HOW TO READ THE STANDARD OF INDEXABLE MILLING

●How this section page is organized

①Organized according to the face milling cutting mode.
(Refer to the index on the next page.)

SCOPE OF AVAILABLE WORK MATERIAL
provides a graph depicting the scope of the available work material for machining.

CORNER ANGLE ICON

TYPE/ NAME OF PRODUCT

APPLICATION ICON
represents available machining applications, such as finishing and roughing.

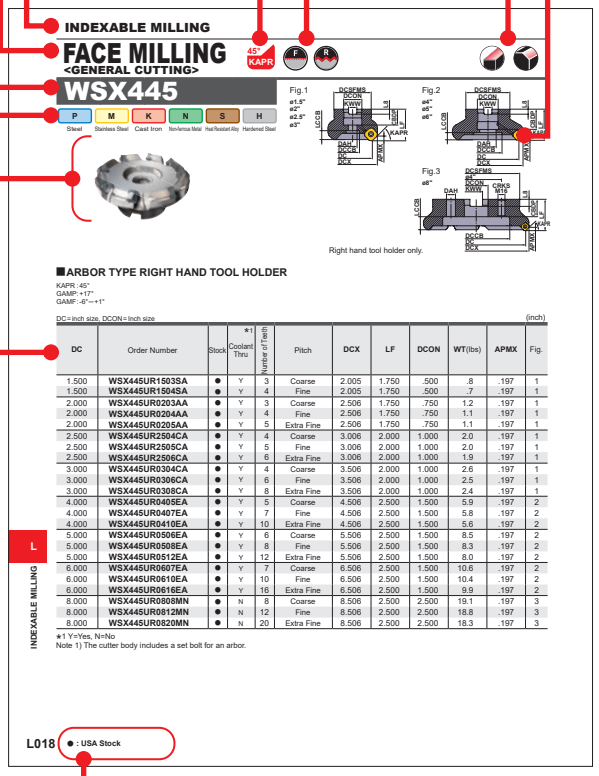
APPLICATION

CUTTING MODE ICON
represents available cutting modes, such as face milling and shoulder milling.

STANDARDS FOR APPLICABLE INSERTS
indicates stock status, dimensions, etc. for applicable inserts.

PRODUCT SECTION

GEOMETRY



LEGEND FOR STOCK STATUS MARK
is shown on the left hand page of each double-page spread.

PRODUCT STANDARDS
indicates tool types, order numbers, stock status (per right/left hand), dimensions, etc.

PHOTO OF PRODUCT

●To Order : For title product, please specify order number and hand of tool (right/left).
For insert, please specify insert number and grade.

MILLING TOOLS

INDEXABLE MILLING

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STANDARD OF MILLING

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AHX640S ····· L048
AHX640W ····· L060
AOX445 ····· L069

FACE MILLING (HIGH FEED)
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SHOULDER MILLING
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ASX400····· L082

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VOS400 ····· L094
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AXD4000 ····· L156
AXD7000 ····· L166
BXD4000 ····· L176
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NEW WJX ····· L224
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DEEP SHOULDER MILLING
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BALL NOSE AND RADIUS END MILLING
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SRM2 ····· L274
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CHAMFER MILLING
CFSP ····· L260

VERTICAL FEED MILLING
PMC····· L288
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BORING CUTTER
BMR····· L292

ARBOR STANDARDS
FOR SCREW-IN HOLDERS····· L294



*Arranged by Alphabetical order

L038 **AHX440S**
L044 **AHX475S**
L048 **AHX640S**
L060 **AHX640W**
L206 **AJX**
L069 **AOX445**
L096 **APX3000**
L106 APX3000 LONG CUTTING EDGE TYPE
L110 **APX4000**
L120 APX4000 LONG CUTTING EDGE TYPE
L196 **AQX**
L236 **ARP**
L248 **ARX**
L082 **ASX400**
L095 **ASX400(SIDE CUTTER)**
L030 **ASX445**
L156 **AXD4000**
L166 **AXD7000**
L292 **BMR**
L256 **BOE**
L252 **BRP**
L176 **BXD4000**
L260 **CFSP**
L070 **FMAX**
L194 **LER**
L288 **PMC**
L290 **PMF**
L291 **PMR**
L294 **SCREW-IN HOLDERS**
L180 **SPX**
L262 **SRF/SUF**
L274 **SRM2**
L286 **SRM2φ40,φ50**
L088 **VAS400**
L092 **VAS500**
L186 **VFX5**
L190 **VFX6**
L094 **VOS400**
L076 **VOX400**
L124 **VPX200**
L140 **VPX300**
L224 **WJX**
L018 **WSX445**

SYMBOL DESCRIPTIONS

KAPR (Cutting Edge Angle) List

15° KAPR	15°
35° KAPR	35°
42° KAPR	42°
45° KAPR	45°
50° KAPR	50°
90° KAPR	90°
R KAPR	R

● : USA Stock
★ : Stocked in Japan
□ : Made to Order

Application


Face Milling


Chamfer Milling


Shoulder Milling with R


Face Milling Near the Wall


Shoulder Milling


Wall Milling


Slot Milling


Step Copy Milling


Pocket Milling


Slot Milling with R


Curved Copy Milling


Spot Milling


Helical Milling

Accuracy



Finish Cutting



Medium Cutting



Rough Cutting

Work Material Range

1st Recommenedation



2nd Recommenedation



LIST OF CUTTING EDGE DIAMETER TOLERANCES

Cutter Type	Cutting Edge Diameter Tolerance
AJX	−.0039" (−0.1mm) −.0157" (−0.4mm)
APX3000 Arbor Type	−.0039" (−0.1mm) −.0157" (−0.4mm)
APX3000 Shank Type	−.0039" (−0.1mm) −.0079" (−0.2mm)
APX3000 Long Cutting Edge Type	−.0039" (−0.1mm) −.0118" (−0.3mm)
APX4000 Arbor Type	−.0039" (−0.1mm) −.0157" (−0.4mm)
APX4000 Shank Type	−.0039" (−0.1mm) −.0079" (−0.2mm)
APX4000 Long Cutting Edge Type	−.0039" (−0.1mm) −.0118" (−0.3mm)
AQX	−.0039" (−0.1mm) −.0118" (−0.3mm)
ARP Arbor Type	−.0039" (−0.1mm) −.0118" (−0.3mm)
ARP Shank Type	−.0039" (−0.1mm) −.0079" (−0.2mm)
ARX	−.0020" (−0.05mm) −.0059" (−0.15mm)
ASX400	0" (0mm) −.0118" (−0.3mm)
AXD4000 Arbor Type	−.0039" (−0.1mm) −.0157" (−0.4mm)
AXD4000 Shank Type	−.0039" (−0.1mm) −.0079" (−0.2mm)
AXD7000 Arbor Type	−.0039" (−0.1mm) −.0157" (−0.4mm)
AXD7000 Shank Type	−.0039" (−0.1mm) −.0079" (−0.2mm)

Cutter Type	Cutting Edge Diameter Tolerance
BOE	0" (0mm) −.0118" (−0.3mm)
BRP	−.0039" (−0.1mm) −.0118" (−0.3mm)
BXD4000 Arbor Type	−.0039" (−0.1mm) −.0157" (−0.4mm)
BXD4000 Shank Type	−.0039" (−0.1mm) −.0079" (−0.2mm)
PMC	±.0020" (±0.05mm)
PMF	0" (0mm) −.0118" (−0.3mm)
PMR	0" (0mm) −.0118" (−0.3mm)
SPX	−.0039" (−0.1mm) −.0118" (−0.3mm)
SRF	0" (0mm) −.0011" (−0.027mm)
SRM	−.0020" (−0.05mm) −.0059" (−0.15mm)
SUF	0" (0mm) −.0008" (−0.02mm)
VFX5, VFX6 Shell Type	−.0039" (−0.1mm) −.0118" (−0.3mm)
VOX400	−.0039" (−0.1mm) −.0157" (−0.4mm)
VPX Arbor Type	−.0039" (−0.1mm) −.0118" (−0.3mm)
VPX Shank Type	−.0039" (−0.1mm) −.0079" (−0.2mm)
WJX	−.0039" (−0.1mm) −.0118" (−0.3mm)

Note 1) Cutting edge diameter tolerance when the gauge insert is set.
Note 2) When setting the insert available, the insert tolerance is added to the above tolerance.
(Tolerance when setting the insert for SRF.)

MAXIMUM ALLOWABLE REVOLUTION FOR CUTTER

Diameter (inch)	WSX445		ASX445		AOX445		ASX400	
	Max. Allowable Revolution (min^{-1})	Clamp Torque (lbf-in)	Max. Allowable Revolution (min^{-1})	Clamp Torque (lbf-in)	Max. Allowable Revolution (min^{-1})	Clamp Torque (lbf-in)	Max. Allowable Revolution (min^{-1})	Clamp Torque (lbf-in)
1.5"	19000	31	—	—	—	—	—	—
2.0"	17000	31	18000	31	13000	71	18000	31
2.5"	15000	31	16000	31	12000	71	16000	31
3.0"	14000	31	14000	31	11000	71	14000	31
4.0"	12000	31	13000	31	9300	71	13000	31
5.0"	11000	31	12000	31	8300	71	12000	31
6.0"	9500	31	10000	31	7200	71	10000	31
8.0"	8500	31	9000	31	6400	71	9000	31
10.0"	—	—	8000	31	—	—	8000	31

Diameter (inch)	FMAX		AHX640S		AHX640W	
	Max. Allowable Revolution (min^{-1})	Clamp Torque (lbf-in)	Max. Allowable Revolution (min^{-1})	Clamp Torque (lbf-in)	Max. Allowable Revolution (min^{-1})	Clamp Torque (lbf-in)
1.5"	30000	—	—	—	—	—
2.0"	30000	31	—	—	—	—
2.5"	27000	31	11800	44.3	—	—
3.0"	24500	31	10000	44.3	8900	53
4.0"	22000	31	8600	44.3	7800	53
5.0"	19600	31	7300	44.3	6600	53
6.0"	—	—	6400	44.3	5300	53
8.0"	—	—	5000	44.3	4100	53
10.0"	—	—	—	—	2900	53
12.0"	—	—	—	—	1700	53

Diameter (inch)	AXD4000		AXD7000		BXD4000		VPX200		VPX300	
	Max. Allowable Revolution (min^{-1})	Clamp Torque (lbf-in)	Max. Allowable Revolution (min^{-1})	Clamp Torque (lbf-in)	Max. Allowable Revolution (min^{-1})	Clamp Torque (lbf-in)	Max. Allowable Revolution (min^{-1})	Clamp Torque (lbf-in)	Max. Allowable Revolution (min^{-1})	Clamp Torque (lbf-in)
.625"	—	—	—	—	—	—	37900	8.9	—	—
.750"	15000	13.3	—	—	15000	35	33200	8.9	—	—
.875"	—	—	—	—	—	—	31400	8.9	—	—
1.0"	49000	13.3	—	—	38000	35	29000	8.9	24100	26.6
1.125"	48500	13.3	—	—	—	—	27200	8.9	22500	26.6
1.25"	48000	13.3	41000	31	33000	35	25100	8.9	20600	26.6
1.375"	45000	13.3	—	—	31000	35	23800	8.9	19500	26.6
1.5"	41000	13.3	36000	31	29000	35	22000	8.9	17900	26.6
2.0"	35000	13.3	30000	31	24000	35	19200	8.9	15500	26.6
2.5"	30000	13.3	25000	31	21000	35	16700	8.9	13400	26.6
3.0"	27000	13.3	23000	31	19000	35	—	—	11500	26.6
4.0"	23000	13.3	19000	31	16000	35	—	—	—	—
5.0"	20000	13.3	16000	31	14000	35	—	—	—	—
6.0"	—	—	—	—	—	—	—	—	—	—

Note 1) All values shown on this chart are based on the insert being properly seated in pocket and torqued to the recommended values.

CLASSIFICATION (ARBOR TYPE)

Product Name · Shape	APMX	Features	Cutter Dia.	Work Material	Page
For General Cutting **WSX445**  45° KAPR	.197"	●Double sided Z Geometry. ●Smooth chip discharge.	Ø1.500" | Ø8.000"	P M K N S H	L018
For General Cutting **ASX445**  45° KAPR	.236"	●Precision molded 20° positive insert. ●A wide range of chip breakers. ●Screw-on type. ●High rigidity due to employment of a carbide shim.	Ø2.500" | Ø10.000"	P M K N S H	L030
For General Cutting **AHX440S**  50° KAPR	.118"	●Heptagonal double sided insert. ●Economical 14 cutting edge inserts. ●Multi insert design for high feed machining.	Ø1.500" | Ø6.000"	P M K H	L036 L038
For High Feed Cutting **AHX475S**  15° KAPR	.063"	●For General Cutting. ●Heptagonal double-sided insert. ●Economical 14 cutting edge inserts. ●Multi insert design for high feed machining.	Ø2.000" | Ø6.000"	P K H	L036 L044
For General Cutting **AHX640S**  50° KAPR	.236"	●Heptagonal double sided insert. ●Economical 14 cutting edge inserts. ●Multi insert design for high feed machining.	Ø2.500" | Ø8.000"	P M K S H	L036 L048
For High Feed Cutting for Cast Iron **AHX640W**  50° KAPR	.236"	●Heptagonal double-sided insert. ●Economical 14 corner use. ●Fine pitch design allows high feed milling.	Ø3.000" | Ø12.000"	K	L060
For High Efficiency Cutting for Cast Iron **AOX445**  45° KAPR	8 mm	●Octagonal double-sided solid CBN insert. ●Economical 16 corner use. (when depth of cut is 3mm) ●High efficiency machining from roughing to finishing. ●Easy operation and cleaning.	Ø63 mm | Ø160 mm	K	L069
For High-efficiency Finishing of Aluminum Alloy **FMAX**  90° KAPR	≤.118"	●For high-efficiency finishing of aluminum alloys. ●Feed Maximum (FMAX) milling cutter for ultra efficient and accurate finishing.	Ø40 mm | Ø125 mm Ø3.000" | Ø5.000"	N	L070

