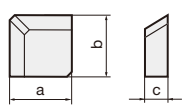
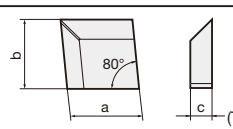
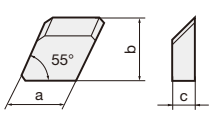
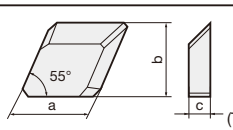
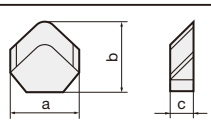
Shape	Designation
 (Steel)	**SP-8**
 (Steel)	**SP-6**
 (Steel)	**BP-3**

(Unit: mm)

Shape	Designation
 (Steel)	**BP-360**
 (Steel)	**BP-490**
 (Steel)	**SL-PI-2**

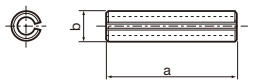
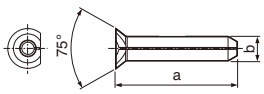
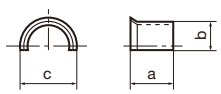
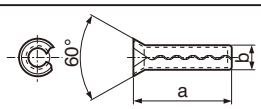
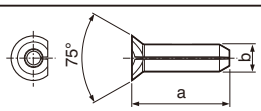
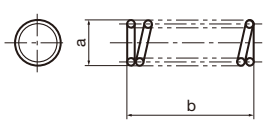
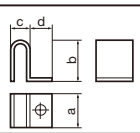
(Unit: mm)

Chipbreaker Pieces

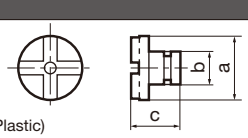
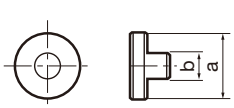
Shape	Designation	Dimension (in)				
		a	b	c		
 (TX30)	**CBT-2S**	0.346	0.299	0.079		
	CBT-2M	0.291	0.260			
	CBT-3S	0.524	0.476	0.098		
	CBT-3M	0.484	0.437			
	CBT-3L	0.445	0.398			
	CBT-4S	0.740	0.665			
	CBT-4M	0.701	0.626			
	CBT-4L	0.661	0.567			
	NCT-2S	0.559	0.465			
	NCT-2M	0.512	0.425			
	NCT-2L	0.469	0.386			
 (TX30)	**CBS-3S**	0.374	0.327	0.079		
	CBS-3M		0.287			
	CBS-4S	0.500	0.457	0.098		
	CBS-4SN					
	CBS-4M		0.417			
	CBS-4L		0.358			
	NCS-3S		0.441			
	NCS-3M		0.402			
	NCS-3L		0.343			
 Right hand (R) shown (TX30)	**B11 R-5**	0.945	0.512	0.197		
	B11 L-5					
 (TX30)	**CBS-4SN**	0.453	0.453	0.098		
	CBS-4MN	0.413	0.413			
	CBS-4LN	0.354	0.354			
	NCS-3SN	0.441	0.441			
	NCS-3MN	0.402	0.402			
	NCS-3LN	0.343	0.343			
 (TX30)	**CBC-4SN**	0.453	0.453	0.098		
	CBC-4MN	0.413	0.413			
	CBC-4LN	0.374	0.374			
 Right hand (R) shown (TX30)	**CBD-4SR**	0.500	0.453	0.098		
	CBD-4MR		0.413			
	CBD-4ML					
	CBD-4LR		0.374			
 (TX30)	**CBD-4SN**	0.453	0.453	0.098		
	CBD-4MN	0.413	0.413			
 (TX30)	**CBR-4SN**	0.500	0.469	0.098		
	CBR-4MN		0.429			

User's Guide - Parts for Tools

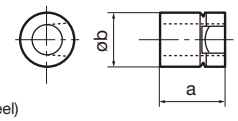
Springs (Springs for Shims)

Shape	Designation	Dimension (in)					
		a	b	c	d		
 (Steel)	**SP-2.5**	0.472	0.106				
 (Steel)	**SP-16-L14**	0.535	0.112				
 (Steel)	**LSP3**	0.217	0.118	0.232			
	LSP3L	0.276					
	LSP4		0.157	0.299			
	LSP4S	0.236					
	LSP5	0.335	0.177	0.346			
	LSP6	0.433	0.232	0.429			
	LSP6C	0.335	0.189	0.366			
	LSP8	0.472	0.394	0.606			
 (Steel)	**PSP-2.5**	0.394	0.106				
	PSP-4.0	0.630	0.165				
	PSP301	0.299	0.118				
 (Steel)	**PSP-16**	0.384	0.112				
 (Steel)	**BP-0**	0.142	0.512				
	BP-5-A						
	BP-7	0.276	0.433				
	BP-8.8	0.346	0.394				
	BP-9	0.327					
	BP-10	0.358					
	SP913	0.354	0.512				
 (Steel)	**BSP-1**	0.307	0.295	0.189	0.236		

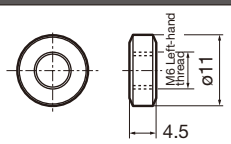
Coolant Supply Attachment

Shape	Designation	Dimension (in)					
		a	b	c	Thread		
 (Plastic)	**EA-20**	0.787	0.394	0.591			
	EA-25	0.984					
	EA-32	1.260	0.630				
 (Plastic)	**CA-16**	0.630	0.315		M6		
	CA-20	0.787	0.335		M6		
	CA-25	0.984	0.453		R1/8		
	CA-32	1.260	0.453		R1/8		
	CA-40	1.575	0.453		R1/8		

Pistons

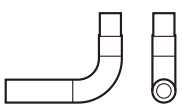
Shape	Designation	Dimension (in)				
		a	øb			
 (Steel)	DPIS33	0.496	0.354			
	DPIS43	0.465	0.394			
	DPIS44	0.528	0.394			
	DPIS54	0.630	0.512			
	DPIS64		0.591			

Nuts

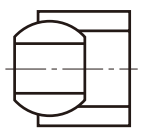
Shape	Designation
	SRW11

(Unit: mm)

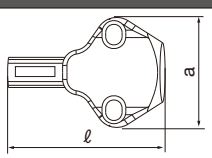
Coolant Pipe & Nozzle

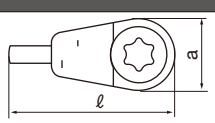
Shape	Designation
	PNZ5

Coolant Nozzle

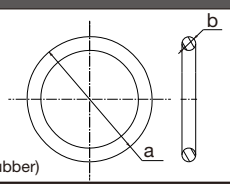
Shape	Designation
	CNZ125
	SATZ-M8X1-M3
	SATZ-M10X1-M5
	EZ104
	EZ83

Coolant unit

Shape	Designation	Dimension (in)	
		a	ℓ
	CU-CW-CHP	0.819	1.169
	CU-D-CHP	0.819	1.165
	CU-V-CHP	0.819	1.181

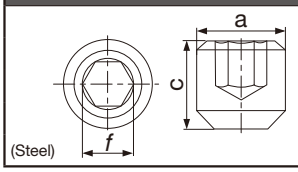
Shape	Designation	Dimension (in)	
		a	ℓ
	S-CU-CHP	0.276	0.638

O-ring for TungTurn-Jet

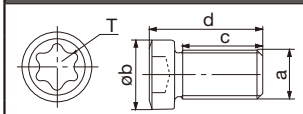
Shape	Designation	Dimension (in)				
		a	øb			
 (Rubber)	OR6.4X0.9N	0.323	0.035			
	OR14X2.5NN	0.748	0.098			

User's Guide - Parts for Tools

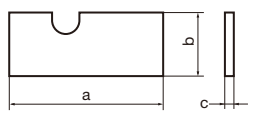
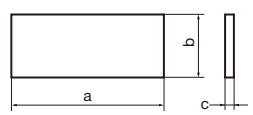
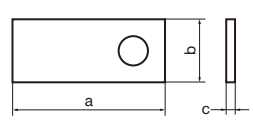
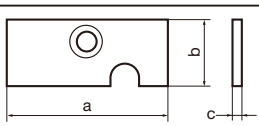
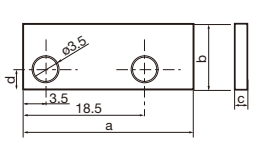
Coolant screw for TungTurn-Jet

Shape	Designation	Dimension (in)				
		a	c			T / *f*
 (Steel)	**SRM4X4 TL360**	M4	0.157			0.079

Mounting screw for TungTurn-Jet

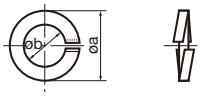
Shape	Designation	Dimension (in)				
		a	øb	c	d	T / *f*
 (Steel)	**SRM3**	M3X0.5	0.165	0.276	0.193	T8

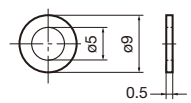
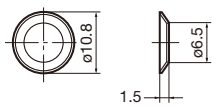
Sizing Plates

Shape	Designation	Dimension (in)					
		a	b	c	d		
 (Steel)	**S0816A**	2.165	0.610	0.031			
	S1016A			0.039			
	S0816B	1.969		0.031			
	S1016B			0.039			
	S0816C	1.772		0.031			
	S1016C			0.039			
	S0820A	2.402	0.768	0.031			
	S1020A			0.039			
	S0820B	2.146		0.031			
	S1020B			0.039			
	SM-00	0.709	0.315	0.039			
 (Steel)	**SW04**	1.004	0.228	0.010			
				0.020			
				0.039			
	SW05	1.457	0.327	0.010			
	SW06	1.417	0.425	0.020			
				0.039			
	SW08	1.398	0.484	0.079			
 (Steel)	**S0810**	1.575	0.433	0.031			
	S1010			0.039			
 Attached with fix screw and wrench. (Steel)	**PSTR08**	0.945	0.433	0.059			
	PSTL08						
	PSTR10	1.654	0.650	0.079			
	PSTL10						
	PSTR12	1.850	0.748	0.079			
	PSTL12						
 (Steel) (Unit: mm)	**AP0801**	1.024	0.374	0.020	0.118		
	AP0802			0.039			
	AP0803			0.059			
	AP0804			0.079			
	AP0805			0.098			
	AP1101	1.181	0.453	0.020	0.197		
	AP1102			0.039			
	AP1103			0.059			
	AP1104			0.079			
	AP1105			0.098			
	AP1106			0.118			

SW04 is composed of three plates and SW05 to SW08 are composed of four plates.
Note on fixing screws: PSTR/L08 is attached with CSSM2-4 and other types are attached with CSHM3-8.

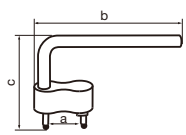
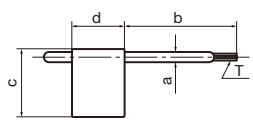
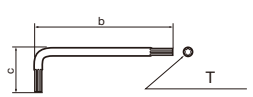
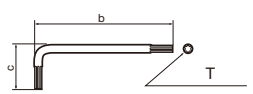
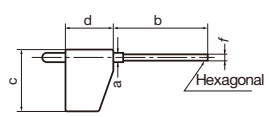
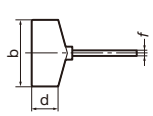
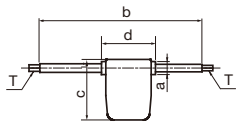
Washers

Shape	Designation	Dimension (in)					
		øa	øb				
	**VA4**	0.299	0.161				
	VA5	0.362	0.201				
	VA6	0.413	0.240				

Shape	Designation
	**CPW5**
	**CDW6**

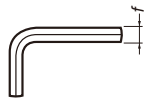
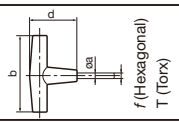
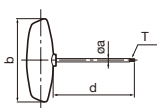
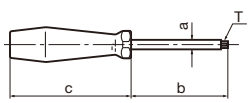
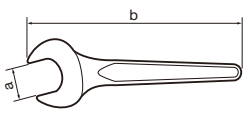
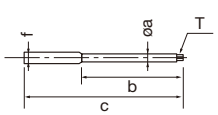
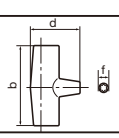
(Unit: mm)

Wrenches and Drivers

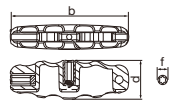
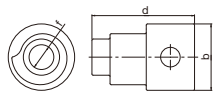
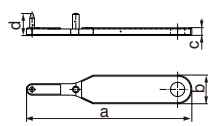
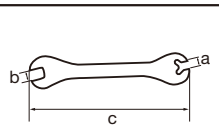
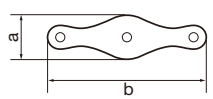
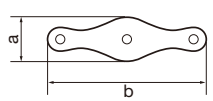
Shape	Designation	Dimension (in)					
		a	b	c	d	*f*	T
	**CRW23**	0.382	3.091	2.165			
	CRW33	0.366					
	**T-6F**	0.079	1.378	0.571	0.591		T6
	T-7F			0.748	0.748		T7
	T-8F	0.098	1.575				T8
	T-9F	0.118		0.925	0.787		T9
	T-15F	0.138	1.772	1.102	0.827		T15
	T-20F	0.157					T20
	IP-6F	0.079	1.378	0.583	0.587		6IP
	SET T-15/5	0.138	1.772	1.102	0.827		T15
	T-20TORX	0.154	1.929	1.181	0.866		T20
	**T-6L**		1.890	0.630			T6
	T-8L						T8
	T-9L						T9
	T-15L		2.323	0.866			T15
	T-25TORX		2.598	0.917			T25
	**KEYV-T20**		2.362	0.866			T20
	KEYV-T25		2.559	0.906			T25
	KEYV-T30L		7.480	1.457			T30
	KEYV-T40L		8.189	1.693			T40
	KEYV-T50L		9.134	1.890			T50
	**P-2F**	0.157	1.732	0.787	0.492	0.079	
	P-2.5F	0.197	1.772	0.984	0.787	0.098	
	HW2.0/5RED	0.118	1.496	0.591	0.591	0.079	
	**P-2.5T**		1.654		0.591	0.098	
	**T-1008/5**	0.256	3.346	1.102	0.984		T10/T8
	T-2010/5						T10/T20

User's Guide - Parts for Tools

Wrenches, Drivers and Lubricant

Shape	Designation	Dimension (in)					
		a	b	c	d	*f*	T
	**1/4HEX**					0.250	
	5/32HEX					0.156	
	1/8HEX					0.125	
	3/32HEX					0.094	
	P-1.5					0.059	
	P-2					0.079	
	P-2.5					0.098	
	P-3					0.118	
	P-3.5					0.138	
	P-4					0.157	
	P-4.5					0.177	
	P-5					0.197	
	P-6					0.236	
	**TP-3A**		2.756		1.791	0.118	
	TP-4		3.346		2.087	0.157	
	TP-5					0.197	
	T-27T	0.197	3.346		1.654		T27
	**T-15T**	0.157	3.937		3.937		T15
	T-20T						T20
	IP-20T						20IP
 Handle shape somewhat varies depending on the type number from the above figure.	**T-6D**	0.098	1.772	2.756			T6
	T-7D	0.079					T7
	T-8D	0.102	2.402	2.657			T8
	T-9D	0.118	2.559	3.150			T9
	T-10D	0.130	2.756	3.543			T10
	T-15D	0.144	2.795	3.937			T15
	T-20D	0.181	3.543				T20
	T-25D	0.173	3.425	3.386			T25
	IP-6DB		1.772	2.756			6IP
	IP-7D	0.098	1.772	2.953			7IP
	IP-8D	0.118	2.165	3.150			8IP
	IP-10D	0.130	2.795	3.504			10IP
	IP-15D	0.157	3.150	3.937			15IP
	IP-20D	0.157	3.543	3.937			20IP
	**KS-21**	0.827	7.677				
	KS-24	0.945	8.465				
	KS-27	1.063	9.252				
	KS-32	1.260	10.827				
	KS-36	1.417	12.008				
	**M-1000**						
	**BT15S**	0.154	1.969	3.543		0.236	T15
	BT15M	0.154	1.969	4.646		0.236	T15
	BT20S	0.181	1.969	3.543		0.236	T20
	BT20M	0.181	1.969	4.646		0.236	T20
	BLD IP15/S7	0.154	1.969	3.543		0.236	15IP
	BLD IP15/M7	0.154	1.969	4.646		0.236	15IP
	BLD IP20/S7	0.181	1.969	3.543		0.236	20IP
	BLD IP20/M7	0.181	1.969	4.646		0.236	20IP
	BLD T10/S7	0.154	2.244	2.953		0.236	T10
	BLD T10/S7-A	0.154	2.244	2.953		0.236	T10
	**H-TB**		3.937		1.457	0.236	
	H-TBS		2.953		1.457	0.236	

Wrenches and Drivers

Shape	Designation	Dimension (in)					
		a	b	c	d	*f*	
	**H-TB2W**		3.740		1.236	0.236	
	**AJC08**		0.433		0.669	0.161	
	**ECW-456EF**	3.425	0.591	0.157	0.453		
	ECW-456I	3.169	0.866	0.157	0.413		
	**KEYV-S05**	0.157	0.217	3.937			
	KEYV-S06	0.213	0.315	4.921			
	KEYV-S08	0.260	0.394	5.906			
	KEYV-S10	0.303	0.512	6.890			
	KEYV-S12	0.370	0.630	9.843			
	KEYV-W20						
	**KEYV-177**	1.142	4.331				
	KEYV-217	1.142	4.331				
	**KGDT-100**	1.260	4.272				
	KGDT-110	1.260	4.272				
	KGDT-120	1.260	4.272				
	KGDT-130	1.260	4.272				
	KGDT-140	1.260	4.272				
	KGDT-150	1.260	4.272				

User's Guide - Parts for Tools

Locators

Designation	Applicable Tool
LD150R	TXD15125R ~ TXD15315R
LD440R/L	TMD44 TGD4400R/L-A TFD44
LD442R/L	EGD4400R
LD540R/L	TMD54
LE302R	ESE3050R (RS**) ~ 3063R (RS**)
LE303R/L	TSE3003R/LIA ~ 3006R/LIA
LE402AR	ESE4050RA ESE4063RA
LE403R/L	TSE4003R/LIA TSE4004R/LIA ESE4003RIA-S32
LE405R/L	TSE4005R/LIA ~ 4012R/LIA
LE413R/L	THE40
LE444R/L	TME4403R/LI ~ 4405R/LI TME4403R/LB ~ 4405R/LB EME4405R ~ 4404RI
LE446R/L	TME4406R/LI ~ 4412R/LI TME4406R/LB ~ 4412R/LB
LE540R/L	TME54
LF440R/L	THF44
LF540R/L	THF54
LF602R	ERF6050R ~ ERF6063R
LF602R/L	TRF6003R/LI ~ TRF6006R/LI TRF6008R/LI ~ TRF6012R/LI
LMS56R/L	MS08R/L ~ MS12R/L
LN423R/L	TGN42
LN645R/L	TPN64
LP403R/L	TSP4003R/LIA ~ TSP4004R/LIA TFP4004R/LIA
LP405R/L	TSP4005R/LIA ~ TSP4012R/LIA TFP4005R/LIA ~ TFP4012R/LIA
LP413R/L	TGP41 TGP42
LP514R/L	TGP51
LPP16R	TPP16
LR602R/L	ERD6050RA ~ ERD6063RA
LR603R/L	TRD6003R/L TRD6004R/L ~ TRD6008R/L
LV525R/L	VSN 1
LV530R/L	VSN 2
LV556R/L	VSN60
LW400R	EFP4063R
LW400R/L	TFD44 TFP4000 SFP4000
LW402R	EFP4050R

Insert locking wedges

Designation	Applicable Tool
FDS-8SST	EDPD09063R EDPD09063RB
FDS-8ST-18	EDP09080R EDPD09080RB DPD09100R~DPD09160R DPD09100RB~DPD09160RB
FW-242R	DPD24063R
FW-243R	DPD24080R, DPD24100R
FW-245R	DPD24125R, DPD24160R
FW304R/L-D	DAD15 DPD15 EDPD15 QPP15
LE302R	ESE3050R (RS**) ~ 3063R (RS**)
WF150R	TXD15125R ~ TXD15315R
WF310R/L	TGP4100BA TGP4103R/LIA
WF330N	TSE4003R/LIA TSE4004R/LIA ESE4003RIA-S32 TSP4003R/LIA ~ TSP4004R/LIA TFP4004R/LIA
WF330R/L	TSE3003R/LIA ~ 3006R/LIA
WF444R/L	TME4403R/LI ~ 4405R/LI TME4403R/LB ~ 4405R/LB EME4405R ~ 4404RI TME4406R/LI ~ 4412R/LI TME4406R/LB ~ 4412R/LB
WF500R	TSE4005R/LIA ~ 4012R/LIA TSP4005R/LIA ~ TSP4012R/LIA TFP4005R/LIA ~ TFP4012R/LIA
WF500R/L	TMD54 TGP51 THF54
WF50R/L	TME54
WF602R	ERF6050R ~ ERF6063R
WF603R/L	TRF6003R/LI ~ TRF600R/LI
WF608R/L	TRF6008R/LI ~ TRF6012R/LI
WF875N	TPYD06 EPYD06
WN645R/L	TPN64
WP193TR/L	EGD4400R
WP440R/L	TMD44 TGD4400R/L-A TFD44 TGP4100IA ~ TGP4112R/LIA TGP42 THF44 THE40
WR602R/LW	ERD6050RA ~ ERD6063RA
WR603R/L	TRD6003R/L TRD6004R/L ~ TRD6008R/L
WT402R	ESE4050RA ESE4063RA
WT402R/L	EME4450RB ~ 4404RB

Locator adjusting wedges

Designation	Applicable Tool
FW-305	TFD44 TFP40 SFP4000 EFP4063
FW325R/L-D	DAD15 QPP15 DPD15 EDPD15
RSFTC1008	TPYP12...
RSFTC1009	EPYP12M032C25.0R05
RSFTC1011	EPYP12M025C25.0R03

Fine adjusting screws

Designation	Applicable Tool
AJM5	DPD09 EDPD09
ASM34L	DPD24

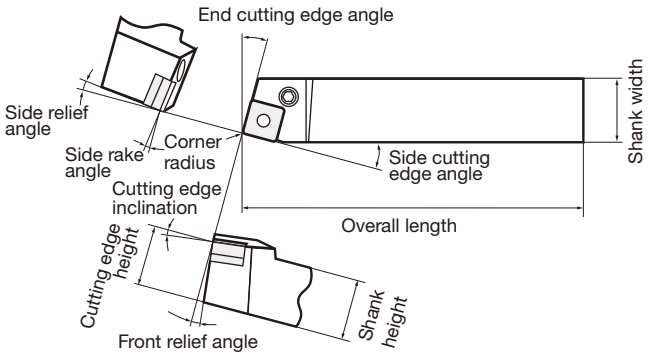
Cover

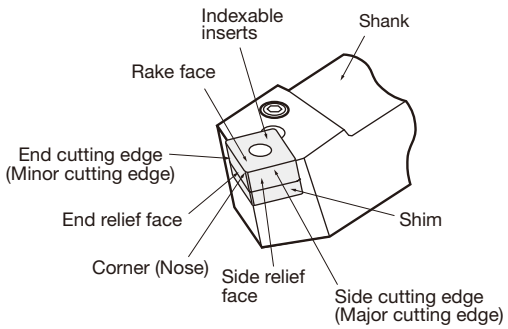
Designation	Applicable Tool
RSFTS6063M	TPYP12M063B22.0R10
RSFTS6080	TPYP12*080B**R12
RSFTS6100	TPYP12*100B**R16
RSFTS6125	TPYP12*125B**R20

User's Guide - Technical Reference

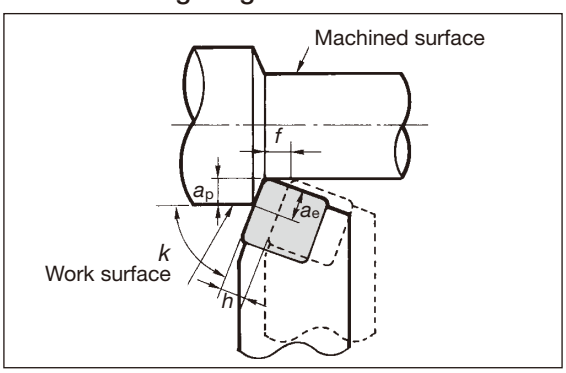
Turning Tools

Name of tool parts



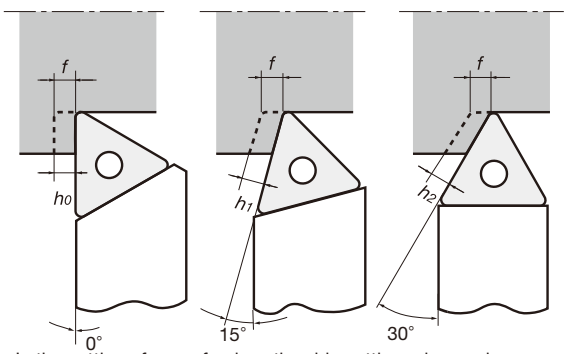


Relating angles between tool and workpiece



a_p … Depth of cut (Distance between work surface and machined surface)
a_e … Length of cutting edge engaging in cutting.
k … Cutting edge angle (Angle to be made by cutting edge and work surface)
f … Feed per revolution
h … Thickness to be cut per revolution
Machined surface … Workpiece surface after having machined.
Work surface … Workpiece surface to be cut.

●Effect of side cutting edge angle



In the cutting of same feed, as the side cutting edge angle increases, the chip thickness decreases.

$h_0 > h_1 > h_2$

●Honing

TAC indexable inserts of steel cutting grades are honed.
Honing specifications are shown in the following table.

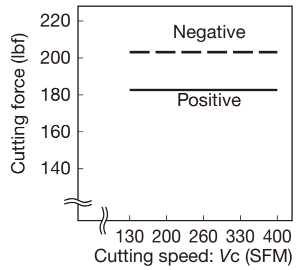
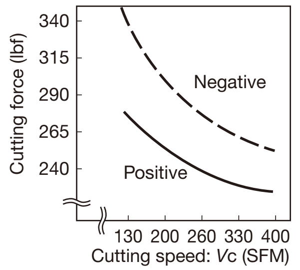
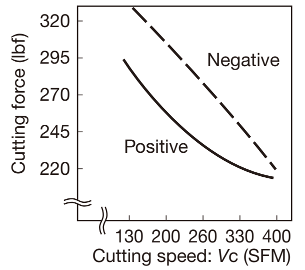
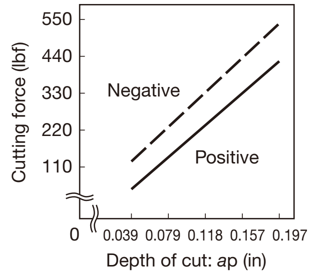
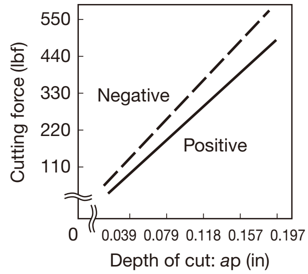
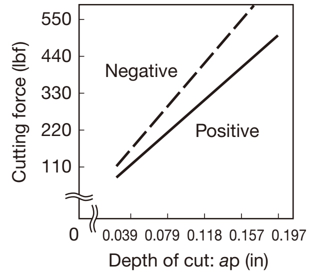
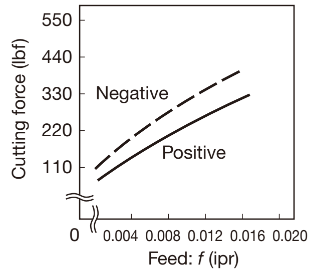
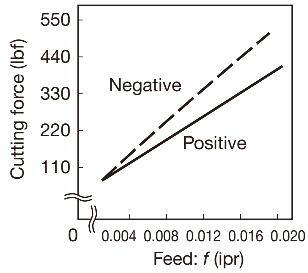
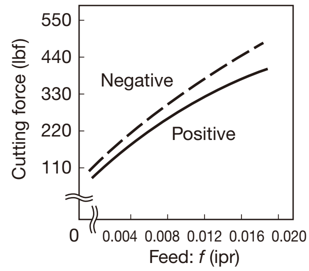
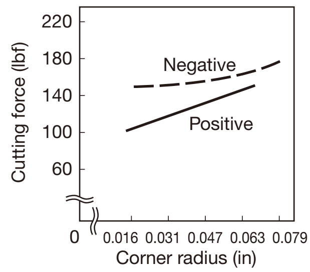
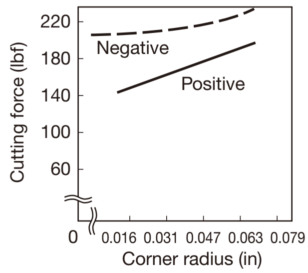
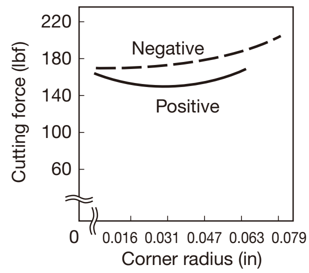
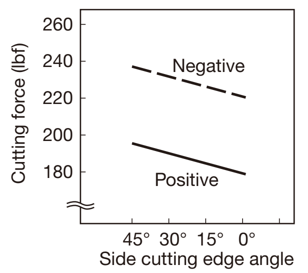
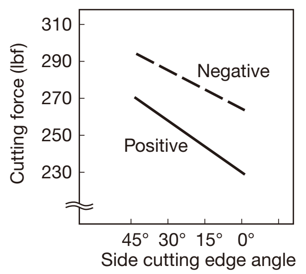
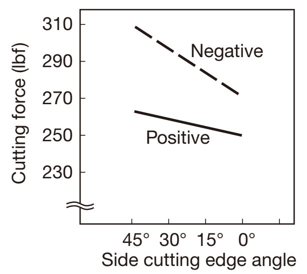
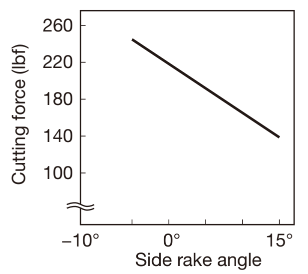
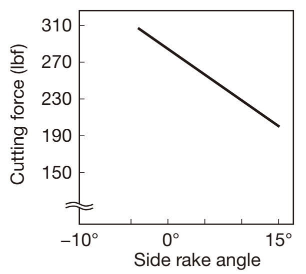
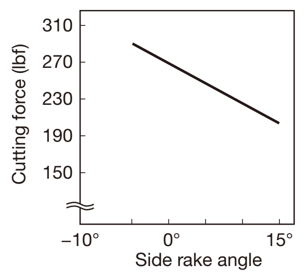
Edge condition	Shape
Sharp edge	
Round honing	
Chamfered honing	

●Effects of tool geometry on cutting phenomena

Increasing \ Phenomena	Flank wear	Crater wear	Edge strength	Cutting force	Surface finish	Chattering	Cutting edge temperature	Chip shape and flow
Cutting edge inclination	–	Decrease	Lower	Radial force decrease	–	Less tendency	Lower	Effect on flow direction
Side rake angle	–	Decrease	Lower	Decrease	–	–	Lower	Effect on shape
Relief angle	Decrease	–	Lower	Decrease	–	Likely to occur	Lower	–
End cutting edge angle	Decrease	–	Lower	Radial force decrease	Roughen	Less tendency	Lower	–
Side cutting edge angle	Decrease	Decrease	Increase	Radial force decrease	–	Likely to occur	Increase	Decrease thickness
Nose radius	Decrease to some level		Increase	Increase	Improve	Likely to occur	Increase	Effect on flow direction
Honing width	Increase	–	Increase	Increase	–	Likely to occur	Increase	–

Turning Tools

Relations between cutting force and cutting conditions or cutting phenomena

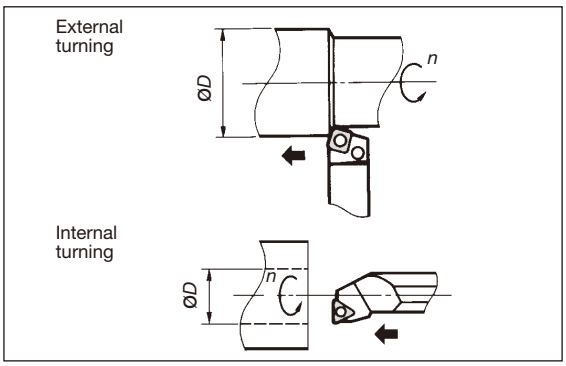
Condition	Grey cast iron (HB130)	Stainless steel (HB145)	Carbon steel (HB230)
Cutting speed and cutting force *f* = 0.008 ipr a_p = 0.079" Side cutting edge angle 0° Corner radius RE = 0.016"			
Depth of cut and cutting force V_c = 330 SFM *f* = 0.008 ipr Side cutting edge angle 0° Corner radius RE = 0.016"			
Feed and cutting force V_c = 330 SFM a_p = 0.079" Side cutting edge angle 0° Corner radius RE = 0.016"			
Corner radius and cutting force V_c = 330 SFM *f* = 0.008 ipr a_p = 0.047" Side cutting edge angle 0°			
Side cutting edge angle and cutting force V_c =330 SFM *f* = 0.008 ipr a_p = 0.079" Corner radius RE = 0.016"			
Side rake angle and cutting force V_c = 330 SFM *f* = 0.008 ipr a_p = 0.079" Side cutting edge angle 0° Corner radius RE 0.008"			

User's Guide - Technical Reference

Turning Tools

Calculation formulas for turning

●Cutting speed



When calculating cutting speed from number of revolutions:

$$Vc = \frac{\text{ø}D \times n}{3.82}$$

Vc : Cutting speed (sfm)
n : Number of revolution (rpm)
øD : Diameter of workpiece (in)
π : 3.14

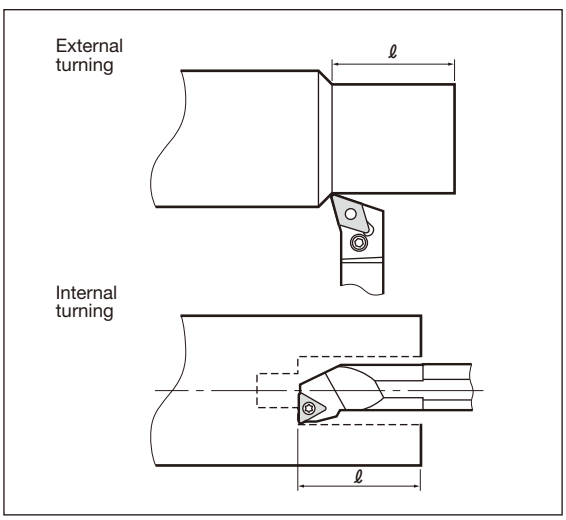
When calculating required number of revolutions from cutting speed:

$$n = \frac{Vc \times 3.82}{\text{ø}D}$$

Example : Calculating the cutting speed when turning a ø6"- diameter workpiece at 250 rpm

$$V_c = \frac{6 \times 250}{3.82} = 392 \text{ sfm}$$

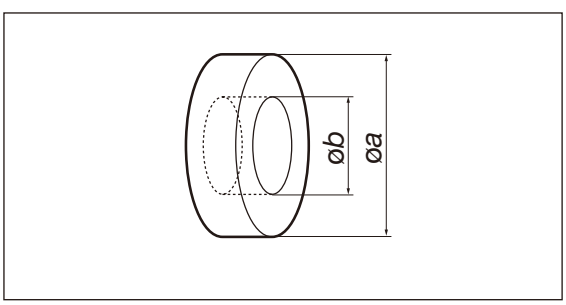
●Cutting time on external and internal turning



$$T_{(\text{min})} = \frac{\ell}{f \times n}$$

T : Cutting time (min)
ℓ : Cutting length (in)
f : Feed (ipr)
n : RPM

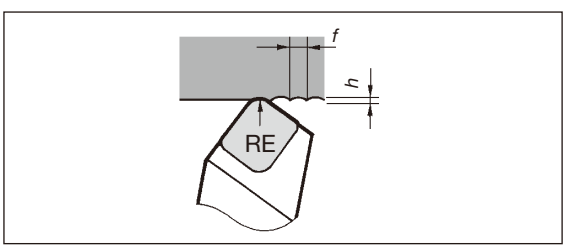
●Cutting time on face turning



$$T_{(\text{min})} = \frac{\pi \times (a^2 - b^2)}{48 \times v_c \times f}$$

V_c : Cutting speed (sfm)
f : Feed (ipr)
T : Cutting Time (min)

●Theoretical surface roughness



$$h_{(\mu\text{m})} = \frac{f^2}{8 \times r} \times 1000$$

h : Surface roughness (μm)
f : Feed (ipr)
r : Nose radius (in)〔RE〕
〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)

●Calculation of power consumption (kW)

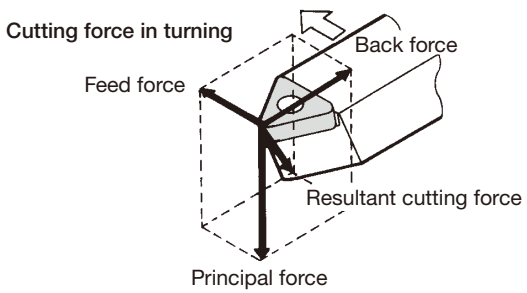
$$P_{c(\text{HP})} = \frac{F \times v_c}{33000}$$

P_c : Power requirement (kW)
F : Cutting force (N)
V_c : Cutting speed (sfm)

Turning Tools

Cutting forces

(1) Finding from the diagram based on experimental data.
(2) In case determining by simplified equation:



$$F = k_c \times a_p \times f \times 1000 \quad \text{(lb-force)}$$

F : Cutting force (lb-force)
k_c : Specific cutting force
KPI (Kilo pound force)
a_p : Depth of cut (in)
f : Feed (ipr)

Example :
Calculating the cutting force when cutting a high carbon steel (1055) at f = 0.007 ipr and ap = 0.118".
$F = 499 \times 0.118 \times 0.0078 \times 1000$
= 460 lb-force

●Calculating power requirement

$$P_c = \frac{k_c \times a_p \times v_c \times f}{33} \quad \text{(kW)}$$

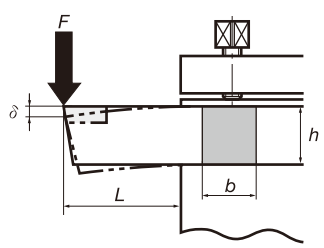
P_c : Net power requirement (H)
k_c : Specific cutting force (KPI)
[Refer to the Table below]
v_c : Cutting speed (sfm)
a_p : Depth of cutting (in)
f : Feed (ipr)

Value of specific cutting force (k_c)

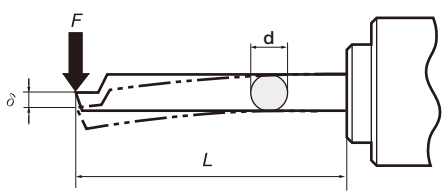
Workpiece material (JIS)	Tensile strength lb/in² (PSI)	Hardness (HB)	Value of specific cutting force on feed k_c (KPI)				
			0.0016 (ipr)	0.004 (ipr)	0.008 (ipr)	0.016 (ipr)	0.039 (ipr)
SS400, S15C	56,565	100	497	412	355	302	247
S35C, S40C	85,572	170	612	506	426	363	302
S50C, SCr430	113,855	230	711	583	497	426	348
SCM440, SNCM439	142,137	300	782	640	548	470	384
SDK	225,992 (56HRC)	56HRC	1,217	996	853	725	598
FC200	(160HB)	160	370	284	236	194	149
FCD600	(200HB)	200	483	370	306	254	194
Aluminum alloy	(89HB)	89	196	164	138	117	97
Aluminum			152	126	107	93	75
Magnesium alloy			57	57	57	57	57
Brass			157	157	157	157	157

●Bending stress and tool deflection

Square shank



Round shank



Bending stress

(1) Square shank

$$S = \frac{6 \times F \times L \times 145}{b \times h^2} \quad \text{(PSI)}$$

(2) Round shank

$$S = \frac{32 \times F \times L \times 145}{\pi \times d_3} \quad \text{(PSI)}$$

Tool deflection (in)

(1) Square shank

$$\delta = \frac{4 \times F \times L^3}{E \times b \times h^3} \quad \text{(in)}$$

(2) Round shank

$$\delta = \frac{64 \times F \times L^3}{3 \times \pi \times E \times d_4} \quad \text{(in)}$$

S : Bending stress in shank (PSI)
F : Cutting force (lb)
L : Overhang length of tool (in)
b : Shank width (in) : 〔B〕
h : Shank height (in) : 〔H〕
d : Shank diameter (in) : 〔DCONMS〕
E : Modulus of elasticity of shank material (lb/in²)

〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)

(Ref.) Values of E

Material	MPa (SPI)	{kgf/mm²}
Steel	30,457,980	30,457,980
Cemented Carbide	81,221,280 ~ 89,923,560	81,221,280 ~ 89,923,560

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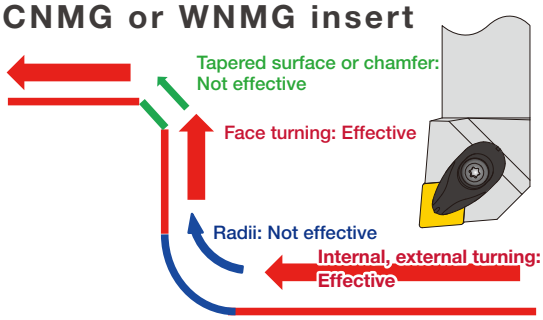
Turning Tools

Machining program compensation for wiper -SW / -FW insert

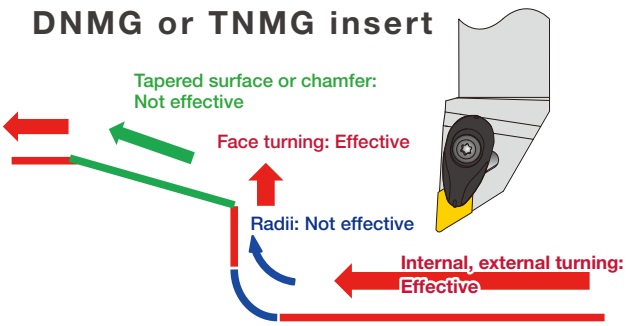
The nose radius on a wiper insert has a different configuration from that on standard ISO insert's. Machining program adjustments are, therefore, required to generate a correct offset for the wiper insert to machine the correct workpiece dimension. No compensation is needed, however, for the positive, CCMT-SW wiper insert.