Product Name · Shape	APMX	Features	Cutter Dia.	Work Material	Page
Multi Functional Milling NEW **WJX** 	.079"	●Negative inserts. ●Stable clamp with dovetail structure. ●Suitable for high feed machining. ●Special designed insert with 6 cutting edges. ●With through coolant holes.	Ø2.000" | Ø6.000"	P M K S H	L224
Multi Functional Milling **AJX** 	.039" .059" .079"	●15° positive insert. ●Air / coolant through. ●High rigidity due to double clamp structure. ●Suitable for high feed cutting. ●Special designed insert with the use of 3 cutting edges.	Ø2.000" | Ø6.299"	P M K S H	L207
Multi Functional Milling of Difficult-to-cut Materials **ARP**  R KAPR	.197" .236"	●Air / coolant through. ●Round Insert Cutter for Difficult-to-cut Materials. ●High run-out accuracy when indexing inserts. ●Solid clamping system. ●Standardized stock of extra fine pitch.	Ø1.500" | Ø4.000"	M S	L236
Multi Functional Milling **BRP**  R KAPR	.240" .302"	●11° positive insert. ●Round shape insert gives strong cutting edge. ●A wide variety of lengths available. ●Suitable for machining of die and mold.	Ø1.500" | Ø4.000"	P M K S H	L253
Multi Functional Milling **BOE**  42° KAPR	.276" .354"	●20° positive insert. ●Compatible with 8-corner use insert and round type insert. ●Multi functional milling.	Ø1.250" | Ø8.000"	P M K H	L257
For Cast Iron **VOX400**  90° KAPR	.394"	●Vertical inserts with high strength cutting edge. ●Economical 8 cutting edge inserts. ●Screw-on type.	Ø2.000" | Ø10.000"	K	L076
For General Cutting **ASX400**  90° KAPR	.394"	●Economical due to the use of 4 cutting edges. ●Low resistance due to the 3D design of the curved cutting edge. ●Curved cutting edge and high rigidity holder.	Ø2.000" | Ø10.000"	P M K N S H	L082
Multi Functional Cutting **APX3000**  90° KAPR	.394"	●Air / coolant through. ●Low resistance insert and high rigidity body. ●Ideal chip control. ●High wall accuracy can be produced by using this cutter and unique insert geometry.	Ø1.500" | Ø3.000"	P M K N S H	L098

CLASSIFICATION (ARBOR TYPE)

Product Name · Shape	APMX	Features	Cutter Dia.	Work Material	Page
Multi Functional Cutting **APX4000**  90° KAPR	.591"	●Air / coolant through. ●Low resistance insert and high rigidity body. ●Ideal chip control. ●High wall accuracy can be produced by using this cutter and unique insert geometry.	Ø2.000" | Ø4.000"	P M K S H	L111
Multi Functional Milling NEW **VPX200**  90° KAPR	.315"	●Special designed insert with 4 cutting edges. ●High precision, high quality insert cutting edge with finishing blade. ●With through coolant holes.	Ø1.250" | Ø2.500"	P M K N S H	L126
Multi Functional Milling NEW **VPX300**  90° KAPR	.433"	●Special designed insert with 4 cutting edges. ●High precision, high quality insert cutting edge with finishing blade. ●With through coolant holes.	Ø1.250" | Ø2.500"	P M K N S H	L142
For Aluminum Alloy and Difficult-to-cut Material Cutting **AXD4000**  90° KAPR	.583" .610"	●Air / coolant through. ●Low resistance inserts. ●High balance quality. ●Excellent wall accuracy. ●Multi functional milling.	Ø1.500" | Ø5.000"	P N S	L157
For Aluminum Alloy and Difficult-to-cut Material Cutting **AXD7000**  90° KAPR	.803" .827"	●Air / coolant through. ●Low resistance inserts. ●High balance quality. ●Excellent wall accuracy. ●Multi functional milling.	Ø2.000" | Ø5.000"	P N S	L166
For Aluminum Alloy and Difficult-to-cut Material Cutting **BXD4000**  90° KAPR	.591"	●Air / coolant through. ●Low resistance inserts & high rigidity body. ●The Anti Fly Insert mechanism guarantees secure high-revolution milling.	Ø1.500" | Ø4.000"	P M N S H	L177

CLASSIFICATION (SIDE CUTTER)

Product Name · Shape	APMX	Features	Cutter Dia.	Work Material	Page
VAS400 Side Cutter  90° KAPR	.449" | .480"	●Insert with 4 cutting edges secure clamping. ●Excellent sharpness with low cutting resistance insert. ●Holders can load all corner R. ∗Cutter bodies are only available through special orders.	Ø4.000" | Ø8.000"	P K	L088
VAS500 Side Cutter  90° KAPR	.606" | .638"	●Insert with 4 cutting edges secure clamping. ●Excellent sharpness with low cutting resistance insert. ●Holders can load all corner R. ∗Cutter bodies are only available through special orders.	Ø100 mm | Ø200 mm	P K	L092
VOS400 Side Cutter  90° KAPR	.394"	●For cast iron. ●Cutter body with high-rigidity design. ●Innovative vertical insert. ●Economical 8 cutting edge insert. ∗Cutter bodies are only available through special orders.	Ø80 mm | Ø160 mm	K	L094
ASX400 Side Cutter  90° KAPR	.394"	●High-precision non-grinding insert. ●Economical 4 cutting edge insert. ●Excellent wall surface precision with curved cutting edges and high-precision body. ∗Cutter bodies are only available through special orders.	Ø80 mm | Ø160 mm	P M K	L095

CLASSIFICATION (BORE BORING TOOLS)

Product Name · Shape	APMX	Features	Cutter Dia.	Work Material	Page
BMR  35° KAPR	—	●Double positive breaker. ●12-corner type with right hand. ●Body with peripheral cutting edge run-out regulator. ∗Cutter bodies are only available through special orders.	—	K	L292

CLASSIFICATION (SHANK TYPE)

Product Name · Shape	APMX	Features	Cutter Dia.	Work Material	Page
WSX445  45° KAPR	.197"	● Double sided Z Geometry. ● Smooth chip discharge. ● End mill style.	Ø1.500" | Ø3.000"	P M K N S H	L024
ASX445  45° KAPR	6 mm	● Precision molded 20° positive insert. ● A wide range of chip breakers. ● Screw-on type. ● High rigidity due to employment of a carbide shim.	Ø50 mm Ø63 mm Ø80 mm	P M K N S H	L031
AOX445  45° KAPR	8 mm	● Octagonal double-sided solid CBN insert. ● Economical 16 corner use. (when depth of cut is 3mm) ● High efficiency machining from roughing to finishing. ● Easy operation and cleansing.	Ø50 mm Ø63 mm	K	L069
AJX 	.039" | .079"	● 13°, 15° positive insert. ● Air / coolant through. ● High rigidity due to double clamp structure. ● Suitable for high feed cutting. ● Special designed insert with the use of 3 cutting edges.	Ø.625" | Ø2.000"	P M K S H	L206
ASX400  90° KAPR	.394"	● Economical due to the use of 4 cutting edges. ● Low resistance due to the 3D design of the curved cutting edge. ● Curved cutting edge and high rigidity holder. ● Max. depth of cut .394".	Ø1.250" | Ø2.000"	P M K N S H	L083
VPX200 NEW  90° KAPR	.315"	●Special designed insert with 4 cutting edges. ●High precision, high quality insert cutting edge with finishing blade. ●With through coolant holes.	Ø.625" | Ø1.500"	P M K N S H	L124
VPX300 NEW  90° KAPR	.433"	●Special designed insert with 4 cutting edges. ●High precision, high quality insert cutting edge with finishing blade. ●With through coolant holes.	Ø1.000" | Ø1.500"	P M K N S H	L140
APX3000  90° KAPR	.394"	● Air / coolant through. ● Low resistance insert and high rigidity body. ● Ideal chip control. ● High wall accuracy can be produced by using this cutter and unique insert geometry.	Ø.500" | Ø1.500"	P M K N S H	L096
APX3000 Long Cutting Edge NEW  90° KAPR	1.102" | 2.165"	●High accuracy, high quality vertical wall. ●Low cutting force insert.	Ø.750" | Ø1.500"	P M K N S	L106

Product Name · Shape	APMX	Features	Cutter Dia.	Work Material	Page
APX3000 **Shell Type**  90° KAPR	1.811"	●High accuracy, high quality vertical wall. ●Low cutting force insert. ●With through coolant holes.	Ø2.000"	P M K N S	L106
APX4000  90° KAPR	.591"	● Air / coolant through. ● Low resistance insert and high rigidity body. ● Ideal chip control. ● High wall accuracy can be produced by using this cutter and unique insert geometry.	Ø.750" | Ø1.500"	P M K S H	L110
APX4000 **Long Cutting Edge**  90° KAPR	2.200" 3.300"	●High accuracy, high quality vertical wall. ●Low cutting force insert. ●With through air & coolant holes.	Ø1.500" | Ø2.000"	P M K S	L120
APX4000 **Shell Type**  90° KAPR	.165" 2.200"	●High accuracy, high quality vertical wall. ●Low cutting force insert. ●With through coolant holes.	Ø2.000" Ø2.500"	P M K S	L120
AXD4000  90° KAPR	.583" .610"	● Air / coolant through. ● Low resistance insert. ● High balance quality. ● Excellent wall accuracy. ● Multi functional milling.	Ø1.000" | Ø1.500"	P N S	L156
AXD7000  90° KAPR	.803" .827"	● Air / coolant through. ● Low resistance insert. ● High balance quality. ● Excellent wall accuracy. ● Multi functional milling.	Ø1.250" Ø1.500"	P N S	L166
BXD4000  90° KAPR	.591"	● Air / coolant through. ● Low resistance insert & high rigidity body. ● The Anti Fly Insert mechanism guarantees secure high-revolution milling.	Ø1.000" | Ø1.500"	P M N S H	L176
AQX  90° KAPR	.281" | 1.500"	● Air / coolant through. ● The center bottom cutting edge enables drilling and end milling without prepared hole.	Ø.625" | Ø1.500"	P M K N S H	L196
ARP  R KAPR	.197" .236"	● Air / coolant through. ● Round Insert Cutter for Difficult-to-cut Material. ● High run-out accuracy when indexing inserts. ● Solid clamping system.	Ø1.000" | Ø2.000"	M S	L237

CLASSIFICATION (SHANK TYPE)

Product Name · Shape	APMX	Features	Cutter Dia.	Work Material	Page
ARX  R KAPR	.099" | .138"	● Precision M-class 15°positive insert. ● Effective for various machining applications. ● Air / coolant through.	Ø10 mm | Ø25 mm	P M K H	L248
WJX NEW 	2 mm	●Multi functional milling. ●Negative inserts. ●Stable clamp with dovetail structure. ●Suitable for high feed machining. ●Special designed insert with 6 cutting edges. ●With through coolant holes.	Ø50 mm	P M K S H	L230
BOE  42° KAPR	.276" .354"	● 20°positive insert. ● Compatible with 8-corner use insert and round type insert. ● Multi functional milling.	Ø1.250" | Ø3.125"	P M K H	L256
BRP  R KAPR	.146" | .302"	● 11° positive insert. ● Round shape insert gives strong cutting edge. ● A wide variety of lengths available. ● Suitable for machining of die and mold. ● Max.depth of cut .146"—.302".	Ø.500" | Ø2.500"	P M K S H	L252
LER  90° KAPR	1.063" | 2.500"	● Different helical flute angles prevents chattering. ● Suitable for heavy cutting due to holder rigidity.	Ø1.000" | Ø2.000"	P M K	L194
SPX  90° KAPR	4.300" | 6.181"	● The wavy cutting edge helps to reduce cutting resistance. ● Suitable for heavy machining due to holder rigidity.	Ø1.969" Ø2.000"	P M K S	L180
SPX Shell Type  90° KAPR	2.280"	● The wavy cutting edge helps to reduce cutting resistance. ● Suitable for heavy machining due to holder rigidity.	Ø2.500" Ø3.000"	P M K S	L181
VFX5  90° KAPR	1.000" | 2.900"	● Vertical insert with high strength cutting edge. ● Screw-on type clamping. ● High efficiency milling of titanium alloy.	Ø2.000" | Ø3.000"	S	L186
VFX6  90° KAPR	1.200" | 3.500"	● Vertical insert with high strength cutting edge. ● Screw-on type clamping. ● High efficiency milling of titanium alloy.	Ø2.500" | Ø4.000"	S	L190

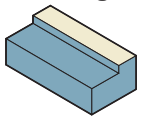
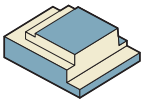
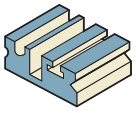
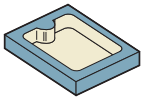
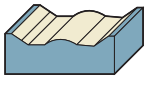
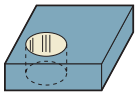
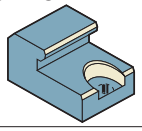
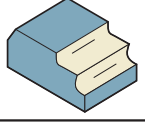
Product Name · Shape	APMX	Features	Cutter Dia.	Work Material	Page
SRF  R KAPR	—	●S-shaped cutting edge provides sharpness similar to that of solid ball nose end mills. ●Highly accurate corner radius tolerance allows for high precision finishing. ●Carbide shank type available.	Ø.375" | Ø1.260"	P K N H	L262
SUF  R KAPR	.060" | .205"	●Highly accurate corner radius tolerance allows for high precision finishing. ●Seamless gash.	Ø.394" | Ø1.250"	P M K H	L262
SRM2  R KAPR	.625" | 1.732"	● Air / coolant through. ● Suitable for roughing to semi-finishing of small and medium molds. ● High rigidity body design. ● Low resistance chipbreaker. ● Key type clamp. ● Shrink fit ready.	Ø.625" | Ø1.250"	P M K S H	L274
SRM2 ϕ40/ϕ50 (ϕ1.575"/ϕ1.969")  R KAPR	2.126" 2.480"	● Best for roughing of molds. ● Low resistance chipbreaker. ● Highly rigid body.	Ø40 mm (Ø1.575") Ø50 mm (Ø1.969")	P K	L286
CFSP  45° KAPR	.327"	● Excellent sharpness with 11°positive inserts. ● 45°chamfer series.	Ø.313" | Ø1.250"	P K	L260
PMF 	0.1 mm	● 2 directional cutting with large overhang. ● No burring so no need for hand finishing. ● High precision multi directional insert ensures highly accurate surfaces.	Ø50 mm | Ø80 mm	P K	L290
PMR 	11 mm	● 1 directional cutting with large overhang. ● Unique shape of curved edge gives high rigidity and low resistance.	Ø50 mm | Ø80 mm	P K	L291

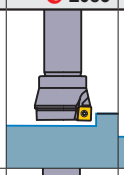
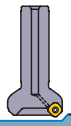
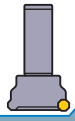
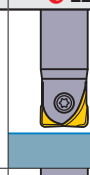
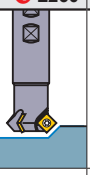
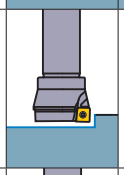
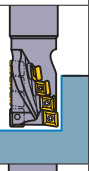
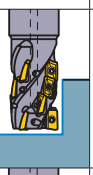
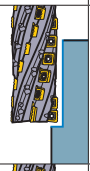
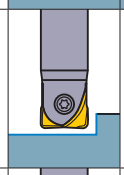
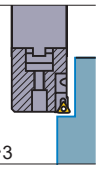
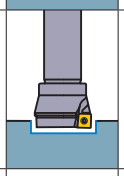
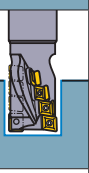
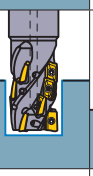
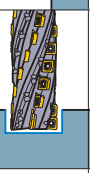
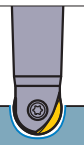
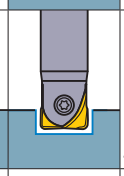
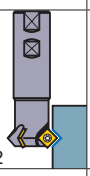
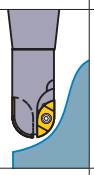
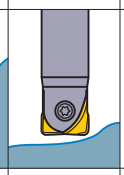
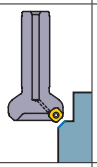
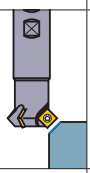
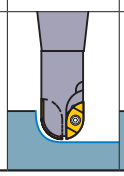
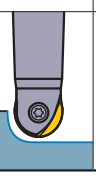
CLASSIFICATION (SCREW-IN TOOLS)