Wiper effectiveness (surface finish quality improvement) by applications

CNMG or WNMG insert

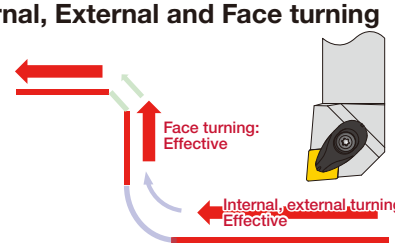
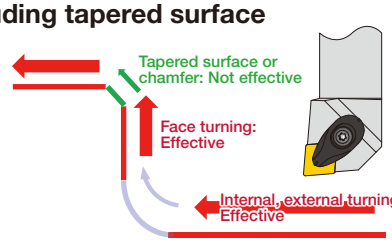
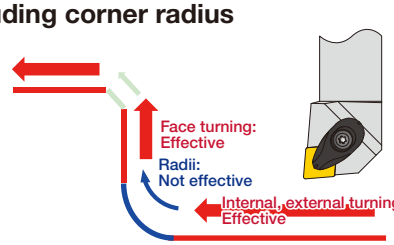
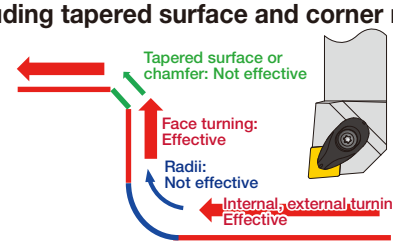


DNMG or TNMG insert



Program compensations by insert shapes and applications

Match your insert shape and application to find the proper compensation method.

Application \ Insert shape	CNMG/WNMG -SW/FW	DNMG/TNMG -SW/FW	CCMT-SW
	Type **L**	Type **J, G, F**	Type **L**
Internal, External and Face turning 	Proceed to Compensation ① (See Page L035)	Proceed to Compensation ④ (See Page L036)	No compensation needed
Including tapered surface 	Proceed to Compensation ①, ② (See Page L035)	Proceed to Compensation ④, ⑤ (See Page L036 - L037)	↑
Including corner radius 	Proceed to Compensation ①, ③ (See Page L035)	Proceed to Compensation ④ (See Page L036) Proceed to Compensation ⑥ (See Page L037)	↑
Including tapered surface and corner radius 	Proceed to Compensation ①, ②, ③ (See Page L035)	Proceed to Compensation ④, ⑤, ⑥ (See Page L036 - L037)	↑

Turning Tools

Compensations for CNMG/WNMG -SW / -FW

Compensations ① Tool offsets (Compensations for X- and Z-axis)

Match the insert approach angle and the insert style to find the value and compensate the machining program for the insert radius.
*This compensation procedure will not be necessary if the insert is compensated with the built-in tool presetter after insert replacement.

CNMG/WNMG-SW/-FW(Type L)

Nose Radius	X-axis direction	Z-axis direction
R0.016	0.001	0.001
R0.031	0.002	0.002
R0.047	0.002	0.002

(Unit: in)

Compensations ② Program compensations for tapered surface (proceed after ①)

To machine tapered surfaces, compensate the nose radius position in the x-axis position to obtain the correct workpiece dimension.

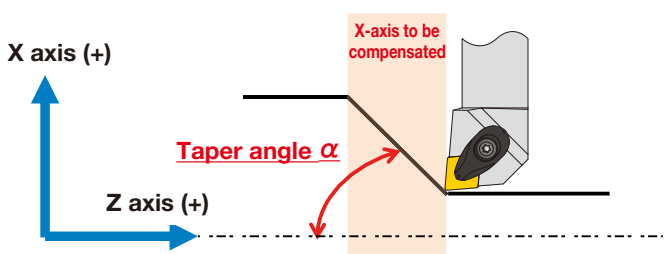
Compensations for x-axis when using CNMG or WNMG-SW/-FW (Tool approach angle: L) insert

Match the insert nose radius and the angle of the surface taper to find the value in Table 1 below to compensate the x-axis position.

For CNMG/WNMG-SW/-FW (Type L)

Compensation values for x-axis (in)

Nose radius (in)	Taper angle α (θ)																		
	0	0.197	0.394	0.591	0.787	0.984	1.181	1.378	1.575	1.772	1.969	2.165	2.362	2.559	2.756	2.953	3.150	3.346	3.543
R0.016	0	0.001	0.001	0.002	0.002	0.002	0.002	0.002	0.003	0.003	0.003	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0
R0.031	0	0.001	0.002	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.005	0.006	0.006	0.007	0.007	0.007	0.005	0.005	0
R0.047	0	0.001	0.002	0.002	0.003	0.003	0.004	0.004	0.004	0.004	0.005	0.006	0.006	0.007	0.007	0.007	0.006	0.006	0



Compensations ③ Program compensation for corner radii (proceed after ①)

To achieve the correct corner radius dimension on the workpiece, compensate the tool position, using the values listed below for respective insert styles.

CNMG/WNMG-SW/-FW(Type L)

Nose Radius	Deviation on the corner radius	Compensate radius by
R0.016	0.002	+0.005
R0.031	0.003	+0.007
R0.047	0.003	+0.007

(Unit: in)

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Compensations for CNMG/WNMG -SW / -FW

Compensations ④ Tool offsets (Compensations for X- and Z-axis)

Match the insert approach angle and the insert style to find the value and compensate the machining program for the insert radius.
*This compensation procedure will not be necessary if the insert is compensated with the built-in tool presetter after insert replacement.

DNMG-SW/-FW (Type J)

Nose Radius	X-axis direction	Z-axis direction
R0.016	0.009	0.001
R0.031	0.009	0.002
R0.047	0.005	0.001

(Unit: in)

TNMG-SW/-FW (Type J)

Nose Radius	X-axis direction	Z-axis direction
R0.016	0.009	0.002
R0.031	0.008	0.002
R0.047	0.006	0.002

(Unit: in)

TNMG-SW/-FW (Type G)

Nose Radius	X-axis direction	Z-axis direction
R0.016	0.009	0.001
R0.031	0.008	0.001
R0.047	0.006	0.001

(Unit: in)

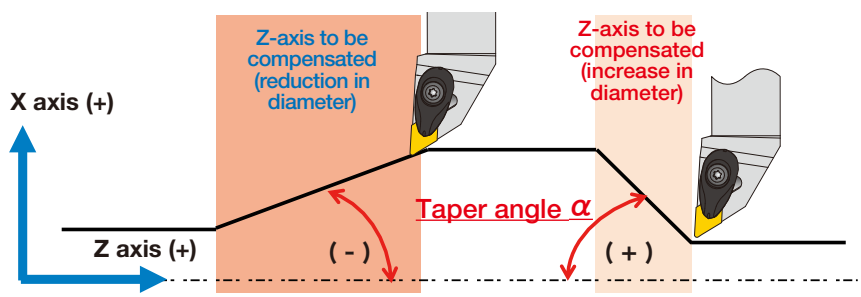
TNMG-SW/-FW (Type F)

Nose Radius	X-axis direction	Z-axis direction
R0.016	0.001	0.009
R0.031	0.001	0.008
R0.047	0.001	0.006

(Unit: in)

Compensations ⑤ Program compensations for tapered surface (proceed after ④)

To machine tapered surfaces with DNMG or TNMG-SW/-FW insert, compensate both the x-axis and z-axis positions. Since these inserts are commonly used for profiling, to machine a tapered surface with a gradual reduction in diameter, the z-axis position has to be compensated in the negative direction.



Compensations for x- and z-axis when using DNMG or TNMG-SW/-FW

Match the insert nose radius and the angle of the surface taper to find the value in below to compensate the x-axis and/or z-axis positions.

For DNMG-SW/-FW (Type J)

X-axis compensation values for plus-tapered surface (increase in diameter)

(Unit: in)

Nose radius (in)	Taper angle α (θ)																		
	0	0.197	0.394	0.591	0.787	0.984	1.181	1.378	1.575	1.772	1.969	2.165	2.362	2.559	2.756	2.953	3.150	3.346	3.543
R0.016	0	-0.0004	-0.0004	-0.0004	-0.0004	-0.0008	-0.0012	-0.0016	-0.0024	-0.0031	-0.0039	-0.0055	-0.0075	-0.0079	-0.0079	-0.0075	-0.0075	-0.0075	0
R0.031	0	0.0004	0.0008	0.0008	0.0012	0.0012	0.0008	0.0004	0.0000	-0.0008	-0.0020	-0.0035	-0.0059	-0.0067	-0.0059	-0.0051	-0.0047	-0.0043	0
R0.047	0	0.0008	0.0016	0.0020	0.0024	0.0028	0.0028	0.0024	0.0016	0.0008	-0.0008	-0.0035	-0.0067	-0.0075	-0.0063	-0.0055	-0.0051	-0.0059	0

Z-axis compensation values for minus-tapered surface (reduction in diameter)

Nose radius (in)	Taper angle α (θ)				
	-0.984	-0.787	-0.591	-0.394	-0.197
R0.016	0.013	0.013	0.013	0.013	0.013
R0.031	0.012	0.013	0.013	0.013	0.013
R0.047	0.013	0.014	0.015	0.016	0.016

(Unit: in)

* Match the taper angle and insert nose radius to find the value in Table 2 and compensate the NC program by either adding or deducting the value.

Example:
Tapering a surface of +45° (increase in diameter) with a R0.031" insert.
Current NC program: X3.937"
Compensation value: -0.001"
Parameter after compensation: X3.936"

Turning Tools

Compensations for DNMG / TNMG -SW / -FW

Compensations ⑤ Program compensations for tapered surface (proceed after ④)

For TNMG-SW/-FW (Type J)

X-axis compensation values for plus-tapered surface (increase in diameter)

Nose radius (mm)	Taper angle α (θ)																		
	0	0.197	0.394	0.591	0.787	0.984	1.181	1.378	1.575	1.772	1.969	2.165	2.362	2.559	2.756	2.953	3.150	3.346	3.543
R0.016	0	0	0	-0.0004	-0.0004	-0.0008	-0.0012	-0.0016	-0.0020	-0.0028	-0.0039	-0.0055	-0.0071	-0.0098	-0.0110	-0.0110	-0.0106	-0.0106	0
R0.031	0	0.0004	0.0008	0.0012	0.0016	0.0016	0.0016	0.0012	0.0008	0	-0.0008	-0.0024	-0.0043	-0.0075	-0.0087	-0.0079	-0.0075	-0.0083	0
R0.047	0	0.0008	0.0020	0.0028	0.0031	0.0035	0.0039	0.0035	0.0031	0.0024	0.0012	-0.0008	-0.0039	-0.0087	-0.0102	-0.0098	-0.0098	-0.0122	0

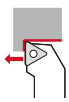
(Unit: in)

Z-axis compensation value for minus-tapered surface (reduction in diameter)

Nose radius (mm)	Taper angle α(θ)				
	-0.984	-0.787	-0.591	-0.394	-0.197
R0.016	0.0165	0.0165	0.0165	0.0161	0.0157
R0.031	0.0138	0.0126	0.0130	0.0134	0.0130
R0.047	0.0165	0.0142	0.0150	0.0154	0.0146

(Unit: in)

For TNMG-SW/-FW (Type G)

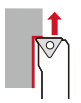


X-axis compensation values for plus-tapered surface (increase in diameter)

Nose radius (mm)	Taper angle α (θ)																		
	0	0.197	0.394	0.591	0.787	0.984	1.181	1.378	1.575	1.772	1.969	2.165	2.362	2.559	2.756	2.953	3.150	3.346	3.543
R0.016	0	0	-0.0004	-0.0004	-0.0008	-0.0012	-0.0016	-0.0020	-0.0028	-0.0035	-0.0047	-0.0063	-0.0087	-0.0110	-0.0114	-0.0114	-0.0114	-0.0126	0
R0.031	0	0.0004	0.0008	0.0008	0.0012	0.0008	0.0008	0.0004	-0.0004	-0.0012	-0.0024	-0.0039	-0.0067	-0.0098	-0.0098	-0.0098	-0.0110	-0.0157	0
R0.047	0	0.0012	0.0024	0.0031	0.0035	0.0039	0.0043	0.0039	0.0035	0.0028	0.0016	-0.0004	-0.0035	-0.0071	-0.0071	-0.0071	-0.0079	-0.0134	0

(Unit: in)

For TNMG-SW/-FW (Type F)



X-axis compensation values for plus-tapered surface (increase in diameter)

Nose radius (mm)	Taper angle α (θ)																		
	0	0.197	0.394	0.591	0.787	0.984	1.181	1.378	1.575	1.772	1.969	2.165	2.362	2.559	2.756	2.953	3.150	3.346	3.543
R0.016	0	-0.0012	-0.0020	-0.0031	-0.0039	-0.0051	-0.0051	-0.0043	-0.0039	-0.0035	-0.0031	-0.0028	-0.0024	-0.0020	-0.0020	-0.0016	-0.0012	-0.0008	0
R0.031	0	-0.0016	-0.0020	-0.0028	-0.0035	-0.0047	-0.0039	-0.0028	-0.0020	-0.0012	-0.0004	0.0004	0.0012	0.0020	0.0028	0.0035	0.0043	0.0051	0
R0.047	0	-0.0012	-0.0016	-0.0020	-0.0028	-0.0035	-0.0020	-0.0004	0.0012	0.0028	0.0043	0.0059	0.0071	0.0087	0.0098	0.0110	0.0126	0.0138	0

Compensations ⑥ Program compensation for corner radii (proceed after ④)

To achieve the correct corner radius dimension on the workpiece, compensate the tool position, using the values listed below for respective insert styles.

DNMG-SW/-FW (Type J)

Nose Radius	Deviation on the corner radius	Compensate radius by
R0.016	0	0
R0.031	0.0008	+0.0079
R0.047	0.0039	+0.0134

(Unit: in)

TNMG-SW/-FW(Type J)

Nose Radius	Deviation on the corner radius	Compensate radius by
R0.016	0	0
R0.031	0.0012	+0.0051
R0.047	0.0043	+0.0142

(Unit: in)

TNMG-SW/-FW(Type G, Type F)

Nose Radius	Deviation on the corner radius	Compensate radius by
R0.016	0	0
R0.031	0.0008	+0.0059
R0.047	0.0035	+0.0150

(Unit: in)

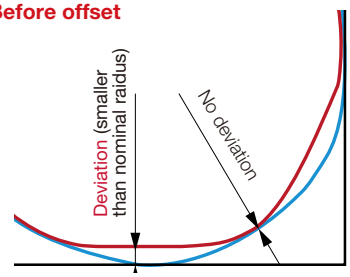
Additional information on offsetting -SW / -FW wiper inserts

Compensations ① , ④ Tool offsets (Compensations for X- and Z-axis)

Why need to offset ? Ex. When using DNMG 433

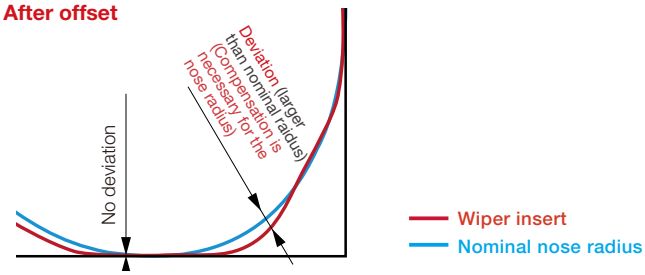
The wiper insert does not provide the exact corner radius. A deviation from the standard nose radius shape as shown below will always occur when going into a corner. An additional program adjustment is, therefore, required to achieve the correct corner radius or tapered surface dimension on the workpiece.

Before offset



Wiper nose radius' contour is slightly smaller than the nominal radius.
→ The nose radius profile deviates from the required corner radius, thus the actual corner profile will be incorrect.

After offset



Wiper nose radius' contour is partially larger than the nominal radius.
→ No compensations necessary for ID, OD, or face turning.
Meanwhile, due to these deviations, compensations to the NC program are necessary when turning corners and tapered surfaces for the correct workpiece dimensions.

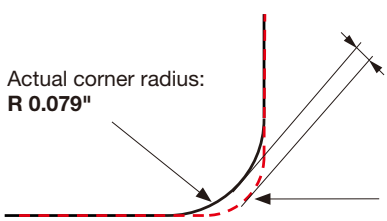
Compensations ③ , ⑥ Program compensation for corner radii (proceed after ① , ④)

Compensation for corner radius Ex. When using DNMG 433

Example: to machine a corner radius = R0.079", using insert nose radius = R0.047".

For standard ISO insert: DNMG 433 **
Input R0.031" for G2 or G3 (circular interpolation) to compensate the nose radius deviation.

Wiper insert
For wiper insert: DNMG150412-SW/-FW
Input **R0.055"**(= R0.031" + 0.013" from the list) for the nose radius, instead of R0.031", to compensate the nose radius deviation.

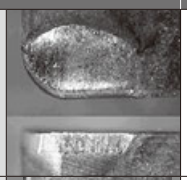
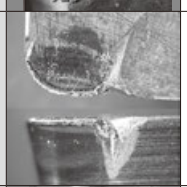
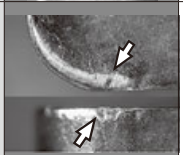
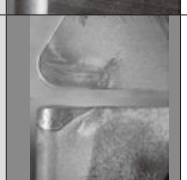


The deviation generated when using the ISO insert parameters for the wiper insert.
0.004"

Theoretical corner radius shape when R0.047"(=nominal nose radius) is programmed for the wiper insert
The actual corner radius becomes smaller than the required radius due to the insert radius deviation.
Corner radius = R0.065"
(R0.079" - 0.013")

Turning Tools

Troubleshooting in turning

Typical tool failure	Countermeasure		
	Tool grade	Cutting conditions	Tool geometry
Flank wear 	• Change to more wear resistant grades **P, M, K30 → 20 → 10**	• Reduce cutting speed • Change to appropriate feed • Change to wet cutting	• Decrease honing width • Increase relief angle • Increase end cutting edge angle • Increase corner radius • Select free-cutting chipbreaker • Increase rake angle
Crater wear 	• Change to more wear resistant grades **P, M, K30 → 20 → 10**	• Reduce cutting speed • Reduce feed • Reduce depth of cut • Change to wet cutting	• Increase rake angle • Select an appropriate chipbreaker • Increase side cutting edge angle • Increase corner radius
Notch wear 	• Change to more wear resistant grades **P, M, K30 → 20 → 10**	• Reduce cutting speed • Reduce feed	• Increase rake angle • Increase side cutting edge angle
Fracture 	• Change to tougher grades • Change to thermal-shock resistant grades **P, M, K10 → 20 → 30**	• Reduce feed • Reduce depth of cut • Improve holding rigidity of work and tool • Reduce overhang length of toolholder • Improve rigidity of machine	• Reduce rake angle • Select a chipbreaker with high edge strength • Increase honing width • Increase side cutting edge angle • Select larger shank size • Increase corner radius
Chipping 	• Change to tougher grades **P, M, K10 → 20 → 30**	• Reduce cutting speed • Reduce feed • Reduce depth of cut • Improve holding rigidity of work and tool • Reduce overhang length of toolholder • Improve rigidity of machine	• Reduce rake angle • Select a chipbreaker with high edge strength • Increase honing width • Increase side cutting edge angle • Select larger shank size
Flaking 	• Change to tougher grades **P, M, K10 → 20 → 30**	• Reduce cutting speed • Reduce feed	• Reduce rake angle • Increase corner radius • Increase honing width
Plastic deformation 	• Change to more wear resistant grade **P, M, K30 → 20 → 10**	• Reduce cutting speed • Change to appropriate feed • Reduce depth of cut • Supply cutting fluid in adequate volume	• Increase relief angle • Increase rake angle • Reduce corner radius • Reduce side cutting edge angle • Select a free-cutting chipbreaker
Chip welding  Built-up edge 	• Use a grade which has a low tendency to adhere to workpiece material **Cemented carbide → Coated carbide or cermet**	• Increase cutting speed • Increase feed • Change to water-insoluble cutting fluid • Change to wet cutting	• Increase rake angle • Select a free-cutting chipbreaker • Decrease honing width
Thermal cracking 	• Change to tougher grades • Change to thermal-shock resistant grades **P, M, K10 → 20 → 30**	• Reduce cutting speed • Reduce feed • Change to dry cutting • Supply cutting fluid in adequate volume • Reduce depth of cut • Change to water-insoluble cutting fluid	• Increase rake angle • Select a free-cutting chipbreaker • Decrease honing width

User's Guide - Technical Reference

Turning Tools

Problem	Cause	Countermeasure	
		Tool	Cutting conditions and others
Deteriorated surface roughness	• Increased tool wear	• Select a more wear resistant grade • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Use an insert with a larger nose radius • Use a more lightly honed insert • Use an insert of closer tolerance (from M class to G class)	• Select a proper feed • Decrease the cutting speed • Use a cutting fluid
	• Edge chipping	• Use a tougher grade • Select a chipbreaker with strong cutting edges • Use a largely honed insert • Increase the side cutting edge angle • Use a larger shank size	• Decrease the depth of cut • Decrease the feed • Use a more rigid machine • Improve the holding rigidity of the tool and workpiece • Shorten the overhang of the toolholder • Improve the machine looseness
	• Chip welding • Built-up-edge	• Select a grade with less affinity with the Workpiece material • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Use a more lightly honed insert • Use an insert of closer tolerance (from M class to G class)	• Increase the cutting speed • Increase the feed • Use a water-insoluble cutting fluid • Use a cutting fluid
	• Vibration and chatter	• Use a tougher grade • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Use an insert with a smaller nose radius • Decrease the side cutting edge angle • Use a more lightly honed insert • Use a larger shank size	• Use a proper cutting speed • Decrease the feed • Decrease the depth of cut • Improve the holding rigidity of the tool and workpiece • Shorten the overhang of the toolholder • Improve the machine looseness
Deteriorated dimensional accuracy	• Improper insert accuracy	• Use an insert of closer tolerance (from M class to G class)	
	• Incomplete engagement of tool and workpiece	• Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Use an insert with a smaller nose radius • Use a more lightly honed insert	• Improve the holding rigidity of the tool and workpiece • Shorten the overhang of the toolholder • Improve the machine looseness
Burr occurrence	• Unsuitable cutting speed		• Decrease the cutting speed • Increase the feed • Use a cutting fluid
	• Worn tool or improper cutting edge geometry	• Use a harder grade • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Increase the relief angle • Use an insert with a smaller nose radius • Decrease the side cutting edge angle • Use a more lightly honed insert	
Edge breakout	• Improper cutting speed		• Decrease the feed • Decrease the depth of cut
	• Worn tool or improper cutting edge geometry	• Use a harder grade • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Increase the side cutting edge angle • Use an insert with a larger nose radius • Use a more lightly honed insert • Use a larger shank size	• Improve the holding rigidity of the tool and workpiece • Shorten the overhang of the toolholder • Improve the machine looseness
Fuzzy surface finish	• Improper cutting conditions		• Increase the cutting speed • Select a proper feed • Use a water-insoluble cutting fluid • Use a cutting fluid
	• Worn tool or improper cutting edge geometry	• Use a harder grade. • Select a grade with less affinity with the Workpiece material • Use an insert with a larger rake angle • Select a freer-cutting chipbreaker type • Use a more lightly honed insert	

Chipbreakers

Chip controllability

Necessity of chip control

①Why is chip control needed?
②Effect of improper chip control

Necessity of chip control (Problems and effects)

Problems	Effects
1. Scattering of chips and coolant. 2. Wrapping around the workpiece and the tool. 3. Accumulation on the tool, jig, and machining facilities.	1. Disturbs unmanned and automated machining. 2. Disturbs high-speed and high-efficiency machining. 3. Degrades finished surface. 4. Threatens operator's safety. 5. Reduced operation rate.

Additional problems when chips are not properly controlled

①Why is chip control needed?

What is chip?

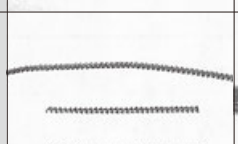
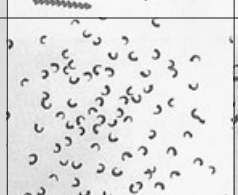
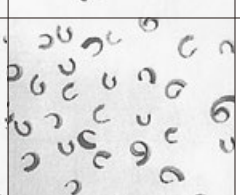
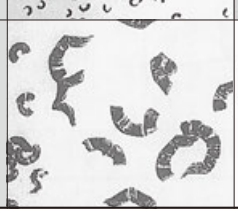
For making a product from a workpiece, removed objects produced by a tool which is set to cut to a specified depth with the relative motion of the tool and the workpiece.

Problems when chips are not properly controlled

②Effect of improper chip control

- Effects on quality → • Defective work. • Defective surface finish • Chip entangling
- Effects on operation → • Increased number of man-hours for handling. • Increased tool costs. • Troublesome chip handling. • Machine stoppage and reduced operation rate.
- Effect on safety and health. → • Stain and damage on machine caused from improper carrying-out of chips. • Dangerous effects on the human body. (Injury and burns on hand, etc.)

Effective measures → **"Chipbreaker"**

Classification	Chip shape: Depth of cut: small	Chip shape: Depth of cut: large	Description of chip shape	Acceptability	Effect
Shape A			Chips irregularly entangled	Not acceptable	• Wrapping around the tool or workpiece or accumulation around the cutting point, hindering cutting • Possible damage to the machined surface
Shape B			Long continuous spiral chips $\ell > 2"$	Acceptable	• Bulky during transport in the automatic line • May be preferred when one operator handles one machine
Shape C			Short spiral chips $\ell < 2"$	Acceptable	• Smooth chip flow • Difficult to scatter • Favorable shape
Shape D			"C" or "9" shaped chips (Around one coiling)	Acceptable	• Favorable shape if not scattering • Not bulky and easy to transport
Shape E			Excessively broken chips. Thin pieces or connected in a form of wave as shown in the figure left	Not acceptable	• Readily scattering. If scattering is the only trouble, it may be acceptable because the chip cover, etc. may be used. • Tend to cause chatter, causing harm on the finished surface roughness or tool life.

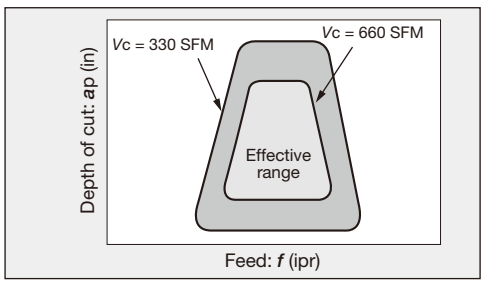
User's Guide - Technical Reference

Chipbreakers

Factors affecting chip control

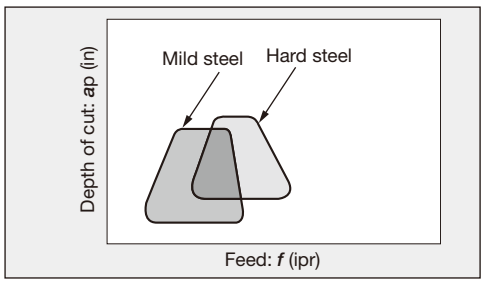
(1) Cutting conditions
1 Feed
2 Depth of cut
3 Cutting speed

- Of these, feed has the greatest effect followed by depth of cut and cutting speed in order listed.
- Feed is proportionate to the thickness of chips.
- Depth of cut is proportionate to the width of chips.
- There are optimum values (effective range) in feed and depth of cut.
- Cutting speed is in inverse proportion to chip thickness. Effective range becomes narrow at high speed.



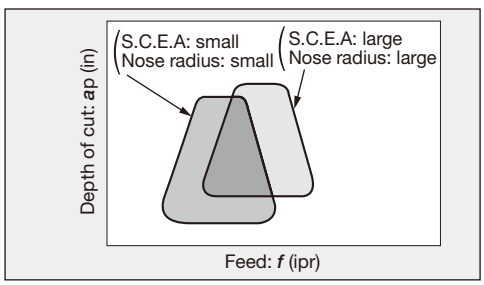
(2) Workpiece material
1 Alloy element
2 Hardness
3 Heat treatment condition

- These are related to thickness of chips and ease of curling.
- Mild steel chips are thicker than those of hard steel.
- Hard steel chips are liable to curl more than those of mild steel.
- Chips that do not curl are thin. As an exception, in case of mild steel even if thick, may not curl.



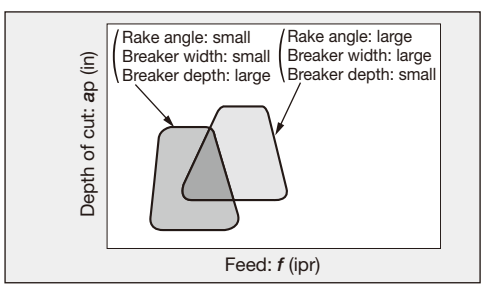
(3) Tool geometry
1 Side cutting edge angle
2 Nose radius

- Side cutting edge angle is relative to chip thickness and width
- Side cutting edge angle is preferably small.
- Nose radius is relative to thickness and width and the direction of flowing out.
- In finishing, small nose radius, whilst for rough cutting, large nose radius is better.



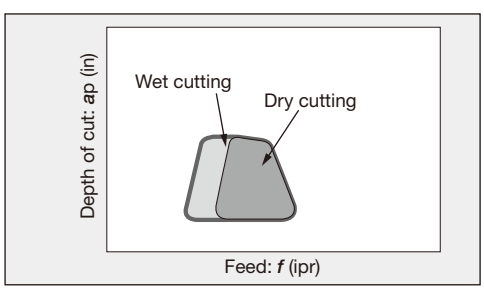
(4) Shape of chipbreaker
1 Rake angle
2 Chipbreaker width
3 Chipbreaker depth

- Rake angle is in inverse proportion to chip thickness.
- Depending on the Workpiece material, there is an optimum value.
- Chipbreaker width is selected proportionately to feed.
- Narrow at low feed and wide at high feed.
- Chipbreaker depth is to be selected so as to be inversely proportionate to feed.
- Deep at low feed and shallow at high feed.



(5) Coolant

- Effective range is wider with wet cutting.
- Especially at low feed range is liable to curl.



(6) Machine
1 Rigidity
2 Power limit

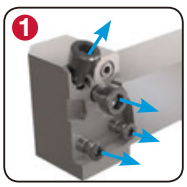
- The machine has enough power and mechanical strength.
- Select the machine consistent with the size of Workpiece material to be used.

Grooving and Parting Tools

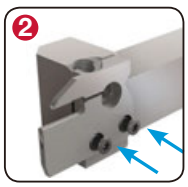
How to install and remove the blade and insert

TUNGMODULAR SYSTEM

●Assembly



Remove all 4 screws and ensure the O rings are all in place.



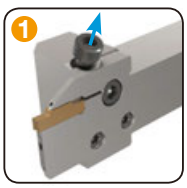
Place the blade and tighten 2 bottom clamping screws.

Place the insert in the pocket and tighten the fixing screw in the center.

Place the long screw in the angular direction and tighten to clamp the insert.

Please follow the installation order as shown above. When the screws are tightened in the ❹→❸ order, the insert clamping may be insufficient and unstable.

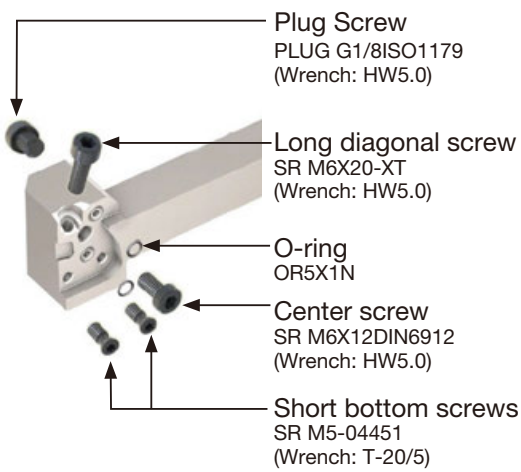
●Disassembly

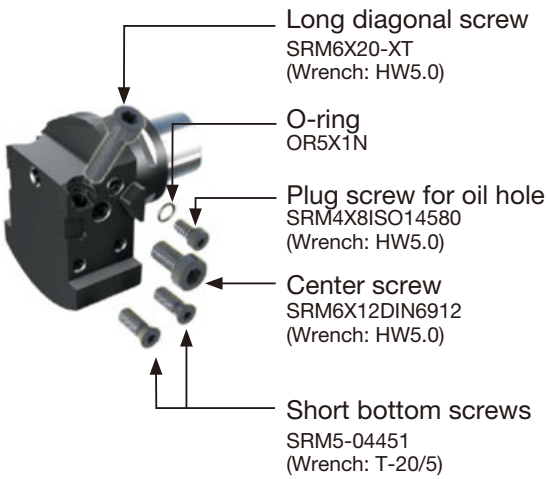


First loosen the long screw in the angular direction.

Loosen the Fixing screw in the center and remove the insert.

Loosing the long screw alone may not release the insert.



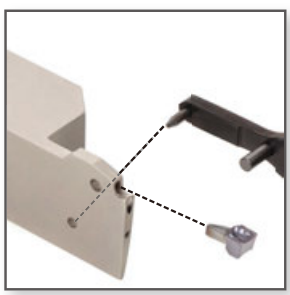


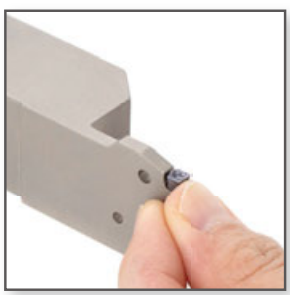
※ All parts listed here are included in the tool holder.

PROCEDURE TO CLAMP AND UNCLAMP INSERT

EASYMULTICUT

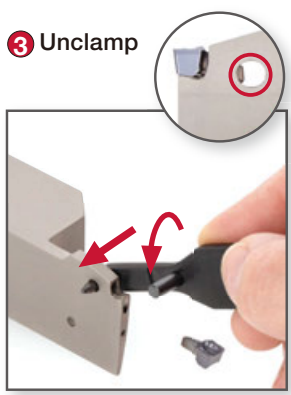
❶ Put the insert in the pocket





❷ Turn the wrench and push the insert into the pocket to clamp

❸ Unclamp

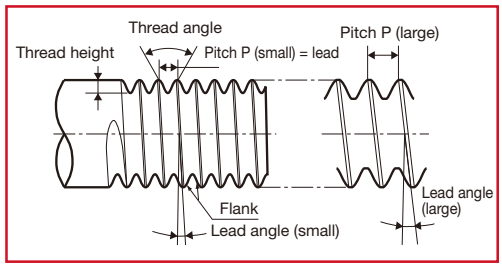


User's Guide - Technical Reference

Fundamentals of screw threads

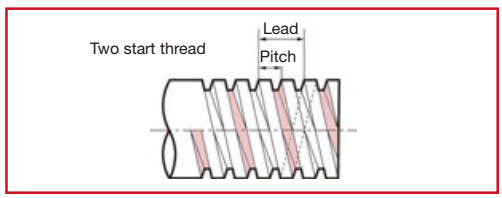
●Relationship between lead, lead angle and pitch

1. Lead is the axial distance a screw advances in one rotation. In single start screw, the lead is equal to the pitch.
2. The inclination angle of a threaded groove is called lead angle. In screws of the same diameter, the lead angle increases as the pitch increases.
3. The side face of a completed thread groove is called flank. The distance between the crest and the root is called thread height.



●Single and multi start thread

1. The single start thread has a single groove. Two start thread or three start thread has two grooves or three grooves respectively.
2. The pitch of multi start thread is the distance of adjoining groove.
3. When viewing the section of the multi start thread, the pitch is same as that of the single start thread. The lead of the two or three start thread is twice or three times the pitch. The multi start thread is mainly used for trapezoidal threads.



●Tolerance class of threads

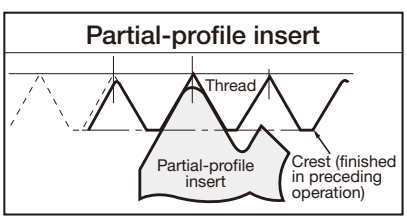
Tolerance classes of screw threads are expressed as follows:
Metric coarse external thread: 6h, 6g Metric coarse internal thread: 5H, 6H
These classes are ranked with tolerances of thread diameter, pitch, thread angle, etc. For fastening applications, 6H- and 6g-class (former JIS second class) threads, manufactured by cutting or rolling, are generally used. 5H- and 4h-class threads (former JIS first class) are generally finished by grinding.
For example, M8-6g means metric coarse external thread of 6g tolerance class.