Product Name · Shape	APMX	Features	Cutter Dia.	Work Material	Page
ASX400  90° KAPR	.394"	● Economical due to the use of 4 cutting edges. ● Low resistance due to the 3D design of the curved cutting edge. ● Curved cutting edge and high rigidity holder. ● Max. depth of cut .394".	Ø32 mm Ø40 mm	P M K N S H	L084
APX3000  90° KAPR	.394"	● Air / coolant through. ● Low resistance insert and high rigidity body. ● Ideal chip control. ● High wall accuracy can be produced by using this cutter and unique insert geometry.	Ø.625" | Ø1.375"	P M K N S H	L102
APX4000  90° KAPR	.591"	● Air / coolant through. ● Low resistance insert and high rigidity body. ● Ideal chip control. ● High wall accuracy can be produced by using this cutter and unique insert geometry.	Ø1.000" | Ø1.375"	P M K S H	L115
AQX  90° KAPR	7.4 mm | 18.0 mm	● Air / coolant through. ● The center bottom cutting edge enables drilling and end milling without prepared hole.	Ø16 mm | Ø40 mm	P M K N S H	L199
VPX200 NEW  90° KAPR	.315"	● Special designed insert with 4 cutting edges. ● High precision, high quality insert cutting edge with finishing blade. ● With through coolant holes.	Ø.625" | Ø1.500"	P M K N S H	L125
VPX300 NEW  90° KAPR	.433"	● Special designed insert with 4 cutting edges. ● High precision, high quality insert cutting edge with finishing blade. ● With through coolant holes.	Ø1.000" | Ø1.500"	P M K N S H	L141
AJX 	.039" | .079"	● 13°, 15° positive insert. ● Air / coolant through. ● High rigidity due to double clamp structure. ● Suitable for high feed cutting. ● Special designed insert with the use of 3 cutting edges.	Ø.625" | Ø1.375"	P M K S H	L209
ARP  R KAPR	.197" | .236"	● Air / coolant through. ● Round Insert Cutter for Difficult-to-cut Material. ● High run-out accuracy when indexing inserts. ● Solid clamping system.	Ø1.000" | Ø1.500"	M S	L241

Product Name · Shape	APMX	Features	Cutter Dia.	Work Material	Page
ARX  R KAPR	.118"	● Precision M-class 15°positive insert. ● Effective for various machining applications. ● Air / coolant through.	Ø16 mm | Ø25 mm	P M K H	L249
SRF  R KAPR	—	●S-shaped cutting edge provides sharpness similar to that of solid ball nose end mills. ●Highly accurate corner radius tolerance allows for high precision finishing. ●With through coolant holes.	Ø.625" Ø.750"	P K N H	L267
SUF  R KAPR	1.5 mm | 5.2 mm	●Highly accurate corner radius tolerance allows for high precision finishing. ●Seamless gash. ●With through coolant holes.	Ø16 mm | Ø32 mm	P M K H	L268
SRM2  R KAPR	.551" | 1.102"	●Suitable for roughing to semi-finishing of small and medium molds. ●High rigidity body design. ●Low resistance chipbreaker. ●With through coolant holes.	Ø.750" | Ø1.250"	P M K S H	L278
PMC 	1.5 mm | 3.5 mm	●For under-cutting trimmed part of press mold. ●2 directional cutting with large overhang. ●With through coolant holes.	Ø25 mm Ø32 mm Ø40 mm	P K	L288

SELECTION CHART

Cutting Mode \ Product Name	VPX200 VPX300 NEW	APX3000 APX4000	AXD4000 AXD7000	BXD4000	WJX NEW	AJX	AQX	ARX	ARP BRP	BOE
	Multi Functional Type									
										
	L124 L140	L096 L110	L156 L166	L176	L230	L206	L196	L248	L237 L252	L256
Face Milling										
Shoulder Milling										
Slot Milling										
Pocket Milling										
Copy Milling										
Helical Drilling										
Chamfer Milling										
Radius Milling										

	General Type			Long Cutting Edge Type				Ball/Radius Type			Special Purpose Type	
	ASX400	**ASX445** **WSX445**	**AOX445**	**LER**	NEW **APX3000** **APX4000** Long Cutting Edge Type	**VFX5** **VFX6**	**SPX**	**SRM2**	**SRF** For Finishing	**SUF** For Finishing	**CFSP**	**PMC**✶1 **PMF** **PMR**
												
	➲ L083	➲ L031 ➲ L024	➲ L069	➲ L194	➲ L106 ➲ L120	➲ L186 ➲ L190	➲ L180	➲ L274 ➲ L286	➲ L262	➲ L262	➲ L260	➲ L288 ➲ L290 ➲ L291
												
												
												
												
												
												

✶1 Vertical Feed Milling ✶2 V-Slot Milling ✶3 Plunging

FACE MILLING
<GENERAL CUTTING>

45° KAPR

WSX445

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron	Non-ferrous Metal	Heat Resistant Alloy	Hardened Steel



Fig.1
ø1.5"
ø2"
ø2.5"
ø3"

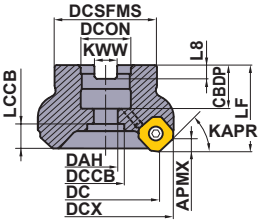


Fig.2
ø4"
ø5"
ø6"

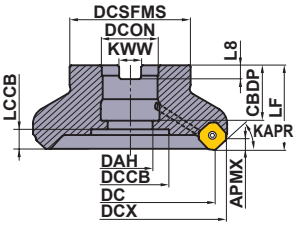
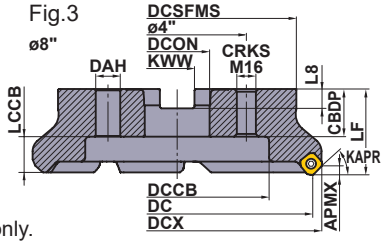


Fig.3
ø8"



Right hand tool holder only.

■ARBOR TYPE RIGHT HAND TOOL HOLDER

KAPR : 45°
GAMP: +17°
GAMF: -6°—+1°

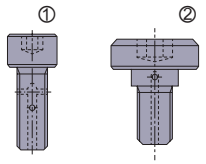
DC = inch size, DCON = Inch size (inch)

DC	Order Number	Stock	∗1 Coolant Thru	Number of Teeth	Pitch	DCX	LF	DCON	WT(lbs)	APMX	Fig.
1.500	**WSX445UR1503SA**	●	Y	3	Coarse	2.005	1.750	.500	.8	.197	1
1.500	**WSX445UR1504SA**	●	Y	4	Fine	2.005	1.750	.500	.7	.197	1
2.000	**WSX445UR0203AA**	●	Y	3	Coarse	2.506	1.750	.750	1.2	.197	1
2.000	**WSX445UR0204AA**	●	Y	4	Fine	2.506	1.750	.750	1.1	.197	1
2.000	**WSX445UR0205AA**	●	Y	5	Extra Fine	2.506	1.750	.750	1.1	.197	1
2.500	**WSX445UR2504CA**	●	Y	4	Coarse	3.006	2.000	1.000	2.0	.197	1
2.500	**WSX445UR2505CA**	●	Y	5	Fine	3.006	2.000	1.000	2.0	.197	1
2.500	**WSX445UR2506CA**	●	Y	6	Extra Fine	3.006	2.000	1.000	1.9	.197	1
3.000	**WSX445UR0304CA**	●	Y	4	Coarse	3.506	2.000	1.000	2.6	.197	1
3.000	**WSX445UR0306CA**	●	Y	6	Fine	3.506	2.000	1.000	2.5	.197	1
3.000	**WSX445UR0308CA**	●	Y	8	Extra Fine	3.506	2.000	1.000	2.4	.197	1
4.000	**WSX445UR0405EA**	●	Y	5	Coarse	4.506	2.500	1.500	5.9	.197	2
4.000	**WSX445UR0407EA**	●	Y	7	Fine	4.506	2.500	1.500	5.8	.197	2
4.000	**WSX445UR0410EA**	●	Y	10	Extra Fine	4.506	2.500	1.500	5.6	.197	2
5.000	**WSX445UR0506EA**	●	Y	6	Coarse	5.506	2.500	1.500	8.5	.197	2
5.000	**WSX445UR0508EA**	●	Y	8	Fine	5.506	2.500	1.500	8.3	.197	2
5.000	**WSX445UR0512EA**	●	Y	12	Extra Fine	5.506	2.500	1.500	8.0	.197	2
6.000	**WSX445UR0607EA**	●	Y	7	Coarse	6.506	2.500	1.500	10.6	.197	2
6.000	**WSX445UR0610EA**	●	Y	10	Fine	6.506	2.500	1.500	10.4	.197	2
6.000	**WSX445UR0616EA**	●	Y	16	Extra Fine	6.506	2.500	1.500	9.9	.197	2
8.000	**WSX445UR0808MN**	●	N	8	Coarse	8.506	2.500	2.500	19.1	.197	3
8.000	**WSX445UR0812MN**	●	N	12	Fine	8.506	2.500	2.500	18.8	.197	3
8.000	**WSX445UR0820MN**	●	N	20	Extra Fine	8.506	2.500	2.500	18.3	.197	3

∗1 Y=Yes, N=No
Note 1) The cutter body includes a set bolt for an arbor.

Arbor Type Mounting Dimensions

DC	Set Bolt	Geometry
1.500	HSCU25011H	①
2.000	HSCU37513H	
2.500	HSCU50014H	
3.000	HSCU50014H	
4.000	MBAU75016H	②
5.000	MBAU75016H	
6.000	MBAU75016H	
8.000	—	—



(inch)

DCON	DC	Order Number	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
.500	1.500	**WSX445UR1503SA**	.630	.276	.433	.581	1.437	.250	.156	1
.500	1.500	**WSX445UR1504SA**	.630	.276	.433	.581	1.437	.250	.156	1
.750	2.000	**WSX445UR0203AA**	.748	.413	.630	.620	1.750	.313	.187	1
.750	2.000	**WSX445UR0204AA**	.748	.413	.630	.620	1.750	.313	.187	1
.750	2.000	**WSX445UR0205AA**	.748	.413	.630	.620	1.750	.313	.187	1
1.000	2.500	**WSX445UR2504CA**	.945	.539	.827	.671	2.190	.375	.219	1
1.000	2.500	**WSX445UR2505CA**	.945	.539	.827	.671	2.190	.375	.219	1
1.000	2.500	**WSX445UR2506CA**	.945	.539	.827	.671	2.190	.375	.219	1
1.000	3.000	**WSX445UR0304CA**	.945	.539	.827	.671	2.190	.375	.219	1
1.000	3.000	**WSX445UR0306CA**	.945	.539	.827	.671	2.190	.375	.219	1
1.000	3.000	**WSX445UR0308CA**	.945	.539	.827	.671	2.190	.375	.219	1
1.500	4.000	**WSX445UR0405EA**	1.417	1.181	2.205	.778	3.500	.625	.375	2
1.500	4.000	**WSX445UR0407EA**	1.417	1.181	2.205	.778	3.500	.625	.375	2
1.500	4.000	**WSX445UR0410EA**	1.417	1.181	2.205	.778	3.500	.625	.375	2
1.500	5.000	**WSX445UR0506EA**	1.417	1.181	2.205	.778	3.813	.625	.375	2
1.500	5.000	**WSX445UR0508EA**	1.417	1.181	2.205	.778	3.813	.625	.375	2
1.500	5.000	**WSX445UR0512EA**	1.417	1.181	2.205	.778	3.813	.625	.375	2
1.500	6.000	**WSX445UR0607EA**	1.417	1.181	2.205	.778	3.813	.625	.375	2
1.500	6.000	**WSX445UR0610EA**	1.417	1.181	2.205	.778	3.813	.625	.375	2
1.500	6.000	**WSX445UR0616EA**	1.417	1.181	2.205	.778	3.813	.625	.375	2
2.500	8.000	**WSX445UR0808MN**	1.378	.709	5.512	1.053	6.890	1.000	.560	3
2.500	8.000	**WSX445UR0812MN**	1.378	.709	5.512	1.053	6.890	1.000	.560	3
2.500	8.000	**WSX445UR0820MN**	1.378	.709	5.512	1.053	6.890	1.000	.560	3

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001



Metric Standard

For inch arbors

Fig.1

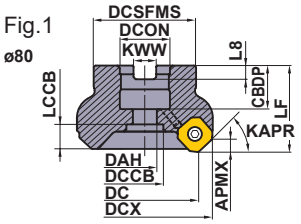


Fig.2

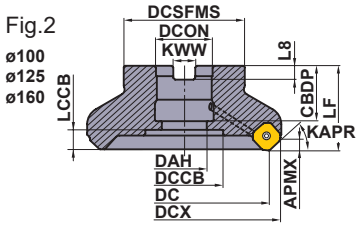
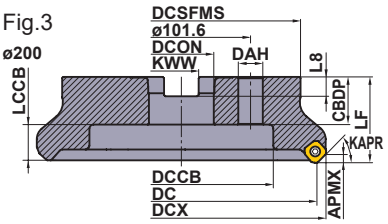


Fig.3

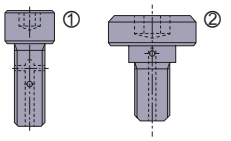


Right hand tool holder shown.