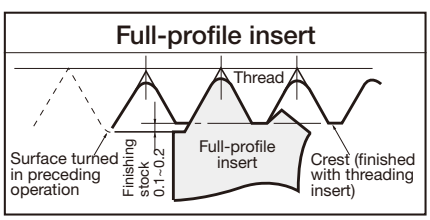
TAC threading insert

●Difference between full-profile and partial-profile insert

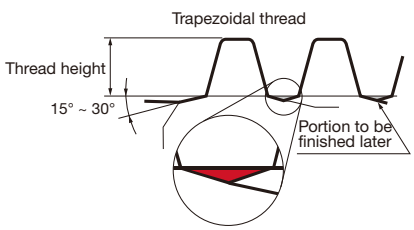
Full-profile insert

In the full-profile insert, the major diameter of the thread is finished by the profiled finishing edge as shown in Figure below. Therefore, about 0.1 mm of finishing stock must be left on the outer surface of the workpiece before threading. In trapezoidal threads, since slants of 15° to 30° are left on the crest of the thread as shown in Figure below, these portions must be finished by another tool later.
Full-profile insert could produce no burr and good thread by the profiled finishing edge.





When machining trapezoidal threads:



Partial-profile insert

Partial-profile inserts can not be used for finishing of the crest, but can be applied to a wide range of pitches.

For example

Designation	Pitch (mm)	TPI	Insert radius RE (mm)
16ERA60	0.5 ~ 1.5	48 ~ 16	0.06
16ERG60	1.75 ~ 3	14 ~ 8	0.22

Corner radii of inserts are fitted to the thread of the smallest pitch.

●Difference between external and internal use inserts

In full-profile inserts for metric and unified threads, the corner radius and thread height differ from those for the external and internal use insert respectively. Therefore, the right hand insert for external use and the left hand insert for internal use are not the same tool.
Since the rake angles of toolholders are -10° for external toolholders and -15° for internal toolholders, the external / internal toolholders can not be used for machining internal / external thread.
In Whitworth thread, though the external thread and internal thread have the same thread form, the external and internal toolholders are incompatible because of the different rake angle.

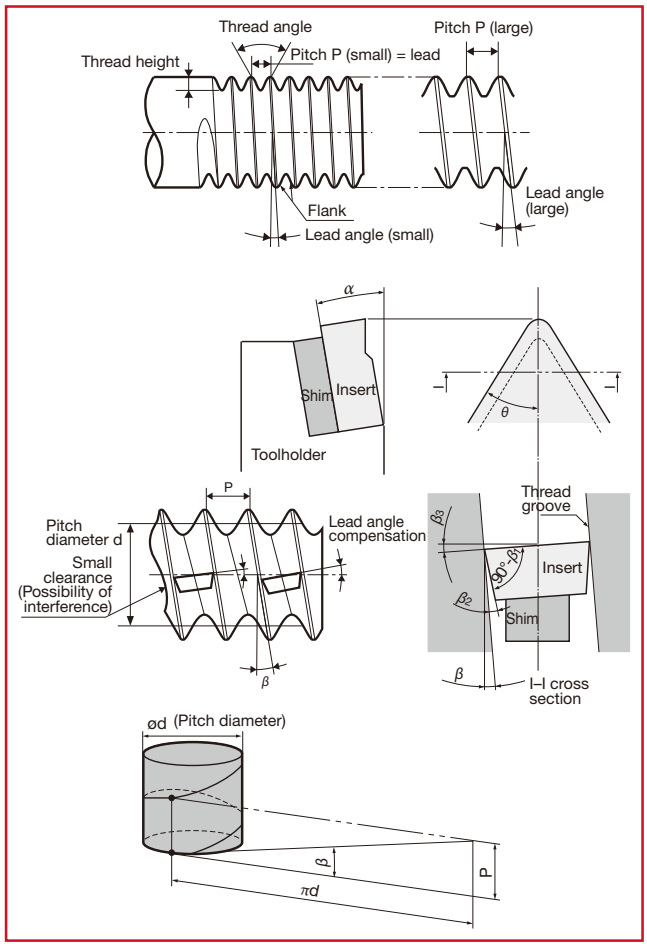
For example

Designation	Applicable inserts	Insert radius R RE (mm)	Thread hight (mm)	Rake angle of holders
16ER20ISO	External	0.25	1.52	-10°
16IL20ISO	Internal	0.14	1.3	-15°

Shim replacement method of ST-type tools

Compensation for the lead angle and tool relief angle

When the pitch is large or the screw diameter is small, the lead angle becomes large and the effective relief angle on the advance flank side β_2 becomes small. In particular, this will cause shorter life of the insert in the case of trapezoidal screw with small flank angle. It is ideal without any interference for the thread cutting insert to have an equal relief angle on both right and left. Replace the shim so that the rake face of insert faces the thread groove direction (that is, $\beta = \beta_3$).



Calculating the lead angle

The lead angle is calculated as follows:

$$\beta = \tan^{-1}(\ell / \pi d) = \tan^{-1}(nP/\pi d)$$

β : Lead angle
ℓ : Lead
n : No. of threads
P : Pitch
d : Pitch diameter

Calculating the relief angle

The relief angle β_1 is calculated as follows:

$$\beta_1 = \tan^{-1}(\tan\theta \cdot \tan\alpha)$$

The α of a standard toolholder is 10° for external threading and 15° for internal threading.

Included angle 2θ	θ	β_1	
		External threading tool	Internal threading tool
60°	30°	5.8°	8.8°
55°	27.5°	5.2°	7.9°
30°	15°	2.7°	4.1°
29°	14.5°	2.6°	4°

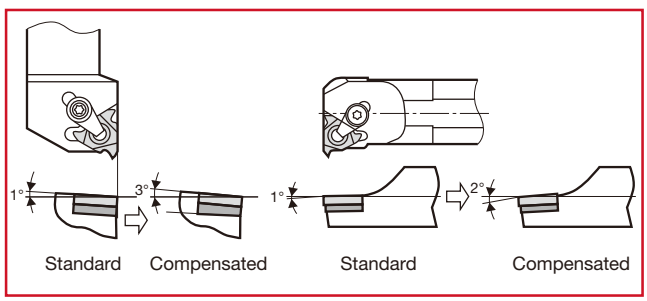
Accordingly, the effective relief angle is calculated as follows:

$$\beta_2 = \beta_1 + \beta_3 - \beta$$

β : Lead angle
β_2 : Effective relief angle
β_3 : Lead angle compensation value

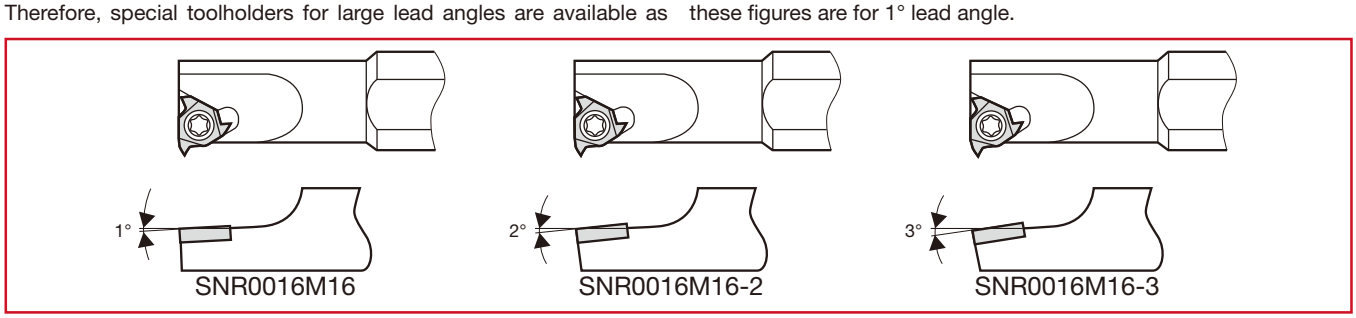
In other words, $\beta_1 = \beta_2$ when the thread lead angle is equal to the compensation value. Namely, the relief angle of the tool itself is equal to the effective relief angle. If the wrong compensation value is used, $\beta_1 > \beta_2$. The effective relief angle becomes smaller and cause the interference between the flank side of insert and the thread groove. Therefore, carry out compensation of the lead angle so that the following range is obtained:

±1° when the thread angle is 60° and 55°
±30° when the thread angle is 30° and 29°



Compensation of lead angle for shim less internal toolholders

When using internal threading toolholders without shim, the above-mentioned method can not be applied for lead angle compensation. Therefore, special toolholders for large lead angles are available as shown below. The final figure of the designation (-2 or -3) indicates 2° or 3° lead angle to be used respectively. The toolholders without these figures are for 1° lead angle.



User's Guide - Technical Reference

Shim replacement method of ST-type tools

Type of shim and the compensation value of lead angle

The designation of the shim and compensated lead angles are shown in the table.

Compensated lead angles	-2°	-1°	0°	1°	2°	3°	4°
Shim	□□□-98	□□□-99	□□□-0	□□□-1	□□□-2	□□□-3	□□□-4

Note: The last numeral of the shim designation is the compensated lead angle.

■ Toolholders and applicable shims

Screw-on / clamp-on dual toolholders

Toolholder designation	Shim	
	R	L
CER/L□□□□□16DT	AE16-□DT	AN16-□DT
CER/L□□□□□22DT	GXE22-□DT	GXN22-□DT
TCNR/L□□□□□16DT	AN16-□DT	AE16-□DT
TCNR/L□□□□□22DT	GXN22-□DT	GXE22-□DT

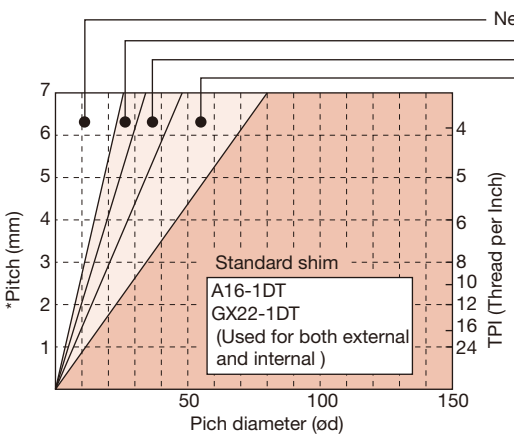
Note: Standard shim is AE16-1DT or GX22-1DT. Other types are optional.

Clamp-on type toolholders

Toolholder designation	Shim	
	R	L
CER/L□□□□□16-T	AE16-□	AN16-□
CER/L□□□□□22-T	NXE22-□	NXN22-□
CER/L□□□□□27-T	NXE27-□	NXN27-□
CNR/L□□□□□16	AN16-□	AE16-□
CNR/L□□□□□22	NXN22-□	NXE22-□
CNR/L□□□□□27	NXN27-□	NXE27-□
B-CER/L□□□16	AE16-□	AN16-□

Note: Standard shim is □□□□□-1. Other types are optional.

Shim selection guide for screw-on / clamp-on dual ST-type tools

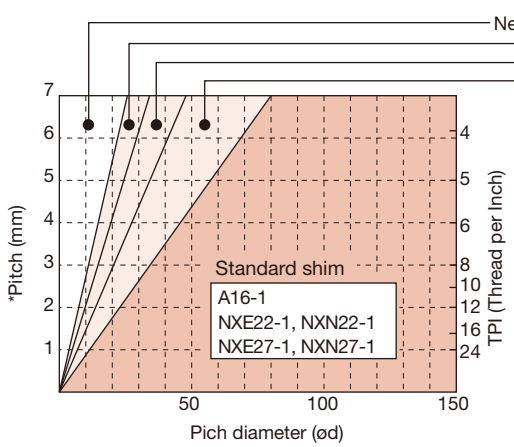


* For the multi start thread lead (multiplied by the pitch and No. of threads)

● List of exchangeable shims

	Designation	D30	Designation	D30	Designation	D30	Designation	D30
β3 = 4°	AE16-4DT	●	AN16-4DT	●	GXE22-4DT	●	GXN22-4DT	●
β3 = 3°	AE16-3DT	●	AN16-3DT	●	GXE22-3DT	●	GXN22-3DT	●
β3 = 2°	AE16-2DT	●	AN16-2DT	●	GXE22-2DT	●	GXN22-2DT	●
β3 = 1° Standard shim	A16-1DT	●	A16-1DT	●	GX22-1DT	●	GX22-1DT	●
β3 = 0°	AE16-0DT	●	AN16-0DT	●	GXE22-0DT	●	GXN22-0DT	●
β3 = -1°	AE16-99DT	●	AN16-99DT	●	GXE22-99DT	●	GXN22-99DT	●
β3 = -2°	AE16-98DT	●	AN16-98DT	●	GXE22-98DT	●	GXN22-98DT	●
Applicable toolholders	CER--16DT TCNL--16DT		CEL--16DT TCNR--16DT		CER--22DT TCNL--22DT		CEL--22DT TCNR--22DT	

Shim selection guide for clamp-on type ST-tools



* For the multi start thread lead (multiplied by the pitch and No. of threads)

● List of exchangeable shims

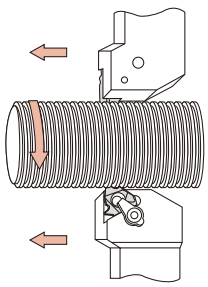
	Designation	D30	Designation	D30	Designation	D30	Designation	D30	Designation	D30	Designation	D30
β3 = 4°	AE16-4	●	AN16-4	●	NXE22-4	●	NXN22-4	●	NXE27-4		NXN27-4	
β3 = 3°	AE16-3	●	AN16-3	●	NXE22-3	●	NXN22-3	●	NXE27-3		NXN27-3	
β3 = 2°	AE16-2	●	AN16-2	●	NXE22-2	●	NXN22-2	●	NXE27-2		NXN27-2	
β3 = 1° Standard shim	A16-1	●	A16-1	●	NXE22-1	●	NXN22-1	●	NXE27-1	●	NXN27-1	●
β3 = 0°	AE16-0	●	AN16-0	●	NXE22-0	●	NXN22-0	●	NXE27-0		NXN27-0	
β3 = -1°	AE16-99	●	AN16-99	●	NXE22-99	●	NXN22-99	●	NXE27-99		NXN27-99	
β3 = -2°	AE16-98	●	AN16-98	●	NXE22-98	●	NXN22-98	●	NXE27-98		NXN27-98	
Applicable toolholders	CER--16T CNL--16 B-CER--16		CEL--16T CNR--16 B-CEL--16		CER--22T CNL--22		CEL--22T CNR--22		CER--27T CNL--27		CEL--27T CNR--27	

● : Line up

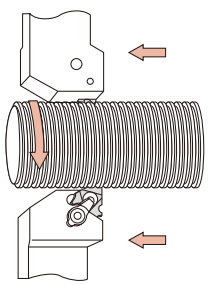
Threading Methods and Combinations

External threading

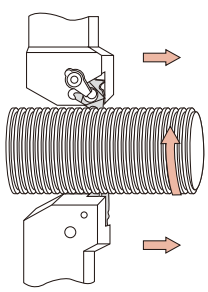
Right hand thread



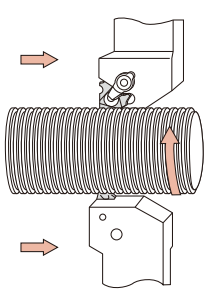
Work rotation	Regular
Feed direction	Push
Hand of toolholder	Right
Hand of insert	Right
Standard shim	①



Work rotation	Regular
Feed direction	Pull
Hand of toolholder	Left
Hand of insert	Left
Standard shim	④

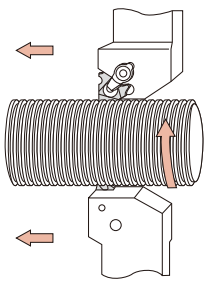


Work rotation	Reverse
Feed direction	Push
Hand of toolholder	Right
Hand of insert	Right
Standard shim	①

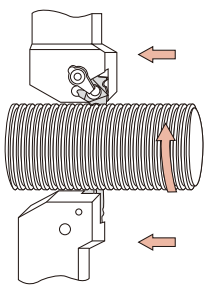


Work rotation	Reverse
Feed direction	Pull
Hand of toolholder	Left
Hand of insert	Left
Standard shim	④

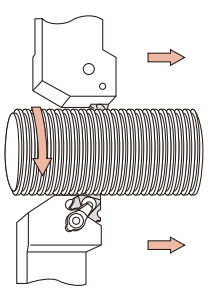
Left hand thread



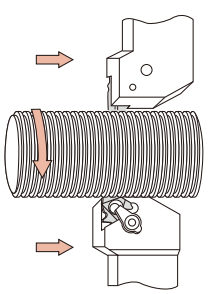
Work rotation	Reverse
Feed direction	Push
Hand of toolholder	Left
Hand of insert	Left
Standard shim	②



Work rotation	Reverse
Feed direction	Pull
Hand of toolholder	Right
Hand of insert	Right
Standard shim	③



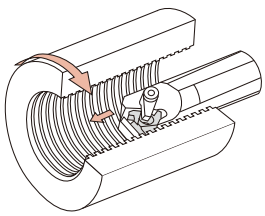
Work rotation	Regular
Feed direction	Push
Hand of toolholder	Left
Hand of insert	Left
Standard shim	②



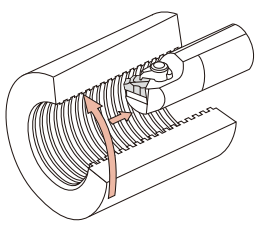
Work rotation	Regular
Feed direction	Pull
Hand of toolholder	Right
Hand of insert	Right
Standard shim	③

Internal threading

Right hand thread

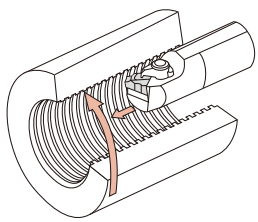


Work rotation	Regular
Feed direction	Push
Hand of toolholder	Right
Hand of insert	Right
Standard shim	②

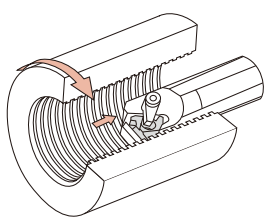


Work rotation	Reverse
Feed direction	Pull
Hand of toolholder	Left
Hand of insert	Left
Standard shim	③

Left hand thread



Work rotation	Reverse
Feed direction	Push
Hand of toolholder	Left
Hand of insert	Left
Standard shim	①



Work rotation	Regular
Feed direction	Pull
Hand of toolholder	Right
Hand of insert	Right
Standard shim	④

Standard shim

No.	New	No.	New
①	A16-1DT	②	A16-1DT
	A16-1		A16-1
	GX22-1DT		GX22-1DT
	NXE22-1		NXN22-1
	NXE27-1		NXN27-1
③	AE16-99DT	④	AN16-99DT
	AE16-99		AN16-99
	GXE22-99DT		GXN22-99DT
	NXE22-99		NXN22-99
	NXE27-99		NXN27-99

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Infeed per Pass and Number of Passes

ISO metric full-profile inserts (for external)

Pitch	0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4	4.5	5	5.5	6
Height of thread	0.32	0.47	0.63	0.79	0.95	1.11	1.27	1.58	1.9	2.21	2.53	2.85	3.16	3.48	3.8
Total depth of cut	0.42	0.57	0.73	0.89	1.05	1.21	1.37	1.68	2	2.31	2.63	2.95	3.26	3.58	3.9
Number of passes 1	0.15	0.18	0.25	0.25	0.3	0.3	0.3	0.3	0.35	0.35	0.4	0.4	0.45	0.5	0.5
2	0.12	0.12	0.2	0.2	0.25	0.25	0.25	0.25	0.3	0.3	0.35	0.35	0.35	0.35	0.4
3	0.1	0.12	0.13	0.15	0.2	0.2	0.2	0.25	0.25	0.3	0.3	0.3	0.3	0.3	0.3
4	0.05	0.1	0.1	0.14	0.15	0.16	0.2	0.23	0.2	0.25	0.25	0.25	0.25	0.25	0.25
5		0.05	0.05	0.1	0.1	0.15	0.15	0.2	0.2	0.21	0.2	0.2	0.25	0.23	0.25
6				0.05	0.05	0.1	0.12	0.15	0.15	0.2	0.2	0.2	0.2	0.2	0.2
7						0.05	0.1	0.15	0.15	0.15	0.15	0.2	0.2	0.2	0.2
8							0.05	0.1	0.15	0.15	0.15	0.15	0.18	0.15	0.15
9								0.05	0.1	0.15	0.15	0.15	0.15	0.15	0.15
10									0.1	0.1	0.13	0.15	0.15	0.15	0.15
11									0.05	0.1	0.1	0.15	0.13	0.15	0.15
12										0.05	0.1	0.1	0.1	0.15	0.15
13											0.1	0.1	0.1	0.15	0.15
14											0.05	0.1	0.1	0.1	0.15
15												0.1	0.1	0.1	0.1
16												0.05	0.1	0.1	0.1
17													0.1	0.1	0.1
18													0.05	0.1	0.1
19														0.1	0.1
20														0.05	0.1
21															0.1
22															0.05
23															
24															

(Unit: mm)

ISO metric full-profile inserts (for internal)

Pitch	0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4	4.5	5	5.5	6
Height of thread	0.29	0.43	0.58	0.72	0.87	1.01	1.16	1.45	1.74	2.03	2.32	2.61	2.9	3.19	3.48
Total depth of cut	0.39	0.53	0.68	0.82	0.97	1.11	1.26	1.55	1.84	2.13	2.42	2.71	3	3.29	3.58
Number of passes 1	0.08	0.1	0.14	0.15	0.2	0.2	0.2	0.25	0.25	0.3	0.3	0.35	0.35	0.4	0.4
2	0.07	0.09	0.13	0.13	0.16	0.18	0.18	0.22	0.22	0.25	0.25	0.25	0.25	0.25	0.25
3	0.07	0.08	0.11	0.12	0.14	0.16	0.17	0.2	0.2	0.22	0.22	0.22	0.22	0.22	0.22
4	0.06	0.08	0.1	0.11	0.12	0.14	0.16	0.18	0.18	0.2	0.2	0.2	0.2	0.2	0.2
5	0.06	0.07	0.08	0.1	0.12	0.12	0.14	0.16	0.16	0.18	0.18	0.18	0.2	0.2	0.19
6	0.05	0.06	0.07	0.09	0.1	0.1	0.12	0.15	0.15	0.16	0.18	0.18	0.18	0.18	0.18
7		0.05	0.05	0.07	0.08	0.09	0.1	0.1	0.14	0.14	0.16	0.16	0.16	0.16	0.17
8				0.05	0.05	0.07	0.08	0.1	0.13	0.13	0.14	0.14	0.14	0.14	0.16
9						0.05	0.06	0.08	0.12	0.12	0.14	0.14	0.14	0.14	0.15
10							0.05	0.06	0.1	0.11	0.12	0.12	0.13	0.13	0.14
11								0.05	0.08	0.1	0.12	0.12	0.13	0.13	0.14
12									0.06	0.1	0.1	0.12	0.12	0.13	0.13
13									0.05	0.07	0.1	0.11	0.12	0.12	0.13
14										0.05	0.09	0.1	0.12	0.12	0.13
15											0.07	0.1	0.11	0.12	0.12
16											0.05	0.09	0.1	0.12	0.12
17												0.08	0.1	0.1	0.12
18												0.05	0.1	0.1	0.1
19													0.08	0.1	0.1
20													0.05	0.1	0.1
21														0.08	0.1
22														0.05	0.1
23															0.08
24															0.05

(Unit: mm)

Unified full-profile inserts

	For external							For internal						
TPI	24	20	18	16	14	12	8	24	20	18	16	14	12	8
Height of thread	0.67	0.8	0.89	1.01	1.15	1.34	2.01	0.61	0.74	0.82	0.92	1.05	1.23	1.84
Total depth of cut	0.77	0.9	0.99	1.11	1.25	1.44	2.11	0.71	0.84	0.92	1.02	1.15	1.33	1.94
Number of passes 1	0.25	0.25	0.28	0.3	0.3	0.3	0.35	0.2	0.2	0.2	0.2	0.25	0.25	0.3
2	0.22	0.2	0.23	0.25	0.25	0.25	0.3	0.16	0.16	0.18	0.18	0.2	0.2	0.25
3	0.15	0.16	0.18	0.18	0.23	0.21	0.25	0.12	0.13	0.15	0.16	0.18	0.18	0.22
4	0.1	0.14	0.15	0.15	0.18	0.18	0.22	0.1	0.12	0.14	0.14	0.16	0.16	0.2
5	0.05	0.1	0.1	0.1	0.14	0.15	0.2	0.08	0.1	0.1	0.11	0.13	0.13	0.18
6		0.05	0.05	0.08	0.1	0.12	0.2	0.05	0.08	0.1	0.1	0.1	0.1	0.16
7				0.05	0.05	0.1	0.16		0.05	0.05	0.08	0.08	0.1	0.14
8						0.08	0.16				0.05	0.05	0.08	0.12
9						0.05	0.12						0.08	0.12
10							0.1						0.05	0.1
11							0.05							0.1
12														0.05
13														
14														

(Unit: mm)

Whitworth full-profile inserts

	For external									For internal								
TPI	20	19	18	16	14	12	11	10	8	20	19	18	16	14	12	11	10	8
Height of thread	0.83	0.88	0.92	1.04	1.19	1.39	1.51	1.66	2.08	0.83	0.88	0.92	1.04	1.19	1.39	1.51	1.66	2.08
Total depth of cut	0.93	0.98	1.02	1.14	1.29	1.49	1.61	1.76	2.18	0.93	0.98	1.02	1.14	1.29	1.49	1.61	1.76	2.18
Number of passes 1	0.25	0.28	0.3	0.3	0.3	0.3	0.3	0.35	0.35	0.2	0.2	0.22	0.22	0.25	0.25	0.25	0.3	0.35
2	0.2	0.22	0.24	0.25	0.25	0.25	0.25	0.3	0.3	0.18	0.18	0.18	0.18	0.21	0.21	0.21	0.25	0.3
3	0.18	0.18	0.18	0.18	0.23	0.2	0.2	0.23	0.25	0.16	0.16	0.17	0.17	0.2	0.2	0.2	0.22	0.25
4	0.15	0.15	0.15	0.14	0.2	0.18	0.18	0.2	0.23	0.14	0.16	0.16	0.16	0.18	0.18	0.18	0.2	0.22
5	0.1	0.1	0.1	0.12	0.16	0.15	0.15	0.15	0.22	0.12	0.13	0.14	0.14	0.16	0.16	0.16	0.16	0.2
6	0.05	0.05	0.05	0.1	0.1	0.14	0.14	0.14	0.2	0.08	0.1	0.1	0.12	0.14	0.14	0.14	0.14	0.18
7				0.05	0.05	0.12	0.12	0.12	0.18	0.05	0.05	0.05	0.1	0.1	0.1	0.12	0.12	0.16
8						0.1	0.12	0.12	0.16				0.05	0.05	0.1	0.1	0.12	0.14
9						0.05	0.1	0.1	0.14						0.1	0.1	0.1	0.12
10							0.05	0.05	0.1						0.05	0.1	0.1	0.11
11									0.05							0.05	0.05	0.1
12																		0.05
13																		
14																		
15																		

(Unit: mm)

Infeed per Pass and Number of Passes

30° Trapezoidal (TR) inserts

		For external					For internal				
Pitch		2	3	4	5	6	2	3	4	5	6
Height of thread		1.25	1.75	2.25	2.75	3.5	1.25	1.75	2.25	2.75	3.5
Total depth of cut		1.35	1.85	2.35	2.85	3.6	1.35	1.85	2.35	2.85	3.6
Number of passes	1	0.25	0.25	0.3	0.3	0.3	0.2	0.22	0.25	0.25	0.25
	2	0.2	0.22	0.25	0.25	0.25	0.18	0.2	0.22	0.22	0.22
	3	0.2	0.2	0.22	0.2	0.23	0.18	0.18	0.2	0.2	0.21
	4	0.18	0.18	0.2	0.2	0.2	0.16	0.16	0.2	0.18	0.2
	5	0.15	0.17	0.18	0.18	0.18	0.15	0.16	0.17	0.18	0.18
	6	0.12	0.16	0.16	0.16	0.18	0.13	0.16	0.16	0.16	0.18
	7	0.1	0.14	0.15	0.16	0.16	0.1	0.14	0.16	0.16	0.16
	8	0.1	0.14	0.14	0.15	0.16	0.1	0.14	0.14	0.15	0.16
	9	0.05	0.12	0.14	0.14	0.16	0.1	0.12	0.14	0.14	0.16
	10		0.12	0.12	0.14	0.16	0.05	0.12	0.12	0.14	0.16
	11		0.1	0.12	0.14	0.16		0.1	0.12	0.14	0.16
	12		0.05	0.12	0.12	0.15		0.1	0.12	0.12	0.15
	13			0.1	0.12	0.15		0.05	0.1	0.12	0.15
	14			0.1	0.12	0.15			0.1	0.12	0.15
	15			0.05	0.12	0.14			0.1	0.12	0.14
	16				0.1	0.14			0.05	0.1	0.14
	17				0.1	0.12				0.1	0.12
	18				0.1	0.12				0.1	0.12
	19				0.05	0.12				0.1	0.12
	20					0.12				0.05	0.12
	21					0.1					0.1
	22					0.1					0.1
	23					0.05					0.1
	24										0.05
	25										
	26										

(Unit: mm)

29° Trapezoidal (TR) inserts

		For external			For internal		
TPI		8	6	5	8	6	5
Height of thread		1.88	2.41	2.92	1.88	2.41	2.92
Total depth of cut		1.98	2.51	3.02	1.98	2.51	3.02
Number of passes	1	0.25	0.25	0.25	0.22	0.22	0.22
	2	0.22	0.22	0.22	0.2	0.2	0.2
	3	0.2	0.2	0.2	0.18	0.18	0.18
	4	0.18	0.18	0.18	0.16	0.18	0.18
	5	0.16	0.17	0.18	0.16	0.16	0.16
	6	0.16	0.16	0.16	0.16	0.15	0.16
	7	0.16	0.16	0.16	0.15	0.15	0.15
	8	0.14	0.14	0.14	0.14	0.14	0.14
	9	0.14	0.14	0.14	0.14	0.14	0.14
	10	0.12	0.14	0.14	0.12	0.14	0.14
	11	0.1	0.14	0.14	0.1	0.14	0.14
	12	0.1	0.12	0.14	0.1	0.12	0.14
	13	0.05	0.12	0.12	0.1	0.12	0.12
	14		0.12	0.12	0.05	0.12	0.12
	15		0.1	0.12		0.1	0.12
	16		0.1	0.12		0.1	0.12
	17		0.05	0.12		0.1	0.12
	18			0.12		0.05	0.12
	19			0.1			0.1
	20			0.1			0.1
	21			0.05			0.1
	22						0.05
	23						
	24						
	25						
	26						

(Unit: mm)

PT full-profile inserts

		For external				For internal		
TPI		28	19	14	11	19	14	11
Height of thread		0.6	0.86	1.16	1.48	0.86	1.16	1.48
Total depth of cut		0.7	0.96	1.26	1.58	0.96	1.26	1.58
Number of passes	1	0.25	0.28	0.3	0.3	0.22	0.25	0.25
	2	0.2	0.2	0.25	0.25	0.2	0.22	0.22
	3	0.1	0.18	0.2	0.22	0.18	0.18	0.18
	4	0.1	0.15	0.15	0.18	0.16	0.14	0.18
	5	0.05	0.1	0.11	0.15	0.1	0.12	0.15
	6		0.05	0.1	0.12	0.05	0.1	0.13
	7			0.1	0.11	0.05	0.1	0.12
	8			0.05	0.1		0.1	0.1
	9				0.1		0.05	0.1
	10				0.05			0.1
	11							0.05
	12							
	13							
	14							
	15							
	16							
	17							
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							

(Unit: mm)

NPT full-profile inserts

		For external				For internal		
TPI		18	14	11.5	8	14	11.5	8
Height of thread		1.14	1.47	1.79	2.58	1.47	1.79	2.58
Total depth of cut		1.24	1.57	1.89	2.68	1.57	1.89	2.68
Number of passes	1	0.2	0.25	0.25	0.3	0.22	0.22	0.25
	2	0.18	0.22	0.22	0.25	0.2	0.2	0.2
	3	0.17	0.2	0.2	0.2	0.18	0.18	0.2
	4	0.16	0.18	0.18	0.2	0.18	0.18	0.2
	5	0.14	0.17	0.18	0.2	0.16	0.16	0.2
	6	0.12	0.16	0.17	0.2	0.14	0.16	0.2
	7	0.12	0.12	0.16	0.18	0.12	0.16	0.18
	8	0.1	0.12	0.14	0.18	0.12	0.14	0.18
	9	0.05	0.1	0.12	0.16	0.1	0.12	0.16
	10		0.05	0.12	0.16	0.1	0.12	0.16
	11			0.1	0.14	0.05	0.1	0.14
	12			0.05	0.14		0.1	0.14
	13				0.12		0.05	0.12
	14				0.1			0.1
	15				0.1			0.1
	16				0.05			0.1
	17							0.05
	18							
	19							
	20							
	21							
	22							
	23							
	24							
	25							
	26							

(Unit: mm)

User's Guide - Technical Reference

Standard Cutting Conditions and Infeed Methods

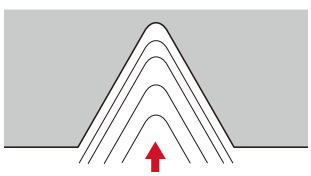
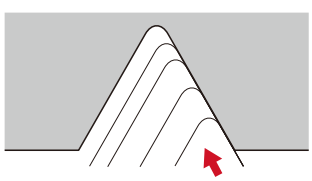
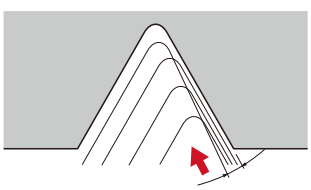
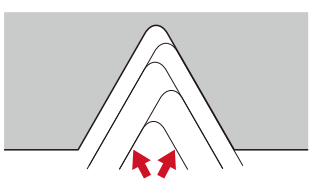
Threading guidelines

Determine the infeed per pass and number of threads whilst referring to the table and description below.

Pitch (mm)	0.5	0.75	1	1.25	1.5	1.75	2	2.5	3	3.5	4	4.5	5 ~
TPI	48	32	24	20	16	14	12	10	8	7	6	5.5	5 ~
No. of passes	4 ~ 6	4 ~ 7	4 ~ 8	5 ~ 9	6 ~ 10	7 ~ 12	7 ~ 12	8 ~ 14	10 ~ 16	11 ~ 18	11 ~ 18	11 ~ 19	12 ~ 24

Note:
- When using the full-profile insert, set the total infeed amount by taking the finish stock of 0.1mm into account.
- Set the first infeed to 150 ~ 200% of nose R and do not allow it to exceed 0.5 mm.
- The infeed amount during the final pass must be a minimum of 0.05 mm. No zero cuts should be made. (Extra small infeed or zero cutting of work hardened surfaces will reduce tool life.)
- The partial-profile insert or inside diameter insert has small nose R. Reduce the infeed per pass and increase the no. of passes.
- Regarding standard infeed per passes and no. of passes, please refer to our catalogue.

Infeed methods for threading tools

Infeed method	Features
 Straight infeed (radial infeed)	• Most simple and usual method • Suitable for relatively small pitch threads of easily machinable material. • Chip contact length on right and left is longer, causing chattering, with increased load on the nose end. • When the half included angle is not symmetrical to the right and left, infeeding in the direction of 1/2 of the included angle will ensure equal machining with right and left cutting edges.
 Single edge infeed (flank infeed)	• Suitable for large pitch threads or easy to tear materials. Effectively prevents chattering. • Chips are discharged in one direction only. Satisfactory chip control. • Edge on the right (with zero infeed) tends to be worn heavily.
 Modified single-edge infeed (flank infeed)	• Edge on the right performs some cutting, therefore wear of this edge can thus be suppressed. • Suitable for large pitch threads or easy to tear materials. Effectively prevents chattering. • Chips are discharged in one direction only. Satisfactory chip control.
 Alternating flank infeed	• Suitable for large pitch threads or easy to tear material. Effectively prevents chattering. • Chips are discharged alternately in right and left directions, resulting possibly in entanglement. • Right and left edges are used alternately, ensuring uniform wear and extending tool life.

Selection of ST-type Toolholders

Selection of internal threading toolholders

Relation between internal toolholders and machinable threads

In the tables starting from next page, the relationships between toolholders, inserts, threads to be machined, and shims to be replaced are shown. In these tables, the criteria are set as follows.

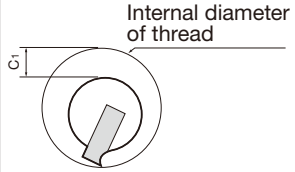
- **The minimum machining diameter.**
- **The L/D ratio of the toolholder.**
- **The lead angle of the thread.**
- **Cutting conditions.**

Especially when machining near the minimum machining diameter, the compensation for the lead angle should be done carefully.
Moreover, in threading, because chips generally can not be broken into small pieces, the shank size should be selected in consideration of adequate clearance (C_1).

Symbols

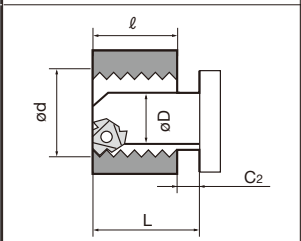
- ◯ Recommended
- • Usable
- 2 Needs replacing of the shim. "2" indicates "Change to the shim for 2° lead angle".
- Unusable

Clearance C_1

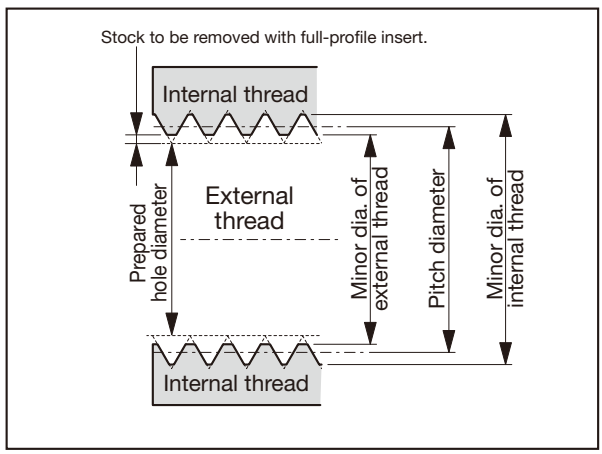


$C_1 \geq 3$ mm
(1 mm for 6IR insert holders)

Overhang ratio L/D



Steel shank	L/D ≤ 2→◯
Carbide shank	L/D ≤ 3→◯



How to use the tables

①Firstly, find the nominal thread diameter. Example: M35 X 1.5
②The table indicates that the lead angle is 0°48′.
③The Cat. No. of the insert to be used corresponds with IR15ISO.
④By following the row to the right, • and ◯ marks are found. The ◯ mark indicates the optimum toolholder type. The toolholders of • mark are usable, but less rigid because the shank diameter against the threading diameter is smaller than those of ◯ marked toolholder. In this example, CNR0025R16 and TCNR0020R16DT are the optimum toolholders. The insert Cat.No. is 16IR15ISO.
⑤In the case of M33 X 3 thread, the lead angle is 1°46′. By following the row to the right. 2 mark is found. This indicates that the shim should be replaced to 2° type. For calculation of the lead angle, refer to page L045.

Metric fine screw thread (ISO)

(For full size of this table, see page L053.)