■ARBOR TYPE RIGHT HAND TOOL HOLDER

KAPR : 45°
GAMP : +17°
GAMF : -6°—+1°

DC	Set Bolt	Geometry
ϕ80	HSC12035H	①
ϕ100	MBA16033H	②
ϕ125	MBA20040H	
ϕ160	MBA24045H	
ϕ200	—	



DC = mm size, DCON = Inch size

(mm)

DC	Order Number	Stock	✶1 Coolant Thru	Number of Teeth	Pitch	DCX	LF	DCON		WT(kg)	APMX	Fig.
80	**WSX445R08004CA**	★	Y	4	Coarse	92.9	50	25.4	[1.00"]	1.3	5	1
80	**WSX445R08006CA**	★	Y	6	Fine	92.9	50	25.4	[1.00"]	1.2	5	1
80	**WSX445R08008CA**	★	Y	8	Extra Fine	92.9	50	25.4	[1.00"]	1.1	5	1
100	**WSX445R10005DA**	★	Y	5	Coarse	112.9	50	31.75	[1.25"]	1.8	5	2
100	**WSX445R10007DA**	★	Y	7	Fine	112.9	50	31.75	[1.25"]	1.7	5	2
100	**WSX445R10010DA**	★	Y	10	Extra Fine	112.9	50	31.75	[1.25"]	1.6	5	2
125	**WSX445R12506EA**	★	Y	6	Coarse	137.9	63	38.1	[1.50"]	3.2	5	2
125	**WSX445R12508EA**	★	Y	8	Fine	137.9	63	38.1	[1.50"]	3.1	5	2
125	**WSX445R12512EA**	★	Y	12	Extra Fine	137.9	63	38.1	[1.50"]	3.0	5	2
160	**WSX445R16007FA**	★	Y	7	Coarse	172.9	63	50.8	[2.00"]	4.9	5	2
160	**WSX445R16010FA**	★	Y	10	Fine	172.9	63	50.8	[2.00"]	4.8	5	2
160	**WSX445R16016FA**	★	Y	16	Extra Fine	172.8	63	50.8	[2.00"]	4.6	5	2
200	**WSX445R20008KN**	★	N	8	Coarse	212.9	63	47.625	[1.85"]	8.7	5	3
200	**WSX445R20012KN**	★	N	12	Fine	212.9	63	47.625	[1.85"]	8.6	5	3
200	**WSX445R20020KN**	★	N	20	Extra Fine	212.8	63	47.625	[1.85"]	8.4	5	3

■ARBOR TYPE LEFT HAND TOOL HOLDER

DC = mm size, DCON = Inch size

(mm)

DC	Order Number	Stock	✶1 Coolant Thru	Number of Teeth	Pitch	DCX	LF	DCON		WT(kg)	APMX	Fig.
80	**WSX445L08004CA**	★	Y	4	Coarse	92.9	50	25.4	[1.00"]	1.3	5	1
100	**WSX445L10005DA**	★	Y	5	Coarse	112.9	50	31.75	[1.25"]	1.8	5	2
125	**WSX445L12506EA**	★	Y	6	Coarse	137.9	63	38.1	[1.50"]	3.2	5	2
160	**WSX445L16007FA**	★	Y	7	Coarse	172.9	63	50.8	[2.00"]	4.9	5	2
200	**WSX445L20008KN**	★	N	8	Coarse	212.9	63	47.625	[1.85"]	8.7	5	3

✶1 Y=Yes, N=No
Note 1) Set bolt not included.



Metric Standard

For metric arbors

Fig.1
ø40
ø50
ø63
ø80

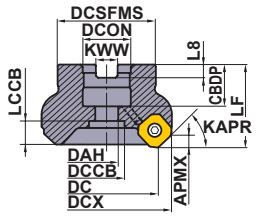


Fig.2
ø100
ø125

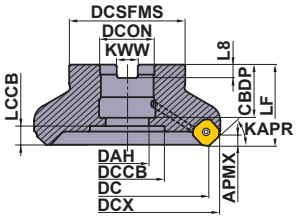


Fig.3
ø160

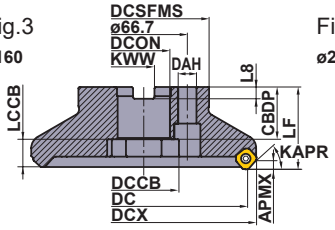
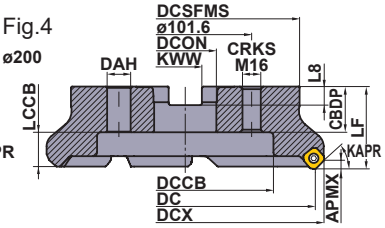
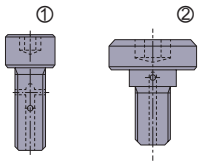


Fig.4
ø200



Right hand tool holder shown.

DC	Set Bolt	Geometry
ϕ40	HSC08025H	①
ϕ50	HSC10030H	
ϕ63	HSC10030H	
ϕ80	HSC12035H	
ϕ100	MBA16033H	②
ϕ125	MBA20040H	
ϕ160	MBA20040H	
ϕ200	—	



■ARBOR TYPE RIGHT HAND TOOL HOLDER

KAPR : 45°
GAMP : +17°
GAMF : -6°—+1°

DC = mm size, DCON = mm size

(mm)

DC	Order Number	Stock	✶1 Coolant Thru	Number of Teeth	Pitch	DCX	LF	DCON	WT(kg)	APMX	Fig.
40	**WSX445-040A03AR**	★	Y	3	Coarse	52.8	40	16	0.3	5	1
40	**WSX445-040A04AR**	★	Y	4	Fine	52.8	40	16	0.3	5	1
50	**WSX445-050A03AR**	★	Y	3	Coarse	62.9	40	22	0.5	5	1
50	**WSX445-050A04AR**	★	Y	4	Fine	62.9	40	22	0.4	5	1
50	**WSX445-050A05AR**	★	Y	5	Extra Fine	62.9	40	22	0.41	5	1
63	**WSX445-063A04AR**	★	Y	4	Coarse	75.9	40	22	0.6	5	1
63	**WSX445-063A05AR**	★	Y	5	Fine	75.9	40	22	0.61	5	1
63	**WSX445-063A06AR**	★	Y	6	Extra Fine	75.9	40	22	0.58	5	1
80	**WSX445-080A04AR**	★	Y	4	Coarse	92.9	50	27	1.3	5	1
80	**WSX445-080A06AR**	★	Y	6	Fine	92.9	50	27	1.2	5	1
80	**WSX445-080A08AR**	★	Y	8	Extra Fine	92.9	50	27	1.14	5	1
100	**WSX445-100B05AR**	★	Y	5	Coarse	112.9	50	32	1.9	5	2
100	**WSX445-100B07AR**	★	Y	7	Fine	112.9	50	32	1.87	5	2
100	**WSX445-100B10AR**	★	Y	10	Extra Fine	112.9	50	32	1.77	5	2
125	**WSX445-125B06AR**	★	Y	6	Coarse	137.9	63	40	3.4	5	2
125	**WSX445-125B08AR**	★	Y	8	Fine	137.9	63	40	3.36	5	2
125	**WSX445-125B12AR**	★	Y	12	Extra Fine	137.9	63	40	3.22	5	2
160	**WSX445-160C07NR**	★	N	7	Coarse	172.9	63	40	4.9	5	3
160	**WSX445-160C10NR**	★	N	10	Fine	172.9	63	40	4.81	5	3
160	**WSX445-160C16NR**	★	N	16	Extra Fine	172.8	63	40	4.64	5	3
200	**WSX445-200C08NR**	★	N	8	Coarse	212.9	63	60	7.5	5	4
200	**WSX445-200C12NR**	★	N	12	Fine	212.9	63	60	7.41	5	4
200	**WSX445-200C20NR**	★	N	20	Extra Fine	212.8	63	60	7.17	5	4

■ARBOR TYPE LEFT HAND TOOL HOLDER

DC = mm size, DCON = mm size

(mm)

DC	Order Number	Stock	✶1 Coolant Thru	Number of Teeth	Pitch	DCX	LF	DCON	WT(kg)	APMX	Fig.
80	**WSX445-080A04AL**	★	Y	4	Coarse	92.9	50	27	1.3	5	1
100	**WSX445-100B05AL**	★	Y	5	Coarse	112.9	50	32	1.9	5	2
125	**WSX445-125B06AL**	★	Y	6	Coarse	137.9	63	40	3.4	5	2
160	**WSX445-160C07NL**	★	N	7	Coarse	172.9	63	40	4.9	5	3

✶1 Y=Yes, N=No
Note 1) Set bolt not included.

MOUNTING DIMENSION ➤ L022
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

Arbor Type Mounting Dimensions

Fig.1
ø40
ø50
ø63
ø80

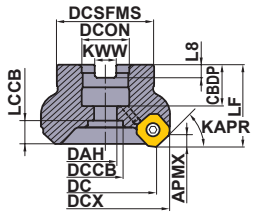


Fig.2
ø100
ø125
ø160

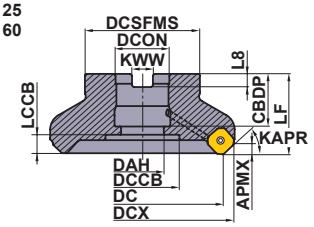
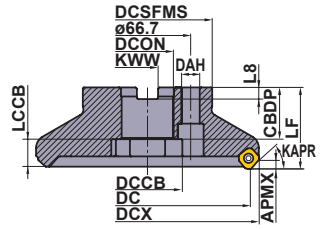


Fig.3
ø160



Right hand tool holder shown.

(mm)

DCON		DC	Order Number	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
16		40	**WSX445-040A03AR**	18	9	14	13.3	37	8.4	5.6	1
16		40	**WSX445-040A04AR**	18	9	14	13.3	37	8.4	5.6	1
22		50	**WSX445-050A03AR**	20	11	17	11.3	47	10.4	6.3	1
22		50	**WSX445-050A04AR**	20	11	17	11.3	47	10.4	6.3	1
22		50	**WSX445-050A05AR**	20	11	17	11.3	47	10.4	6.3	1
22		63	**WSX445-063A04AR**	20	11	17	11.3	50	10.4	6.3	1
22		63	**WSX445-063A05AR**	20	11	17	11.3	50	10.4	6.3	1
22		63	**WSX445-063A06AR**	20	11	17	11.3	50	10.4	6.3	1
25.4	[1.00"]	80	**WSX445R08004CA**	26	13	20	14.3	56	9.5	6	1
25.4	[1.00"]	80	**WSX445R08006CA**	26	13	20	14.3	56	9.5	6	1
25.4	[1.00"]	80	**WSX445R08008CA**	26	13	20	14.3	56	9.5	6	1
25.4	[1.00"]	80	**WSX445L08004CA**	26	13	20	14.3	56	9.5	6	1
27		80	**WSX445-080A04AR**	23	13	20	14.3	56	12.4	7	1
27		80	**WSX445-080A06AR**	23	13	20	14.3	56	12.4	7	1
27		80	**WSX445-080A08AR**	23	13	20	14.3	56	12.4	7	1
27		80	**WSX445-080A04AL**	23	13	20	14.3	56	12.4	7	1
31.75	[1.25"]	100	**WSX445R10005DA**	32	26	45	11.3	70	12.7	8	2
31.75	[1.25"]	100	**WSX445R10007DA**	32	26	45	11.3	70	12.7	8	2
31.75	[1.25"]	100	**WSX445R10010DA**	32	26	45	11.3	70	12.7	8	2
31.75	[1.25"]	100	**WSX445L10005DA**	32	26	45	11.3	70	12.7	8	2
32		100	**WSX445-100B05AR**	26	26	45	16.3	78	14.4	8	2
32		100	**WSX445-100B07AR**	26	26	45	16.3	78	14.4	8	2
32		100	**WSX445-100B10AR**	26	26	45	16.3	78	14.4	8	2
32		100	**WSX445-100B05AL**	26	26	45	16.3	78	14.4	8	2
38.1	[1.50"]	125	**WSX445R12506EA**	36	30	56	19.3	80	15.9	10	2
38.1	[1.50"]	125	**WSX445R12508EA**	36	30	56	19.3	80	15.9	10	2
38.1	[1.50"]	125	**WSX445R12512EA**	36	30	56	19.3	80	15.9	10	2
38.1	[1.50"]	125	**WSX445L12506EA**	36	30	56	19.3	80	15.9	10	2
40		125	**WSX445-125B06AR**	28	30	56	21.3	89	16.4	9	2
40		125	**WSX445-125B08AR**	28	30	56	21.3	89	16.4	9	2
40		125	**WSX445-125B12AR**	28	30	56	21.3	89	16.4	9	2
40		125	**WSX445-125B06AL**	28	30	56	21.3	89	16.4	9	2
40		160	**WSX445-160C07NR**	40	14	56	21.3	100	16.4	9	3
40		160	**WSX445-160C10NR**	40	14	56	21.3	100	16.4	9	3
40		160	**WSX445-160C16NR**	40	14	56	21.3	100	16.4	9	3
40		160	**WSX445-160C07NL**	40	14	56	21.3	100	16.4	9	3

Fig.4
ø200

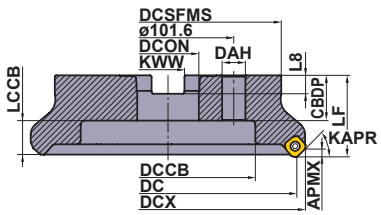
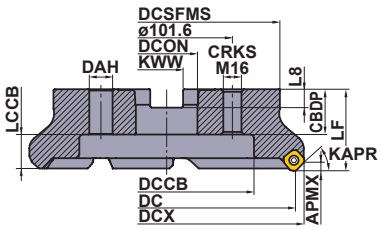


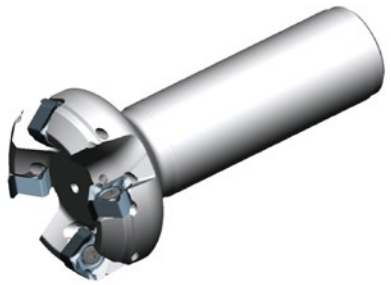
Fig.5
ø200

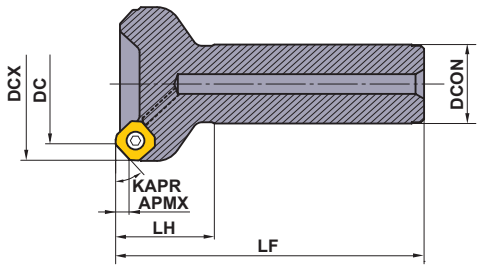


Right hand tool holder shown.

(mm)

DCON		DC	Order Number	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
47.625	[1.85"]	200	**WSX445R20008KN**	35	18	135	26.3	175	25.4	14.22	4
47.625	[1.85"]	200	**WSX445R20012KN**	35	18	135	26.3	175	25.4	14.22	4
47.625	[1.85"]	200	**WSX445R20020KN**	35	18	135	26.3	175	25.4	14.22	4
47.625	[1.85"]	200	**WSX445L20008KN**	35	18	135	26.3	175	25.4	14.22	4
50.8	[2.00"]	160	**WSX445R16007FA**	38	40	72	16.3	100	19.1	11	2
50.8	[2.00"]	160	**WSX445R16010FA**	38	40	72	16.3	100	19.1	11	2
50.8	[2.00"]	160	**WSX445R16016FA**	38	40	72	16.3	100	19.1	11	2
50.8	[2.00"]	160	**WSX445L16007FA**	38	40	72	16.3	100	19.1	11	2
60		200	**WSX445-200C08NR**	32	18	135	29.3	160	25.7	14.22	5
60		200	**WSX445-200C12NR**	32	18	135	29.3	160	25.7	14.22	5
60		200	**WSX445-200C20NR**	32	18	135	29.3	160	25.7	14.22	5





Right hand tool holder only.