Nominal size	Pitch	Effective diameter	Lead angle	Shank material	Steel shank															Carbide shank									"Tsuppari-Ichiban"					
				Insert size	6IR				11IR				16IR				22IR				6IR				11IR				16IR		16IR			22IR	
				Holder Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	SNR0020Q22	SNR0020Q22-2	CNR0025R22	CNR0032S22	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)	TSNR0020R22	TCNR0025S22DT
				Insert Cat. No.																														
M33×1.5	1.5	32.03	0°51′	IR15ISO					•		•		•		◯									•		•		•		•	◯				
M33×2	2	31.7	1°09′	IR20ISO	•		•		•		•		•		•	◯					•		•		•		•		•		•	◯				
M33×3	3	31.05	1°46′	IR30ISO											2																•	2				
M35×1.5	1.5	34.03	0°48′	IR15ISO					•		•		•		•	◯								•		•		•		•	◯				
M36×1.5	1.5	35.03	0°47′	IR15ISO					•		•		•		•	◯								•		•		•		•	◯				
M36×2	2	34.7	1°03′	IR20ISO											•	◯					•		•		•		•		•		•	◯				
M36×3	3	34.05	1°36′																												•	2				
M38×1.5	1.5																							•		•		•		•	•	◯			

User's Guide - Technical Reference

Selection of ST-type Toolholders

Selection of Internal Toolholders—Relationship between thread sizes, toolholders, and inserts—Part 1

Metric coarse screw thread (ISO)

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank																Carbide shank								"Tsuppari-Ichiban"	
				Insert size	6IR				11IR				16IR		22IR				27IR		6IR				11IR		16IR		22IR	
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11-2	SNR0010K11-3	SNR0013L11-2	SNR0013L11-3	SNR0016M16-2	SNR0016M16-3	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	(CNR0040T22)	CNR0040T27	(CNR0050U27)	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC-2	SNR0010M11SC-3	SNR0016R16SC-2	(SNR0016R16SC-3)	TCNR0025S22DT	(TCNR0032T22DT)
M10	1.5	9.03	3°02′	IR15ISO																										
M11	1.5	10.03	2°44′	IR15ISO		○																○								
M12	1.75	10.86	2°56′	IR175ISO		○																○								
M14	2	12.7	2°52′	IR20ISO		•		○														•		○						
M16	2	14.7	2°29′	IR20ISO	•		○															•		○						
M18	2.5	16.38	2°47′	IR25ISO																										
M20	2.5	18.38	2°29′	IR25ISO																										
M22	2.5	20.38	2°14′	IR25ISO																										
M24	3	22.05	2°29′	IR30ISO																										
M27	3	25.05	2°11′	IR30ISO									○														○			
M30	3.5	27.73	2°18′	IR35ISO																										
M33	3.5	30.73	2°05′	IR35ISO											○															
M36	4	33.4	2°11′	IR40ISO											○															
M39	4	36.4	2°00′	IR40ISO											•		2												2	
M42	4.5	39.08	2°06′	IR45ISO											•		2												2	
M45	4.5	42.08	1°57′	IR45ISO											•		2												2	
M48	5	44.75	2°02′	IR50ISO											•		2	2											2	2
M52	5	48.75	1°52′	IR50ISO											•		2	2											2	2
M56	5.5	52.43	1°55′	IR55ISO																										
M60	5.5	56.43	1°47′	IR55ISO															2											
M64	6	60.1	1°49′	IR60ISO															2											
M68	6	64.1	1°42′	IR60ISO															2	2										

2 : Change the shim to NXN22-2

2 : Change the shim to NXN27-2

2 : Change the shim to GXN22-2DT

Metric fine screw thread (ISO)

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank										Carbide shank									
				Insert size	6IR				11IR						6IR				11IR					
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0010K11-3	SNR0013L11	SNR0013L11-2	SNR0013L11-3	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0010M11SC-3	SNR0012P11SC	SNR0012P11SC-2	SNR0012P11SC-3
M9×0.75	0.75	8.51	1°36′	IR075ISO																				
M9×1	1	8.32	2°11′	IR10ISO																				
M10×0.75	0.75	9.51	1°26′	IR075ISO																				
M10×1	1	9.35	1°57′	IR10ISO	○										○									
M10×1.25	1.25	9.19	2°29′	IR125ISO																				
M11×0.75	0.75	10.51	1°18′	IR075ISO																				
M11×1	1	10.35	1°46′	IR10ISO	○										○									
M12×1	1	11.35	1°36′	IR10ISO	•		○								•		○							
M12×1.25	1.25	11.19	2°02′	IR125ISO	○										○									
M12×1.5	1.5	11.03	2°29′	IR15ISO	○										○									
M14×1	1	13.35	1°22′	IR10ISO																				
M14×1.25	1.25	13.19	1°44′	IR125ISO	•		○								•		○							
M14×1.5	1.5	13.03	2°06′	IR15ISO	•		○								•		○							
M15×1	1	14.35	1°16′	IR10ISO																				
M15×1.5	1.5	14.03	1°57′	IR15ISO	•		○								•		○							
M16×1	1	15.35	1°11′	IR10ISO					○															
M16×1.5	1.5	15.03	1°49′	IR15ISO	•		○								•		○							
M17×1	1	16.35	1°07′	IR10ISO					○										○					
M17×1.5	1.5	16.03	1°42′	IR15ISO	•		•			○					•		○							
M18×1	1	17.35	1°03′	IR10ISO					○										○					
M18×1.5	1.5	17.03	1°36′	IR15ISO	•		•			○					•		•			○				
M18×2	2	16.7	2°11′	IR20ISO	•		•			○					•		•			○				
M20×1	1	19.35	0°57′	IR10ISO					•			○							•			○		
M20×1.5	1.5	19.03	1°26′	IR15ISO					•			○							•			○		
M20×2	2	18.7	1°57′	IR20ISO	•		•			○					•		•			•			○	

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

Metric fine screw thread (ISO)

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank													Carbide shank												"Tsuppari-Ichiban"	
				Insert size	6IR				11IR					16IR				6IR				11IR					16IR				16IR	
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0013L11-3	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0010M11SC-3	SNR0012P11SC	SNR0012P11SC-2	SNR0012P11SC-3	SNR0016R16SC	SNR0016R16SC-2	(SNR0016R16SC-3)	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT
M22×1	1	21.35	0°51′	IR10ISO					•		○											•			○							
M22×1.5	1.5	21.03	1°18′	IR15ISO	•		•		•		○							•		•		•			○							
M22×2	2	20.7	1°46′	IR20ISO	•		•			•		○						•		•			•			○						
M24×1	1	23.35	0°47′	IR10ISO							○			•								•			○					•		
M24×1.5	1.5	23.03	1°11′	IR15ISO	•		•				○			•				•		•		•			○					•		
M24×2	2	22.07	1°39′	IR20ISO	•		•			•		○						•		•			•			○						
M25×1	1	24.35	0°45′	IR10ISO					•		○			•								•			○			•		•		
M25×1.5	1.5	24.03	1°08′	IR15ISO	•		•		•		○			•				•		•					○			•		•		
M25×2	2	23.7	1°32′	IR20ISO	•		•			•		○			•			•		•			•			○						
M26×1.5	1.5	25.03	1°06′	IR15ISO	•		•		•		•			○				•		•		•			•			•			○		
M27×1	1	26.35	0°42′	IR10ISO					•		•			○								•			•			•			○		
M27×1.5	1.5	26.03	1°03′	IR15ISO	•		•		•		•			○				•		•		•			•			•			○		
M27×2	2	25.7	1°25′	IR20ISO	•		•		•		•			○				•		•		•			•			•			○		
M28×1	1	27.35	0°40′	IR10ISO					•		•			○								•			•			•			○		
M28×1.5	1.5	27.03	1°01′	IR15ISO	•		•		•		•			○				•		•		•			•			•			○		
M28×2	2	26.7	1°22′	IR20ISO	•		•		•		•			○				•		•		•			•			•			○		
M30×1	1	29.35	0°37′	IR10ISO					•		•			○								•			•			•			○		
M30×1.5	1.5	29.03	0°57′	IR15ISO					•		•			○								•			•			•			○		
M30×2	2	28.7	1°16′	IR20ISO	•		•		•		•			○				•		•		•			•			•			○		
M30×3	3	28.05	1°57′	IR30ISO											○													○				
M32×1.5	1.5	31.03	0°53′	IR15ISO					•		•			○			○					•			•			•			○		
M32×2	2	30.07	1°11′	IR20ISO	•		•		•		•			○			○	•		•		•			•			•			○		

Metric fine screw thread (ISO)

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank																Carbide shank										"Tsuppari-Ichiban"		
				Insert size	6IR				11IR				16IR				22IR				6IR				11IR				16IR		16IR		22IR	
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	SNR0020Q22	SNR0020Q22-2	CNR0025R22	CNR0032S22	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)	TSNR0020R22	TCNR0025S22DT
M33×1.5	1.5	32.03	0°51′	IR15ISO					•		•		•		○										•		•		•		•	○				
M33×2	2	31.7	1°09′	IR20ISO	•		•		•		•		•		•	○					•		•		•		•		•		•	○				
M33×3	3	31.05	1°46′	IR30ISO											2																•	2				
M35×1.5	1.5	34.03	0°48′	IR15ISO					•		•		•		•	○									•		•		•		•	○				
M36×1.5	1.5	35.03	0°47′	IR15ISO					•		•		•		•	○									•		•		•		•	○				
M36×2	2	34.7	1°03′	IR20ISO	•		•		•		•		•		•	○					•		•		•		•		•		•	○				
M36×3	3	34.05	1°36′	IR30ISO											2																•	2				
M38×1.5	1.5	37.03	0°44′	IR15ISO					•		•		•		•	○									•		•		•		•	•	○			
M39×1.5	1.5	38.03	0°43′	IR15ISO					•		•		•		•	○									•		•		•		•	•	○			
M39×2	2	38.7	0°58′	IR20ISO					•		•		•		•	○									•		•		•		•	•	○			
M39×3	3	37.05	1°29′	IR30ISO									•		•	○													•		•	•	○			
M40×1.5	1.5	39.03	0°42′	IR15ISO					•		•		•		•	○									•		•		•		•	•	○			
M40×2	2	37.8	0°57′	IR20ISO					•		•		•		•	○									•		•		•		•	•	○			
M40×3	3	38.05	1°26′	IR30ISO									•		•	○													•		•	•	○			
M42×1.5	1.5	41.03	0°40′	IR15ISO					•		•		•		•	○									•		•		•		•	•	○			
M42×2	2	40.7	0°54′	IR20ISO					•		•		•		•	○									•		•		•		•	•	○			
M42×3	3	40.05	1°22′	IR30ISO									•		•	○													•		•	•	○			
M42×4	4	39.4	1°51′	IR40ISO															2															•	2	
M45×1.5	1.5	44.03	0°37′	IR15ISO					•		•		•		•	•	○								•		•		•		•	•	○	○		
M45×2	2	43.7	0°50′	IR20ISO					•		•		•		•	•	○								•		•		•		•	•	○	○		
M45×3	3	43.05	1°16′	IR30ISO									•		•	•	○												•		•	•	○	○		
M45×4	4	42.4	1°43′	IR40ISO															2															•	2	
M48×1.5	1.5	47.03	0°35′	IR15ISO					•		•		•		•	•	○								•		•		•		•	•	○	○		
M48×2	2	46.7	0°47′	IR20ISO					•		•		•		•	•	○								•		•		•		•	•	○	○		
M48×3	3	46.05	1°11′	IR30ISO									•		•	•	○												•		•	•	○	○		
M48×4	4	45.4	1°36′	IR40ISO															2															•	2	

2 : Change the shim to AN16-2
2 : Change the shim to NXN22-2
2 : Change the shim to AN16-2DT
2 : Change the shim to GXN22-2DT

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

User's Guide - Technical Reference

Selection of ST-type Toolholders

Metric fine screw thread (ISO)

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank																		Carbide shank									"Tsuppari-Ichiban"					
				Insert size	6IR				11IR				16IR						22IR						6IR				11IR				16IR		16IR		22IR		
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	(CNR0040T16)	(CNR0050U16)	CNR0020Q22	CNR0020Q22-2	CNR0025R22	CNR0032S22	(CNR0040T22)	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)	TSNR0020R22	TCNR0025S22DT	(TCNR0032T22DT)
M50×1.5	1.5	49.03	0°33′	IR15ISO					•		•		•		•	•	○	•									•		•		•		•	•	○	○			
M50×2	2	48.7	0°45′	IR20ISO					•		•		•		•	•	○										•		•		•		•	•	○	○			
M50×3	3	48.05	1°08′	IR30ISO									•		•	•	○														•		•	•	○	○			
M52×1.5	1.5	51.03	0°32′	IR15ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M52×2	2	50.7	0°43′	IR20ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M52×3	3	50.05	1°06′	IR30ISO									•		•	•	○	•													•		•	•	○	○			
M52×4	4	49.4	1°29′	IR40ISO															•	•	•	•															•	•	○
M55×1.5	1.5	54.03	0°30′	IR15ISO					•		•		•		•	•	○	•									•		•		•		•	•	○	○			
M55×2	2	53.7	0°41′	IR20ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M55×3	3	53.05	1°02′	IR30ISO									•		•	•	•	○													•		•	•	○	○			
M55×4	4	52.4	1°24′	IR40ISO															•	•	•	•	○														•	•	○
M56×1.5	1.5	55.03	0°30′	IR15ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M56×2	2	54.7	0°40′	IR20ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M56×3	3	54.05	1°01′	IR30ISO									•		•	•	•	○													•		•	•	○	○			
M56×4	4	53.4	1°22′	IR40ISO															•	•	•	•	○														•	•	○
M58×1.5	1.5	57.03	0°29′	IR15ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M58×2	2	56.7	0°39′	IR20ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M58×3	3	56.05	0°59′	IR30ISO									•		•	•	•	○													•		•	•	○	○			
M58×4	4	55.4	1°19′	IR40ISO															•	•	•	•	○														•	•	○
M60×1.5	1.5	59.03	0°28′	IR15ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M60×2	2	58.7	0°37′	IR20ISO					•		•		•		•	•	•	○									•		•		•		•	•	○	○			
M60×3	3	58.05	0°57′	IR30ISO									•		•	•	•	○													•		•	•	○	○			
M60×4	4	57.4	1°16′	IR40ISO															•	•	•	•	○														•	•	○

Unified coarse screw thread (UNC)

Nominal size	TPI	Pitch diameter	Lead angle	Shank material	Steel shank																	Carbide shank									"Tsuppari-Ichiban"	
				Insert size	11IR						16IR			22IR					27IR			11IR						16IR			22IR	
				Holder Cat. No. / Insert Cat. No.	SNR0010K11	SNR0010K11-2	SNR0010K11-3	SNR0013L11	SNR0013L11-2	SNR0013L11-3	SNR0016M16	SNR0016M16-2	SNR0016M16-3	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	(CNR0040T22)	CNR0040T27	(CNR0050U27)	(CNR0063V27)	SNR0010M11SC	SNR0010M11SC-2	SNR0010M11SC-3	SNR0012P11SC	SNR0012P11SC-2	SNR0012P11SC-3	SNR0016R16SC	SNR0016R16SC-2	(SNR0016R16SC-3)	TCNR0025S22DT	(TCNR0032T22DT)
7/16-14UNC	14	9.93	3°20′	(IR14UN)																											
1/2-13UNC	13	11.43	3°07′	(IR13UN)																											
9/16-12UNC	12	12.91	2°59′	IR12UN																											
5/8-11UNC	11	14.38	2°56′	(IR11UN)																											
3/4-10UNC	10	17.4	2°40′	(IR10UN)																											
7/8-9UNC	9	20.39	2°31′	IR9UN																											
1-8UNC	8	23.34	2°29′	IR8UN								○																			
1 1/8-7UNC	7	26.22	2°31′	(IR7UN)																											
1 1/4-7UNC	7	29.39	2°15′	(IR7UN)											○																	
1 3/8-6UNC	6	32.17	2°24′	(IR6UN)											○																	
1 1/2-6UNC	6	35.35	2°11′	(IR6UN)											○		2														2	
1 3/4-5UNC	5	41.15	2°15′	(IR5UN)											○		2														2	
2-4 1/2UNC	4.5	47.14	2°11′	(IR45UN)																											
2 1/4-4 1/2UNC	4.5	53.49	1°55′	(IR45UN)															2												
2 1/2-4UNC	4	59.38	1°57′	(IR4UN)															2												
2 3/4-4UNC	4	65.73	1°46′	(IR4UN)															2	2											
3-4UNC	4	72.08	1°36′	(IR4UN)															2	2											
3 1/4-4UNC	4	78.43	1°29′	(IR4UN)															•	•	○										
3 1/2-4UNC	4	84.78	1°22′	(IR4UN)															•	•	○										
3 3/4-4UNC	4	91.13	1°16′	(IR4UN)															•	•	○										
4-4UNC	4	97.48	1°11′	(IR4UN)															•	•	○										

2 : Change the shim to NXN22-2

2 : Change the shim to NXN27-2

2 : Change the shim to GXN22-2DT

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

Unified fine screw thread (UNF)

Nominal size	TPI	Pitch diameter	Lead angle	Shank material	Steel shank										Carbide shank								"Tsuppari-Ichiban"		
				Insert size	6IR				11IR		16IR				6IR				11IR				16IR		16IR		
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11-2	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT
3/8-24UNF	24	8.84	2°11′	(IR24UN)																					
				IRA60																					
7/16-20UNF	20	10.29	2°15′	(IR20UN)																					
				IRA60	○										○										
1/2-20UNF	20	11.87	1°57′	(IR20UN)																					
				IRA60	•		○								•		○								
9/16-18UNF	18	13.37	1°55′	(IR18UN)																					
				IRA60	•		○								•		○								
5/8-18UNF	18	14.96	1°43′	(IR18UN)																					
				IRA60	•		○								•		○								
3/4-16UNF	16	18.02	1°36′	IR16UN					○										○						
7/8-14UNF	14	21.05	1°34′	IR14UN					•	○									•		○				
1-12UNF	12	24.03	1°36′	IR12UN								○										○			
1 1/8-12UNF	12	27.2	1°25′	IR12UN							○										○		○		
1 1/4-12UNF	12	30.38	1°16′	IR12UN							•		○								○		•	○	
1 3/8-12UNF	12	33.55	1°09′	IR12UN							•		•	○							○		•	•	○
1 1/2-12UNF	12	36.73	1°03′	IR12UN							•		•	○							○		•	•	○

Unified extra fine screw thread (UNEF)

Nominal size	TPI	Pitch diameter	Lead angle	Shank material	Steel shank										Carbide shank						"Tsuppari-Ichiban"		
				Insert size	6IR		11IR				16IR				6IR		11IR				16IR		16IR		
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0008H06-2	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	SNR0006H06SC-2	SNR0008H06SC-2	SNR0010K11	SNR0010K11-2	SNR0012L11	SNR0012L11-2	SNR0016M16	SNR0016M16-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT
3/8	32	9.01	1°61′	IR32UN																					
7/16	28	10.52	1°57′	IR28UN	○										○										
1/2	28	12.11	1°37′	IR28UN																					
9/16	24	13.6	1°42′	IR24UN																					
5/8	24	15.19	1°27′	IR24UN																					
11/16	24	16.77	1°15′	IR24UN			○										○								
3/4	20	18.22	1°27′	IR20UN			○										○								
13/16	20	19.81	1°17′	IR20UN			•		○								•		○						
7/8	20	21.4	1°08′	IR20UN			•		○								•		○						
15/16	20	22.99	1°01′	IR20UN			•		•		○						•		○				○		
1	20	24.57	0°94′	IR20UN			•		•		○						•		•		○		○		
1 1/16	18	26.07	0°99′	IR18UN			•		•		○						•		•		○		○		
1 1/8	18	27.66	0°93′	IR18UN			•		•		○						•		•		○		○		
1 3/16	18	29.25	0°88′	IR18UN			•		•		•		○				•		•		○		•	○	
1 1/4	18	30.83	0°84′	IR18UN			•		•		•		○				•		•		○		•	○	
1 5/16	18	32.42	0°79′	IR18UN			•		•		•		○				•		•		○		•	○	
1 3/8	18	34.01	0°76′	IR18UN			•		•		•		•	○			•		•		○		•	•	○
1 7/16	18	35.6	0°72′	IR18UN			•		•		•		•	○			•		•		○		•	•	○
1 1/2	18	37.18	0°69′	IR18UN			•		•		•		•	○			•		•		○		•	•	○
1 9/16	18	38.77	0°66′	IR18UN			•		•		•		•	○			•		•		○		•	•	○
1 5/8	18	40.36	0°64′	IR18UN			•		•		•		•	•	○		•		•		○		•	•	○
1 11/16	18	41.95	0°61′	IR18UN			•		•		•		•	•	○		•		•		○		•	•	○

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

User's Guide - Technical Reference

Selection of ST-type Toolholders

Whitworth British Standard (BSW) (for pipe)

Nominal size	TPI	Pitch diameter	Lead angle	Shank material	Steel shank											Carbide shank		"Tsuppari-Ichiban"				
				Insert size	16IR						22IR					16IR		16IR			22IR	
				Holder Cat. No. / Insert Cat. No.	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	CNR0032S16	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	SNR0016M16	SNR0016M16-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	TSNR0020R22	TCNR0025S22DT
7/16	14	9.95	3°32′	IR14W																		
1/2	12	11.34	3°40′	IR12W																		
9/16	12	12.93	2°98′	IR12W																		
5/8	11	14.4	2°92′	IR11W																		
11/16	11	15.98	2°63′	IR11W																		
3/4	10	17.42	2°66′	IR10W																		
7/8	9	20.42	2°52′	IR9W																		
1	8	23.37	2°48′	IR8W																		
1 1/8	7	26.25	2°52′	IR7W																		
1 1/4	7	29.43	2°25′	IR7W								○										
1 1/2	6	35.39	2°18′	IR6W								○										
1 3/4	5	41.2	2°25′	IR5W								•		[2]								[2]

[2] : Change the shim to NXN22-2

[2] : Change the shim to GXN22-2DT

Whitworth British Standard Fine (BSF) (for pipe)

Nominal size	TPI	Pitch diameter	Lead angle	Shank material	Steel shank													Carbide shank				"Tsuppari-Ichiban"				
				Insert size	6IR		11IR		16IR					22IR					6IR		16IR		16IR			22IR	
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0008H06-2	SNR0010K11	SNR0010K11-2	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	SNR0006H06SC-2	SNR0008H06SC-2	SNR0016M16	SNR0016M16-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	TSNR0020R22	TCNR0025S22DT
7/16	18	10.21	2°52′	IR18W																						
1/2	16	11.68	2°48′	IR16W	○													○								
9/16	16	13.27	2°18′	IR16W	•	○												•	○							
5/8	14	14.71	2°25′	IR14W																						
11/16	14	16.3	2°03′	IR14W				○																		
3/4	12	17.69	2°18′	IR12W																						
7/8	11	20.75	2°03′	IR11W																						
1	10	23.77	1°95′	IR10W						○																
1 1/8	9	26.77	1°92′	IR9W						○											○					
1 1/4	9	29.94	1°72′	IR9W						•		[2]									○		[2]			
1 3/8	8	32.89	1°76′	IR8W						•		[2]									○		[2]			
1 1/2	8	36.07	1°61′	IR8W						•		•	[2]								○		•	[2]		
1 5/8	8	39.24	1°48′	IR8W					•			•	○							○		•	•	○		
1 3/4	7	42.13	1°57′	IR7W											○		[2]									[2]
2	7	48.48	1°37′	IR7W										•			•	○							•	○
2 1/4	6	54.44	1°42′	IR6W										•			•	○							•	○
2 1/2	6	60.79	1°27′	IR6W										•			•	○							•	○
2 3/4	6	67.14	1°15′	IR6W										•			•	○							•	○
3	5	72.95	1°27′	IR5W										•			•	○							•	○
3 1/4	5	79.3	1°17′	IR5W										•			•	○							•	○

[2] : Change the shim to AN16-2

[2] : Change the shim to NXN22-2

[2] : Change the shim to AN16-2DT

[2] : Change the shim to GXN22-2DT

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

30° trapezoidal thread (TR) (for machine parts)

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank														Carbide shank			"Tsuppari-Ichiban"						
				Insert size	16IR								22IR					27IR		16IR			16IR				22IR		
				Holder Cat. No. / Insert Cat. No.	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	CNR0032S16	CNR0040T16	CNR0050U16	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	CNR0040T27	(CNR0050U27)	SNR0016R16SC	SNR0016R16SC-2	(SNR0016R16SC-3)	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)	TSNR0020R22	TCNR0025S22DT	(TCNR0032T22DT)
TR22×3	3	20.5	2°40′	IR30TR																								
TR24×5	5	21.5	4°14′	IR50TR																								
TR24×3	3	22.5	2°26′	IR30TR																								
TR26×5	5	23.5	3°52′	IR50TR																								
TR26×3	3	24.5	2°14′	IR30TR		○																						
TR28×5	5	25.5	3°34′	IR50TR																								
TR28×3	3	26.5	2°04′	IR30TR		•														○								
TR30×6	6	27	4°03′	IR60TR																								
TR30×3	3	28.5	1°55′	IR30TR		•														○								
TR32×6	6	29	3°46′	IR60TR																								
TR32×3	3	30.5	1°48′	IR30TR		•		[2]												•				[2]				
TR34×6	6	31	3°32′	IR60TR																								
TR34×3	3	32.5	1°41′	IR30TR		•		[2]												•				[2]				
TR36×6	6	33	3°19′	IR60TR																								
TR36×3	3	34.5	1°35′	IR30TR		•		2	[2]											•				[2]	[2]			
TR38×3	3	36.5	1°30′	IR30TR		•		2	[2]											•				[2]	[2]			
TR40×3	3	38.5	1°25′	IR30TR	•			•	○											○				•	○			
TR42×3	3	40.5	1°21′	IR30TR	•			•	○											○				•	○			
TR44×3	3	42.5	1°17′	IR30TR	•			•	•	○										○				•	•	○		
TR46×3	3	44.5	1°14′	IR30TR	•			•	•	○										○				•	•	○		
TR48×3	3	46.5	1°11′	IR30TR	•			•	•	○										○				•	•	○		
TR50×3	3	48.5	1°08′	IR30TR	•			•	•	○										○				•	•	○		
TR52×3	3	50.5	1°05′	IR30TR	•			•	•	•	○									○				•	•	○		
TR55×3	3	53.5	1°01′	IR30TR	•			•	•	•	○									○				•	•	○		
TR60×3	3	58.5	0°56′	IR30TR	•			•	•	•	○									○				•	•	○		

[2] : Change the shim to AN16-2

[2] : Change the shim to AN16-2DT

30° trapezoidal thread (TR) (for machine parts)

Nominal size	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank																	Carbide shank			"Tsuppari-Ichiban"						
				Insert size	16IR						22IR							27IR				16IR			16IR				22IR		
				Holder Cat. No. / Insert Cat. No.	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	CNR0032S16	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	(CNR0040T22)	(CNR0050U22)	(CNR0063V22)	CNR0040T27	(CNR0050U27)	(CNR0063V27)	SNR0016R16SC	SNR0016R16SC-2	(SNR0016R16SC-3)	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)	TSNR0020R22	TCNR0025S22DT	(TCNR0032T22DT)
TR65×4	4	63	1°09′	IR40TR							•			•	•	•	○											•	•	○
TR70×4	4	68	1°04′	IR40TR							•			•	•	•	○											•	•	○
TR75×4	4	73	1°00′	IR40TR							•			•	•	•	○											•	•	○
TR80×4	4	78	0°56′	IR40TR							•			•	•	•	•	○										•	•	○
TR85×4	4	83	0°53′	IR40TR							•			•	•	•	•	○										•	•	○
TR90×4	4	88	0°50′	IR40TR							•			•	•	•	•	○										•	•	○
TR95×4	4	93	0°47′	IR40TR							•			•	•	•	•	○										•	•	○
TR100×4	4	98	0°45′	IR40TR							•			•	•	•	•	○										•	•	○
TR105×4	4	103	0°42′	IR40TR							•			•	•	•	•	○										•	•	○
TR110×4	4	108	0°41′	IR40TR							•			•	•	•	•	○										•	•	○
TR115×6	6	112	0°59′	IR60TR															•	•	○									
TR120×6	6	117	0°56′	IR60TR															•	•	○									
TR125×6	6	122	0°54′	IR60TR															•	•	○									
TR130×6	6	127	0°52′	IR60TR															•	•	○									
TR135×6	6	132	0°50′	IR60TR															•	•	○									
TR140×6	6	137	0°48′	IR60TR															•	•	○									
TR145×6	6	142	0°46′	IR60TR															•	•	○									
TR150×6	6	147	0°45′	IR60TR															•	•	○									
TR155×6	6	152	0°43′	IR60TR															•	•	○									
TR160×6	6	157	0°42′	IR60TR															•	•	○									
TR165×6	6	162	0°41′	IR60TR															•	•	○									
TR170×6	6	167	0°39′	IR60TR															•	•	○									

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

User's Guide - Technical Reference

Selection of ST-type Toolholders

Parallel pipe thread (G) (for pipe) This table is also applied to PF, Rp, and PS type threads.

Nominal size	TPI	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank												Carbide shank									"Tsuppari-Ichiban"			
					Insert size	6IR		11IR				16IR						6IR				11IR				16IR		16IR			
					Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0008H06-2	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	(CNR0040T16)	(CNR0050U16)	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)
G1/4	19	1.34	12.30	1°59′	IR19W	•	○												•		○										
G3/8	19	1.34	15.81	1°33′	IR19W	•	•		○										•		○										
G1/2	14	1.81	19.79	1°40′	IR14W				•		○												•		○						
G5/8	14	1.81	21.75	1°31′	IR14W				•		○												•		○						
G3/4	14	1.81	25.28	1°18′	IR14W			•		•		○										•		•		○		○			
G7/8	14	1.81	29.04	1°08′	IR14W			•		•		•		○								•		•		○		•	○		
G1	11	2.31	31.77	1°20′	IR11W							•		○												○		•	○		
G1-1/8	11	2.31	36.42	1°09′	IR11W							•		•	○											○		•	•	○	
G1-1/4	11	2.31	40.43	1°02′	IR11W							•		•	○											○		•	•	○	
G1-1/2	11	2.31	46.32	0°55′	IR11W							•		•	•	○										○		•	•	•	○
G1-3/4	11	2.31	52.27	0°48′	IR11W							•		•	•	•	○									○		•	•	•	○
G2	11	2.31	58.14	0°43′	IR11W							•		•	•	•	○									○		•	•	•	○
G2-1/4	11	2.31	64.23	0°39′	IR11W							•		•	•	•	•	○								○		•	•	•	○
G2-1/2	11	2.31	73.71	0°34′	IR11W							•		•	•	•	•	○								○		•	•	•	○
G2-3/4	11	2.31	80.06	0°32′	IR11W							•		•	•	•	•	○								○		•	•	•	○
G3	11	2.31	86.41	0°29′	IR11W									0	0	0	0	0											0	0	0
G3-1/2	11	2.31	98.85	0°26′	IR11W									0	0	0	0	0											0	0	0
G4	11	2.31	111.55	0°23′	IR11W									0	0	0	0	0											0	0	0
G4-1/2	11	2.31	124.25	0°20′	IR11W									0	0	0	0	0											0	0	0
G5	11	2.31	136.95	0°18′	IR11W									0	0	0	0	0											0	0	0
G6	11	2.31	162.35	0°16′	IR11W									0	0	0	0	0											0	0	0

0 : Change the shim to AN16-0 ←

0 : Change the shim to AN16-0DT ←

Taper pipe thread (PT) (for pipe) This table is also applied to Rc type pipe thread.

Nominal size	TPI	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank													Carbide shank								"Tsuppari-Ichiban"			
					Insert size	6IR				11IR				16IR														16IR			
					Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0010K11	SNR0010K11-2	SNR0013L11	SNR0013L11-2	SNR0016M16	SNR0016M16-2	CNR0020P16	CNR0025R16	CNR0032S16	(CNR0040T16)	(CNR0050U16)	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0010M11SC	SNR0010M11SC-2	SNR0012P11SC	SNR0012P11SC-2	SNR0016R16SC	SNR0016R16SC-2	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)
PT1/4	19	1.34	12.30	1°59′	IR19PT	○													○												
PT3/8	19	1.34	15.81	1°33′	IR19PT	•		○											•		○										
PT1/2	14	1.81	19.79	1°40′	IR14PT						○													•		○					
PT3/4	14	1.81	25.28	1°19′	IR14PT									○									•		•		○		○			
PT1	11	2.31	31.77	1°20′	IR11PT									•		○											○		•	○		
PT1 1/4	11	2.31	40.43	1°02′	IR11PT									•		•	○										○		•	•	○	
PT1 1/2	11	2.31	46.32	0°55′	IR11PT									•		•	•	○									○		•	•	•	○
PT2	11	2.31	58.14	0°43′	IR11PT									•		•	•	•	○								○		•	•	•	○
PT2 1/2	11	2.31	73.71	0°34′	IR11PT									•		•	•	•	•	○							○		•	•	•	○
PT3	11	2.31	86.41	0°29′	IR11PT											0	0	0	0	0									0	0	0
PT3 1/2	11	2.31	98.85	0°26′	IR11PT											0	0	0	0	0									0	0	0
PT4	11	2.31	111.55	0°23′	IR11PT											0	0	0	0	0									0	0	0
PT5	11	2.31	136.95	0°18′	IR11PT											0	0	0	0	0									0	0	0
PT6	11	2.31	162.35	0°16′	IR11PT											0	0	0	0	0									0	0	0
PT7	11	2.31	187.75	0°13′	IR11PT											0	0	0	0	0									0	0	0
PT8	11	2.31	213.15	0°12′	IR11PT											0	0	0	0	0									0	0	0
PT9	11	2.31	238.55	0°11′	IR11PT											0	0	0	0	0									0	0	0
PT10	11	2.31	263.95	0°10′	IR11PT											0	0	0	0	0									0	0	0
PT12	11	2.31	314.75	0°08′	IR11PT											0	0	0	0	0									0	0	0

0 : Change the shim to AN16-0 ←

0 : Change the shim to AN16-0DT ←

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

National taper pipe thread (NPT) (for pipe)

Nominal size	TPI	Pitch	Lead angle	Shank material	Steel shank											Carbide shank							"Tsuppari-Ichiban"			
				Insert size	6IR				16IR							6IR				16IR			16IR			
				Holder Cat. No. / Insert Cat. No.	SNR0006H06-2	SNR0006H06-3	SNR0008H06-2	SNR0008H06-3	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	CNR0032S16	(CNR0040T16)	(CNR0050U16)	SNR0006K06SC-2	SNR0006K06SC-3	SNR0008K06SC-2	SNR0008K06SC-3	SNR0016R16SC	SNR0016R16SC-2	(SNR0016R16SC-3)	TSNR0016Q16	TCNR0020R16DT	TCNR0025S16DT	(TCNR0032T16DT)
3/8NPT	18	1.41	1°37′	IR18NPT	•		○										•		○								
1/2NPT	14	1.81	1°40′	IR14NPT																							
3/4NPT	14	1.81	1°19′	IR14NPT					○												○			○			
1NPT	11.5	2.21	1°17′	IR115NPT					○			○									○			•	○		
1 1/4NPT	11.5	2.21	1°00′	IR115NPT					○			•	•	○							○			•	•	•	○
1 1/2NPT	11.5	2.21	0°52′	IR115NPT					○			•	•	○							○			•	•	•	○
2NPT	11.5	2.21	0°41′	IR115NPT					○			•	•	•	•	○					○			•	•	•	○
2 1/2NPT	8	3.175	0°50′	IR8NPT					○			•	•	•	•	○					○			•	•	•	○
3NPT	8	3.175	0°40′	IR8NPT					○			•	•	•	•	○					○			•	•	•	○
3 1/2NPT	8	3.175	0°35′	IR8NPT					○			•	•	•	•	○					○			•	•	•	○
4NPT	8	3.175	0°31′	IR8NPT					○			•	•	•	•	○					○			•	•	•	○
5NPT	8	3.175	0°25′	IR8NPT								0	0	0	0	[0]									0	0	[0]
6NPT	8	3.175	0°21′	IR8NPT								0	0	0	0	[0]									0	0	[0]
8NPT	8	3.175	0°16′	IR8NPT								0	0	0	0	[0]									0	0	[0]
10NPT	8	3.175	0°13′	IR8NPT								0	0	0	0	[0]									0	0	[0]
12NPT	8	3.175	0°11′	IR8NPT								0	0	0	0	[0]									0	0	[0]
14NPT	8	3.175	0°10′	IR8NPT								0	0	0	0	[0]									0	0	[0]
16NPT	8	3.175	0°09′	IR8NPT								0	0	0	0	[0]									0	0	[0]
18NPT	8	3.175	0°08′	IR8NPT								0	0	0	0	[0]									0	0	[0]
20NPT	8	3.175	0°07′	IR8NPT								0	0	0	0	[0]									0	0	[0]
24NPT	8	3.175	0°06′	IR8NPT								0	0	0	0	[0]									0	0	[0]

[0] : Change the shim to AN16-0

[0] : Change the shim to AN16-0DT

29° trapezoidal thread (ACME) (for machine parts, pipe)

Nominal size	TPI	Pitch	Pitch diameter	Lead angle	Shank material	Steel shank												Carbide shank			"Tsuppari-Ichiban"			
					Insert size	16IR						22IR					27IR		16IR			16IR		22IR	
					Holder Cat. No. / Insert Cat. No.	SNR0016M16	SNR0016M16-2	SNR0016M16-3	CNR0020P16	CNR0025R16	CNR0032S16	SNR0020Q22	SNR0020Q22-2	SNR0020Q22-3	CNR0025R22	CNR0032S22	CNR0040T27	(CNR0050U27)	SNR0016R16SC	SNR0016R16SC-2	SNR0016R16SC-3	TSNR0016Q16	TCNR0020R16DT	TCNR0025S22DT	(TCNR0032T22DT)
3/8	12	2.12	8.465	4°33′	IR12ACME																			
7/16	12	2.12	10.053	3°50′	IR12ACME																			
1/2	10	2.54	11.43	4°03′	IR10ACME																			
5/8	8	3.18	14.274	4°03′	IR8ACME																			
3/4	6	4.23	16.934	4°33′	IR6ACME																			
7/8	6	4.23	20.109	3°50′	IR6ACME																			
1	5	5.08	22.86	4°03′	IR5ACME																			
1-1/8	5	5.08	26.035	3°33′	IR5ACME																			
1-1/4	5	5.08	29.21	3°10′	IR5ACME																			
1-3/8	4	6.35	31.75	3°39′	IR4ACME																			
1-1/2	4	6.35	34.925	3°19′	IR4ACME																			
1-3/4	4	6.35	41.275	2°48′	IR4ACME																			
2	4	6.35	47.625	2°26′	IR4ACME																			

Because this thread standard is characterized with large pitch and small diameter, (that is a large lead angle) the standard inserts and toolholders can not be used for machining this thread type. The application is limited to outside of the standard.

Note : The above tables show correspondence of internal toolholders at the time of setting clearance between thread and toolholder to 3 mm (1 mm in case of SN type) and the finishing stock to 0.1 mm.