SHANK TYPE

(inch)

Type	Order Number	Stock R	∗1 Coolant Thru	Number of Teeth	DC	DCX	LF	DCON	LH	WT (lbs)	APMX
Coarse Pitch	**WSX445UR2403FA20M**	●	Y	3	1.500	2.005	4.750	1.250	1.500	1.698	.197
	WSX445UR3203FA20M	●	Y	3	2.000	2.506	4.750	1.250	1.500	2.050	.197
	WSX445UR4004FA20M	●	Y	4	2.500	3.006	4.750	1.250	1.500	2.469	.197
	WSX445UR4804FA20M	●	Y	4	3.000	3.506	4.750	1.250	1.500	2.976	.197
Fine Pitch	**WSX445UR2404FA20M**	●	Y	4	1.500	2.005	4.750	1.250	1.500	1.631	.197
	WSX445UR3204FA20M	●	Y	4	2.000	2.506	4.750	1.250	1.500	1.984	.197
	WSX445UR4005FA20M	●	Y	5	2.500	3.006	4.750	1.250	1.500	2.381	.197
	WSX445UR4806FA20M	●	Y	6	3.000	3.506	4.750	1.250	1.500	2.844	.197

∗1 Y=Yes, N=No

Metric Standard

STRAIGHT SHANK TYPE

(mm)

Type	Order Number	Stock R	∗1 Coolant Thru	Number of Teeth	DC	DCX	LF	DCON	LH	WT (kg)	APMX
Coarse Pitch	**WSX445R4003SA32M**	★	Y	3	40	52.8	125	32	40	0.84	5
	WSX445R5003SA32M	★	Y	3	50	62.9	125	32	40	0.98	5
	WSX445R6304SA32M	★	Y	4	63	75.9	125	32	40	1.18	5
	WSX445R8004SA32M	★	Y	4	80	92.9	125	32	40	1.51	5
Fine Pitch	**WSX445R4004SA32M**	★	Y	4	40	52.8	125	32	40	0.81	5
	WSX445R5004SA32M	★	Y	4	50	62.9	125	32	40	0.95	5
	WSX445R6305SA32M	★	Y	5	63	75.9	125	32	40	1.15	5
	WSX445R8006SA32M	★	Y	6	80	92.9	125	32	40	1.45	5

∗1 Y=Yes, N=No

SPARE PARTS

Arbor Type	 ∗ Clamp Screw	 Wrench (Insert)
WSX445	TPS4R	TIP15W

∗ Clamp Torque (lbf-in) : TPS4R=31

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

INSERTS WITH BREAKER

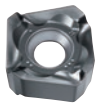
(inch)

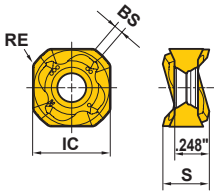
Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat Resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting
✠ : Unstable Cutting

Edge Preparation (Honing) :
E : Round **F** : Sharp

Shape	Order Number	Class	Hand	Edge Preparation	Coated									Cermet	Carbide		IC	S	BS	RE	Geometry
					MC5020	MP6120	MP6130	MP7130	MP7140	MP9120	MP9130	VP15TF	VP20RT	MX3030	TF15						
	SNGU140812ANFR-L	G	R	F											●		.551	.331	.059	.047	
	SNGU140812ANER-L	G	R	E	●	●	●	●	●	●	●	●	●	●			.551	.331	.059	.047	
	SNGU140812ANER-M	G	R	E	●	●	●	●	●	●	●	●	●	●			.551	.331	.059	.047	
	SNMU140812ANER-M	M	R	E	●	●	●	●	●	●	●	●	●	●			.551	.331	.059	.047	
	SNMU140812ANER-R	M	R	E	●	●	●					●	●				.551	.331	.059	.047	
	SNMU140812ANER-H	M	R	E	●	●	●					●	●				.551	.331	.059	.047	
NEW	SNGU140812ANFL-L	G	L	F											●		.551	.331	.059	.047	
NEW	SNGU140812ANEL-L	G	L	E	●	●	●					●		●			.551	.331	.059	.047	
	SNGU140812ANEL-M	G	L	E	●	●	●					●		●			.551	.331	.059	.047	
	SNMU140812ANEL-M	M	L	E	●	●	●					●		●			.551	.331	.059	.047	
	SNMU140812ANEL-R	M	L	E	●	●	●					●					.551	.331	.059	.047	





Right hand insert shown.

● = NEW

WIPER INSERTS

(inch)

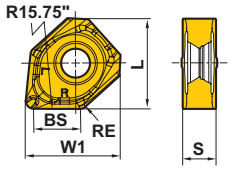
Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting
✠ : Unstable Cutting

Honing : **E** : Round

Shape	Order Number	Class	Honing	Coated			Cermet	L	W1	S	BS	RE	Geometry
				MC5020	MP6120	VP15TF	NEW MX3020						
	WNGU1406ANEN8C-M	G	E	●	●	●	●	.664	.664	.236	.315	.039	





● = NEW

■ Instructions for Use of Wiper Inserts

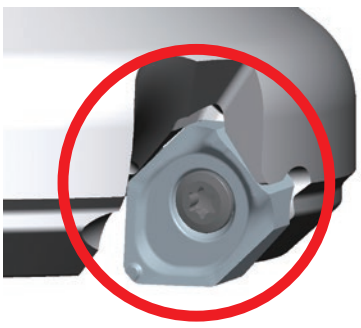


Fig.1

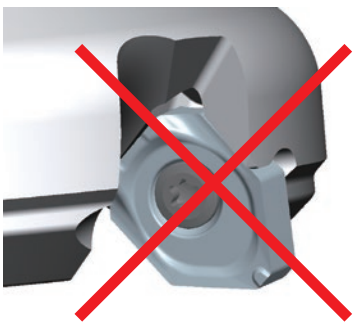


Fig.2

Wiper inserts for WSX445 are two-cornered. Please set as shown in Fig.1.
Excellent surface finish can be achieved with one wiper.
Set more than 2 wiper inserts, equally spaced, when the feed per revolution is larger than .315 IPR.

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

RECOMMENDED CUTTING CONDITIONS

■ Dry Cutting Condition

	Work Material	Hardness	1st Recommendation	2nd Recommendation	**vc** (SFM)	Finish Cutting	
						fz (IPT)	**ap**
P						L Breaker	
	Mild Steel	≤180HB	MP6120	VP15TF	820 (655—985)	.006 (.004—.008)	≤.039
			MP6130	VP20RT	785 (620—950)	.006 (.004—.008)	≤.039
			MX3030	—	590 (425—755)	.006 (.004—.008)	≤.039
	Carbon Steel Alloy Steel	180—350HB	MP6120	VP15TF	720 (560—885)	.006 (.004—.008)	≤.039
			MP6130	VP20RT	655 (490—820)	.006 (.004—.008)	≤.039
			MX3030	—	490 (395—590)	.006 (.004—.008)	≤.039
	Alloy Tool Steel	≤ 350HB (Annealing)	MP6120	VP15TF	720 (560—885)	.006 (.004—.008)	≤.039
			MP6130	VP20RT	655 (490—820)	.006 (.004—.008)	≤.039
			MX3030	—	490 (395—590)	.006 (.004—.008)	≤.039
	Pre-Hardened Steel	35—45HRC	MP6120	VP15TF	460 (330—590)	.006 (.004—.008)	≤.039
			MP6130	VP20RT	395 (295—490)	.006 (.004—.008)	≤.039
M						L Breaker	
	Austenitic Stainless Steel	≤200HB	MP7130	VP15TF	655 (490—820)	.006 (.004—.008)	≤.039
			MP7140	VP20RT	655 (490—820)	.006 (.004—.008)	≤.039
			MX3030	—	425 (330—590)	.006 (.004—.008)	≤.039
	Austenitic Stainless Steel	>200HB	MP7130	VP15TF	560 (395—720)	.006 (.004—.008)	≤.039
			MP7140	VP20RT	560 (395—720)	.006 (.004—.008)	≤.039
	Duplex Stainless Steel	≤ 280HB	MP7130	VP15TF	525 (360—690)	.006 (.004—.008)	≤.039
			MP7140	VP20RT	525 (360—690)	.006 (.004—.008)	≤.039
	Precipitation Hardening Stainless Steel	< 450HB	MP7130	VP15TF	490 (330—655)	.006 (.004—.008)	≤.039
			MP7140	VP20RT	490 (330—655)	.006 (.004—.008)	≤.039
K						L Breaker	
	Gray Cast Iron	≤350MPa	MC5020	—	720 (655—885)	.006 (.004—.008)	≤.039
			VP15TF	—	590 (425—820)	.006 (.004—.008)	≤.039
			VP20RT	—	560 (395—785)	.006 (.004—.008)	≤.039
			MX3030	—	490 (395—590)	.006 (.004—.008)	≤.039
	Ductile Cast Iron	≤450MPa	MC5020	—	655 (590—820)	.006 (.004—.008)	≤.039
			VP15TF	VP20RT	525 (360—785)	.006 (.004—.008)	≤.039
	Ductile Cast Iron	≤800MPa	MC5020	—	655 (590—820)	.006 (.004—.008)	≤.039
			VP15TF	—	525 (360—785)	.006 (.004—.008)	≤.039
			VP20RT	—	490 (330—655)	.006 (.004—.008)	≤.039
H						M Breaker	
	Hardened Steel	40—55HRC	VP15TF	—	165 (100—230)	.002 (.002—.004)	≤.039
	Hardened Steel	55—62HRC	VP15TF	—	130 (65—165)	.002 (.002—.004)	≤.039

Note 1) Refer to the table above and set the cutting conditions to match the application.
Note 2) Wet cutting is recommended, when focusing on the surface finish. (Life is lower than dry cutting.)

(inch)

	Light Cutting		Medium Cutting		Rough Cutting		Heavy Cutting	
	fz (IPT)	**ap**	**fz** (IPT)	**ap**	**fz** (IPT)	**ap**	**fz** (IPT)	**ap**
	L,M Breaker		M Breaker		M,R Breaker		R,H Breaker	
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	L,M Breaker		M Breaker					
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	—	—	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	L,M Breaker		M Breaker		M,R Breaker		R,H Breaker	
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	M,R Breaker		R,H Breaker					
	.002 (.002—.004)	≤.059	.004 (.002—.006)	≤.079	—	—	—	—
	.002 (.002—.004)	≤.059	.004 (.002—.006)	≤.079	—	—	—	—

RECOMMENDED CUTTING CONDITIONS

■ Wet Cutting Condition

	Work Material	Hardness	1st Recommendation	2nd Recommendation	vc (SFM)	Finish Cutting	
						fz (IPT)	ap
P						L Breaker	
	Mild Steel	≤ 180HB	MP6120	VP15TF	490 (330—655)	.006 (.004—.008)	≤.039
			MP6130	VP20RT	490 (330—655)	.006 (.004—.008)	≤.039
	Carbon Steel Alloy Steel	180—350HB	MP6120	VP15TF	395 (260—525)	.006 (.004—.008)	≤.039
			MP6130	VP20RT	395 (260—525)	.006 (.004—.008)	≤.039
	Alloy Tool Steel	≤ 350HB (Annealing)	MP6120	VP15TF	395 (260—525)	.006 (.004—.008)	≤.039
			MP6130	VP20RT	395 (260—525)	.006 (.004—.008)	≤.039
	Pre-Hardened Steel	35—45HRC	MP6120	VP15TF	330 (260—395)	.006 (.004—.008)	≤.039
			MP6130	VP20RT	330 (260—395)	.006 (.004—.008)	≤.039
M						L Breaker	
	Austenitic Stainless Steel	≤ 200HB	MP7130	VP15TF	425 (260—590)	.006 (.004—.008)	≤.039
			MP7140	VP20RT	425 (260—590)	.006 (.004—.008)	≤.039
	Austenitic Stainless Steel	> 200HB	MP7130	VP15TF	330 (260—490)	.006 (.004—.008)	≤.039
			MP7140	VP20RT	330 (260—490)	.006 (.004—.008)	≤.039
	Duplex Stainless Steel	≤ 280HB	MP7130	VP15TF	330 (260—490)	.006 (.004—.008)	≤.039
			MP7140	VP20RT	330 (260—490)	.006 (.004—.008)	≤.039
	Precipitation Hardening Stainless Steel	< 450HB	MP7130	VP15TF	295 (165—460)	.006 (.004—.008)	≤.039
			MP7140	VP20RT	295 (165—460)	.006 (.004—.008)	≤.039
K						L Breaker	
	Gray Cast Iron	≤350MPa	MC5020	—	590 (525—655)	.006 (.004—.008)	≤.039
			VP15TF	VP20RT	425 (330—525)	.006 (.004—.008)	≤.039
	Ductile Cast Iron	≤450MPa	MC5020	—	590 (525—655)	.006 (.004—.008)	≤.039
			VP15TF	VP20RT	425 (330—525)	.006 (.004—.008)	≤.039
	Ductile Cast Iron	≤ 800MPa	MC5020	—	590 (525—655)	.006 (.004—.008)	≤.039
			VP15TF	VP20RT	360 (260—460)	.006 (.004—.008)	≤.039
N						L Breaker	
	Aluminum Alloy	—	TF15	—	1640 (655—3280)	.006 (.004—.008)	≤.039
S						L Breaker	
	Titanium Alloy	—	MP9120	VP15TF	165 (130—195)	.002 (.002—.004)	≤.039
			MP9130	VP20RT	165 (130—195)	.002 (.002—.004)	≤.039
	Heat Resistant Alloy	—	MP9120	VP15TF	130 (65—165)	.002 (.002—.004)	≤.039
			MP9130	VP20RT	130 (65—165)	.002 (.002—.004)	≤.039

Note 1) Refer to the table above and set the cutting conditions to match the application.
Note 2) Wet cutting is recommended, when focusing on the surface finish. (Life is lower than dry cutting.)