User's Guide - Technical Reference

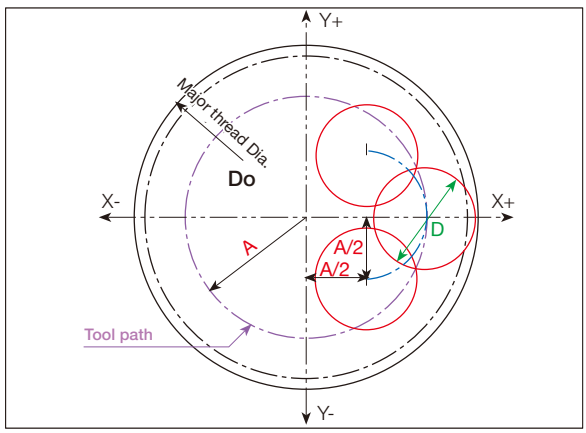
THREADMILLING

Thread Milling CNC Program for Internal Thread

Right-hand thread (climb milling) from bottom up. Program is based on tool center.
This method of programming needs no tool radius compensation value, other than an offset for wear.

$$A = \frac{Do - D}{2}$$

A = Radius of tool path
Do = Major thread diameter
D = Cutting diameter



General Program

G90 G00 G54 G43 H1X0 Y0 Z10 S (n : Number of revolutions)
G00 Z-(to thread depth)
G01 G91 G41 D1 X (A/2) Y-(A/2) Z0 F (Center of tool)
G03 X(A/2) Y(A/2) R (A/2) Z(1/8 pitch) F (Cutting edge)
G03 X0 Y0 I -(A) J0 Z (pitch)
G03 X-(A/2) Y(A/2) R (A/2) Z(1/8 pitch)
G01 G40 X -(A/2) Y-(A/2) Z0
G90 X0 Y0 Z0

Internal Thread

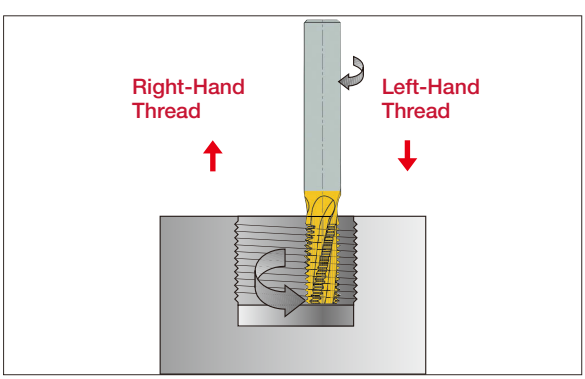
Example: M20x2.0 **IN-RH** (Thread depth 20 mm)
Tool : **MTEC1010C27 2.0ISO**
(Cutting dia. 10 mm)
A=(**Do**-**D**)/2=(20-10)/2=5
A/2=2.5
(Tool compensation of radius=0)
G90 G0 G54 G43 G17 **H1X0 Y0 Z10 S**4000
G0 Z-20
G01 G91 G41 **D1X** 2.5 **Y**-2.5 **Z0 F**840
G03 **X**2.5 **Y**2.5 **R**2.5 **Z**0.25 F420
G03 **X0 Y0 I**-5.0 **J0 Z**2.0
G03 **X**-2.5 **Y**2.5 **R**2.5 **Z**0.25
G01 G40 **X**-2.5 **Y**-2.5 **Z0**
G90 G0 **X0 Y0 Z0**
M30
%

F (Center of tool) = n x *f* x z

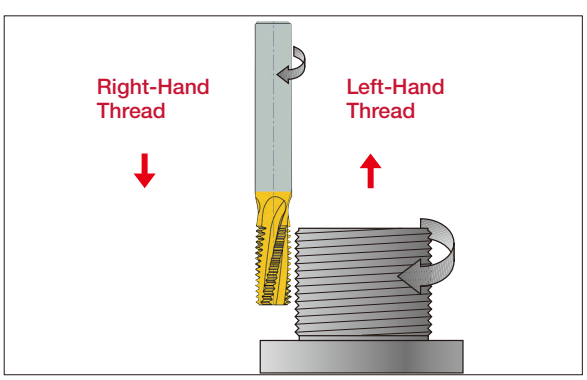
F (Cutting edge) = $\frac{Do - D}{Do}$ x n x *f* x z

n : Number of revolutions
f : rev / tooth
z : Number of edge

Internal Thread



External Thread

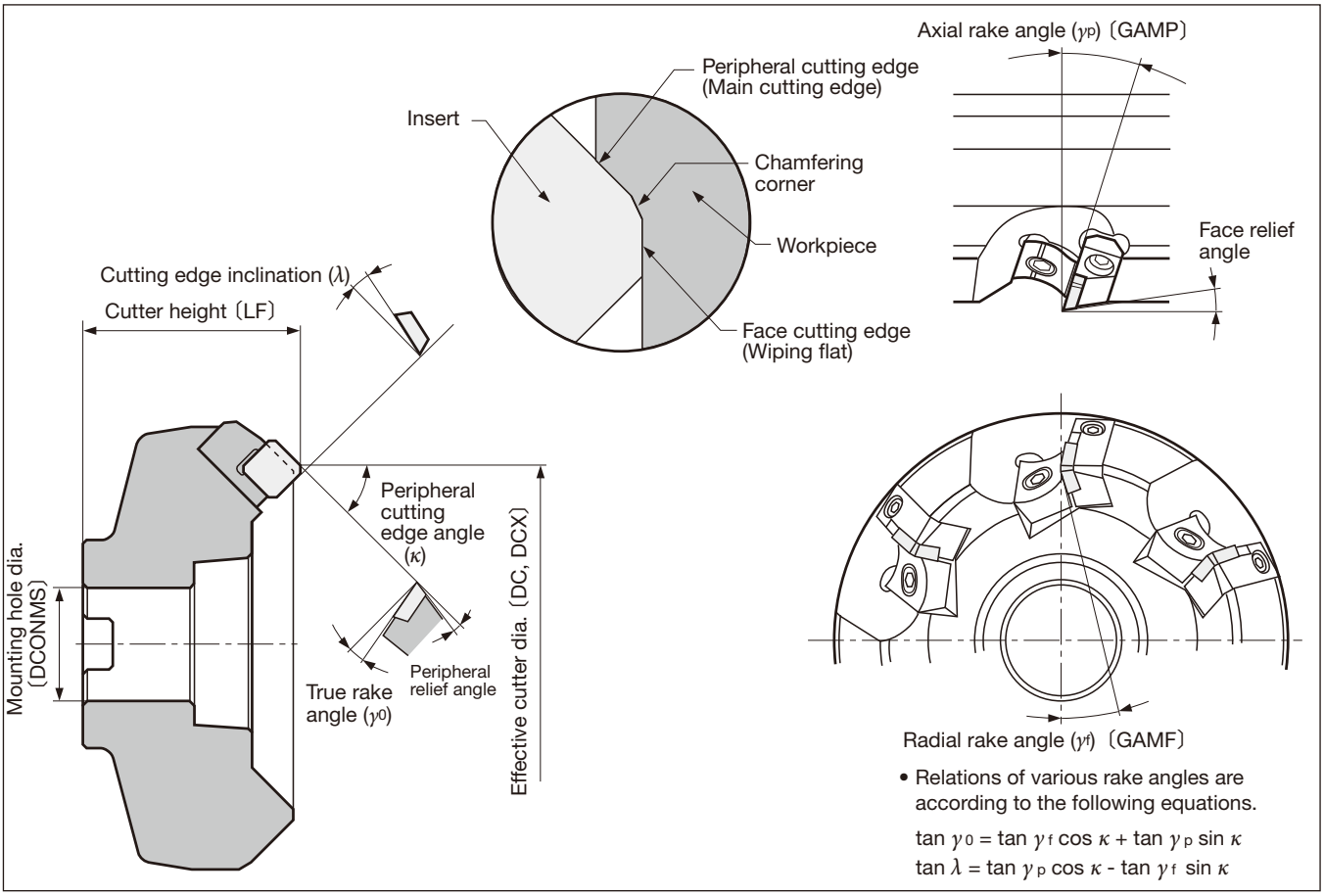


A thread milling operation is applicable for thread cutting in non-symmetrical parts utilizing the advantage of helical interpolation programs on modern machining centers.

For more details, please check ThreadMilling advisor.

Milling tools

Nomenclature for face milling cutter



- Relations of various rake angles are according to the following equations.

$\tan \gamma_0 = \tan \gamma_f \cos \kappa + \tan \gamma_p \sin \kappa$

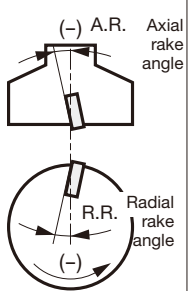
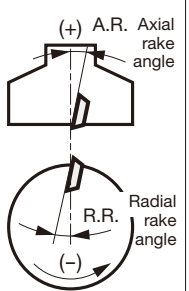
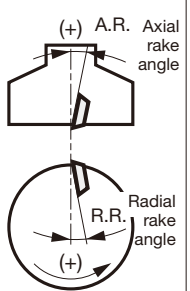
$\tan \lambda = \tan \gamma_p \cos \kappa - \tan \gamma_f \sin \kappa$

〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)

Cutter geometry and applications

Condition		Rake angle combination and applicability		
		Negative-Negative	Negative-Positive	Positive-Positive
Shapes of cutting edge	γp 〔GAMP〕	-	+	+
	γf 〔GAMF〕	-	-	+
	γo	-	+	+
Workpiece material	Carbon steels, alloy steels (< 300HB)	△	◎	◎
	Stainless steels (< 300HB)	×	◎	○
	Die steels (< 300HB)	△	◎	○
	Cast irons Ductile cast irons	◎	○	○
	Aluminum alloys	×	○	◎
	Copper and its alloys	×	○	◎
	Titanium and its alloys	×	○	○
	Hardened steels (40 ~ 55HRC)	○	○	×
Features		· Higher cutting edge strength · Many usable corners of inserts	· Excellent chip removal · Higher cutting edge strength and Freer cutting action	· Most excellent cutting action
Typical examples of mills		**DoPent**	**TungMill** **DoTripleMill**	**TFE12** **DPD09**

〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)

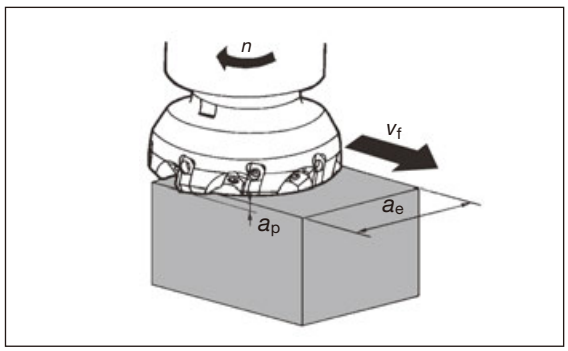
Rake angle combination		
Negative type (Negative-Negative)	Negative-Positive type	Positive type (Positive-Positive)
		

User's Guide - Technical Reference

Milling tools

Calculation formulas for milling

●Cutting speed



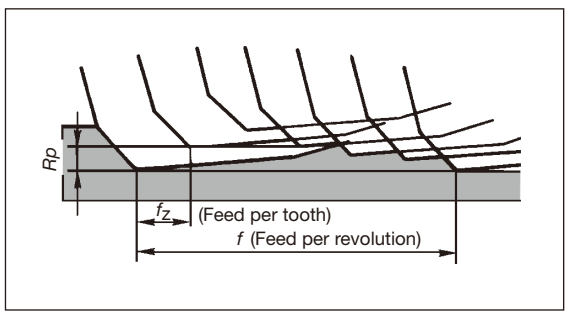
●**Cutting speed** (Calculated from number of revolutions)

$$SFM = \frac{RPM \times D}{3.82}$$

SFM : Cutting speed (m/min)
D : Effective diameter (mm) 〔DC, DCX〕
RPM : Number of revolutions (min-1)

●**Number of revolution** (Calculated from cutting speed)

$$RPM = \frac{SFM \times 3.82}{D}$$



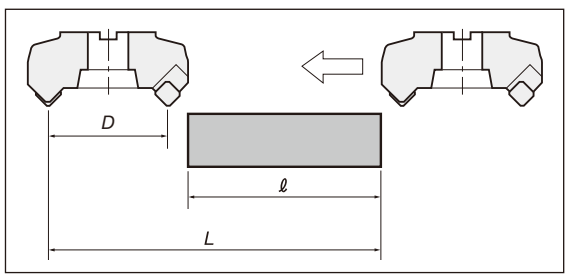
●**Feed speed and feed per tooth**

$$v_f = f_z \times z \times n$$

v_f : Feed speed (in/min)
f_z : Feed per tooth (ipt)
z : No. of teeth of the cutter
n : Number of revolutions (min^{-1})

Feed speed is relative speed of cutter and workpiece material and in the normal milling machine, it is the table speed.
In milling, the feed per tooth is very important. The recommended cutting condition is expressed by v_c and f_z and using the above equation calculate n and v_f and input in the machine.

●Cutting time on face milling

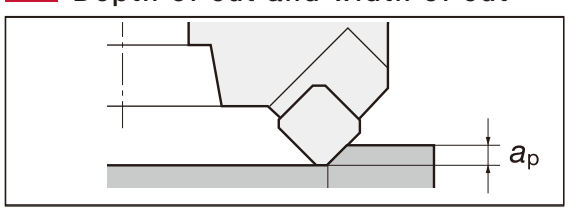


$$T_{(min)} = \frac{L}{v_f}$$

T : Cutting time (min)
L : Total table feed length.
(ℓ : Workpieces length (in) + øD_c: Effective cutter diameter (in) 〔DC, DCX〕)
v_f : Feed speed (in/min)

〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)

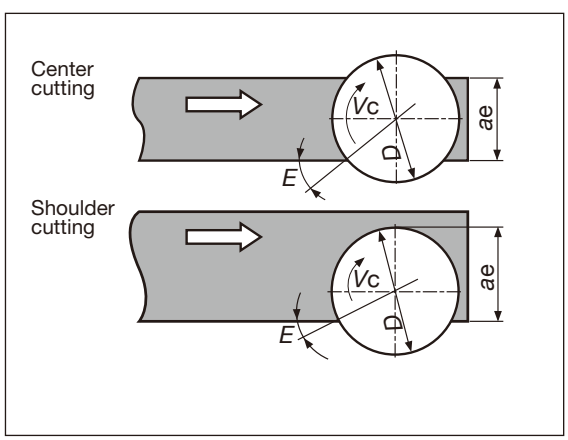
Depth of cut and width of cut



●**Depth of cut**

Determine by required allowance for machining and capacity of the machine. In case of mill, there are cutting limits according to shape and size of the insert. Please see spec in the catalog.

a_p : Depth of cut (in)



●**Width of cut and engagement angle**

There is an appropriate engage angle depending on the cutter diameter, cutting position, workpiece material, etc., and ordinarily the values in the table below are used as a guide.

D : Cutter diameter (in) 〔DC, DCX〕
E : Engage angle
a_e : Width of cut (in)

〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)

Center cutting

Workpiece material	Appropriate E	Cutter dia. and a_e
Steel	~ 42°	$a_e \fallingdotseq \frac{2}{3} D$
Cast iron	~ 53°	$a_e \fallingdotseq \frac{4}{5} D$

Shoulder cutting

Workpiece material	Appropriate E	Cutter dia. and a_e
Steel	~ 30°	$a_e \fallingdotseq \frac{3}{5} D$
Cast iron	~ 40°	$a_e \fallingdotseq \frac{3}{4} D$

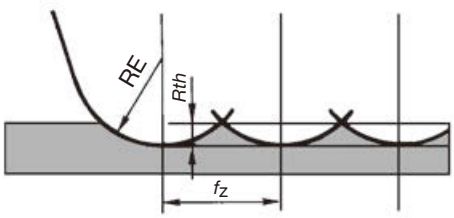
Milling tools

Roughness of finished surface

(1) Theoretical surface roughness
Theoretical roughness as shown below, is the same as for single point turning

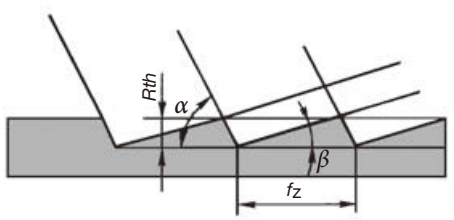
●With corner radius RE

$$Rth = \frac{fz^2}{8RE} \times 1000 \times 1000$$

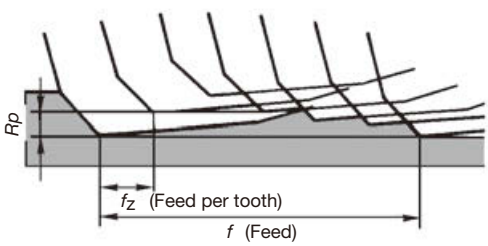


●Without corner radius RE

$$Rth = fz\left(\frac{\tan\alpha \cdot \tan\beta}{\tan\alpha + \tan\beta}\right) \times 1000 \times 40$$

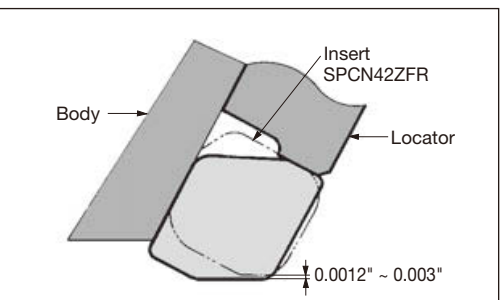


Rth : Theoretical roughness (μm)
f_z : Feed per tooth (ipt)
RE : Corner radius (in)
α : Corner angle
β : Face cutting edge angle



(2) Actual surface roughness
A facemill cutter in practice is composed of multiple point cutting edges and is prone to create uneven peaks, or an axial runout error (*Rp*) on cutting edges. One or two cutting edges being non-coplanar to the rest invariably create the dominant mark on a face-milled surface, producing periodic patterns corresponding to the feed per revolution *f* (ipr) superimposing on the feed per tooth *fz* (ipt).

Improving surface roughness



Face run out must be minimized and a low feed and high speed should be used. Also, in order to attain good finished surface at high efficiency, there are the following methods:

(1) In case of ordinary mill
Use wiper insert as shown in the figure at left.

(2) Use of super finish mill for finishing.
- Use of combination mills with finishing insert such as TFD4400-A and TFP4000IA ($a_p < 0.039$").
- Use of super finish mill for finishing such as NMS cutters and SFP4000 etc.

User's Guide - Technical Reference

Milling tools

Calculating power requirement

$$P_c \text{ (HP)} = \frac{k_c \times a_p \times a_e \times v_f}{330}$$

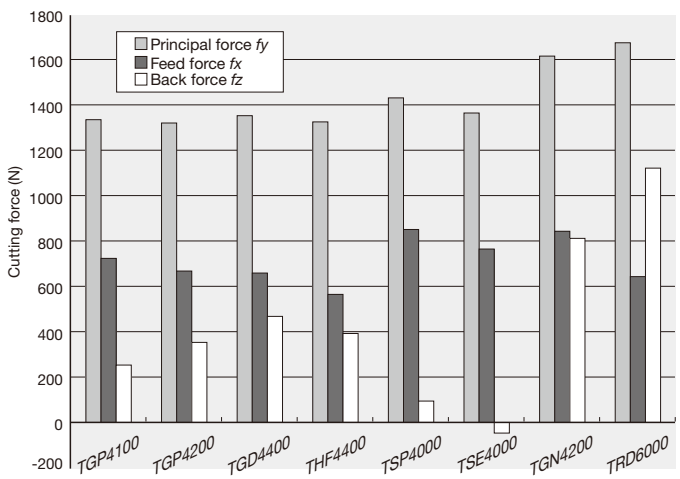
Because practical power requirements depend on the type of mill (proportional to the true rake angle) and the motor efficiency of the machine used, the result calculated from the above formula should be considered as a rough guide.

P_c : Net power requirement (HP)
k_c : Specific cutting force (KPI) [Refer to the Table below]
a_p : Depth of cut (in)
a_e : Width of cut (in)
v_f : Feed speed (in/min)

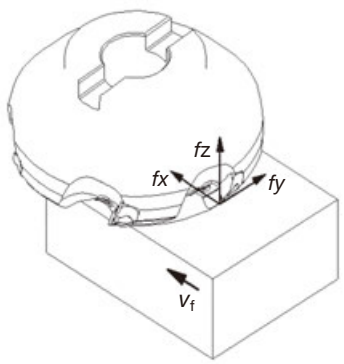
●Values of specific cutting force (k_c)

Workpiece material (JIS)	Tensile strength	Value of specific cutting force on feed per tooth k_c (N/mm^2)				
	MPa	0.004 (ipt)	0.006 (ipt)	0.008 (ipt)	0.012 (ipt)	0.016 (ipt)
SS400	75,420	312	290	276	254	239
S55C	111,679	286	270	261	255	235
SCM435	105,878	355	341	319	287	248
SKT4	(HB352)	294	292	263	244	231
SC450	75,420	393	367	350	325	307
FC250	(HB200)	241	210	191	167	149
Al (Si)	29,008	96	84	76	67	59
Brass	72,519	158	139	127	110	99

●Values of cutting force (k_c)



Workpiece material : 1049 (210HB), Diameter of mill : ø6.29"
Cutting speed : V_c = 490 sfm, Feed per tooth: f_z = 0.008 ipr
Depth of cut: a_p = 0.118", Cutting by a single edge, dry



●Conversion from cutting speed to number of revolutions

(unit : min^{-1})

Cutter diameter DC, DCX (in)	Cutting speed : Vc (sfm)												
	33	98	164	328	410	492	656	984	1640	2625	3281	6562	13123
0.394	318	955	1,592	3,184	3,980	4,777	6,369	9,554	15,923	25,477	31,847	63,694	127,388
0.472	265	796	1,326	2,653	3,317	3,980	5,307	7,961	13,269	21,231	26,539	53,078	106,157
0.630	199	597	995	1,990	2,488	2,985	3,980	5,971	9,952	15,923	19,904	39,808	79,617
0.787	159	477	796	1,592	1,990	2,388	3,184	4,777	7,961	12,738	15,923	31,847	63,694
0.984	127	382	636	1,273	1,592	1,910	2,547	3,821	6,369	10,191	12,738	25,477	50,955
1.181	106	318	530	1,061	1,326	1,592	2,123	3,184	5,307	8,492	10,615	21,231	42,462
1.260	99	298	497	995	1,244	1,492	1,990	2,985	4,976	7,961	9,952	19,904	39,808
1.378	90	272	454	909	1,137	1,364	1,819	2,729	4,549	7,279	9,099	18,198	36,396
1.575	79	238	398	796	995	1,194	1,592	2,388	3,980	6,369	7,961	15,923	31,847
1.969	63	191	318	636	796	955	1,273	1,910	3,184	5,095	6,369	12,738	25,477
2.480	50	151	252	505	631	758	1,011	1,516	2,527	4,044	5,055	10,110	20,220
3.150	39	119	199	398	497	597	796	1,194	1,990	3,184	3,980	7,961	15,923
3.937	31	95	159	318	398	477	636	955	1,592	2,547	3,184	6,369	12,738
4.921	25	76	127	254	318	382	509	764	1,273	2,038	2,547	5,095	10,191
6.299	19	59	99	199	248	298	398	597	995	1,592	1,990	3,980	7,961
7.874	15	47	79	159	199	238	318	477	796	1,273	1,592	3,184	6,369
9.843	12	38	63	127	159	191	254	382	636	1,019	1,273	2,547	5,095
12.402	10	30	50	101	126	151	202	303	505	808	1,011	2,022	4,044

Note: In this table, the effects of centrifugal force on the rotating balance of the tool and the toolholder, flying risk of cutter parts, and limited value of toolholder destruction are not considered. Therefore, when using the tool at high speeds, be sure to observe the specified condition range.

Milling tools

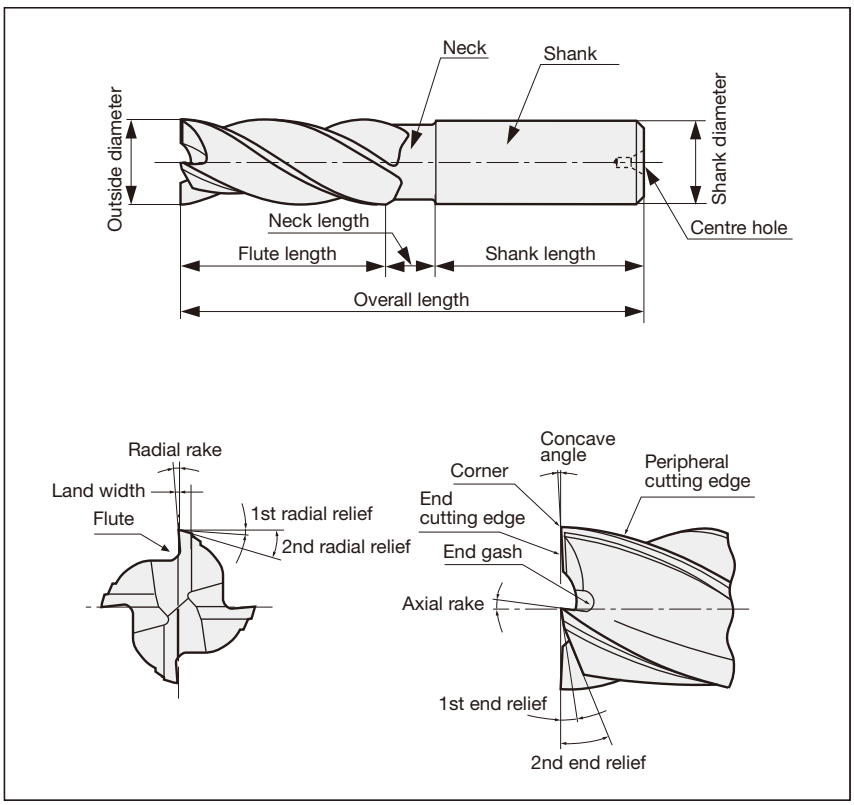
Trouble shooting in face milling

Trouble	Possible causes	Countermeasures
Rapid wear of cutting edge	• Improper insert grade selection (Insufficient wear resistance)	• Use a grade with high wear resistance P30 → P20
	• Excessive cutting speed	• Select cutting speed suited for Workpiece material and insert grade
	• Inadequate feed	• Use standard cutting condition in catalog as guide
Rapid chipping of cutting edge	• Improper Insert grade selection (Insufficient toughness)	• Use a grade with high fracture resistance P10 → P20
	• Cutting hard material and unfavorable surface condition	• Decrease cutting speed • Use cutter with strong cutting edge
	• Excessive feed	• Proper selection of feed conditions, using recommended cutting conditions in catalog as guide
	• Excessive pressure applied on cutting edge	• Proper selection of engaging angle
	• Machining superalloys	• Use a negative-positive type cutter with large corner angle
Fracturing	• Cracking due to thermal shock	• Select insert grade of stronger thermal shock resistance • Decrease cutting speed
	• Continuous use of excessively worn insert	• Shorten replacement standard time of insert
	• Cutting hard material	• Use cutter with stronger cutting edge • Use cutter of larger corner angle
	• Obstruction to chip flow • Recutting of chips after chip welding	• Use cutter with better chip expulsion • Select insert grades difficult for chips to adhere Cemented carbides → cermets, coated grades • Use air blow
	• Excessively slow cutting, too fine feed	• Select cutting speed and feed optimized for insert grade and Workpiece material
Excessive chip welding or build-up on cutting edge	• Cutting soft material such as aluminum, copper, mild steel	• Use cutter with large rake angle
	• Cutting stainless steel	• Coated grades (AH130、AH3135)
	• Use of cutter with negative rake or too small rake angle	• Use cutter with large rake angle
Rough finish	• Effect of built-up edge	• Increase cutting speed • Appropriate cutting depth (finish allowance) • Change insert grade For steels : P → coated → cermet For cast irons : K → coated
	• Effect of face cutting edge run out	• Proper installing of inserts • Use insert of high dimensional accuracy • Cleaning of insert pocket
	• Continuous use of excessively worn insert	• Shorten replacement standard time of insert
	• Remarkable feed marks	• Feed per revolution to be set within flatland width • Use wiper insert type cutter such as T/EAW13 • Use cutter exclusively for finishing
Chattering	• Unstable clamping of workpiece	• Check clamping method of workpiece
	• Cutting of welded construction of thin steel plate	• Use cutter of large rake angle and small corner angle
	• Excessive cutting condition	• Re-examine allowable chip removal rate according to motor HP
	• Face milling of narrow width workpiece	• Use cutter of small cutter diameter and with many teeth
	• Too many simultaneous cutting teeth engagement	• Reduce No. of teeth

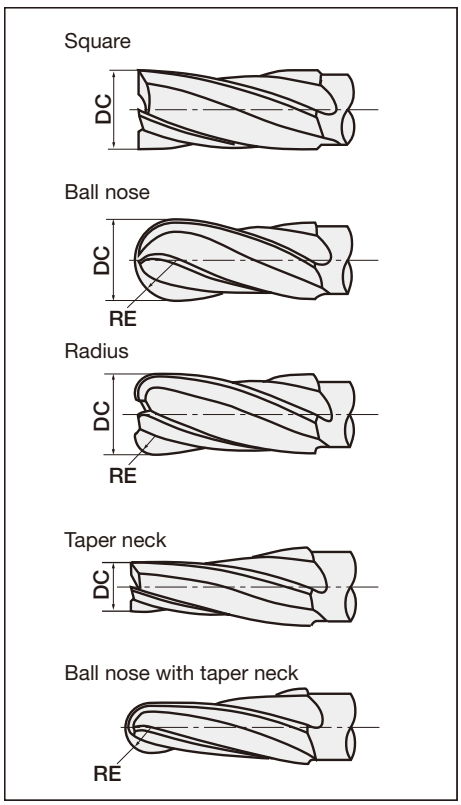
User's Guide - Technical Reference

Solid Carbide Endmills

Part details

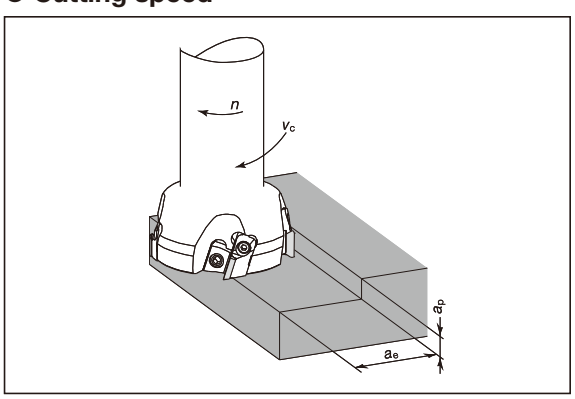


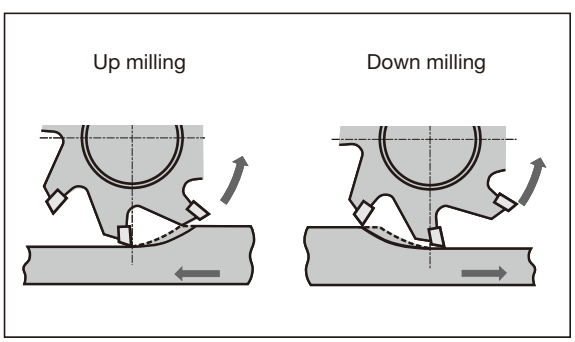
Types



Cutting condition of Endmills

● Cutting speed





● **Cutting speed** (Calculated from number of revolutions)

$$SFM = \frac{RPM \times D}{3.82}$$

SFM: Cutting speed
D : Effective diameter (in) (DC)
RPM: Number of revolutions (min-1)

● **Number of revolution** (Calculated from cutting speed)

$$RPM = \frac{SFM \times 3.82}{D}$$

● **Feed speed and feed per tooth**

$$v_f = f_z \times z \times n$$

v_f : Feed speed (in/min)
f_z : Feed per tooth (ipt)
z : No. of teeth of the endmills
n : Number of revolutions (min^{-1})
( ) The notation in the brackets is the one used in the catalog (ISO compliant)

● **Cutting**

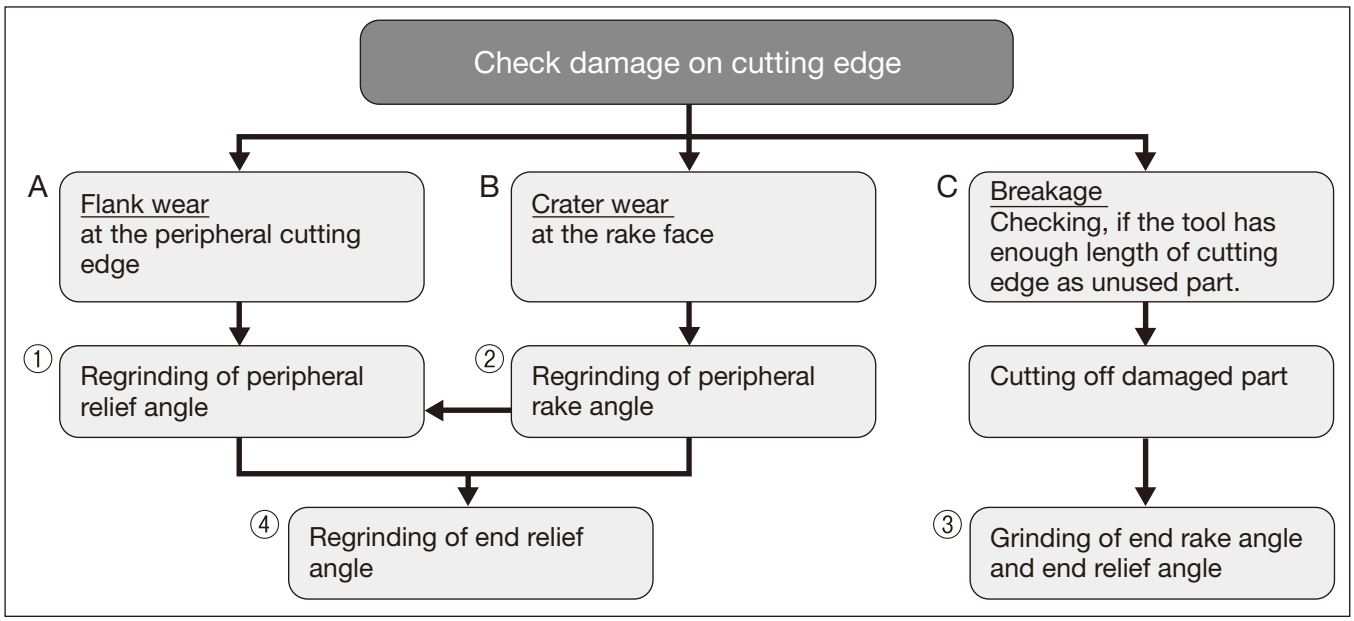
The necessary capacity of the machine is limited by the length of cut edge of the endmill.

● **Up milling and down milling**

Down milling generally produces better tool life and surface roughness.
In case of cast iron sand inclusion or welding surface, up milling is recommended.

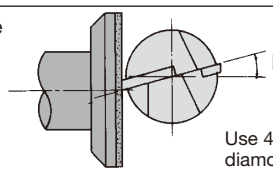
Solid Carbide Endmills

Regrinding procedures of solid carbide endmill



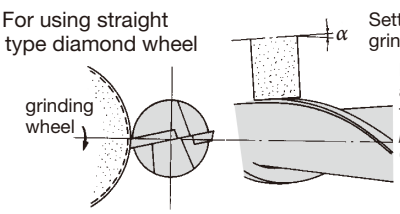
1 Regrinding of end relief angle

1. For using cup type diamond wheel



Use 400 to 600 mesh diamond wheel

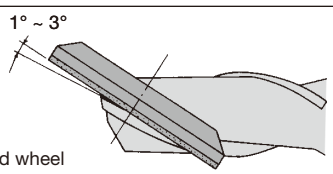
2. For using straight type diamond wheel



Setting angle of grinding wheel

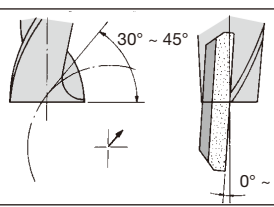
Formular of setting angle α
$\tan \alpha = \tan \beta \times \tan \theta$
β : peripheral relief angle
θ : spiral angle

2 Regrinding of peripheral rake angle



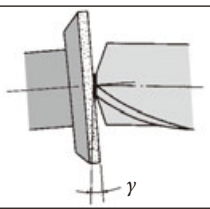
Cup type diamond wheel

3 Regrinding of end rake angle (End gash)



For 2 flutes endmill: straight type diamond wheel
For ≥ 3 flutes endmill: cup type diamond wheel

4 Regrinding of end relief angle



Cup type diamond wheel
γ : 1st end relief angle: 5° ~ 7°
2nd end relief angle: 15° ~ 20°

Notice of regrinding

(1) If, after checking the damage of the cutting edge, the damage is as case "A" or "B" of the flow chart, the tool must be reground.
Too much damage of the cutting edge requires too much stock removal and thus reduces tool life.
(2) Please use diamond grinding wheel.
(3) Peripheral relief angle must be ground between 18° and 10°.
Relief angle of small diameter cutters for aluminum machining must be a large degree.
(4) First check if "C" in flow chart can be adapted for the case of coated endmill or not.
If procedure "C" can be adapted for regrinding, tool life after the grinding would be more improved than new one. The reason is remaining coated layer of cutting edge and shorter tool length will keep much higher rigidity of the tool than before regrinding.
(5) Please check run out of peripheral cutting edge, face cutting edge, with Vee block after regrinding.
The value of the run out must be controlled within 0.0004".

Notice for regrinding of ball nose endmill

- Regrinding of relief angle only is available. The dimension of nose radius will be smaller after grinding.
- Honing of cutting edge is necessary after regrinding.

User's Guide - Technical Reference

Solid Carbide Endmills

Trouble shooting in Endmilling

Trouble	Possible causes	Countermeasures
Breakage	● At the start of machining ● At the end of machining	● Reduce feed. ● Reduce tool overhang length. ● Exchange to short cutting edge tool.
	When usual machining	● Reduce feed. ● Managing tool life → Exchange in shorter time. ● Replace chuck or collet to new one. ● Reduce tool overhang length. ● Make optimum honing on the edge. ● Reduce flutes. E.g. 4 flutes → 3flutes, or 2flutes. ● Use enough coolant. Change direction of supplying coolant.
	When change the direction of feed	● Use the circular interpolation in NC machine. Stop feed shortly before changing. ● Lower feed around changing part. ● Replace chuck or collet to new one.
Fracture on cutting edge	Chipping on corner edge	● Chamfer the corner with hand-stick grinder. ● Down cutting ⇒ Upward milling.
	Chipping on boundary part	● Change cutting direction, Down cutting → Upward milling. ● Reduce cutting speed.
	Chipping on central part or all edges.	● Make slight honing on the edge. Or make honing bigger. ● Change spindle revolution number. ● Increase cutting speed. ● If chattering, increase feed. ● Use coolant or air blast. ● Replace chuck or collet to new one. ● Decrease cutting speed.
	Fracture on cutting edge	● Decrease feed. ● Reduce flutes. E.g. 4 flutes → 3 flutes, or 2 flutes. ● Make slight honing on the edge. Or make honing bigger. ● Replace chuck or collet to new one. **【For Solid carbide endmill】** ● Decrease cutting speed. ● Use enough coolant. Change direction of supplying coolant.
Large wear in short time		● Decrease cutting speed. ● Change cutting direction, Upward milling → down cutting. ● Increase feed. ● Use coolant or air blast. ● In reground tool, grind flank face with FINER wheel.

(Continued on next page)

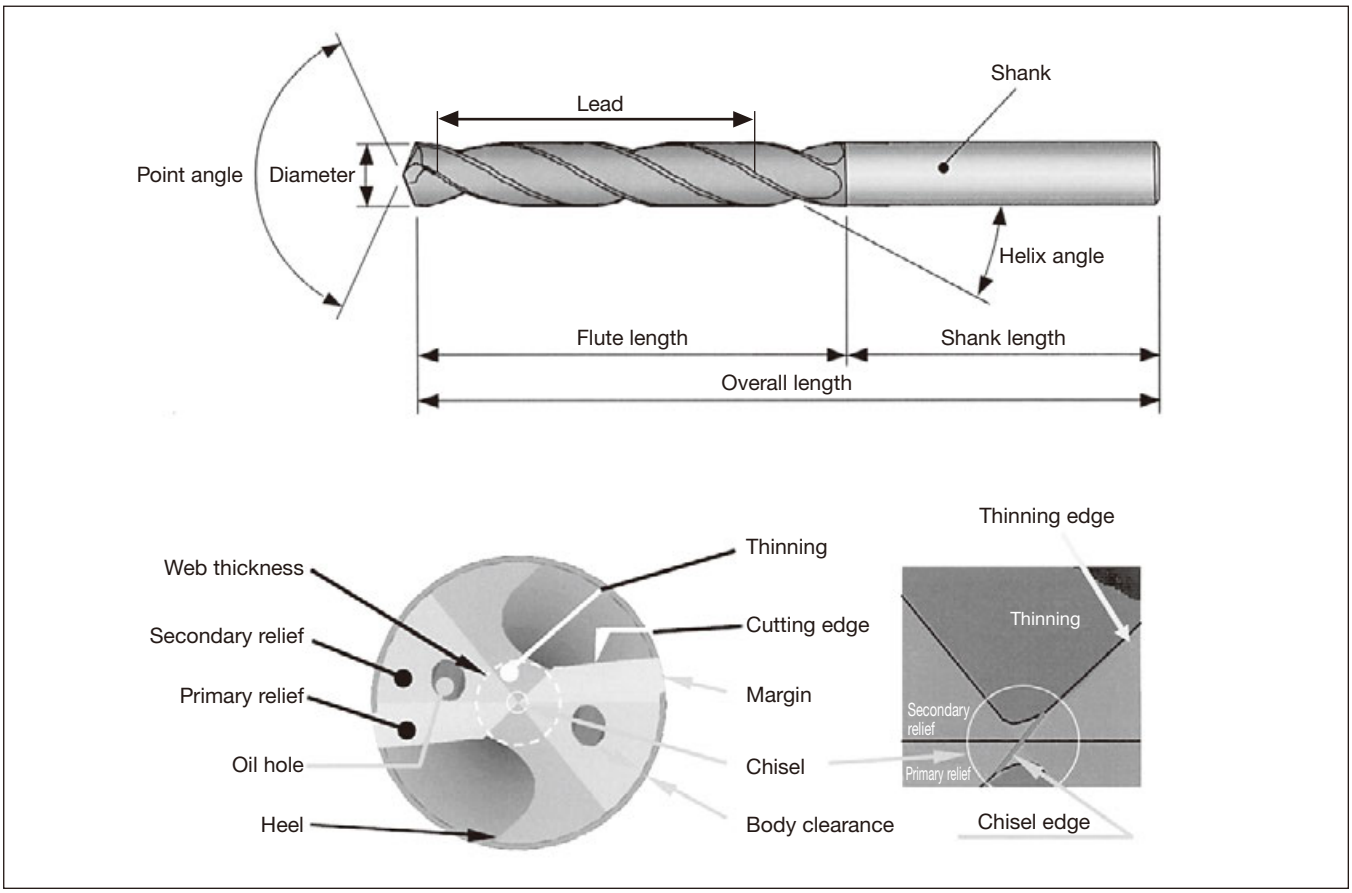
Solid Carbide Endmills

Trouble	Possible causes	Countermeasures
Poor surface finish	Bright, but Wavy surface	● Reduce feed per tooth. ● Increase flutes; E.g. 2 flutes → 3flutes, or 4flutes.
	Small chips are welded on surface.	● Increase cutting speed. ● Use coolant or air blast, or increase coolant. ● Make slight honing on the edge. ● Upward milling → Down cutting. ● Increase feed per tooth. Increase Depth of Cut.
	Scratches on the surface	● Make slight honing on the edge. ● Use non-water soluble coolant. ● Down cutting → Upward milling.
	Poor surface by over cutting	● Reduce depth of cut. ● Increase cutting speed. ● Reduce feed per tooth.
Poor accuracy	Finish size becomes a minus tendency.	● Upward milling → Down cutting. ● Reduce depth of cut. ● Replace chuck or collet to new one. ● Reduce overhang length. ● Increase cutting speed.
	Poor straightness	● Reduce depth of cut. ● Replace chuck or collet to new one. ● Reduce overhang length. ● Increase cutting speed. ● Increase flutes; E.g. 2 flutes → 4flutes. ● Reduce feed per tooth. ● Check the edge. Change tool, when needed.
Chattering		● Increase feed per tooth. Reduce feed per tooth, when current feed is more than 0.003 ipt. ● Change cutting speed. ● Replace chuck or collet to new one. ● Reduce overhang length. ● Use 2 flutes tool in roughing. Use 4 flutes tool in finishing. ● Down cutting → Upward milling.

User's Guide - Technical Reference

Drilling Tools

Nomenclature for solid carbide drills



Cutting forces and power requirement

●Twist drill

Power requirement

$$P_C = \frac{KD^2n}{(kW)} \quad (0.647 + 17.29f) \times 10^{-6}$$

1kw = 1.34 HP

Thrust force

$$T_C = \frac{570KDf^{0.85}}{(N)}$$

Torque

$$M_C = \frac{KD^2\,(0.630 + 16.84f)}{100} \quad (N\cdot m)$$

P_C : Power requirement (kW)
T_C : Thrust force (N)
M_C : Torque (N·m)
D : Drill diameter (mm)〔DC〕
f : Feed (mm/rev)
n : No. of revolutions (min^{-1})
K : Material constant···· Refer to the Table at right

〔 〕 The notation in the brackets is the one used in the catalog (ISO compliant)

●Material constant compensating for power requirement and thrust force

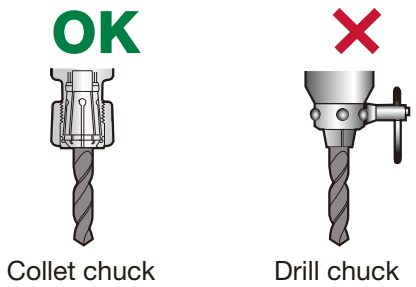
Workpiece material	Tensile strength MPa(N/mm^2)	Tensile strength {Kgf/mm^2}	Brinell hardness (HB)	Material constant (K)
Cast iron	210	21	177	1.00
Cast iron	280	28	198	1.39
Cast iron	350	35	224	1.88
Aluminum	250	25	100	1.01
Low carbon steel (JIS S20C)	550	55	160	2.22
Free cutting steel (JIS SUM32)	620	62	183	1.42
Manganese steel (JIS SMn438)	630	63	197	1.45
Nickel chromium steel (JIS SNC236)	690	69	174	2.02
4115 steel Cr0.5, Mo0.11, Mn0.8	630	63	167	1.62
Chromium molybdenum steel (JIS SCM430)	770	77	229	2.10
Chromium molybdenum steel (JIS SCM440)	940	94	269	2.41
Nickel chromium molybdenum steel (JIS SNCM420)	750	75	212	2.12
Nickel chromium molybdenum steel (JIS SNCM625)	1,400	140	390	3.44
Chromium vanadium steel				
Cr0.6, Mn0.6, V0.12	580	58	174	2.08
Cr0.8, Mn0.8, V0.1	800	80	255	2.22

Drilling Tools

Guidelines for correct usage of carbide drills

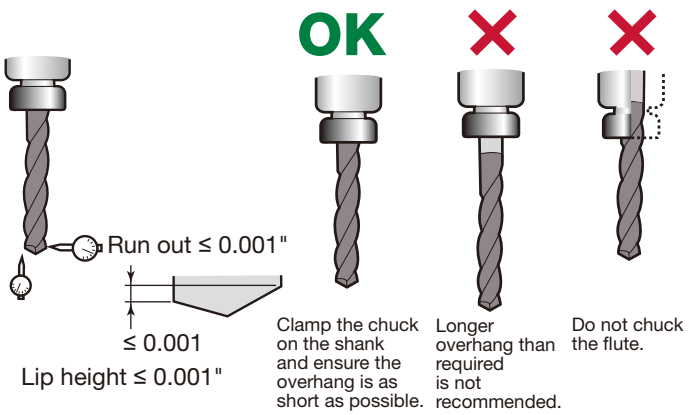
● Holders for solid carbide drills:

A collet chuck holder is recommended for use with carbide drills. When using a milling chuck holder, a collet chuck with a straight shank or straight collet should be used.



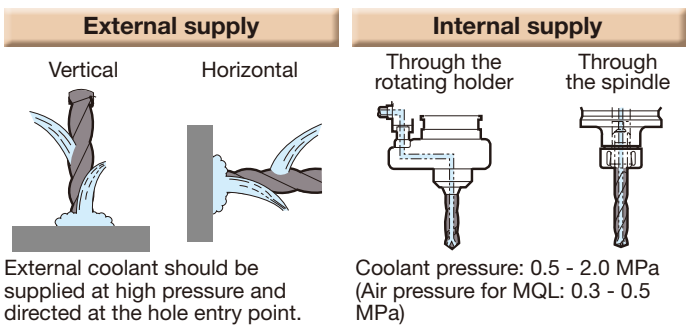
● Chucking drills:

- Radial run out and lip height should be less than 0.001". If run out or lip height is larger (close to 0.002"), machining is possible. However, less accurate holes or short tool life may be a result.
- Overhang length should be as short as possible.



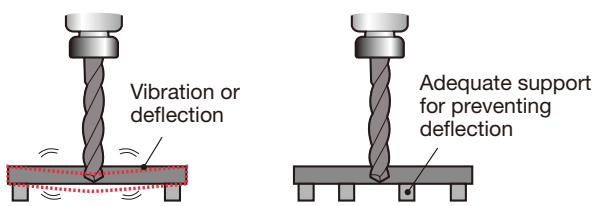
● Coolant Supply:

When using a drill without a coolant hole, such as the DSW-DE type, coolant should always be directed to the entrance of the hole. Maintaining this supplying is very important for stable drilling performance.



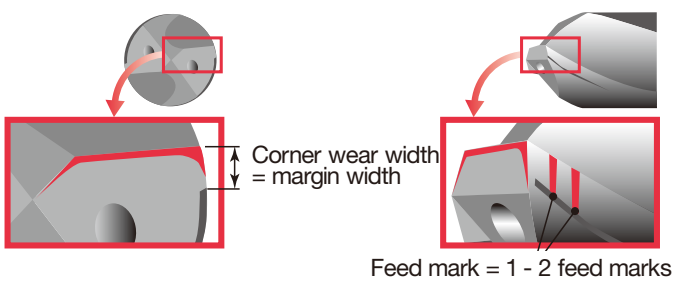
● Clamping workpieces:

As solid carbide drills have a higher thrust force, machining with low rigidity or inadequate support can cause fractures or breakages through vibration. It is important the workpiece is rigidly clamped and has adequate support.



● The criteria of tool life:

- Corner wear width: equal to margin width
- Feed mark: 1 - 2 feed marks on the margin
- Spindle load increase: 30% higher than starting level
- Irregular situation: worse chip control, hole diameter change, worse surface finish, larger burrs, bigger sound.



User's Guide - Technical Reference

Drilling Tools

Regrinding method [Applied to DSW]

Please refer to the following instructions prior to regrinding DSW type drills.

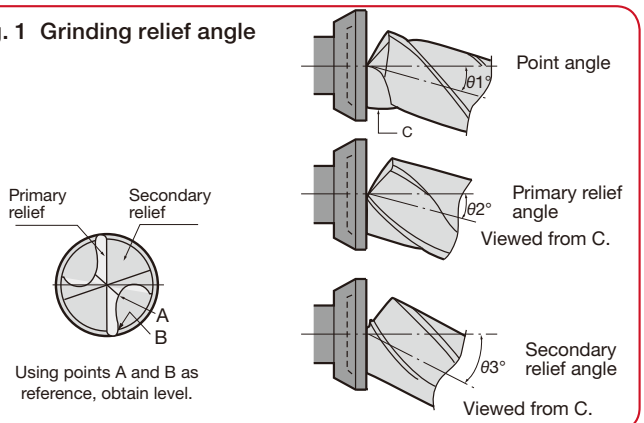
Before regrinding
Check the cutting edge for damage and wear. If any large fracture is found, remove with a silicon carbide wheel.

(1) Grinding the flank

● Use a 280 to 400 grit diamond cup type wheel of 3.937" - 7.874" in diameter.

1) Grind the relief surface so that primary relief angle (θ) of 2° can be formed as shown in Fig.1. After grinding the other side likewise, do sparkout grinding so that the difference of the lip height will be kept within 0.02 mm.
2) In the cases of DSW types: After grinding the primary relief angle (θ) 2°, without rotating the drill, grind the secondary relief surface so that the relief angle (θ) of 3° can be formed. In the same way as 2), take care to bring the ridge line formed between the primary and secondary relief surfaces to the drill center. (Values (θ) of 1° ~ 3° are shown in Table 1)

Fig. 1 Grinding relief angle



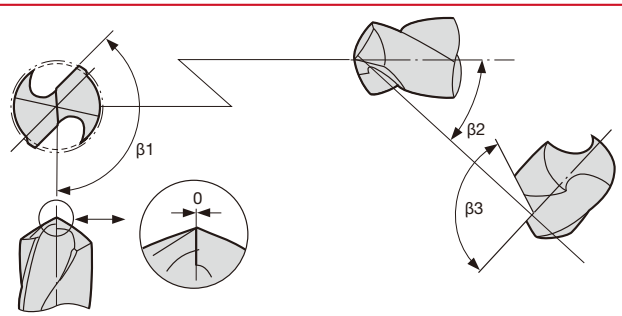
(2) Thinning

- Use a 280 ~ 400 grit diamond straight-type wheel of 3.937" - 7.874" in diameter.
- Conduct thinning in the same manner as cross thinning (X-type).
- Values of β1 to β3 written in the figures are given in the Table 2.

Table 1	θ1 (Point angle)	θ2 (Primary relief angle)	θ3 (Secondary relief angle)
DSW	–20°	–6° ~ –12°	–23° ~ –27°

Table 2	β1	β2	β3
DSW	147° ~ 153°	30° ~ 42°	95° ~ 110°

Fig. 2



(3) Honing

- The honing angle θ and width H should be varied depending on the drill type, diameter, and work material. Recommended honing specifications are given in the Table below.
- Honing procedures (refer to Fig.3)
  (1) Round the R portion shown in Fig.3 in large.
  (2) Then, roughly hone the cutting edge lines by using an electro-deposited diamond file of around 170 grit.
  (3) Carry out finish honing by using a diamond hand stick of 400 to 600 grit.
- The honing width should be changed depending on the drill diameter. For smaller side of diameters, the width should be in smaller side of values given in the Table.

• Angle honing

	~ ø0.236"	ø0.236" ~ ø0.394"	ø0.394" ~ ø0.630"
θ	- 20°	- 20°	- 20°
H	0.001" ~ 0.002"	0.002" ~ 0.003"	0.003" ~ 0.004"

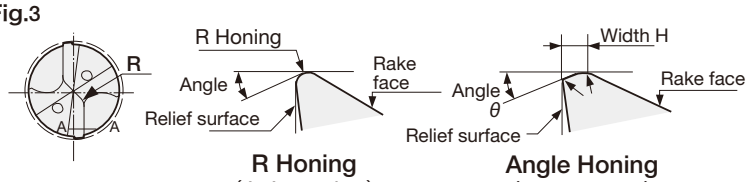
• R Honing

Dimensions (in)	R Honing R (in)
DC ≤ ø0.236"	0.0008" ~ 0.0016"
ø0.236" < DC ≤ ø0.630"	0.0012" ~ 0.0020"

After regrinding, check the following before use.

- The difference of the lip height is kept within 0.0008".
- Any damaged portion on the cutting edges is not left.
- Cutting edges are properly honed.
- Any grinding burr is not left.

Fig.3



Notes:
- For more details on regrinding, consult the nearest Tungaloy sales office.

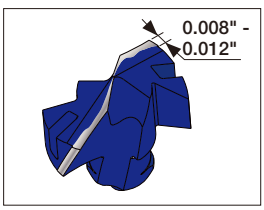
Drilling Tools

DRILLMEISTER

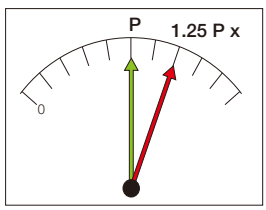
Technical guidelines

●When to change drill heads (Criteria for the end of tool life)

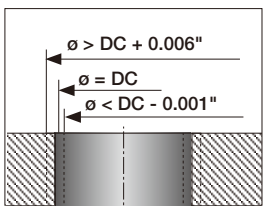
The criteria to identify the time for tool change are as follows:



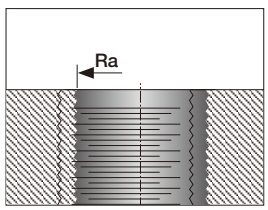
Width of corner wear reaches 0.008" - 0.012".



Spindle load exceeds 125% of the normal value.



Hole diameter is 0.006" larger or 0.001" smaller than the drill diameter.

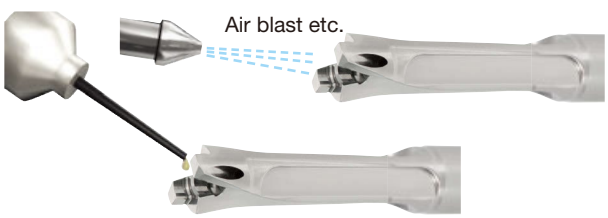


Surface roughness deteriorates.

Vibration or unusual noise occurs.

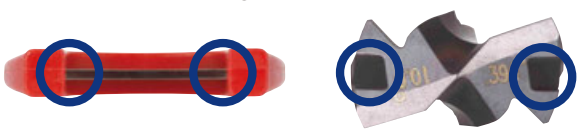
●How to clamp the drill head

① **Clean and lubricate the pocket.**



② **Set the drill head into the pocket.**

③ **Set the clamping key on the drill head**

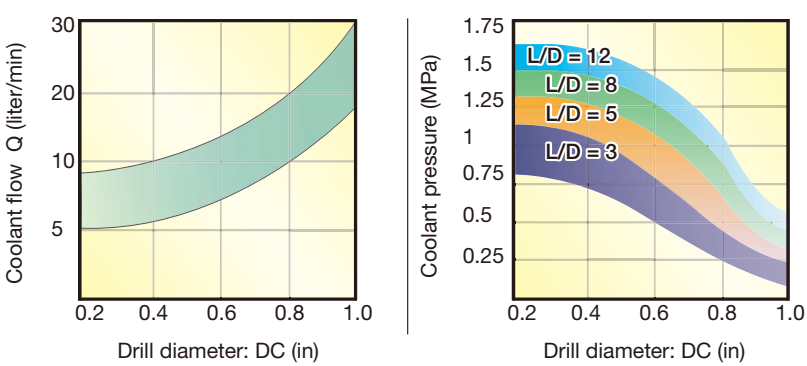


④ **Clamp**

●Coolant supply

Internal coolant supply is recommended.

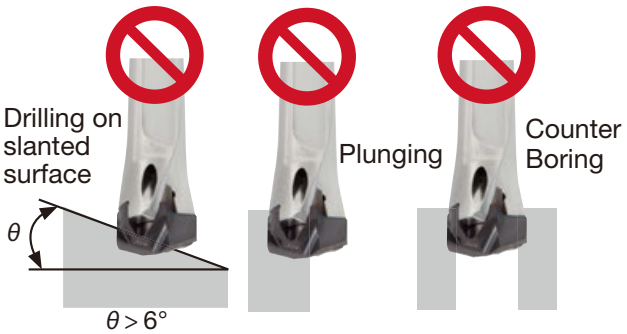
■ The required coolant flow and pressure



User's Guide - Technical Reference

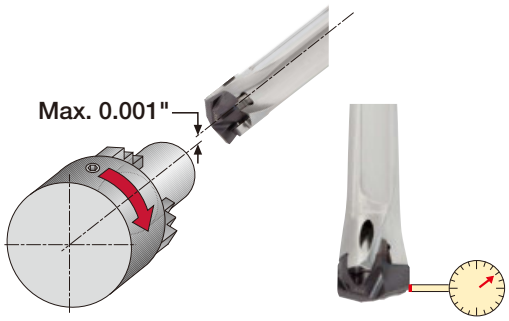
Drilling Tools

● Applications that are not recommended



● Run-out

Run-out should be less than 0.001".



Ideal : ≤ 0.001"
Acceptable : ≤ 0.002"
Not acceptable : > 0.002"

Instruction of clamping head

Fig. #1

Fig. #2

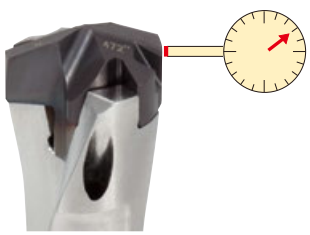


Fig. #3

Procedure

① Clean the clamping areas on the drill body and the head with an air blast, lubricate them, and put the drill head in the pocket.
② Set the clamping key in the groove on the drill head. Push the head toward the pocket with equal torque on the right and the left sides, and turn the clamping key to clamp the head completely. (Fig. #1)
③ Be sure that there is no gap between the bottom of the head and the drill body. A shim in the thickness of around 0.004" is useful to check the gap. (Fig. #2)
④ If there is a gap thicker than 0.004", unclamp the head and return to procedure No. ①
⑤ Check the run-out at the margin of the drill head. Run-out must be less than 0.002". (Fig. #3) (Recommended value: less than 0.001")
If the run-out exceeds 0.002", unclamp the head and return to procedure No. ① .

Note #1: If the clamping torque is not equally applied on the right and the left sides of the drill head, there may be a gap between the head and the body, which increases the run-out of the head.
Note #2: Low accuracy in holding the drill body may affect the run-out. If the run-out is large, check the accuracy in holding the drill body.

KEY FOR MEASURING HEAD RELEASE TORQUE

The release torque in unclamping a head is measured with a torque driver to determine the body's tool life. Please refer to the below for the standard release torque value which indicates the end of tool life (The value less than the standard should be judged as the end of tool life).

Dedicated key designation :
KHS-TID10-19.99

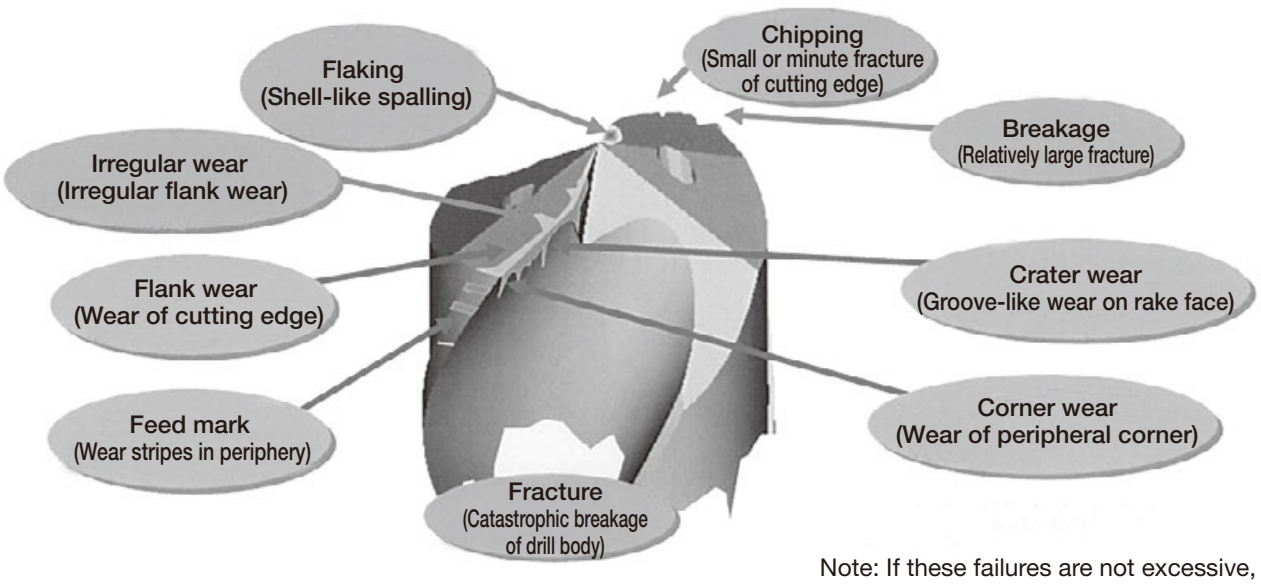
*Can be connected with a commercially available torque driver.

Head designation	Release torque value to indicate tool replacement (N·m)	(lbs·ft)	(cN·M)
DMP100-109	0.2	0.15	20
DMP110-119	0.2	0.15	20
DMP120-129	0.25	0.18	25
DMP130-139	0.25	0.18	25
DMP140-149	0.3	0.22	30
DMP150-159	0.3	0.22	30
DMP160-169	0.35	0.26	35
DMP170-179	0.35	0.26	35
DMP180-189	0.4	0.3	40
DMP190-199	0.4	0.3	40

(Unit: mm)

Drilling Tools

Cutting edge failure of solid carbide drills



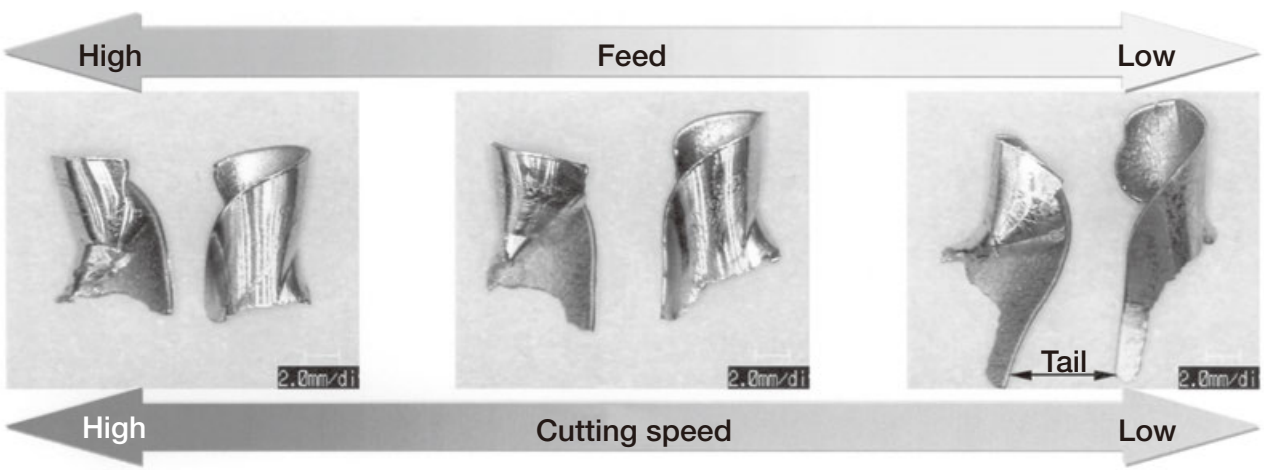
Note: If these failures are not excessive, the tool is in a normal condition.

Change of chip shapes in drilling

Change of chip shapes relating to cutting conditions

Photographs below show the change of chip shapes relating to change of the feed and the cutting speed. These chip shapes are all well controlled in a proper condition range.

When the speed and feed are low, the chip shows whitish color and the tail of the chip tends to lengthen gradually. In contrast, as the speed or the feed increases, the chip tends to increase in brightness and becomes a compact shape with a short tail. These changes in the shape depend on the cutting temperature. As the temperature increases, chips tend to be broken.



User's Guide - Technical Reference

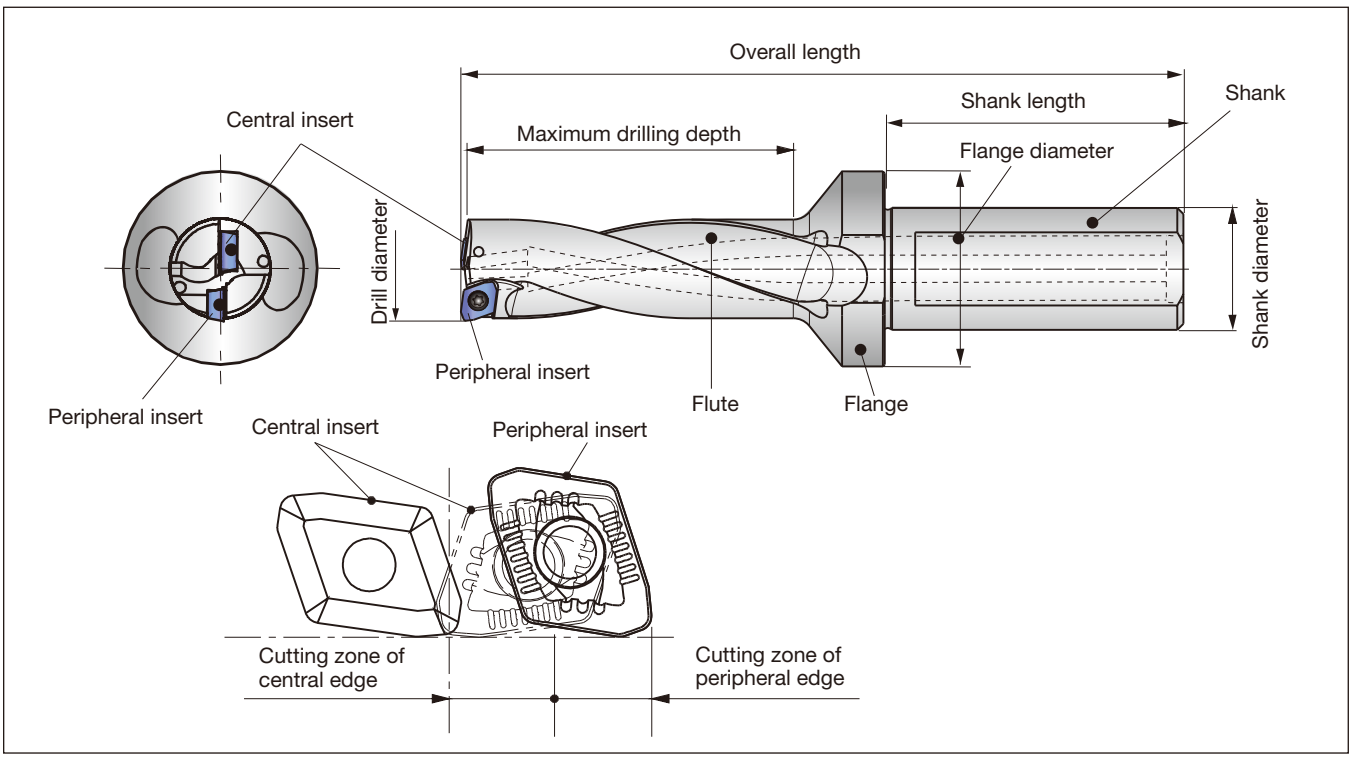
Drilling Tools

Troubleshooting for solid carbide drills

Problem		Cause	Countermeasure
Abnormal wear	Relief surface	Inappropriate cutting speed	•Increase the cutting speed by 10% within standard conditions if abnormal wear is around center. •Lower the cutting speed by 10% within standard conditions if abnormal wear is on the periphery.
		Inappropriate cutting fluid	•Check the filter. •Use the cutting fluid superior in lubricity. (Increase the dilution rate)
	Margin	Inappropriate cutting speed	•Lower the cutting speed by 10%.
		Regrinding timing, insufficient reground amount	•Shorten the regrinding timing.
		Insufficient rigidity of the machine and workpiece	•Change the clamp method to the one with rigidity.
		Insufficient drill rigidity	•Use smallest possible overhang.
		Inappropriate cutting fluid	•Check the filter. •Use the cutting fluid superior in lubricity. (increase the dilution rate)
		Intermittent cutting when entering	•Avoid interruption at entry and exit. •Lower the feed by about 50% during entering into and leaving from the workpiece.
Chipping and fracture	Chisel section (center of drill cutting edge)	Insufficient rigidity of the drill	•Reduce the drill overhang as much as possible. •Increase the feed at entry when the low speed feed is selected in standard cutting condition range. •Use a bushing or a center drill.
		Insufficient rigidity of the machine and workpiece	•Change the clamp method to the one with rigidity.
		Inappropriate entry into the workpiece	•Avoid interruption at entry into the workpiece. •Lower the feed by 10% at entry.
		High workpiece hardness	•Lower the feed by 10%.
		Inappropriate honing	•Check if honing has been made to the center of cutting edge.
	Peripheral cutting edge	Insufficient drill rigidity	•Lower the cutting speed by 10%. •Increase the feed at entry when the low speed feed is selected in standard cutting condition range.
		Inappropriate drill mounting accuracy	•Check the run out accuracy after drill installation. (0.0012" or less)
		Insufficient machinery and workpiece rigidity	•Change the clamp method to the one with rigidity. •Lower the feed during entering and leaving from the workpiece.
		Inappropriate honing	•Check if honing has been made to the cutting edge periphery.
	Margin	Insufficient machine and workpiece rigidity	•Change the clamp method to the one with rigidity.
		Insufficient drill rigidity	•Use smallest possible overhang. •Use a bushing or center drill.
		Regrinding timing and insufficient amount of reground stock	•Shorten the regrinding timing.
		Intermittent cutting when entering or exiting the cut	•Avoid interruption at entry and exit. •Lower the feed by about 50% during entering into and leaving from the workpiece.
Breakage		Tendency to cause chipping or develop abnormal wear	•Check the failure mode condition before breakage and find out the wear and chip countermeasures.
		Chip packing in the drill flutes	•Review the cutting conditions. •For internal coolant supply, raise the supply pressure of cutting fluid. •Use peck feed for deep holes.
		Insufficient machine output	•Review the cutting conditions. •Use the machine with high power.
Insufficient hole accuracy		Insufficient rigidity of the machinery and workpiece	•Change to the clamp method with rigidity
		Inappropriate drill installation accuracy	•Check the run out accuracy of drill mounting. (0.0012" or less)
		Chip packing in the flutes.	•Review the cutting conditions. •Raise the cutting oil supply pressure. •Use peck-feed for deep holes.
		Inappropriate edge sharpening accuracy	•Check the edge shape accuracy.
Prolonged chips		Inappropriate cutting conditions	•Increase the feed by 10% within standard conditions.
		Inappropriate honing	•Provide the appropriate honing.
		Cutting edge with chipping or breakage	•Lower the cutting speed by 10%.

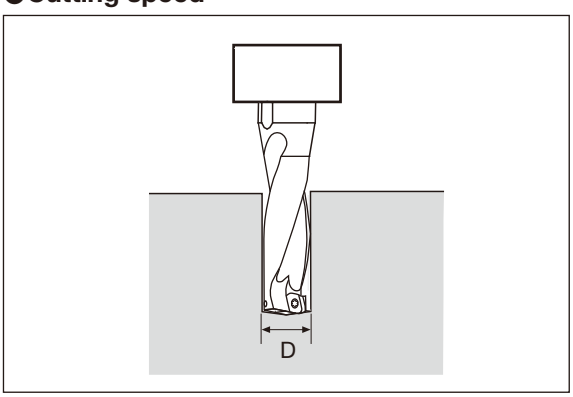
Drilling Tools

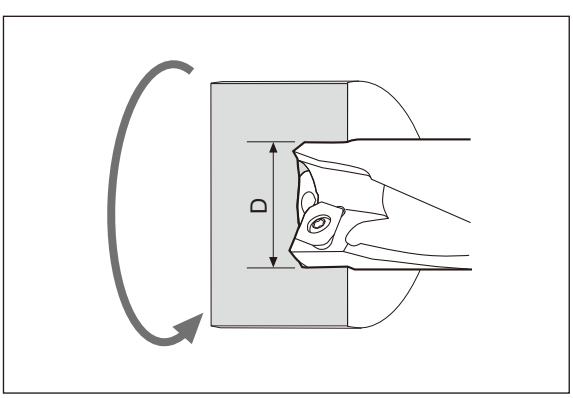
Nomenclature for Indexable drill



Calculation formulas for Indexable drill

●Cutting speed





●When calculating cutting speed from number of revolutions: (Drilling formulas)

$$SFM = \frac{RPM \times D}{3.82}$$

SFM : Cutting speed
D : Drill diameter (in) 〔DC〕
RPM : Number of revolution (min-1)

●When calculating required number of revolutions from cutting speed: (Drilling formulas)

$$RPM = \frac{SFM \times 3.82}{D}$$

●When calculating cutting speed from number of revolutions: (Where the workpiece rotates.)

$$v_c = \frac{\pi \times D \times n}{1000}$$

v_c : Cutting speed (sfm)
D : Drilling diameter (in) 〔DC〕
n : Number of revolution (min^{-1})
$\pi \approx 3.14$

●When calculating required number of revolutions from cutting speed: (Where the workpiece rotates.)

$$n\ (min^{-1}) = \frac{1000 \times v_c}{\pi \times D}$$

●Calculation of feed speed

$$v_f = f \times n \quad (in/min)$$

v_f : Feed speed (in/min)
f : Feed (ipr)
n : Number of revolution (min^{-1})

〔 〕The notation in the brackets is the one used in the catalog (ISO compliant)

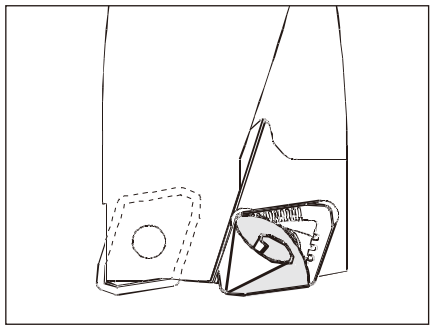
User's Guide - Technical Reference

Drilling Tools

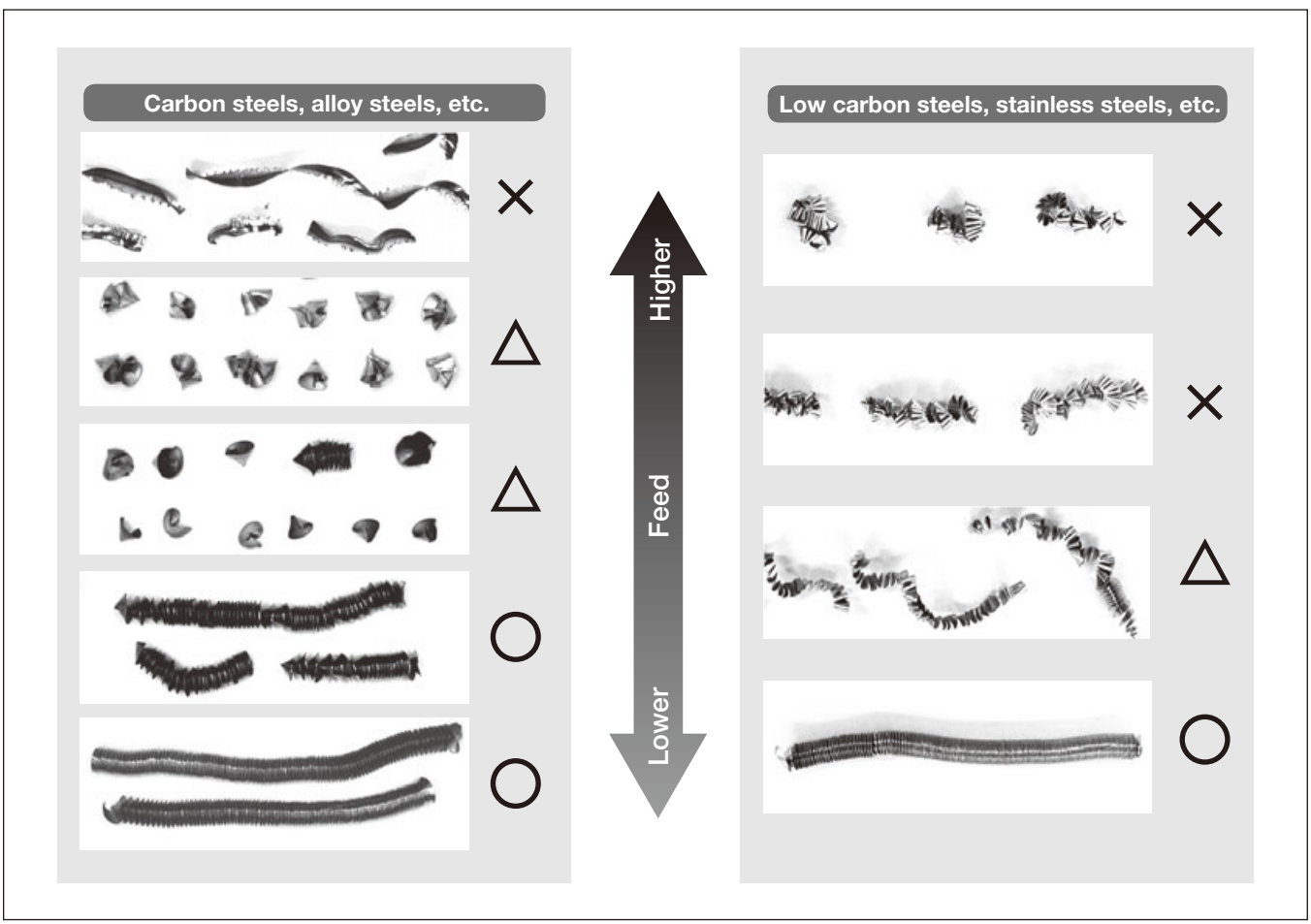
Chip shapes

Chip shape produced with central insert

- A conical coil shape whose apex point coincides with the rotating center of the drill is the basic shape. The chips are broken into small sections with increases in feed. However, excessively high feed causes the chip to increase in thickness and develops vibration which disturbs stable machining.
- In TDX drills, ○ marked chips shown below are the most preferable shapes. This type of chip is broken into adequate lengths by centrifugal forces when used in tool-rotating condition. On the other hand, when used in work-rotating condition such as on a lathe, a continuously long chip is often produced without entangling.