(inch)

	Light Cutting		Medium Cutting		Rough Cutting		Heavy Cutting	
	fz (IPT)	**ap**	**fz** (IPT)	**ap**	**fz** (IPT)	**ap**	**fz** (IPT)	**ap**
	L,M Breaker		M Breaker		M,R Breaker		R,H Breaker	
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	L,M Breaker		M Breaker					
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	—	—	—	—
	L,M Breaker		M Breaker		M,R Breaker		R,H Breaker	
	.006 (.004—.008)	≤.079	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	.006 (.004—.008)	≤.079	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	L Breaker		L Breaker		L Breaker		L Breaker	
	.006 (.004—.008)	≤.079	.008 (.006—.010)	≤.118	.008 (.006—.010)	≤.157	.010 (.008—.012)	≤.197
	L,M Breaker		M Breaker					
	.002 (.002—.004)	≤.059	.004 (.002—.006)	≤.079	—	—	—	—
	.002 (.002—.004)	≤.059	.004 (.002—.006)	≤.079	—	—	—	—
	.002 (.002—.004)	≤.059	.004 (.002—.006)	≤.079	—	—	—	—
	.002 (.002—.004)	≤.059	.004 (.002—.006)	≤.079	—	—	—	—

FACE MILLING
<GENERAL CUTTING>

45° KAPR

ASX445

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron	Non-ferrous Metal	Heat Resistant Alloy	Hardened Steel



Fig.1
ø2"
ø2.5"

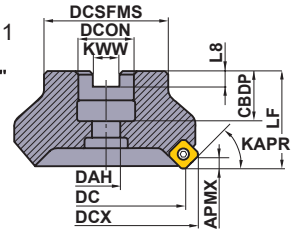


Fig.2
ø3"
ø4"
ø5"
ø6"

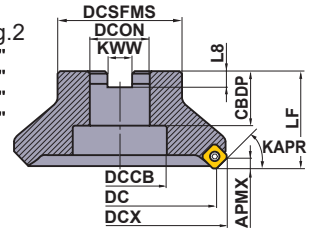
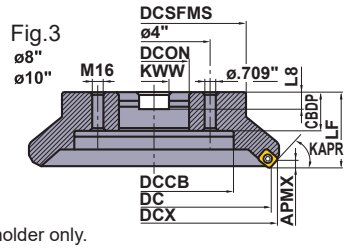


Fig.3
ø8"
ø10"



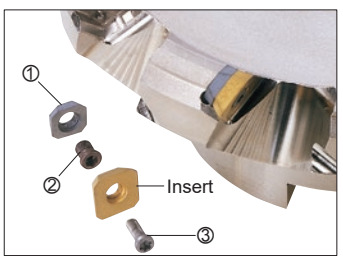
KAPR :45°
GAMP :+20°—+23°
GAMF :-13°—-10°

Right hand tool holder only.

■ ARBOR TYPE

Type	Order Number	Stock R	Number of Teeth	Dimensions (inch) DC	DCX	LF	DCON	CBDP	DAH	DCCB	DCSFMS	KWW	L8	APMX (inch)	WT (lbs)	Type (Fig.)
Coarse Pitch	ASX445R2504	●	4	2.500	3.009	1.575	.750	.748	.415	—	1.969	.313	.187	.236	1.5	1
	ASX445R0304C	●	4	3.000	3.520	1.969	1.000	1.024	—	1.496	2.205	.375	.219	.236	2.4	2
	ASX445R0405E	●	5	4.000	4.518	1.969	1.500	1.378	—	2.362	3.150	.625	.375	.236	4.0	2
	ASX445R0506E	●	6	5.000	5.513	2.480	1.500	1.378	—	2.362	3.150	.625	.375	.236	6.6	2
	ASX445R0607E	●	7	6.000	6.511	2.480	1.500	1.378	—	2.362	3.937	.625	.375	.236	10.4	2
	ASX445R0808M	●	8	8.000	8.509	2.480	2.500	1.378	—	5.512	6.890	1.000	.560	.236	17.4	3
	ASX445R1010M	●	10	10.000	10.508	2.480	2.500	1.378	—	7.087	8.661	1.000	.560	.236	28.6	3
Fine Pitch	ASX445R0204	●	4	2.000	2.513	1.575	.750	.748	.415	—	1.772	.313	.187	.236	.9	1
	ASX445R2505	●	5	2.500	3.009	1.575	.750	.748	.415	—	1.969	.313	.187	.236	1.5	1
	ASX445R0306C	●	6	3.000	3.520	1.969	1.000	1.024	—	1.496	2.205	.375	.219	.236	2.2	2
	ASX445R0407E	●	7	4.000	4.518	1.969	1.500	1.378	—	2.362	3.150	.625	.375	.236	3.7	2
	ASX445R0508E	●	8	5.000	5.513	2.480	1.500	1.378	—	2.362	3.150	.625	.375	.236	6.2	2
	ASX445R0610E	●	10	6.000	6.511	2.480	1.500	1.378	—	2.362	3.937	.625	.375	.236	10.1	2
	ASX445R0812M	●	12	8.000	8.509	2.480	2.500	1.378	—	5.512	6.890	1.000	.560	.236	17.0	3
	ASX445R1014M	●	14	10.000	10.508	2.480	2.500	1.378	—	7.087	8.661	1.000	.560	.236	28.2	3
Extra Fine Pitch	ASX445R0205	●	5	2.000	2.513	1.575	.750	.748	.415	—	1.772	.313	.187	.236	.9	1
	ASX445R0308C	●	8	3.000	3.520	1.969	1.000	1.024	—	1.496	2.205	.375	.219	.236	2.2	2
	ASX445R0410E	●	10	4.000	4.518	1.969	1.500	1.378	—	2.362	3.150	.625	.375	.236	3.8	2
	ASX445R0512E	●	12	5.000	5.513	2.480	1.500	1.378	—	2.362	3.150	.625	.375	.236	6.4	2
	ASX445R0616E	●	16	6.000	6.511	2.480	1.500	1.378	—	2.362	3.937	.625	.375	.236	10.3	2
	ASX445R0820M	●	20	8.000	8.509	2.480	2.500	1.378	—	5.512	6.890	1.000	.560	.236	17.2	3
	ASX445R1024M	●	24	10.000	10.508	2.480	2.500	1.378	—	7.087	8.661	1.000	.560	.236	28.4	3

Note 1) Set bolt not included.



SPARE PARTS

Tool Holder Number	① Shim	② Shim Screw *	③ Insert Screw *	Wrench (Insert)	Wrench (Shim)
ASX445 Type	STASX445N	WCS503507H	TPS35	TIP15T	HKY35R

* Clamp Torque (lbf-in) : WCS503507H=44, TPS35=31



Fig.1

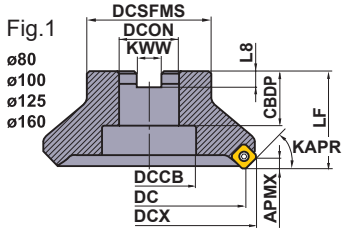


Fig.2

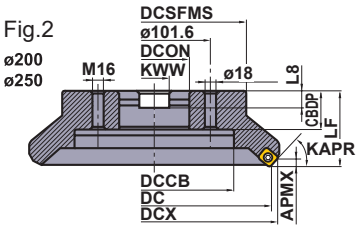
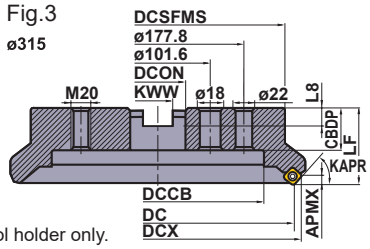


Fig.3



Metric Standard

For inch arbors

KAPR :45°
GAMP :+20°—+23°
GAMF :-13°—-10°

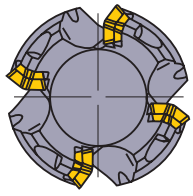
Right hand tool holder only.

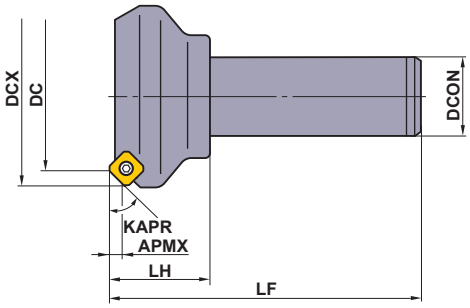
■ ARBOR TYPE

Type	Order Number	Stock	Number of Teeth	Dimensions (mm) [inch]									APMX (mm)	WT (kg)	Type (Fig.)
		R		DC	DCX	LF	DCON	CBDP	DCCB	DCSFMS	KWW	L8			
Coarse Pitch	ASX445R08004C	★	4	80	93.2	50	25.4 [1.0"]	26	38	56	9.5	6	6	1.1	1
	ASX445R10005D	★	5	100	113.2	50	31.75 [1.25"]	32	45	70	12.7	8	6	1.8	1
	ASX445R12506E	★	6	125	138.0	63	38.1 [1.5"]	35	60	80	15.9	10	6	2.9	1
	ASX445R16007F	★	7	160	173.0	63	50.8 [2.0"]	38	80	100	19.1	11	6	4.7	1
	ASX445R20008K	★	8	200	212.9	63	47.625 [1.875"]	35	140	175	25.4	14.22	6	7.9	2
	ASX445R25010K	★	10	250	262.9	63	47.625 [1.875"]	35	180	220	25.4	14.22	6	12.9	2
	ASX445R31514P	★	14	315	327.9	63	47.625 [1.875"]	40	245	285	25.4	14.22	6	22.4	3
Fine Pitch	ASX445R08006C	★	6	80	93.2	50	25.4 [1.0"]	26	38	56	9.5	6	6	1.0	1
	ASX445R10007D	★	7	100	113.2	50	31.75 [1.25"]	32	45	70	12.7	8	6	1.7	1
	ASX445R12508E	★	8	125	138.0	63	38.1 [1.5"]	35	60	80	15.9	10	6	2.8	1
	ASX445R16010F	★	10	160	173.0	63	50.8 [2.0"]	38	80	100	19.1	11	6	4.6	1
	ASX445R20012K	★	12	200	212.9	63	47.625 [1.875"]	35	140	175	25.4	14.22	6	7.8	2
	ASX445R25014K	★	14	250	262.9	63	47.625 [1.875"]	35	180	220	25.4	14.22	6	12.8	2
	ASX445R31518P	★	18	315	327.9	63	47.625 [1.875"]	40	245	285	25.4	14.22	6	22.2	3
Extra Fine Pitch	ASX445R08008C	★	8	80	93.2	50	25.4 [1.0"]	26	38	56	9.5	6	6	1.1	1
	ASX445R10010D	★	10	100	113.2	50	31.75 [1.25"]	32	45	70	12.7	8	6	1.8	1
	ASX445R12512E	★	12	125	138.0	63	38.1 [1.5"]	35	60	80	15.9	10	6	2.9	1
	ASX445R16016F	★	16	160	173.0	63	50.8 [2.0"]	38	80	100	19.1	11	6	4.7	1
	ASX445R20020K	★	20	200	212.9	63	47.625 [1.875"]	35	140	175	25.4	14.22	6	7.8	2
	ASX445R25024K	★	24	250	262.9	63	47.625 [1.875"]	35	180	220	25.4	14.22	6	12.8	2
	ASX445R31528P	★	28	315	327.9	63	47.625 [1.875"]	40	245	285	25.4	14.22	6	21.8	3

Note 1) Set bolt not included.







Metric Standard

Right hand tool holder only.

■ SHANK TYPE

Order Number	Stock	Number of Teeth	Dimensions (mm)					APMX (mm)
	R		DC	DCX	LF	DCON	LH	
ASX445R503S32	★	3	50	63.0	125	32	40	6
ASX445R634S32	★	4	63	75.9	125	32	40	6
ASX445R804S32	★	4	80	93.2	125	32	40	6

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

Metric Standard

For metric arbors



ø50, ø63



Over ø80

Fig.1 ø50 ø63

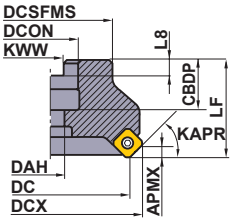


Fig.2 ø80 ø100

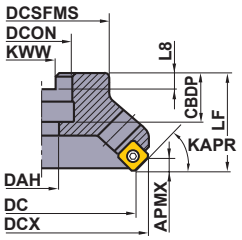


Fig.3 ø125

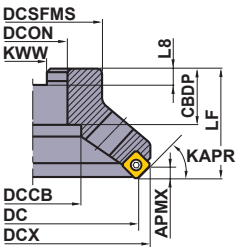


Fig.4 ø160

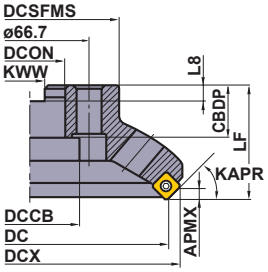
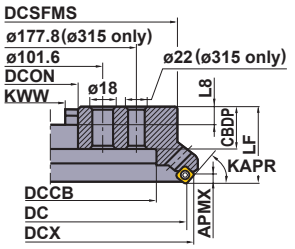


Fig.5 ø200 ø250 ø315



KAPR :45°
GAMP :+20° ─ +23°
GAMF :-13° ─ -10°

Right hand tool holder only.

■ ARBOR TYPE

Type	Order Number	Stock R	Number of Teeth	Dimensions (mm) DC	DCX	LF	DCON	CBDP	DAH	DCCB	DCSFMS	KWW	L8	APMX (mm)	WT (kg)	Type (Fig.)
Coarse Pitch	**ASX445-050A03R**	★	3	50	63.0	40	22	20	11	─	45	10.4	6.3	6	0.5	1
	ASX445-063A04R	★	4	63	75.9	40	22	20	11	─	50	10.4	6.3	6	0.7	1
	ASX445-080A04R	★	4	80	93.2	50	27	23	13.5	─	56	12.4	7	6	1.0	2
	ASX445-100A05R	★	5	100	113.2	50	32	26	17.5	─	70	14.4	8	6	1.6	2
	ASX445-125B06R	★	6	125	138.0	63	40	32	─	56	80	16.4	9	6	2.4	3
	ASX445-160C07R	★	7	160	173.0	63	40	29	─	56	100	16.4	9	6	3.9	4
	ASX445-200C08R	★	8	200	212.9	63	60	32	─	135	155	25.7	14.22	6	6.7	5
	ASX445-250C10R	★	10	250	262.9	63	60	32	─	174	200	25.7	14.22	6	10.5	5
	ASX445-315C14R	★	14	315	327.9	80	60	57	─	256.8	285	25.7	14.22	6	22.4	5
Fine Pitch	**ASX445-050A04R**	★	4	50	63.0	40	22	20	11	─	45	10.4	6.3	6	0.4	1
	ASX445-063A05R	★	5	63	75.9	40	22	20	11	─	50	10.4	6.3	6	0.6	1
	ASX445-080A06R	★	6	80	93.2	50	27	23	13.5	─	56	12.4	7	6	0.9	2
	ASX445-100A07R	★	7	100	113.2	50	32	26	17.5	─	70	14.4	8	6	1.5	2
	ASX445-125B08R	★	8	125	138.0	63	40	32	─	56	80	16.4	9	6	2.3	3
	ASX445-160C10R	★	10	160	173.0	63	40	29	─	56	100	16.4	9	6	3.6	4
	ASX445-200C12R	★	12	200	212.9	63	60	32	─	135	155	25.7	14.22	6	5.8	5
	ASX445-250C14R	★	14	250	262.9	63	60	32	─	174	200	25.7	14.22	6	10.6	5
	ASX445-315C18R	★	18	315	327.9	80	60	57	─	256.8	285	25.7	14.22	6	22.2	5
Extra Fine Pitch	**ASX445-050A05R**	★	5	50	63.0	40	22	20	11	─	45	10.4	6.3	6	0.4	1
	ASX445-063A06R	★	6	63	75.9	40	22	20	11	─	50	10.4	6.3	6	0.6	1
	ASX445-080A08R	★	8	80	93.2	50	27	23	13.5	─	56	12.4	7	6	0.9	2
	ASX445-100A10R	★	10	100	113.2	50	32	26	17.5	─	70	14.4	8	6	1.5	2
	ASX445-125B12R	★	12	125	138.0	63	40	32	─	56	80	16.4	9	6	2.3	3
	ASX445-160C16R	★	16	160	173.0	63	40	29	─	56	100	16.4	9	6	3.6	4
	ASX445-200C20R	★	20	200	212.9	63	60	32	─	135	155	25.7	14.22	6	6.5	5
	ASX445-250C24R	★	24	250	262.9	63	60	32	─	174	200	25.7	14.22	6	10.3	5
	ASX445-315C28R	★	28	315	327.9	80	60	57	─	256.8	285	25.7	14.22	6	21.8	5

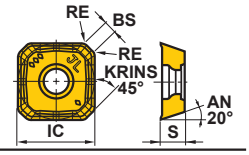
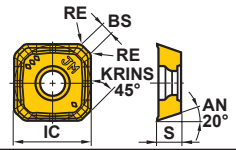
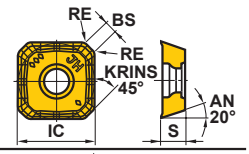
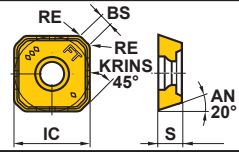
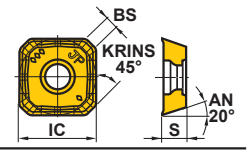
Note 1) Set bolt not included.