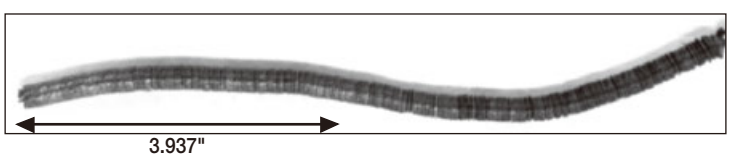


Relation between chip shapes and feeds (In the case of central insert)



Example of chip shape in work-rotating applications (In the case of central insert)

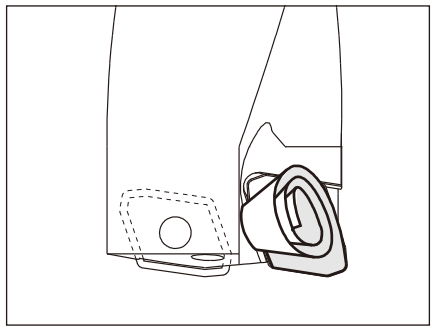
(ø1.024", 1045, V_c = 330 sfm, f = 0.004 ipr)



Drilling Tools

Chip shape produced with peripheral insert

- Chip problems such as entangling are mainly caused by chips produced with the peripheral insert. These problems are dependent on the types of Workpiece material and the cutting conditions.
- As shown below, when the feed is extremely low, the chips jump over the chipbreaker groove and the continuously long chips may wrap around the drill body.
- When the feed is too high, the chips increase in thickness and can not be curled.
- Therefore, it is important to select proper cutting conditions to suit the machining so that well controlled chips will be formed.



Medium to high carbon steels, alloy steels, etc.

As shown below, several turns of coil are an ideal shape.
As the feed increases, the curl radius and the number of turns tend to decrease.

Typical chip shapes of general steels

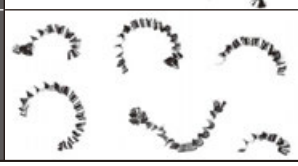
Variation of chip shapes relating to feeds

f = 0.003 ipr　　*f* = 0.004 ipr　　*f* = 0.005 ipr

Stainless steels, low-carbon steels, low-alloy steels, etc.

- When machining long-chip materials such as stainless steels and mild steels, the wrong selection of cutting conditions results in chip entangling and tool breakage at worst. Therefore, cutting conditions should be carefully selected.
- "C" shaped, continuous coils of several to ten turns having adequately divided lengths are the ideal shape.

Ideal chip shapes

	Stainless steel (JIS SUS 304) (ø0.866", *Vc* = 330 sfm, *f* = 0.004 ipr)	Mild steel (JIS SS400) (ø0.866", *Vc* = 530 sfm, *f* = 0.003 ipr)
DS chipbreaker		
DJ chipbreaker		

For machining stainless steels or low carbon steels, DS chipbreaker is recommended.
When using a TDX drill in tool-rotating condition, DS chipbreaker produces compact chips and allows more stable machining than DJ chipbreaker. When using it in work-rotating condition, DS chipbreaker provides outstanding affect on chip control.

User's Guide - Technical Reference

Drilling Tools

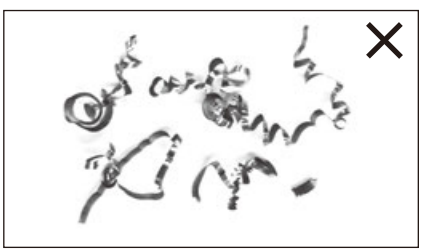
● Chip shapes which tend to entangle and remedies against them

① Apple-peel-like chips

These chips are often produced in machining mild steels or low-carbon steels at low-speeds and low-feeds.

Remedies

Increase the cutting speed in stages by 20% within the range of standard cutting conditions. If there is no effect, increase the feed by about 10% as the cutting speed is raised by 20%.



Apple-peel-like chips (Without curling)

② Short-lead chips

These chips are often produced in machining stainless steels at low-feeds and tend to entangle to the tool in spite of short length.

Remedies

Increase the feed by about 10%. If there is no effect, increase the cutting speed in stages by 10% within the range of standard cutting conditions.

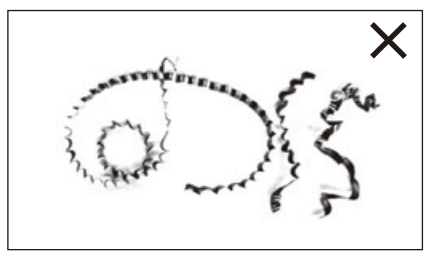
Continuously curled "C" shape chips with short lead (P).

③ Very long chips

Often produced in machining mild steels or low-carbon steels under improper cutting conditions.

Remedies

Increase the cutting speed in stages by 20% within the range of standard cutting conditions. If there is no effect, decrease the feed by about 10% as the cutting speed is raised by 20%.

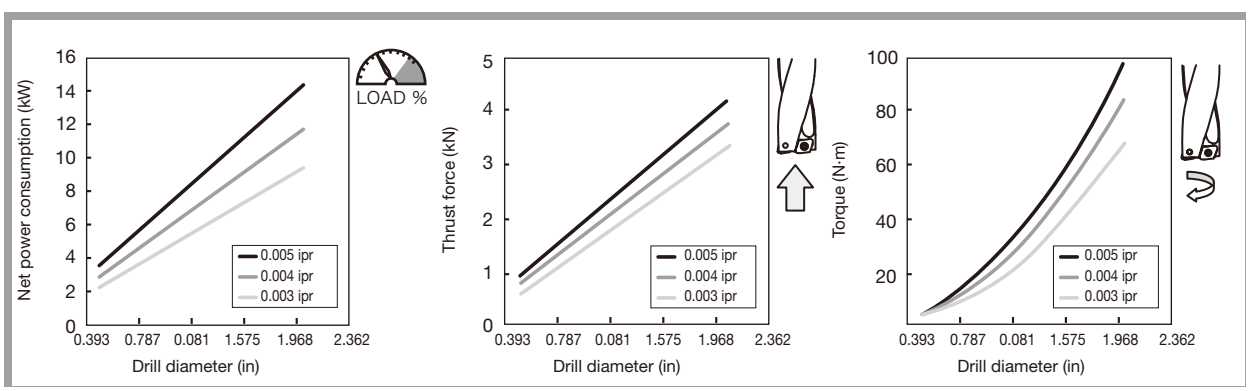


Continuously coiled long chips

Cutting forces

The charts below show a guideline for cutting forces. Use TDX drills on a machine with ample power and sufficient rigidity.

● Guidelines for cutting forces



Cutting speed: V_c = 330 sfm
Workpiece material: Alloy steel 4140), 240HB
Cutting fluid: Used

Drilling Tools

Troubleshooting for indexable drills

Problem			Cause	Countermeasure
Abnormal wear	Central cutting edge	Relief surface	Inappropriate cutting conditions	● Increase the cutting speed by 10% within standard conditions. ● Lower the feed by 10%.
	Peripheral cutting edge	Relief surface	Inappropriate cutting conditions	● Increase the cutting speed by 10% within standard conditions. ● When the feed is extremely low or high, set up it within standard conditions.
	Common	Relief surface	Varieties and supply of cutting fluid	● Confirm that the cutting fluid flow is higher than 7 liter/min. ● The concentration of cutting fluid must be higher than 5%. ● Use the cutting fluid superior in lubricity. ● Change to internal cutting fluid supply from external one.
			Vibration in drilling	● Change to the machine with higher torque. ● Change to the clamp method with rigidity. ● Change the drill setting method.
			Unsuitable for selection of grade	● Change the grade to high wear resistant.
			Looseness of screws	● Tighten the screw.
		Crater	Cutting heat is too high	● Change to internal cutting fluid supply from external one. ● Increase the supply rate of the cutting fluid. (Higher than 10 liter/min.) ● Lower the feed by 20% within standard conditions. ● Lower the cutting speed by 20% within standard conditions.
			Excessive chip welding	● Lower the feed by 20% within standard conditions. ● Lower the cutting speed by 20% within standard conditions.
		Chipbreaker	Chip packing	● Increase the cutting speed by 20% and lower the feed by 20% within standard conditions. ● Raise the fluid pressure (for higher than 1.5 MPa).
Chipping and fracture	Central cutting edge	The rotation center of drill	Misalignment for workpiece rotation	● Set the misalignment to 0 ~ 0.008".
			Large offset	● Check the manual and use the tool in the allowable offset range.
			No flatness of machined surface	● Flatten the entry surface in pre-machining. ● Set the feed for lower than 0.002 ipr in rough surface area.
			High feed	● Lower the feed by 20 ~ 50% within standard conditions.
			Using a chipping corner	● Confirm the corner when exchanging inserts.
	Peripheral cutting edge	Peripheral corner area	Using inserts in excess of tool-life	● Exchange the corner or the insert before the nose wear reaches 0.012".
			No flatness of machined surface	● Flatten the entry surface in pre-machining. ● Set the feed for lower than 0.002 ipr at rough surface area.
			The existence of interrupted area	● Set the feed for lower than 0.002 ipr in interrupted area.
			Using a chipped corner	● Confirm the corner when exchanging inserts.
	Common	The unused corner area and cutting edge	High hardness of workpiece	● Increase the cutting speed by 20% and lower the feed by 20% within standard conditions. ● Raise the fluid pressure (for higher than 1.5 MPa).
			Chip packing	● Lower the feed by 20% within standard conditions.
			Machinery impact	● Change to continuous feed in case of pick feeding.
		Contact boundary	Using inserts in excess of tool-life	● Exchange the corner or the insert before the nose wear reaches 0.012".
			Vibration in drilling	● Change to the machine with higher rigidity. ● Change to the clamp method with rigidity. ● Change the drill setting method.
		Flaking	High hardness of workpiece	● Set the feed for lower than 0.002 ipr.
			Thermal impact	● Change to internal cutting fluid supply from external one. ● Lower the feed by 20% within standard conditions.
		Common	Unsuitable for selection of grade	● Change the grade to toughness.
			Looseness of screws	● Tighten the screw.

User's Guide - Technical Reference

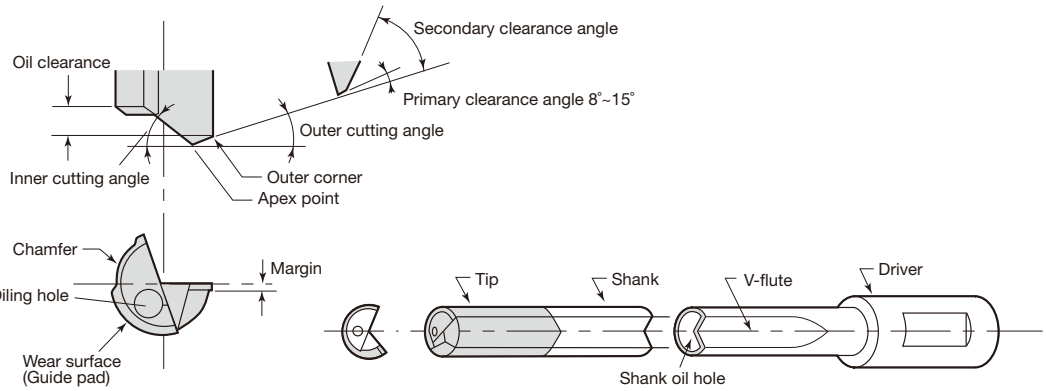
Drilling Tools

Troubleshooting for indexable drills

Problem		Cause	Countermeasure
Scratch marks on the tool	The tool periphery	Misalignment of workpiece rotation	● Set the misalignment to 0 ~ 0.008".
		Offset machining in excess of allowable range	● Use the tool in the allowable offset range.
		Offset direction reduced diameter of workpiece	● Set offset direction extended diameter of workpiece
		No flatness of the entry surface	● Flatten the entry surface in pre-machining. ● Set the feed for lower than 0.002 ipr in rough surface area.
		Chipping of peripheral cutting edge	● Exchange the insert.
		Bend of workpiece	● Change to the clamp method with rigidity.
		Chip packing	● Increase the cutting speed by 20% and lower the feed by 20% within standard conditions. ● Raise the fluid pressure (for higher than 1.5 MPa).
Inappropriate hole accuracy	Hole diameter	Misalignment for workpiece rotation	● Set the misalignment to 0 ~ 0.008".
		Inappropriate offset contents	● Adjust offset contents.
		No flatness of the entry surface	● Flatten the entry surface in pre-machining. ● Set the feed for lower than 0.002 ipr at rough surface area.
		Bend of workpiece	● Change to the clamp method with rigidity.
	Roughness	Varieties and supply of cutting fluid	● The concentration of cutting fluid must be higher than 5%. ● Use the cutting fluid superior in lubricity. ● Change to internal cutting fluid supply from external one.
		Inappropriate cutting conditions	● Increase the cutting speed by 20% within standard conditions. ● Lower the feed by 20% within standard conditions.
	Common	Failures of inserts	● Exchange the insert.
		Chip packing	● Increase the cutting speed by 20% and lower the feed by 20% within standard conditions. ● Raise the fluid pressure (for higher than 1.5 MPa).
		Looseness of screws	● Tighten the screw.
Chip control	Prolonged and twisted of chips	Inappropriate cutting conditions	● Work within standard conditions. ● Increase the cutting speed by 10% within standard conditions. ● Increase the feed by 10% within standard conditions.
		Failures of inserts	● Exchange inserts.
		Machining by external fluid supply	● Change to internal cutting fluid supply from external one. ● Work by step feed. ● Use dwell function for 0.1 sec approximately.
		Chips around the central cutting edge	● There is a tendency to shorten the chips when shifting to higher speed and feed.
	Chip packing	Fluid supply	● Change to internal cutting fluid supply from external one. ● Raise the fluid pressure (for higher than 1.5 MPa).
		Inappropriate cutting conditions	● Increase the cutting speed by 20% and lower the feed by 20% within standard conditions. ● Raise the fluid pressure (for higher than 1.5 MPa).
	Common	Large failure of drill holders	● Exchange the drill holder.
		Looseness of screws	● Tighten the screw.
Others	Chatter	Inappropriate cutting conditions	● Lower the cutting speed by 20% within standard conditions. ● Increase the feed by 10% within standard conditions.
		Large wear of inserts	● Exchange the insert.
		Vibration in drilling	● Change to the machine with higher torque rigidity. ● Change to the clamp method with rigidity. ● Change the drill setting method.
		Looseness of screws	● Tighten the screw.
	Machine stop	Insufficient machine power and torque	● Use the range of number of revolutions suited machine spec. Lower the feed by 20 ~ 50%.
		Burned inserts	● Exchange inserts before the failure becomes larger. ● Check the oil-hole plug screw is tightly screwed in place. ● Check that the fluid flows powerfully from the drill. ● Lower the cutting speed and the feed by 20% within standard conditions.
	Large burr	Failures of inserts	● Exchange the insert.
		Inappropriate cutting conditions	● Lower the feed by 20 ~ 50% just before leaving from the workpiece.

Drilling Tools

Nomenclature for gun drill



Troubleshooting in gun drilling

Problem		Cause	Trigger	Countermeasure
Breaking of drill	At entry into workpiece	Machine	Clamping the workpiece is unstable.	Clamp the workpiece firmly.
			The guide bush is apart from the workpiece surface at the entry.	Contact the guide bush closely with the workpiece.
			The machine's rapid feed is used.	Use cutting feed.
			Whipping effect occurs.	Place a whip guide at the appropriate position.
			The shape of the guide bush is not suitable.	Use the guide bush in the shape suitable for the workpiece.
		Drill	The drill is not set properly.	Set the drill with an appropriate torque, hydraulic pressure, etc.
			Regrinding is in poor quality.	Make sure no damage is left on the drill and that the cutting edge geometry is not changed.
		Cutting condition	The feed (*f*) is too high.	Use low feed.
		Workpiece	The workpiece surface is slanted.	Use low feed.
	During drilling	Machine	Clamping the workpiece is unstable.	Clamp the workpiece firmly.
			The shape of the guide bush is not suitable.	Modify the shape of the guide bush. See "Chip packing" for the details.
			The feed speed (*Vf*) varies.	Use mechanical feed.
			The number of revolutions varies (decreases).	Increase the machine power or adjust the cutting conditions.
		Drill	Abnormal damage occurs.	See "Short tool life" for the details.
		Cutting condition	The feed (*f*) is not suitable.	Use an appropriate feed.
		Workpiece	Interrupted or cross drilling is required.	Change the tool to a standard gundrill.
		Others	Chip packing occurs.	See "Chip packing" for the details.
	At exit from workpiece	Drill	The tip is too long.	Make the tip length short.
			The selection of the guide pads is not suitable.	Use 2 guide pads instead of 3.
			The clearance of the coolant hole is too large.	Reduce the clearance of the coolant hole.
		Cutting condition	The feed (*f*) is too high.	Use low feed.
		Workpiece	The workpiece surface is slanted.	Use low feed.
	During retracting	Machine	Clamping the workpiece is unstable.	Clamp the workpiece firmly.
		Cutting condition	Burnishing torque (cutting power) is increased due to reduced hole diameter.	Reduce cutting speed (*Vc*).

User's Guide - Technical Reference

Drilling Tools

Troubleshooting in gun drilling

Problem		Cause	Trigger	Countermeasure
Hole accuracy	Rough surface finish	Machine	Clamping the workpiece is unstable.	Clamp the workpiece firmly.
			The type of coolant is not appropriate.	Use water-insoluble coolant.
			Foreign material is in the coolant.	Thoroughly filtrate the coolant (Use a filter with the filtration accuracy in 10µm or less).
			The run-out of the spindle is too large.	Minimize the run-out of the spindle.
			The clearance between the guide bush and the drill is not appropriate.	Replace the guide bush (The clearance should be between +0.00012" and +0.00031").
			The feed speed (*Vf*) varies.	Use mechanical feed.
			The number of revolutions varies (decreases).	Increase the machine power or adjust the cutting conditions.
		Drill	Abnormal damage occurs.	See "Short tool life" for the details.
			Regrinding is in poor quality.	Make sure no damage is left on the drill and that the cutting edge geometry is not changed.
		Cutting condition	The feed (*f*) is too high.	Reduce the feed.
		Others	Chip packing occurs.	See "Chip packing" for the details.
	Unacceptable circularity, cyndricity, and oversize	Machine	The clearance between the guide bush and the drill is not appropriate.	Replace the guide bush (The clearance should be between +0.00012" and +0.00031").
			The guide bush is apart from the workpiece surface at the entry.	Contact the guide bush closely with the workpiece.
			The type of coolant is not appropriate.	Use water-insoluble coolant.
			The concentricity of the guide bush and the spindle is too large.	Decrease the concentricity of the guide bush and the spindle.
		Drill	Abnormal damage occurs.	See "Short tool life" for the details.
			Regrinding is in poor quality.	Make sure no damage is left on the drill and that the cutting edge geometry is not changed.
		Cutting condition	The feed (*f*) is not suitable.	Use an appropriate feed.
		Workpiece	Interrupted or cross drilling is required.	Change the tool to a standard gundrill.
		Others	Chip packing occurs.	See "Chip packing" for the details.
	Bending of hole	Machine	Clamping the workpiece is unstable.	Clamp the workpiece firmly.
			The guide bush is apart from the workpiece surface at the entry.	Contact the guide bush closely with the workpiece.
			The concentricity of the guide bush and the spindle is too large.	Decrease the concentricity of the guide bush and the spindle.
			The clearance between the guide bush and the drill is not appropriate.	Replace the guide bush (The clearance should be between +0.00012" and +0.00031").
		Drill	The selection of the guide pads is not suitable.	Use 2 guide pads instead of 3.
			Regrinding is in poor quality.	Make sure no damage is left on the drill and that the cutting edge geometry is not changed.
		Cutting condition	The feed (*f*) is too high.	Reduce the feed.
		Workpiece	The workpiece has blow holes or unevenness.	Use the workpiece without defect.
			The workpiece surface is slanted at the entry.	Use low feed.
			Interrupted or cross drilling is required.	Change the tool to a standard gundrill.

Drilling Tools

Troubleshooting in gun drilling

Problem		Cause	Trigger	Countermeasure
Short tool life	Abnormal wear	Machine	The type of coolant is not appropriate.	Use water-insoluble coolant.
			Foreign material is in the coolant.	Thoroughly filtrate the coolant (Use a filter with the filtration accuracy in 10μm or less).
			The clearance between the guide bush and the drill is not appropriate.	Replace the guide bush (The clearance should be between +0.003 mm and +0.008 mm).
			Whipping effect occurs.	Place a whip guide at the appropriate position.
			The concentricity of the guide bush and the spindle is too large.	Decrease the concentricity of the guide bush and the spindle.
			The coolant temperature is too high.	Increase the capacity of the tank.
		Drill	The selection of the guide pads is not suitable.	Use 2 guide pads instead of 3.
			Regrinding is in poor quality.	Make sure no damage is left on the drill and that the cutting edge geometry is not changed.
			The drill's overall length is excessive.	Reduce the drill's overall length.
			Excessive wear occurs and the chip shape changes.	Regrind the gundrill (ease the tool life criteria).
		Cutting condition	The cutting speed (*Vc*) is too high.	Reduce the cutting speed.
			The feed (*f*) is too high.	Reduce the feed.
			The coolant pressure is not high enough.	Increase the coolant pressure.
		Workpiece	The material quality varies.	Reduce the cutting speed (*Vc*).
Chip control	Chip packing	Machine	The shape of the guide bush is not suitable.	Modify the tip of the guide bush to match the shape of the workpiece surface at the entry.
			The number of revolutions varies (decreases).	Increase the machine power or adjust the cutting conditions.
			The chip box is too small for smooth chip evacuation.	Enlarge the chip box.
		Cutting condition	The feed (*f*) is not suitable.	Use an appropriate feed.
			The coolant pressure is not high enough.	Increase the coolant pressure.
		Workpiece	Interrupted or cross drilling is required.	Change the tool to a standard gundrill.
			The operation is for stacked plates.	Change the cutting edge shape so that the cores become small.
			The material quality varies.	Increase the feed.
	Chip entanglement	Drill	The cutting edge is fractured or chipped.	See "Breakage" for the details.
			Wear on the outer corner is excessive.	Regrind the gundrill (ease the tool life criteria).
		Cutting condition	The feed (*f*) is too low.	Increase the feed.
		Workpiece	Drilling a center hole is required.	Make the center hole as small as the drill diameter and increase the coolant pressure.

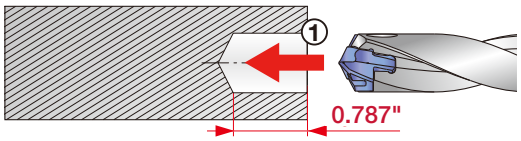
User's Guide - Technical Reference

Drilling Tools

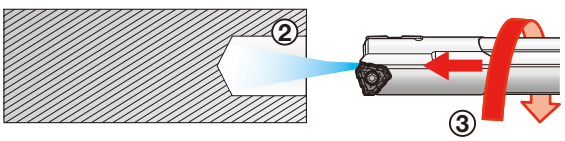
Drilling procedure on machining centers and lathes

DEEP TRI DRILL

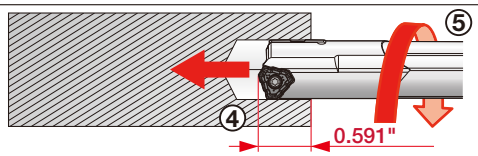
Proceed as instructed below in order to maximize the tool performance.



① Drill a pilot hole
Hole diameter tolerance: +0.0004" - +0.004"
Hole depth: H = 0.787"
Please use DrillMeister or DrillForce-Meister for a pilot hole
Use a drill with 3xD or smaller

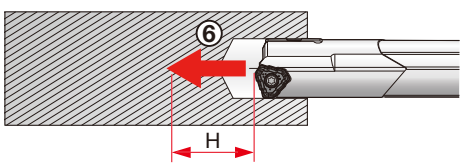


② Start coolant
③ Slowly insert DeepTri-Drill into the pilot hole
No. of revolution: *n* = 1.969 - 3.937 rpm
Feed speed: *Vf* = 4 - 12 ipm
Caution: Do not rotate the drill at a full machining speed before engaging the pilot hole.

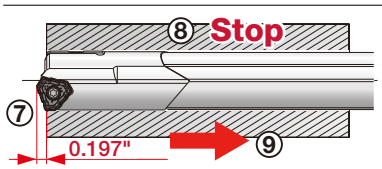


④ Stop the drill at 0.591" depth

⑤ Start rotating at full machining speed



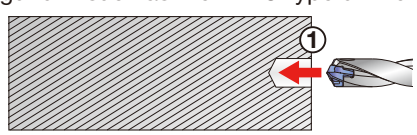
⑥ Start feeding
At the entry (H = 0.591" - 0.984"):
→ Feed: *f* = 80% of programmed feed
Hole depth:
H ≥ 0.984" → Feed: *f* = 100%



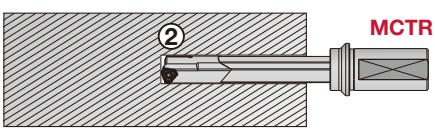
⑦ For a through hole
Continue drilling until the drill head passes through the workpiece by 0.197"
⑧ Stop the rotation and coolant
⑨ Return the drill

How to use a TRLG type DeepTri-Drill on a horizontal machining center or boring machine

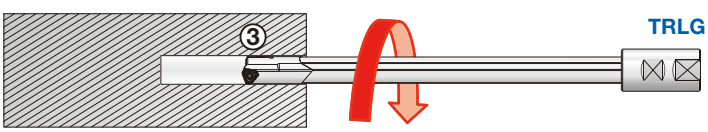
When using the TRLG drill on a conventional machining center or horizontal boring machine where there are no drilling-bush supports available, a pilot hole needs to be further deepened with a MCTR drill to better support the long gundrill. A long gundrill such as the TRLG type drill tends to "whip" when the pilot hole is too short to support the gundrill.



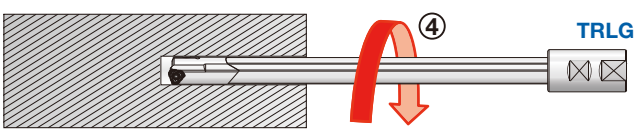
① Drill a pilot hole



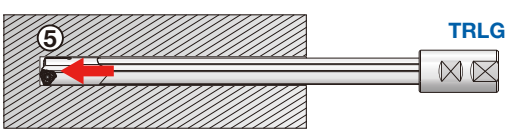
② Expand the pilot hole deeper using a MCTR drill



③ Drill with a TRLG drill at a reduced rotation and feed. Use the following parameters:
No. of revolution: *n* = 50 - 100 rpm
Feed speed: *Vf* = 4 - 12 ipm



④ When DeepTri-Drill reaches all the way to the end of the pilot hole, increase drill rotation to full machining speed.

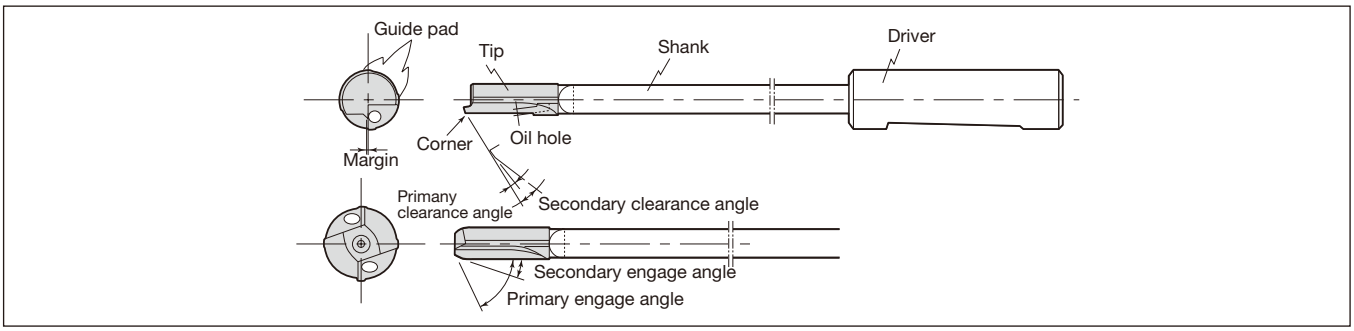


⑤ Start feeding to complete the drilling

(Caution)
Always use Step ② to prevent the gundrill from whipping, which may lead to drill breakage and a possible superfluous injury.

Drilling Tools

Nomenclature for gun reamer



Troubleshooting in gun reaming

Trouble		Possible cause		Countermeasure
Breaking of reamer		Increased burnishing torque due to excessively small stock allowance	● Chamfer angle small	● Enlarge chamfer angle and increase stock allowance
			● Excessive wear in peripheral cutting edge.	● Reduce cutting speed to prevent peripheral wear of edge ● Increase lubricity of cutting fluid
		Sticking	● Faulty filtering of cutting fluid ● Incorrect selection of cutting fluid ● Insufficient cutting fluid pressure	● Improve filtering accuracy ● Change to fluid with higher lubricity ● Increase fluid pressure
		Mechanical trouble		● Repair electrical system ● Improve clamping method of workpiece
Faulty machining accuracy	Unacceptable surface roughness Too large and inconsistent over-sized	Excessive feed rate per tooth		● Reduce fluid pressure ● Increase number of teeth
		Improper tool specifications	● Excessive chamfer angle ● Excessive back taper ● Peripheral run out excessive	● Reduce chamfer angle ● Reduce back taper ● Improve run out accuracy
		Faulty regrinding	● Cutting edge run out is large ● Residual damage of preceding process	● Improve run out accuracy ● Remove residual damage completely
		Improper cutting fluid	● Excessive fluid pressure ● Improper selection of cutting fluid	● Reduce fluid pressure ● Increase activity and lubricity of the fluid
		Faulty machine accuracy		● Correct spindle run out and bushing clearance and alignment
		Faulty clamping of workpiece	● Clamping position wrong ● Clamping force inadequate	● Improper clamping position ● Increase clamping force
	Defective out-of-roundness	Faulty machine accuracy	● Excessive bushing clearance ● Faulty spindle run out and alignment	● Correct bushing clearance ● Correct spindle run out and alignment
		Improper tool specifications	● Outer run out of reamer large ● Insufficient reamer rigidity	● Correct peripheral run out ● Increase reamer rigidity
		Faulty clamping position of workpiece		● Change clamping position
		Unevenness in wall thickness of workpiece		● Reduce reamer guide width (margin width)
	Insufficient oversize allowance	Chamfer angle small		● Increase chamfer angle
		Excessive wear in peripheral cutting edge	● Too high cutting speed ● Faulty lubricity of cutting fluid	● Decrease cutting speed ● Increase lubricating capacity
		Faulty regrinding (residual damage)		● Increase regrinding stock amount

User's Guide - Technical Reference

International Tolerance (IT Grade)

IT grades shows a tolerance allowable for difference of the diameters of a hole and a shaft. As the number added after IT increases, the tolerance becomes rough. Depending on the basic size, the tolerance value in each grade varies.
In the catalog, IT grades are shown as a guide of dimensional dispersion in the diameters of holes machined with the drill. For information, H8 tolerance for a ø8.0 hole is 0 to + 0.022 mm, the width of the value is the same as that of IT 8.
In the Table shown below, tolerance areas attainable with typical drilling tools are distinguished by using different colors. Solid drills are generally used for machining holes of IT 9 to 12. For machining a hole of better than IT 8, finishing process such as reaming is required. For a hole better than IT 5, high-precision finishing is required. Above description is based on machining of general steel. In practice, the IT grade attained with the tool varies widely depending on the hardness and the composition of the work material.

IT (International Tolerance) Grades

Basic size (mm)		International tolerance grade																
		IT1	IT2	IT3	IT4	IT5	IT6	IT7	IT8	IT9	IT10	IT11	IT12	IT13	IT14	IT15	IT16	IT17	IT18
>	≤						(μm)									(mm)			
-	3	0.8	1.2	2	3	4	6	10	14	25	40	60	0.1	0.14	0.25	0.4	0.6	1	1.4
3	6	1	1.5	2.5	4	5	8	12	18	30	48	75	0.12	0.18	0.3	0.48	0.75	1.2	1.8
6	10	1	1.5	2.5	4	6	9	15	22	36	58	90	0.15	0.22	0.36	0.58	0.9	1.5	2.2
10	18	1.2	2	3	5	8	11	18	27	43	70	110	0.18	0.27	0.43	0.7	1.1	1.8	2.7
18	30	1.5	2.5	4	6	9	13	21	33	52	84	130	0.21	0.33	0.52	0.84	1.3	2.1	3.3
30	50	1.5	2.5	4	7	11	16	25	39	62	100	160	0.25	0.39	0.62	1	1.6	2.5	3.9
50	80	2	3	5	8	13	19	30	46	74	120	190	0.3	0.46	0.74	1.2	1.9	3	4.6
80	120	2.5	4	6	10	15	22	35	54	87	140	220	0.35	0.54	0.87	1.4	2.2	3.5	5.4
120	180	3.5	5	8	12	18	25	40	63	100	160	250	0.4	0.63	1	1.6	2.5	4	6.3
180	250	4.5	7	10	14	20	29	46	72	115	185	290	0.46	0.72	1.15	1.85	2.9	4.6	7.2
250	315	6	8	12	16	23	32	52	81	130	210	320	0.52	0.81	1.3	2.1	3.2	5.2	8.1
315	400	7	9	13	18	25	36	57	89	140	230	360	0.57	0.89	1.4	2.3	3.6	5.7	8.9
400	500	8	10	15	20	27	40	63	97	155	250	400	0.63	0.97	1.55	2.5	4	6.3	9.7
500	630	9	11	16	22	32	44	70	110	175	280	440	0.7	1.1	1.75	2.8	4.4	7	11
630	800	10	13	18	25	36	50	80	125	200	320	500	0.8	1.25	2	3.2	5	8	12.5
800	1000	11	15	21	28	40	56	90	140	230	360	560	0.9	1.4	2.3	3.6	5.6	9	14
1000	1250	13	18	24	33	47	66	105	165	260	420	660	1.05	1.65	2.6	4.2	6.6	10.5	16.5
1250	1600	15	21	29	39	55	73	125	195	310	500	780	1.25	1.95	3.1	5	7.8	12.5	19.5
1600	2000	18	25	35	46	65	92	150	230	370	600	920	1.5	2.3	3.7	6	9.2	15	23
2000	2500	22	30	41	55	78	110	175	280	440	700	1100	1.75	2.8	4.4	7	11	17.5	28
2500	3150	26	36	50	68	96	135	210	330	540	860	1350	2.1	3.3	5.4	8.6	13.5	21	33

Tolerance area requiring finishing process such as with a reamer.

Tolerance area attainable with a solid drill.

Tolerance area attainable with an indexable drill.

Deviations of Shafts to be Used in Commonly Used Fits

Deviations of Shafts to be Used in Commonly Used Fits (JIS B0401 extrac)

Basic size step (mm)		Tolerance zone class of shaft (μm)															
>	≤	e9	f6	f7	f8	g5	g6	h5	h6	h7	h8	h9	js5	js6	js7	k5	k6
–	3	−14 −39	−6 −12	−6 −16	−6 −20	−2 −6	−2 −8	0 −4	0 −6	0 −10	0 −14	0 −25	±2	±3	±5	+4 0	+6 0
3	6	−20 −50	−10 −18	−10 −22	−10 −28	−4 −9	−4 −12	0 −5	0 −8	0 −12	0 −18	0 −30	±2.5	±4	±6	+6 +1	+9 +1
6	10	−25 −61	−13 −22	−13 −28	−13 −35	−5 −11	−5 −14	0 −6	0 −9	0 −15	0 −22	0 −36	±3	±4.5	±7	+7 +1	+10 +1
10	14	−32 −75	−16 −27	−16 −34	−16 −43	−6 −14	−6 −17	0 −8	0 −11	0 −18	0 −27	0 −43	±4	±5.5	±9	+9 +1	+12 +1
14	18																
18	24	−40 −92	−20 −33	−20 −41	−20 −53	−7 −16	−7 −20	0 −9	0 −13	0 −21	0 −33	0 −52	±4.5	±6.5	±10	+11 +2	+15 +2
24	30																
30	40	−50 −112	−25 −41	−25 −50	−25 −64	−9 −20	−9 −25	0 −11	0 −16	0 −25	0 −39	0 −62	±5.5	±8	±12	+13 +2	+18 +2
40	50																
50	65	−60 −134	−30 −49	−30 −60	−30 −76	−10 −23	−10 −29	0 −13	0 −19	0 −30	0 −46	0 −74	±6.5	±9.5	±15	+15 +2	+21 +2
65	80																
80	100	−72 −159	−36 −58	−36 −71	−36 −90	−12 −27	−12 −34	0 −15	0 −22	0 −35	0 −54	0 −87	±7.5	±11	±17	+18 +3	+25 +3
100	120																

In every step given in the table, the value on the upper side shows the upper deviation and the value on the lower side, the lower deviation.