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

INSERTS WITH BREAKER

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	
H	Hardened Steel	

Cutting Conditions (Guide) :
● : Stable Cutting ◕ : General Cutting
✠ : Unstable Cutting
Honing :
E : Round **F :** Sharp
S : Chamfer + Hone

Application	Shape	Order Number	Class	Honing	Coated											Cermet		Carbide		Dimensions (inch)				Geometry
					F7010	F7030	MC5020	MP6120	MP6130	MP7130	MP7140	MP9120	MP9130	VP15TF	VP30RT	NX4545		HTi10		IC	S	BS	RE	
Finish–Light Cutting	**JL** Breaker 	**SEET13T3AGEN-JL**	E	E		●		●	●	●	●	●	●	●	●	●				.528	.156	.075	.059	
Light–Rough Cutting	**JM** Breaker 	**SEMT13T3AGSN-JM**	M	S	●	●	●	●	●	●	●	●	●	●	●	●				.528	.156	.075	.059	
Medium–Heavy Cutting	**JH** Breaker 	**SEMT13T3AGSN-JH**	M	S		●	●	●	●	●	●	●	●	●	●					.528	.156	.075	.059	
Roughing For Cast Iron	**FT** Breaker 	**SEMT13T3AGSN-FT**	M	S			●													.528	.156	.075	.059	
For Aluminum Alloy	**JP** Breaker 	**SEGT13T3AGFN-JP**	G	F														●		.528	.156	.087	—	

■ Instructions for using JP breaker handling

Note 1) The JP breaker has sharp cutting edge. Please wear gloves when installing to prevent.
Note 2) During machining of aluminum alloy, chip welding can occur that can cause fracturing of the insert.
Note 3) Wet cutting is recommended.

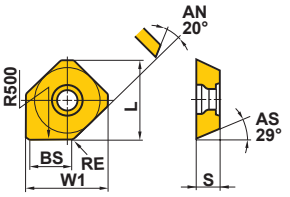
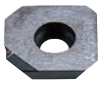
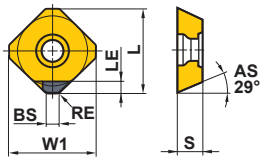
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

WIPER INSERTS

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◕ : General Cutting ✲ : Unstable Cutting

Honing :
E : Round **F :** Sharp
T : Chamfer

Shape	Order Number	Class	Honing	Coated		Cermet	Coated Cermet	Carbide	CBN	PCD	Dimensions(inch)						Geometry
				MC5020	VP15TF	NX2525	VP25N	HTi05T	MB710	MD220	L	LE	W1	S	BS	RE	
	**WEEW13T3AGER8C**	E	E	●	●			●			.654	—	.649	.156	.295	.059	
	WEEW13T3AGTR8C	E	T			●	●				.654	—	.649	.156	.295	.059	
	**NP-WEEW13T3AGFR3C**	E	F							●	.654	.071	.649	.156	.118	.059	
	NP-WEEW13T3AGTR3C	E	T						●		.654	.071	.649	.156	.118	.059	

*Wiper inserts are single-cornered.
*CBN grade MB710 is for cast iron.
*PCD grade MD220 is for aluminum alloy.

■Instructions for use of wiper inserts



Fig.1



Fig.2

Note 1) These wiper inserts are single-cornered.
Note 2) Install the insert so that the cutting edge is located as shown in Fig. 1.
Do not install the wiper insert as shown in Fig. 2. (The insert may be damaged by a too heavy cutting load.)
Note 3) Recommended depth of cutting is ap=.008"-.020". (Be aware of the cutting load if the depth of cut is over the recommendation.)
Note 4) The major cutting edge of a wiper insert is set more inside than a general tooth.
This is to prevent heavy loads on the wiper insert. (To prevent fracture set the feed under .008 inch/t.)
Note 5) Excellent finished surface can be obtained with one wiper insert.
Note 6) When the feed per revolution is larger than the width of the wiper edge, install 2 or more wiper inserts equally inside the cutting body.

RECOMMENDED CUTTING CONDITIONS WHEN USING A WIPER INSERT

Work Material	Grade	Recommended Cutting Speed (SFM)
P	**VP25N**	655 (260—820)
	VP15TF	590 (260—820)
M	**VP15TF**	390—885
K	**MC5020**	425—820
	VP15TF	
	MB710	
S	**VP15TF**	65—165
H	**VP15TF**	130—260
N	**MD220**	2130 (985—3280)

●Recommended depth of cut (ap) is .008"-.020" and feed per tooth (fz) is up to .008 inch/t.
● : **USA Stock**
<CBN and PCD wiper inserts are available in 1 piece in one case>

RECOMMENDED CUTTING CONDITIONS

	Work Material	Hardness	Grade	Cutting Speed (SFM)	Finish—Light Cutting		Light—Rough Cutting		Medium—Heavy Cutting	
					Feed per Tooth (IPT)	Breaker	Feed per Tooth (IPT)	Breaker	Feed per Tooth (IPT)	Breaker
P	Mild Steel	≤180HB	**F7030**	920 (690—1150)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	.012 (.008—.016)	**JH**
			MP6120 VP15TF	820 (655—985)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	.012 (.008—.016)	**JH**
			MP6130	800 (620—950)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	.012 (.008—.016)	**JH**
			VP30RT	755 (590—920)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	.012 (.008—.016)	**JH**
			NX4545	590 (425—755)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	—	—
	Carbon Steel Alloy Steel	180—280HB	**F7030**	820 (655—985)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	.012 (.008—.016)	**JH**
			MP6120 VP15TF	720 (560—885)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	.012 (.008—.016)	**JH**
			MP6130	600 (480—740)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	.012 (.008—.016)	**JH**
			VP30RT	490 (395—590)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	—	—
			NX4545	490 (390—590)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	—	—
		280—350HB	**F7030**	590 (425—755)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	.012 (.008—.016)	**JH**
			MP6120 VP15TF	460 (330—590)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	.012 (.008—.016)	**JH**
			MP6130	400 (300—490)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	.012 (.008—.016)	**JH**
			VP30RT	330 (260—395)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	—	—
			NX4545	330 (260—390)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	—	—
M	Stainless Steel	≤270HB	**MP7130 VP15TF**	720 (560—885)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	.012 (.008—.016)	**JH**
			MP7140 VP30RT	655 (490—820)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	.012 (.008—.016)	**JH**
			NX4545	490 (395—590)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	—	—
K	Cast Iron Ductile Cast Iron	Tensile Strength ≤450MPa	**MC5020**	655 (400—820)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	.012 (.008—.016)	**JH FT**
			VP15TF NX4545	590 (425—826)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	.012 (.008—.016)	**JH**
		Tensile Strength ≥450MPa	**MC5020**	360 (260—490)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	.012 (.008—.016)	**JH FT**
N	Aluminum Alloy	—	**HTi10**	2130 (1000—3300)	.006 (.004—.008)	**JP**	.008 (.004—.012)	**JP**	.012 (.008—.016)	**JP**
S	Titanium Alloy	—	**MP9120 VP15TF**	165 (130—195)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	—	—
			MP9130	140 (100—180)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	—	—
	Heat Resistant Alloy	—	**MP9120 VP15TF**	130 (65—165)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	—	—
			MP9130	110 (55—140)	.006 (.004—.008)	**JL**	.008 (.004—.012)	**JM**	—	—
H	Hardened Steel	40—55HRC	**VP15TF**	260 (195—330)	.004 (.002—.006)	**JL**	.006 (.004—.008)	**JM**	.008 (.004—.012)	**JH**

FACE MILLING
<GENERAL CUTTING>

AHX440S/475S/640S

Selection Reference Table (Cutting Edge Count and Cutting Conditions)

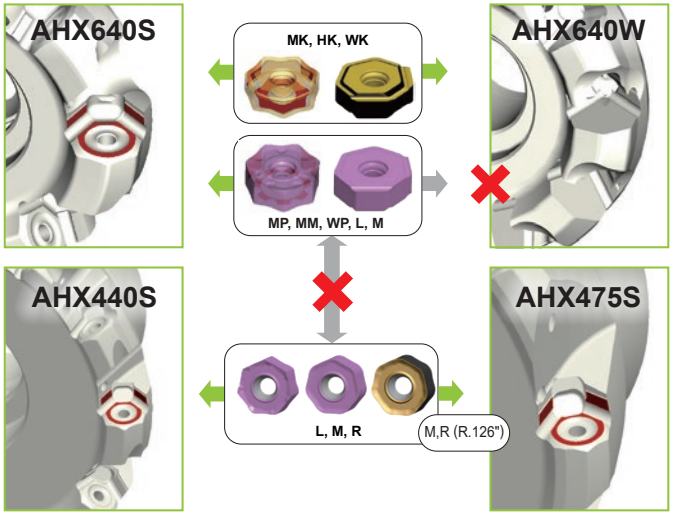
(inch)

DC	Type	Number of Teeth	AHX440S General Cutting			AHX475S High Feed Machining			AHX640S General Cutting		
			Stock	fr (IPR)	APMX	Stock	fr (IPR)	APMX	Stock	fr (IPR)	APMX
1.500" 40 mm	Fine Pitch	3	●	.024 — .047	.118						
	Extra Fine Pitch	4	●	.031 — .063	.118						
2.000" 50 mm"	Fine Pitch	4	●	.031 — .063	.118	●	.094 — .157	.063			
	Extra Fine Pitch	5	●	.039 — .079	.118	●	.118 — .197	.063			
	Super Extra Fine Pitch	6	●	.047 — .094	.118						
2.500" 63 mm	Coarse Pitch	4							●	.031 — .063	.236
	Fine Pitch	5	●	.039 — .079	.118	●	.118 — .197	.063	●	.039 — .079	.236
	Extra Fine Pitch	6	●	.047 — .094	.118	●	.142 — .236	.063			
	Super Extra Fine Pitch	8	●	.063 — .126	.118						
3.000" 80 mm"	Coarse Pitch	4							●	.031 — .063	.236
	Fine Pitch	6	●	.047 — .094	.118	●	.142 — .236	.063	●	.047 — .094	.236
	Extra Fine Pitch	8	●	.063 — .126	.118	●	.189 — .315	.063			
	Super Extra Fine Pitch	10	●	.079 — .157	.118						
4.000" 100 mm"	Coarse Pitch	5							●	.039 — .079	.236
	Fine Pitch	7	●	.055 — .110	.118	●	.165 — .276	.063	●	.055 — .110	.236
	Extra Fine Pitch	9				●	.213 — .354	.063			
		10	●	.079 — .157	.118						
	Super Extra Fine Pitch	12	●	.094 — .189	.118						
5.000" 125 mm	Coarse Pitch	6							●	.047 — .094	.236
	Fine Pitch	8	●	.063 — .126	.118	●	.189 — .315	.063	●	.063 — .126	.236
	Extra Fine Pitch	10				●	.236 — .394	.063			
		12	●	.094 — .189	.118						
	Super Extra Fine Pitch	14	●	.110 — .220	.118						
6.000" 160 mm	Coarse Pitch	7							●	.055 — .110	.236
	Fine Pitch	10	●	.079 — .157	.118	●	.236 — .394	.063	●	.079 — .157	.236
	Extra Fine Pitch	12				●	.283 — .472	.063			
		14	●	.110 — .220	.118						
	Super Extra Fine Pitch	16	●	.126 — .252	.118						
8.000" 200 mm	Coarse Pitch	8							●	.063 — .126	.236
	Fine Pitch	12							●	.094 — .189	.236

Note 1) fr: Feed rate per revolution (AHX475S: the feed rate per cutter (fz) will be limited by the cutting width ae. Please refer to page L042 for details.)
Note 2) APMX: Maximum depths of cut (AHX440S: the maximum depths of cut will vary depending on the breaker)
Note 3) The depths of cut and feed rate are identical to the recommended conditions for carbon steel and alloy steel.