Deviations of Holes to be Used in Commonly Used Fits. (JIS B0401 extrac)

Basic size step (mm)		Tolerance zone class of hole (μm)															
>	≤	E7	E8	E9	F6	F7	F8	G6	G7	H6	H7	H8	H9	H10	JS6	JS7	K6	K7
–	3	+24 +14	+28 +14	+39 +14	+12 +6	+16 +6	+20 +6	+8 +2	+12 +2	+6 0	+10 0	+14 0	+25 0	+40 0	±3	±5	0 −6	0 −10
3	6	+32 +20	+38 +20	+50 +20	+18 +10	+22 +10	+28 +10	+12 +4	+16 +4	+8 0	+12 0	+18 0	+30 0	+48 0	±4	±6	+2 −6	+3 −9
6	10	+40 +25	+47 +25	+61 +25	+22 +13	+28 +13	+35 +13	+14 +5	+20 +5	+9 0	+15 0	+22 0	+36 0	+58 0	±4.5	±7	+2 −7	+5 −10
10	14	+50 +32	+59 +32	+75 +32	+27 +16	+34 +16	+43 +16	+17 +6	+24 +6	+11 0	+18 0	+27 0	+43 0	+70 0	±5.5	±9	+2 −9	+6 −12
14	18																	
18	24	+61 +40	+73 +40	+92 +40	+33 +20	+41 +20	+53 +20	+20 +7	+28 +7	+13 0	+21 0	+33 0	+52 0	+84 0	±6.5	±10	+2 −11	+6 −15
24	30																	
30	40	+75 +50	+89 +50	+112 +50	+41 +25	+50 +25	+64 +25	+25 +9	+34 +9	+16 0	+25 0	+39 0	+62 0	+100 0	±8	±12	+3 −13	+7 −18
40	50																	
50	65	+90 +60	+106 +60	+134 +60	+49 +30	+60 +30	+76 +30	+29 +10	+40 +10	+19 0	+30 0	+46 0	+74 0	+120 0	±9.5	±15	+4 −15	+9 −21
65	80																	
80	100	+107 +72	+126 +72	+159 +72	+58 +36	+71 +36	+90 +36	+34 +12	+47 +12	+22 0	+35 0	+54 0	+87 0	+140 0	±11	±17	+4 −18	+10 −25
100	120																	

In every step given in the table, the value on the upper side shows the upper deviation and the value on the lower side, the lower deviation.

User's Guide - Technical Reference

Symbols of Metals

● Carbon steel and alloy steel for structural use

Type	Japan	International	Other countries				
			U.S.A.	Great Britain	Germany	France	Russia
	JIS	ISO	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Carbon steel	S10C	C10	1010	C10 C10E C10R	C10E C10R	C10E C10R	–
	S15C	C15E4 C15M2	1015	C15 C15E C15R	C15E C15R	C15E C15R	–
	S20C	–	1020	C22, C22E C22R	C22 C22E C22R	C22 C22E C22R	–
	S25C	C25 C25E4 C25M2	1025	C25 C25E C25R	C25 C25E C25R	C25 C25E C25R	–
	S30C	C30 C30E4 C30M2	1030	C30 C30E C30R	C30 C30E C30R	C30 C30E C30R	30Г
	S35C	C35 C35E4 C35M2	1035	C35 C35E C35R	C35 C35E C35R	C35 C35E C35R	35Г
	S40C	C40 C40E4 C40M2	1039 1040	C40 C40E C40R	C40 C40E C40R	C40 C40E C40R	40Г
	S43C	–	1042 1043	080A42	–	–	40Г
	S45C	C45 C45E4 C45M2	1045 1046	C45 C45E C45R	C45 C45E C45R	C45 C45E C45R	45Г
	S48C	–	–	–	–	–	45Г
	S50C	C50 C50E4 C50M2	1049	C50 C50E C50R	C50 C50E C50R	C50 C50E C50R	50Г
	S53C	–	1050 1053	–	–	–	50Г
	S55C	C55 C55E4 C55M2	1055	C55 C55E C55R	C55 C55E C55R	C55 C55E C55R	–
	S58C	C60 C60E4 C60M2	1059 1060	C60 C60E C60R	C60 C60E C60R	C60 C60E C60R	60Г

Type		Japan	International	Other countries				
				U.S.A.	Great Britain	Germany	France	Russia
		JIS	ISO	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Alloy steel	Nickel chromium steel	SNC236	–	–	–	–	–	40XH
		SNC415(H)	–	–	–	–	–	–
		SNC631(H)	–	–	–	–	–	30XH3A
		SNC815(H)	15NiCr13	–	15NiCr13	15NiCr13	15NiCr13	–
		SNC836	–	–	–	–	–	–
	Nickel chromium molybdenum steel	SNCM220	20NiCrMo2 20NiCrMoS2	8615 8617(H) 8620(H) 8622(H)	20NiCrMo2-2 20NiCrMoS2-2	20NiCrMo2-2 20NiCrMoS2-2	20NiCrMo2-2 20NiCrMoS2-2	–
		SNCM240	41CrNiMo2 41CrNiMoS2	8637 8640	–	–	–	–
		SNCM415	–	–	–	–	–	–
		SNCM420(H)	–	4320(H)	–	–	–	20XH2M(20XHM)
		SNCM431	–	–	–	–	–	–
		SNCM439	–	4340	–	–	–	–
		SNCM447	–	–	–	–	–	–
		SNCM616	–	–	–	–	–	–
		SNCM625	–	–	–	–	–	–
		SNCM630	–	–	–	–	–	–
		SNCM815	–	–	–	–	–	–

Note: The above chart is based on published data and not authorized by each manufacturer.

Symbols of Metals

● Alloy steel

Type		Japan	International	Other countries				
				U.S.A.	Great Britain	Germany	France	Russia
		JIS	ISO	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Alloy steel	Chromium steel	SCr415(H)	–	–	17Cr3 17CrS3	17Cr3 17CrS3	17Cr3 17CrS3	15X 15XA
		SCr420(H)	20Cr4(H) 20CrS4	5120(H)	–	–	–	20X
		SCr430(H)	34Cr4 34CrS4	5130(H) 5132(H)	34Cr4 34CrS4	34Cr4 34CrS4	34Cr4 34CrS4	30X
		SCr435(H)	34Cr4 34CrS4 37Cr4 37CrS4	5132	37Cr4 37CrS4	37Cr4 37CrS4	37Cr4 37CrS4	35X
		SCr440(H)	37Cr4 37CrS4 41Cr4 41CrS4	5140(H)	530M40 41Cr4 41CrS4	41Cr4 41CrS4	41Cr4 41CrS4	40X
		SCr445(H)	–	–	–	–	–	45X
	Chromium molybdenum steel	SCM415(H)	–	–	–	–	–	–
		SCM418(H)	18CrMo4 18CrMoS4	–	18CrMo4 18CrMoS4	18CrMo4 18CrMoS4	18CrMo4 18CrMoS4	20XM
		SCM420(H)	–	–	708M20(708H20)	–	–	20XM
		SCM430	–	4130	–	–	–	30XM 30XMA
		SCM432	–	–	–	–	–	–
		SCM435(H)	34CrMo4 34CrMoS4	4137(H)	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	34CrMo4 34CrMoS4	35XM
		SCM440(H)	42CrMo4 42CrMoS4	4140(H) 4142(H)	42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	42CrMo4 42CrMoS4	–
		SCM445(H)	–	4145(H) 4147(H)	–	–	–	–
	Manganese steel and manganese chromium steel	SMn420(H)	22Mn6(H)	1522(H)		–	–	–
		SMn433(H)	–	1534	–	–	–	30Г2 35Г2
		SMn438(H)	36Mn6(H)	1541(H)	–	–	–	35Г2 40Г2
		SMn443(H)	42Mn6(H)	1541(H)	–	–	–	40Г2 45Г2
		SMnC420(H)	–	–	–	–	–	–
		SMnC443(H)	–	–	–	–	–	–
	Aluminum chromium molybdenum steel	SACM645	41CrAlMo74	–	–	–	–	–

● Stainless steel

Type		Japan	International	Other countries					
				U.S.A.		Great Britain	Germany	France	Russia
		JIS	ISO	UNS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Stainless steel	Austenitic	SUS201	X12CrMnNiN17-7-5	S20100	201			Z12CMN17-07Az	
		SUS202	X12CrMnNiN18-9-5	S20200	202	284S16			12Х17Г9АН4
		SUS301	X10CrNi18-8	S30100	301	301S21	X12CrNi17-7	Z11CN17-08	07Х16Н6
		SUS301L	X2CrNiN18-7				X2CrNiN18-7		
		SUS301J1					X12CrNi17-7		
		SUS302		S30200	302	302S25		Z12CN18-09	12Х18Н9
		SUS302B	X12CrNiSi18-9-3	S30215	302B				
		SUS303	X10CrNiS18-9	S30300	303	303S21	X10CrNiS18-9	Z8CNF18-09	
		SUS303Se		S30323	303Se	303S41			12Х18Н10Е
		SUS303Cu							
		SUS304	X5CrNi18-9	S30400	304	304S31	X5CrNi18-10	Z7CN18-09	08Х18Н10
		SUS304L	X2CrNi18-9	S30403	304L	304S11	X2CrNi19-11	Z3CN19-11	03Х18Н11
		SUS304N1	X5CrNiN18-8	S30451	304N			Z6CN19-09Az	
		SUS304N2		S30452					
		SUS304LN	X2CrNiN18-9	S30453	304LN		X2CrNiN18-10	Z3CN18-10Az	
		SUS304J1							
		SUS304J2							
		SUS304J3		S30431	S30431				
		SUS305	X6CrNi18-12	S30500	305	305S19	X5CrNi18-12	Z8CN18-12	06Х18Н11

Note: The above chart is based on published data and not authorized by each manufacturer.

User's Guide - Technical Reference

Symbols of Metals

● Stainless steel

Type		Japan	International	Other countries					
				U.S.A.		Great Britain	Germany	France	Russia
		JIS	ISO	UNS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Stainless steel	Austenitic	SUS305J1							
		SUS309S		S30908	309S			Z10CN24-13	
		SUS310S	X6CrNi25-21	S31008	310S	310S31		Z8CN25-20	10X23H18
		SUS315J1							
		SUS315J2							
		SUS316	X5CrNiMo17-12-2 X3CrNiMo17-12-3	S31600	316	316S31	X5CrNiMo17-12-2 X5CrNiMo17-13-3	Z7CND17-12-02 Z6CND18-12-03	
		SUS316F							
		SUS316L	X2CrNiMo17-12-2 X2CrNiMo17-12-3 X2CrNiMo18-14-3	S31603	316L	316S11	X2CrNiMo17-13-2 X2CrNiMo17-14-3	Z3CND17-12-02 Z3CND17-12-03	03X17H14M3
		SUS316N		S31651	316N				
		SUS316LN	X2CrNiMoN17-11-2 X2CrNiMoN17-12-3	S31653	316LN		X2CrNiMoN17-12-2 X2CrNiMoN17-13-3	Z3CND17-11Az Z3CND17-12Az	
		SUS316Ti	X6CrNiMoTi17-12-2	S31635			X6CrNiMoTi17-12-2	Z6CNDT17-12	08X17H13M2T
		SUS316J1							
		SUS316J1L							
		SUS317		S31700	317	317S16			
		SUS317L	X2CrNiMo19-14-4	S31703	317L	317S12	X2CrNiMo18-16-4	Z3CND19-15-04	
		SUS317LN	X2CrNiMoN18-12-4	S31753				Z3CND19-14Az	
		SUS317J1							
		SUS317J2							
		SUS317J3L							
		SUS836L		N08367					
		SUS890L	X1CrNiMoCu25-20-5	N08904	N08904	904S14		Z2NCDU25-20	
		SUS321	X6CrNiTi18-10	S32100	321	321S31	X6CrNiTi18-10	Z6CNT18-10	08X18H10T
		SUS347	X6CrNiNb18-10	S34700	347	347S31	X6CrNiNb18-10	Z6CNNb18-10	08X18H12Б
		SUS384	X3NiCr18-16	S38400	384			Z6CN18-16	
		SUSXM7	X3CrNiCu18-9-4	S30430	304Cu	394S17		Z2CNU18-10	
		SUSXM15J1		S38100				Z15CNS20-12	
	Austenitic Ferritic	SUS329J1		S32900	329				
		SUS329J3L	X2CrNiMoN22-5-3	S31803	31803			Z3CNDU22-05Az	08X21H6M2T
		SUS329J4L	X2CrNiMoCuN25-6-3	S32250	32250			Z3CNDU25-07Az	
	Ferritic	SUS405	X6CrAl13	S40500	405	405S17	X6CrAl13	Z8CA12	
		SUS410L						Z3C14	
		SUS429		S42900	429				
		SUS430	X6Cr17	S43000	430	430S17	X6Cr17	Z8C17	12X17
		SUS430F	X7CrS17	S43020	430F		X7CrS18	Z8CF17	
		SUS430LX	X3CrTi17 X3CrNb17	S43035			X6CrTi17	Z4CT17	
		SUS430J1L	X2CrTi17				X6CrNb17	Z4CNb17	
		SUS434	X6CrMo17-1	S43400	434	434S17	X6CrMo17-1	Z8CD17-01	
		SUS436L	X1CrMoTi16-1	S43600	436				
		SUS436J1L							
		SUS444	X2CrMoTi18-2	S44400	444			Z3CDT18-02	
		SUS445J1							
		SUS445J2							
		SUS447J1		S44700					
		SUSXM27		S44627				Z1CD26-01	
	Martensitic	SUS403		S40300	403				
		SUS410	X12Cr13	S41000	410	410S21	X10Cr13	Z13C13	
		SUS410S	X6Cr13	S41008	410S	403S17	X6Cr13	Z8C12	08X13
		SUS410F2							
		SUS410J1		S41025					
		SUS416	X12CrS13	S41600	416	416S21		Z11CF13	
		SUS420J1	X20Cr13	S42000	420	420S29	X20Cr13	Z20C13	20X13
		SUS420J2	X30Cr13	S42000	420	420S37	X30Cr13	Z33C13	30X13
		SUS420F	X29CrS13	S42020	420F			Z30CF13	
		SUS420F2							
		SUS429J1							
		SUS431	X19CrNi16-2	S43100	431	431S29	X20CrNi17-2	Z15CN16-02	20X17H2
		SUS440A	X70CrMo15	S44002	440A			Z70C15	
		SUS440B		S44003	440B				
		SUS440C	X105CrMo17	S44004	440C			Z100CD17	95X18
		SUS440F		S44020	S44020				
	Precipitation hardening type	SUS630	X5CrNiCuNb16-4	S17400	S17400			Z6CNU17-04	
		SUS631	X7CrNiAl17-7	S17700	S17700		X7CrNiAl17-7	Z9CNA17-07	09X17H7Ю
		SUS631J1							

Note: The above chart is based on published data and not authorized by each manufacturer.

Symbols of Metals

● Heat resistant steel

Type		Japan	International	Other countries					
				U.S.A.		Great Britain	Germany	France	Russia
		JIS	ISO	UNS	AISI SAE	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Heat resistant steel	Austenitic	SUH31				331S42		Z35CNWS14-14	45X14H14B2M
		SUH35		S63008		349S52		Z52CMN21-09Az	
		SUH36				349S54	X53CrMnNi21-9	Z55CMN21-09Az	55X20Г9 AH4
		SUH37		S63017		381S34			
		SUH38							
		SUH309		S30900	309	309S24		Z15CN24-13	
		SUH310		S31000	310	310S24	CrNi2520	Z15CN25-20	20X25H20C2
		SUH330		N08330	N08330			Z12NCS35-16	
		SUH660		S66286				Z6NCTV25-20	
		SUH661		R30155					
	Ferritic	SUH21					CrAl1205		
		SUH409	X6CrTi12	S40900	409	409S19	X6CrTi12	Z6CT12	
		SUH409L	X2CrTi12					Z3CT12	
		SUH446		S44600	446			Z12C25	15X28
	Martensitic	SUH1		S65007		401S45	X45CrSi9-3	Z45CS9	
		SUH3						Z40CSD10	40X10C2M
		SUH4				443S65		Z80CSN20-02	
		SUH11							40X9C2
		SUH600							20X12BHMБФР
		SUH616		S42200					

● Tool steel

Type	Japan	International	U.S.A.
	JIS	ISO	AISI ASTM
Carbon tool steel	SK140	–	–
	SK120	C120U	W1-11 1/2
	SK105	C105U	W1-10
	SK95	–	W1-9
	SK90	C90U	–
	SK85	–	W1-8
	SK80	C80U	–
	SK75	–	–
	SK70	C70U	–
	SK65	–	–
	SK60	–	–
High speed steel	SKH2	HS18-0-1	T1
	SKH3	–	T4
	SKH4	–	T5
	SKH10	–	T15
	SKH40	HS6-5-3-8	–
	SKH50	HS1-8-1	–
	SKH51	HS6-5-2	M2
	SKH52	HS6-6-2	M3-1
	SKH53	HS6-5-3	M3-2
	SKH54	HS6-5-4	M4
	SKH55	HS6-5-2-5	–
	SKH56	–	M36
	SKH57	HS10-4-3-10	–
	SKH58	HS2-9-2	M7
	SKH59	HS2-9-1-8	M42
Alloy tool steel	SKS11	–	F2
	SKS2	–	–
	SKS21	–	–

Type	Japan	International	U.S.A.
	JIS	ISO	AISI ASTM
Alloy tool steel	SKS5	–	–
	SKS51	–	L6
	SKS7	–	–
	SKS81	–	–
	SKS8	–	–
	SKS4	–	–
	SKS41	–	–
	SKS43	105V	W2-9 1/2
	SKS44	–	W2-8 1/2
	SKS3	–	–
	SKS31	–	–
	SKS93	–	–
	SKS94	–	–
	SKS95	–	–
	SKD1	X210Cr12	D3
	SKD2	X210CrW12	–
	SKD10	X153CrMoV12	–
	SKD11	–	D2
	SKD12	X100CrMoV5	A2
	SKD4	–	–
	SKD5	X30WCrV9-3	H21
	SKD6	–	H11
	SKD61	X40CrMoV5-1	H13
	SKD62	X35CrWMoV5	H12
	SKD7	32CrMoV12-28	H10
	SKD8	38CrCoWV18-17-17	H19
	SKT3	–	–
	SKT4	55NiCrMoV7	–
	SKT6	45NiCrMo16	–

● Special use steel

Type	Japan	International	U.S.A.
	JIS	ISO	AISI ASTM
Free cutting carbon steels	SUM11	–	1110
	SUM12	–	1109
	SUM21	9S20	1212
	SUM22	11SMn28	1213
	SUM22L	11SMnPb28	–
	SUM23	–	1215
	SUM23L	–	–
	SUM24L	11SMnPb28	12L14
	SUM25	12SMn35	–
	SUM31	–	1117
	SUM31L	–	–

Type	Japan	International	U.S.A.
	JIS	ISO	AISI ASTM
Free cutting carbon steels	SUM32	–	–
	SUM41	–	1137
	SUM42	–	1141
	SUM43	44SMn28	1144
High carbon chromium	SUJ1	–	–
	SUJ2	B1	52100
	SUJ3	B2	ASTM A 485 Grade 1
	SUJ4	–	–
	SUJ5	–	–

Note: The above chart is based on published data and not authorized by each manufacturer.

User's Guide - Technical Reference

Symbols of Metals

● Casting or forging steel

Type		Japan	International	Other countries				
				U.S.A.	Great Britain	Germany	France	Russia
		JIS	ISO	AISI ASTM	BS BS/EN	DIN DIN/EN	NF NF/EN	ГОСТ
Casting steel	Carbon steel casting	SC	200-400, 230-450, 270-480	U-	A1, A2	GS-	GE230, GE280, GE320	–
	Steel casting for welded structure	SCW	200-400W, 230-450W, 270-480W, 340-550W	WCA, WCB, WCC	A4	–	GE230, GE280	–
	Heat resisting steel casting	SCH	GX40CrSi24, GX40CrNiSi22-10, GX40NiCrSi38-19	Grade HC, HD, HF	309C30, 310C45, 330C12	–	GX40NiCrNb45-35, GX50NiCrCoW35-25-15-5	–
	Steel casting for high temperature and high pressure service	SCPH	–	Grade WC1, WC6, WC9	A1, A2, B1, B2, B3, B4, B5, B7	G20Mo5, G17CrMo5-5, G17CrMo5-10	G17CrMo9-10, GX15CrMo5, GP240GH, GP280GH	–
	Steel casting for low temperature and high pressure service	SCPL	–	Grade LCB, LC1, LC2, LC3	AL1, BL2	–	FB-M, FC1-M, FC2-M,FC3-M	–
Casting iron	Grey iron casting	FC	100,150,200,250, 300,350	No.20,25,30,35, 40,45,50	EN-GJL-	EN-GJL-	EN-GJL-	–
	Spheroidal graphite iron casting	FCD	700-2, 600-3, 500-7, 450-10, 400-15, 400-18, 350-22	60-40-18, 65-45-12, 8-55-06, 100-70-03, 120-90-02	EN-GJS-	EN-GJS-	EN-GJS-	ВЧ
	Austempered spheroidal graphite iron casting	FCAD	–	–	EN-GJS-	EN-GJS-	EN-GJS-	–
	Austenitic iron casting	FCA- FCDA-	L-, S-	Type 1, 2, Type D-2, D-3A Class 1, 2	F1, F2, S2W, S5S	GGL-, GGG-	L-, S-	–
Forging steel	Carbon steel forging for general use	SF	–	Class A, B, C, D, E, F	C22, C25, C30, C35, C40, C45, C50, C55, C60	P285, P355	P245, P280, P305	–
	Chromium molybdenum steel forgings for general use	SFCM	–	Class E, F, G, I Grade 3A, 4 Class G, J, K, L, M	–	–	–	–
	Nickel Chromium molybdenum steel forgings for general use	SFNCM	–	Class G, H, I, J Class 3A, 4, 5, 6 Class K, L, M	–	–	–	–

● Non-ferrous alloy

Type		Japan	International	Other countries			
				U.S.A.		Great Britain	Germany
		JIS	ISO	ASTM SAE		BS BS/EN	DIN DIN/EN
Copper alloy, Nickel alloy	Copper alloy casting	CAC101	–	–	–	–	
		CAC102	–	–	–	Cu-C(CC040AgrodeC)	
		CAC103	–	–	–	Cu-C(CC040AgrodeA,B)	
	Brass casting	CAC201	–	–	–	CuZn15As-C(CC760S)	
		CAC202	–	C85400	–	CuZn33Pb2-C(CC750S)	
		CAC203	–	C85700	–	CuZn39Pb1-C(CC754S)	
	High strength brass casting	CAC301	–	C86500	–	CuZn35Mn2Al1Fe-C(CC765S)	
		CAC302	–	C86400	–	CuZn34Mn3Al2Fe1-C(CC764S)	
		CAC303	–	C86200	–	CuZn25Al5Mn4Fe3-C(CC762S)	
		CAC304	–	C86300	–	CuZn25Al5Mn4Fe3-C(CC762S)	
	Bronze casting	CAC401	–	C84400	–	CuSn3Zn8Pb5-C(CC490K)	
		CAC402	–	C90300	–	–	
		CAC403	–	C90500	–	–	
		CAC406	–	C83600	–	CuSn5Zn5Pb5-C(CC490K)	
		CAC407	–	C92200	–	–	
	Phosphor bronze casting	CAC502A	–	C90700 C90800	–	CuSn10-C(CC480K) CuSn12-C(CC483K)	
		CAC502B	–		–		
		CAC503A	–		–		
		CAC503B	–		–		
	Aluminum bronze casting	CAC701	–	C95200	–	CuAl10Fe2-C(CC331G)	
		CAC702	–	C95400	–	CuAl10Ni3Fe2-C(CC332G)	
			–	C95410	–		
		CAC703	–	C95800	–	CuAl10Fe5Ni5-C(CC333G)	
		CAC704	–	C95700	–	–	
	Silicon bronze castings	CAC801	–	–	–	–	
		CAC802	–	C87500	–	–	
		CAC803	–	C87400	–	CuZn16Si4-C(CC761S)	

Note: The above chart is based on published data and not authorized by each manufacturer.

Symbols of Metals

● Non-ferrous alloy

Type		Japan	International	Other countries			
				U.S.A.	Great Britain	Germany	France
		JIS	ISO	ASTM SAE	BS BS/EN	DIN DIN/EN	NF NF/EN
Aluminum alloy	Aluminum alloy ingots for casting	AC1B	Al-Cu4MgTi	204.0	EN AC-2100		
		AC2A	–	–	–		
		AC2B	–	319.0	–		
		AC3A	–	–	EN AC-44100		
		AC4A	–	–	–		
		AC4B	Al-Si8Cu3	333.0	EN AC-46200		
		AC4C	Al-Si7Mg(Fe)	356.0	EN AC-42000		
		AC4CH	Al-Si7Mg0.3	A356.0	EN AC-42100		
		AC4D	–	355.0	EN AC-45300		
		AC5A	Al-Cu4Ni2Mg2	242.0	–		
		AC7A	–	514.0	–		
		AC8A	Al-Si12CuNiMg	–	EN AC-48000		
		AC8B	–	–	–		
		AC8C	–	332.0	–		
		AC9A	–	–	–		
		AC9B	–	–	–		
	Aluminum alloy die casting	ADC1	–	A413.0	–		
		ADC3	–	A360.0	–		
		ADC5	–	518.0	–		
		ADC6	–	–	–		
		ADC10	–	–	–		
		ADC10Z	–	A380.0	–		
		ADC12	–	–	–		
		ADC12Z	–	383.0	–		
		ADC14	–	B390.0	–		
Magnesium alloy	Magnesium alloy casting	MC5	–	AM100A	–		
		MC6	–	ZK51A	–		
		MC7	–	ZK61A	–		
		MC8	MgRE3Zn2Zr	EZ33A	EN MC65120		
		MC9	MgAg3RE2Zr	QE22A	EN MC65210		
		MC10	MgZn4RE1Zr	ZE41A	EN MC35110		
	Magnesium alloy die casting	MD1A	–	AZ91A	G-A9Z1Y4		
		MDC1B	–	AZ91B	–		
		MDC1D	MgAl9Zn1(A)	AZ91D	EN MC21120		
		MDC2B	MgAl6Mn	AM60B	EN MC21320		

Type		Japan	International	Other countries			
				U.S.A.	Great Britain	Germany	France
		JIS	ISO	ASTM AA	BS BS/EN	DIN DIN/EN	NF NF/EN
Aluminum alloy	Aluminum alloy extruded shapes	A5052S	–	5052	EN AW-5052		
		A5454S	–	5454	EN AW-5454		
		A5083S	AlMg4.5Mn0.7	5083	EN AW-5083		
		A5086S	–	5086	EN AW-5086		
		A6061S	AlMg1SiCu	6061	EN AW-6061		
		A6063S	AlMg0.7Si	6063	EN AW-6063		
		A7003S	–	–	EN AW-7003		
		A7N01S	–	–	–		
		A7075S	AlZn5.5MgCu	7075	EN AW-7075		

Note: The above chart is based on published data and not authorized by each manufacturer.

User's Guide - Technical Reference

Approximate Conversion Table of Hardness

● Approximate conversion value for Brinell hardness. *1

(The source: JIS HB Ferrous Materials and Metallurgy I -2005)

HB		HV	Rockwell *3				HS	Approx. tensile strength (MPa) *2
Brinell, 10mm ball, Load 3000kg		Vickers	HRA	HRB	HRC	HRD	Shore	
Standard ball	Tungsten carbide ball		A Scale, Load 60kg, Brale Diamond	B Scale, Load 100kg, Diameter 1/16 in. Steel ball	C Scale, Load 150kg, brale diamond	D Scale, Load 100kg, Brale Diamond		
–	–	940	85.6	–	68.0	76.9	97	–
–	–	920	85.3	–	67.5	76.5	96	–
–	–	900	85.0	–	67.0	76.1	95	–
–	(767)	880	84.7	–	66.4	75.7	93	–
–	(757)	860	84.4	–	65.9	75.3	92	–
–	(745)	840	84.1	–	65.3	74.8	91	–
–	(733)	820	83.8	–	64.7	74.3	90	–
–	(722)	800	83.4	–	64.0	73.8	88	–
–	(712)	–	–	–	–	–	–	–
–	(710)	780	83.0	–	63.3	73.3	87	–
–	(698)	760	82.6	–	62.5	72.6	86	–
–	(684)	740	82.2	–	61.8	72.1	–	–
–	(682)	737	82.2	–	61.7	72.0	84	–
–	(670)	720	81.8	–	61.0	71.5	83	–
–	(656)	700	81.3	–	60.1	70.8	–	–
–	(653)	697	81.2	–	60.0	70.7	81	–
–	(647)	690	81.1	–	59.7	70.5	–	–
–	(638)	680	80.8	–	59.2	70.1	80	–
–	630	670	80.6	–	58.8	69.8	–	–
–	627	667	80.5	–	58.7	69.7	79	–
–	–	677	80.7	–	59.1	70.0	–	–
–	601	640	79.8	–	57.3	68.7	77	–
–	–	640	79.8	–	57.3	68.7	–	–
–	578	615	79.1	–	56.0	67.7	75	–
–	–	607	78.8	–	55.6	67.4	–	–
–	555	591	78.4	–	54.7	66.7	73	2055
–	–	579	78.0	–	54.0	66.1	–	2015
–	534	569	77.8	–	53.5	65.8	71	1985
–	–	553	77.1	–	52.5	65.0	–	1915
–	514	547	76.9	–	52.1	64.7	70	1890
(495)	–	539	76.7	–	51.6	64.3	–	1855
–	–	530	76.4	–	51.1	63.9	–	1825
–	495	528	76.3	–	51.0	63.8	68	1820
(477)	–	516	75.9	–	50.3	63.2	–	1780
–	–	508	75.6	–	49.6	62.7	–	1740
–	477	508	75.6	–	49.6	62.7	66	1740
(461)	–	495	75.1	–	48.8	61.9	–	1680
–	–	491	74.9	–	48.5	61.7	–	1670
–	461	491	74.9	–	48.5	61.7	65	1670
444	–	474	74.3	–	47.2	61.0	–	1595
–	–	472	74.2	–	47.1	60.8	–	1585
–	444	472	74.2	–	47.1	60.8	63	1585

HB		HV	Rockwell *3				HS	Approx. tensile strength (MPa) *2
Brinell, 10mm ball, Load 3000kg		Vickers	HRA	HRB	HRC	HRD	Shore	
Standard ball	Tungsten carbide ball		A Scale, Load 60kg, Brale Diamond	B Scale, Load 100kg, Diameter 1/16 in. Steel ball	C Scale, Load 150kg, brale diamond	D Scale, Load 100kg, Brale Diamond		
429	429	455	73.4	–	45.7	59.7	61	1510
415	415	440	72.8	–	44.5	58.8	59	1460
401	401	425	72.0	–	43.1	57.8	58	1390
388	388	410	71.4	–	41.8	56.8	56	1330
375	375	396	70.6	–	40.4	55.7	54	1270
363	363	383	70.0	–	39.1	54.6	52	1220
352	352	372	69.3	(110.0)	37.9	53.8	51	1180
341	341	360	68.7	(109.0)	36.6	52.8	50	1130
331	331	350	68.1	(108.5)	35.5	51.9	48	1095
321	321	339	67.5	(108.0)	34.3	51.0	47	1060
311	311	328	66.9	(107.5)	33.1	50.0	46	1025
302	302	319	66.3	(107.0)	32.1	49.3	45	1005
293	293	309	65.7	(106.0)	30.9	48.3	43	970
285	285	301	65.3	(105.5)	29.9	47.6	–	950
277	277	292	64.6	(104.5)	28.8	46.7	41	925
269	269	284	64.1	(104.0)	27.6	45.9	40	895
262	262	276	63.6	(103.0)	26.6	45.0	39	875
255	255	269	63.0	(102.0)	25.4	44.2	38	850
248	248	261	62.5	(101.0)	24.2	43.2	37	825
241	241	253	61.8	100.0	22.8	42.0	36	800
235	235	247	61.4	99.0	21.7	41.4	35	785
229	229	241	60.8	98.2	20.5	40.5	34	765
223	223	234	–	97.3	(18.8)	–	–	–
217	217	228	–	96.4	(17.5)	–	33	725
212	212	222	–	95.5	(16.0)	–	–	705
207	207	218	–	94.6	(15.2)	–	32	690
201	201	212	–	93.8	(13.8)	–	31	675
197	197	207	–	92.8	(12.7)	–	30	655
192	192	202	–	91.9	(11.5)	–	29	640
187	187	196	–	90.7	(10.0)	–	–	620
183	183	192	–	90.0	(9.0)	–	28	615
179	179	188	–	89.0	(8.0)	–	27	600
174	174	182	–	87.8	(6.4)	–	–	585
170	170	178	–	86.8	(5.4)	–	26	570
167	167	175	–	86.0	(4.4)	–	–	560
163	163	171	–	85.0	(3.3)	–	25	545
156	156	163	–	82.9	(0.9)	–	–	525
149	149	156	–	80.8	–	–	23	505
143	143	150	–	78.7	–	–	22	490
137	137	143	–	76.4	–	–	21	460
131	131	137	–	74.0	–	–	–	450
126	126	132	–	72.0	–	–	20	435
121	121	127	–	69.8	–	–	19	415
116	116	122	–	67.6	–	–	18	400
111	111	117	–	65.7	–	–	15	385

Note :

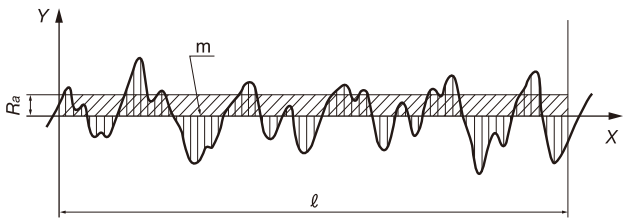
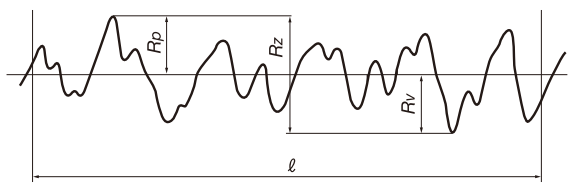
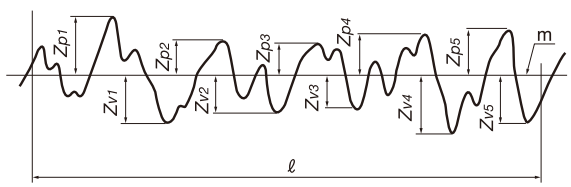
*1: This table is based on AMS Metals Handbook, the 8th Edition, Volume 1, and includes some information added to "Approx. tensile strength (MPa)," such as the values calculated in metric; and Brinell hardness that exceeds recommended values.

*2: 1 MPa = 1 N/mm^2

*3: Figures in ( ) are not commonly used. It's just reference.

Surface Roughness

(According to JIS B 0601, 2001 and its explanation.)

Type	Symbol	How to determine	Example (Fig.)
Arithmetic mean roughness	*Ra*	*Ra* means the value obtained by the following formula and expressed in micrometer (μm) when sampling only the reference length from the roughness curve in the direction of mean line, taking X-axis in the direction of mean line and Y-axis in the direction of longitudinal magnification of this sampled part and the roughness curve is expressed by $y = f(x)$: $Ra = \frac{1}{\ell}\int_0^{\ell} \lvert f(x) \rvert \, dx$ where, ℓ : reference length	
Maximum height	*Rz*	*Rz* shall be that only the reference length is sampled from the roughness curve in the direction of mean line, the distance between the top of profile peak line and the bottom of profile valley line on this sampled portion is measured in the longitudinal magnification direction of roughness curve and the obtained value is expressed in micrometer (μm). $Rz = Rp + Rv$	
Ten point mean roughness	*RzJIS*	*RzJIS* shall be that only the reference length is sampled from the roughness curve in the direction of its mean line, the sum of the average value of absolute values of the heights of five highest profile peaks (*Zp*) and the depths of five deepest profile valleys (*Zv*) measured in the vertical magnification direction from the mean line of this sampled portion and this sum is expressed in micrometer (μm) $RzJIS = \frac{\lvert Zp1+Zp2+Zp3+Zp4+Zp5 \rvert + \lvert Zv1+Zv2+Zv3+Zv4+Zv5 \rvert}{5}$	 where, $Zp_1, Zp_2, Zp_3, Zp_4, Zp_5$: altitudes of the heights of five highest profile peaks of the sampled portion corresponding to the reference length ℓ where, $Zv_1, Zv_2, Zv_3, Zv_4, Zv_5$: altitudes of the depths of five deepest profile valleys of the sampled portion corresponding to the reference length ℓ

Alphanumeric Index

Alphanumeric Index

Alphanumeric Index

Alphanumeric Index

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ACLNR/L□□□...	ISO-EcoTurn / TurningA external toolholder	C018, C020
ACP...	Clamp	L016
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ACS...	Screw	L008
ADJC□ER32	TungCap ER collet chuck holder with center alignment	K036
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AE16-...	Shim	L013
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AH110	PVD coated grade	A003
AH120	PVD coated grade	A003
AH130	PVD coated grade	A003
AH140	PVD coated grade	A003
AH170	PVD coated grade	A003
AH180	PVD coated grade	A003
AH3035	PVD coated grade	A004
AH3135	PVD coated grade	A004
AH3225	PVD coated grade	A004
AH330	PVD coated grade	A003
AH4035	PVD coated grade	A004
AH6030	PVD coated grade	A004
AH630	PVD coated grade	A003
AH645	PVD coated grade	A003
AH7025	PVD coated grade	A003
AH710	PVD coated grade	A003
AH725	PVD coated grade	A003
AH730	PVD coated grade	A003
AH740	PVD coated grade	A003
AH750	PVD coated grade	A003
AH8005	PVD coated grade	A003
AH8015	PVD coated grade	A003
AH9030	PVD coated grade	A004
AH905	PVD coated grade	A003
AH9130	PVD coated grade	A004
AJC08	Wrench / Driver	L027
AJM...	Screw	L005, L029
AJM5	Fine adjusting screw	L005, L029
AN16-...	Shim	L013
AN16-□DT	Shim	L013
AOGT□□□□□□PDFR-AJ	TungRec insert	H117, H127
AOMT□□□□□□PDPR-MJ	TungRec insert	H117, H127
AOMT030204-N-□□DT	DrillMeister insert for special chamfering tool	J023
AOMT060204-C45	DrillMeister insert for special chamfering tool	J023
AOMT070208PDPR-HJ	TungRec insert	H117
AP...	Shim	L024
ARGNR/L...	TurningA external toolholder	C084
ASBNR/L...	TurningA external toolholder	C098
ASC...	Shim	L011
ASD...	Shim	L011
ASDNN...	TurningA external toolholder	C108
ASG□□N...	TungMini-Slit side cutter	H151
ASGT11T□□□PDFR-AJ	TungRec insert	H123
ASKNR/L...	TurningA external toolholder	C115
ASM...	Screw	L005, L029
ASMT11T□□□PDPR-MJ	TungRec insert	H123
ASMT11T304PDPR-MS	TungRec insert	H123
ASN□□R□□□M...	TecTangential-Slot axial drive slot mill	H159
ASR420	Shim	L012
ASS...	Shim	L010
ASSNR/L...	TurningA external toolholder	C112
AST...	Shim	L009
ASV...	Shim	L012
ASV□□N...	TungThin-Slit axial drive slot mill	H155
ASW□□N...	TungUniversal-Slot axial drive slot mill	H157
ASW□22	Shim	L012
AT9530	PVD coated cermet grade	A005
ATFNR/L...	TurningA external toolholder	C122
ATGNR/L...	TurningA external toolholder	C091
ATJNR/L...	TurningA external toolholder	C055
ATQNR/L...	TurningA external toolholder	C130
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AVGT060□□□PBFR-AJ	TungForce-Rec insert	H114
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