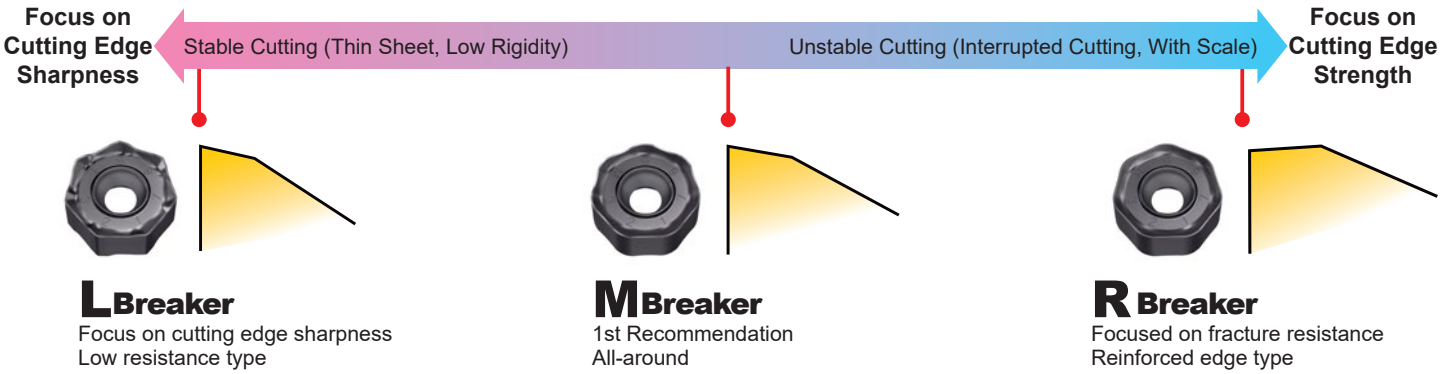
Compatibility with Inserts for AHX Series

The RE = .126 inch insert for use with AHX440S can be mounted on AHX475S.
All inserts for use with AHX640 can be mounted on AHX640S (note, however, that the set height will differ).
The inserts for mounting on AHX640W are the MK, HK, and WK breakers for casting.



Breaker System

Breaker Series for Varied Cutting Conditions



L Breaker
Focus on cutting edge sharpness
Low resistance type

M Breaker
1st Recommendation
All-around

R Breaker
Focused on fracture resistance
Reinforced edge type

Work Material	Cutting Conditions		
	Stable Cutting	General Cutting	Unstable Cutting
P	AHX440S: L (With Wiper); M (R.031") (With Wiper); M (R.126") (Not with Wiper, Shared with AHX475); R (Not with Wiper, Shared with AHX475)		
	AHX640S: M; MP		
M	AHX440S: L (With Wiper); M (R.031") (With Wiper); M (R.126") (Not with Wiper); R (Not with Wiper)		
	AHX640S: MM		
K	AHX440S: L (With Wiper); M (R.031") (With Wiper); M (R.126") (Not with Wiper, Shared with AHX475); R (Not with Wiper, Shared with AHX475)		
	AHX640S: MK; HK		

Wiper Insert of AHX640S

Based on the number of inserts and the cutting conditions, use of wiper inserts can improve overall surface finishes.

P

WP + combination with **MP**
Right-hand 2 corners, left-hand 2 corners.



K

WK + combination with **MK**
Right-hand 2 corners, left-hand 2 corners.



FACE MILLING
<GENERAL CUTTING>

50° KAPR

F R

AHX440S

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron			Hardened Steel



Fig. 1
ø1.500"
ø2.000"
ø2.500"
ø3.000"

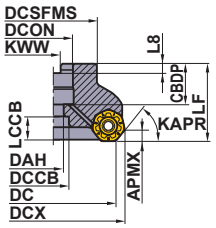
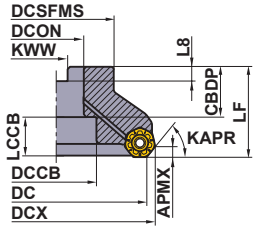
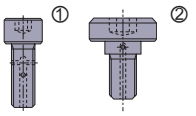


Fig. 2
ø4.000"
ø5.000"
ø6.000"



Right hand tool holder only.

DC	Set Bolt	Geometry
ϕ1.500	HSCU25011H	①
ϕ2.000	HSCU37513H	
ϕ2.500	HSCU50014H	
ϕ3.000		
ϕ4.000	MBAU75016H	②
ϕ5.000		
ϕ6.000		



KAPR :50°
GAMP:-6°
GAMF:-7°
DC=Inch size, DCON=Inch size

(inch)

DC	Order Number	Stock	∗1 Coolant Thru	Number of Teeth	LF	DCX	DCON	Fig.	WT(lbs)	∗2 APMX
1.500	**AHX440SUR1503SA**	●	Y	3	1.750	1.829	.500	1	.7	.118, .138
	AHX440SUR1504SA	●	Y	4	1.750	1.829	.500	1	.6	.118, .138
2.000	**AHX440SUR0204AA**	●	Y	4	1.750	2.329	.750	1	1.0	.118, .138
	AHX440SUR0205AA	●	Y	5	1.750	2.329	.750	1	1.0	.118, .138
	AHX440SUR0206AA	●	Y	6	1.750	2.329	.750	1	.9	.118, .138
2.500	**AHX440SUR2505CA**	●	Y	5	2.000	2.829	1.000	1	1.8	.118, .138
	AHX440SUR2506CA	●	Y	6	2.000	2.829	1.000	1	1.7	.118, .138
	AHX440SUR2508CA	●	Y	8	2.000	2.829	1.000	1	1.6	.118, .138
3.000	**AHX440SUR0306CA**	●	Y	6	2.000	3.329	1.000	1	2.3	.118, .138
	AHX440SUR0308CA	●	Y	8	2.000	3.329	1.000	1	2.2	.118, .138
	AHX440SUR0310CA	●	Y	10	2.000	3.328	1.000	1	2.1	.118, .138
4.000	**AHX440SUR0407EA**	●	Y	7	2.500	4.329	1.500	2	5.1	.118, .138
	AHX440SUR0410EA	●	Y	10	2.500	4.329	1.500	2	5.0	.118, .138
	AHX440SUR0412EA	●	Y	12	2.500	4.329	1.500	2	4.9	.118, .138
5.000	**AHX440SUR0508EA**	●	Y	8	2.500	5.329	1.500	2	8.1	.118, .138
	AHX440SUR0512EA	●	Y	12	2.500	5.329	1.500	2	7.9	.118, .138
	AHX440SUR0514EA	●	Y	14	2.500	5.329	1.500	2	7.8	.118, .138
6.000	**AHX440SUR0610EA**	●	Y	10	2.500	6.329	1.500	2	10.3	.118, .138
	AHX440SUR0614EA	●	Y	14	2.500	6.329	1.500	2	10.1	.118, .138
	AHX440SUR0616EA	●	Y	16	2.500	6.329	1.500	2	10.1	.118, .138

∗1 Y=Yes
∗2 For NNMU130508ZER-L, APMX max = .118, for NNMU130508ZEN-M, NNMU130532ZEN-M & NNMU130532ZEN-R, APMX max = .138
Note 1) The above "APMX" will vary depending on the insert chipbreaker.
Note 2) The cutter body includes a set bolt for an arbor.



Fig. 1
ø80

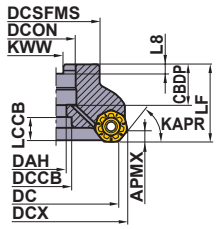
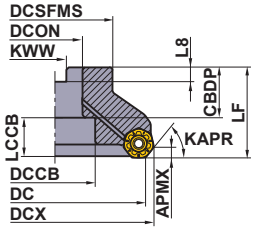


Fig. 2
ø100
ø125
ø160



Right hand tool holder only.

Metric Standard

For inch arbors

KAPR :50°
GAMP:-6°
GAMF:-7°
DC=mm size, DCON=Inch size

(mm)

DC	Order Number	Stock	∗1 Coolant Thru	Number of Teeth	LF	DCX	DCON	Fig.	WT(kg)	∗2 APMX
80	**AHX440SR08006CA**	★	Y	6	50	88.4	25.4 [1.0"]	1	1.1	3.0, 3.5
	AHX440SR08008CA	★	Y	8	50	88.4	25.4 [1.0"]	1	1.1	3.0, 3.5
	AHX440SR08010CA	★	Y	10	50	88.4	25.4 [1.0"]	1	1.1	3.0, 3.5
100	**AHX440SR10007DA**	★	Y	7	50	108.4	31.75 [1.25"]	2	1.6	3.0, 3.5
	AHX440SR10010DA	★	Y	10	50	108.4	31.75 [1.25"]	2	1.6	3.0, 3.5
	AHX440SR10012DA	★	Y	12	50	108.3	31.75 [1.25"]	2	1.6	3.0, 3.5
125	**AHX440SR12508EA**	★	Y	8	63	133.4	38.1 [1.50"]	2	3.0	3.0, 3.5
	AHX440SR12512EA	★	Y	12	63	133.4	38.1 [1.50"]	2	3.0	3.0, 3.5
	AHX440SR12514EA	★	Y	14	63	133.3	38.1 [1.50"]	2	2.9	3.0, 3.5
160	**AHX440SR16010FA**	★	Y	10	63	168.4	50.8 [2.0"]	2	4.8	3.0, 3.5
	AHX440SR16014FA	★	Y	14	63	168.4	50.8 [2.0"]	2	4.6	3.0, 3.5
	AHX440SR16016FA	★	Y	16	63	168.4	50.8 [2.0"]	2	4.7	3.0, 3.5

∗1 Y=Yes
∗2 For NNMU130508ZER-L, APMX max = 3.0, for NNMU130508ZEN-M, NNMU130532ZEN-M & NNMU130532ZEN-R, APMX max = 3.5
Note 1) Set bolt not included.
Note 2) The above "APMX" will vary depending on the insert chipbreaker.

SPARE PARTS

Tool Holder Number	∗  Clamp Screw	 Wrench (Insert)
AHX440S	TS35R	TKY15T

∗ Clamp Torque (lbf-in) : TS35R=31

MOUNTING DIMENSION ➤ L056, L058
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001



Metric Standard

For metric arbors

KAPR :50°
GAMP:-6°
GAMF:-7°
DC=mm size, DCON=mm size

Fig. 1
ø40
ø50
ø63
ø80

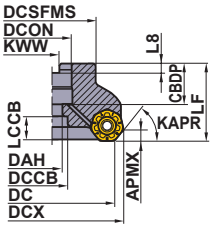


Fig. 2
ø100
ø125

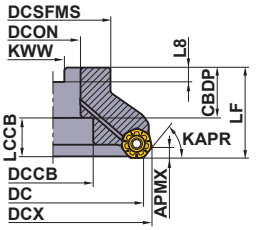
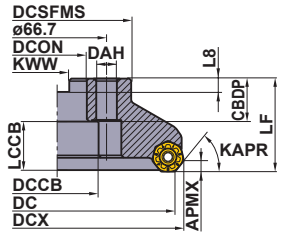


Fig. 3
ø160



Right hand tool holder only.

(mm)

DC	Order Number	Stock	∗1 Coolant Thru	Number of Teeth	LF	DCX	DCON	Fig.	WT(kg)	∗2 APMX
40	**AHX440S-040A03AR**	★	Y	3	40	48.4	16	1	0.3	3.0, 3.5
	AHX440S-040A04AR	★	Y	4	40	48.4	16	1	0.2	3.0, 3.5
50	**AHX440S-050A04AR**	★	Y	4	40	58.4	22	1	0.4	3.0, 3.5
	AHX440S-050A05AR	★	Y	5	40	58.4	22	1	0.4	3.0, 3.5
	AHX440S-050A06AR	★	Y	6	40	58.4	22	1	0.4	3.0, 3.5
63	**AHX440S-063A05AR**	★	Y	5	40	71.4	22	1	0.6	3.0, 3.5
	AHX440S-063A06AR	★	Y	6	40	71.4	22	1	0.6	3.0, 3.5
	AHX440S-063A08AR	★	Y	8	40	71.4	22	1	0.5	3.0, 3.5
80	**AHX440S-080A06AR**	★	Y	6	50	88.4	27	1	1.1	3.0, 3.5
	AHX440S-080A08AR	★	Y	8	50	88.4	27	1	1.1	3.0, 3.5
	AHX440S-080A10AR	★	Y	10	50	88.4	27	1	1.1	3.0, 3.5
100	**AHX440S-100B07AR**	★	Y	7	50	108.4	32	2	1.6	3.0, 3.5
	AHX440S-100B10AR	★	Y	10	50	108.4	32	2	1.6	3.0, 3.5
	AHX440S-100B12AR	★	Y	12	50	108.3	32	2	1.6	3.0, 3.5
125	**AHX440S-125B08AR**	★	Y	8	63	133.4	40	2	3.0	3.0, 3.5
	AHX440S-125B12AR	★	Y	12	63	133.4	40	2	3.0	3.0, 3.5
	AHX440S-125B14AR	★	Y	14	63	133.3	40	2	2.9	3.0, 3.5
160	**AHX440S-160C10NR**	★	N	10	63	168.4	40	3	4.8	3.0, 3.5
	AHX440S-160C14NR	★	N	14	63	168.4	40	3	4.6	3.0, 3.5
	AHX440S-160C16NR	★	N	16	63	168.4	40	3	4.7	3.0, 3.5

∗1 Y=Yes N=No
∗2 For NNMU130508ZER-L, APMX max = 3.0, for NNMU130508ZEN-M, NNMU130532ZEN-M & NNMU130532ZEN-R, APMX max = 3.5
Note 1) Set bolt not included.
Note 2) The above "APMX" will vary depending on the insert chipbreaker.

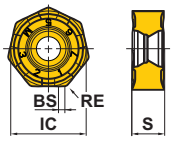
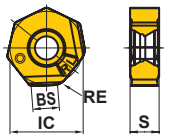
● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

MOUNTING DIMENSION ➢ L058

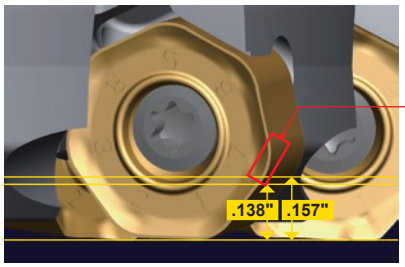
INSERTS

Work Material			MP6120	MP6130	MP7130	MP7140	MC5020	VP15TF
	P	Steel	●	✱				●
	M	Stainless Steel			●	✱		●
	K	Cast Iron					●	●
	H	Hardened Steel						●

Cutting Conditions (Guide) :
● : Stable Cutting ● : General Cutting ✱ : Unstable Cutting
Honing :
E : Round

Application	Shape	Order Number	Class	Honing	Coated						Dimensions (inch)					Geometry
					MP6120	MP6130	MP7130	MP7140	MC5020	VP15TF	IC	RE	BS	S	APMX	
Stable Cutting		**NNMU130508ZER-L**	M	E	●	●	●	●	●	★	.528	.031	.039	.227	.118	
General Cutting		**NNMU130508ZEN-M**	M	E	●	●	●	●	●	★	.528	.031	.039	.219	✱.138	
		NNMU130532ZEN-M	M	E	●	●	●	●	●	★	.528	.126	—	.219	✱.138	
Unstable Cutting		**NNMU130532ZEN-R**	M	E	●	●	●	●	●	★	.528	.126	—	.215	✱.157	
Finish Cutting	 Wiper	**WNEU1305ZEN4C-M**	E	E	●				●	●	.528	.106	.157	.201	.020	

✱ When not using the Wiper, APMX = .138 inch



Corner R on Opposite Side

If using corner R on the opposite side, APMX = .157 inch
If not using the opposite corner, APMX = .138 inch

■Instructions for Use of Wiper Iinserts

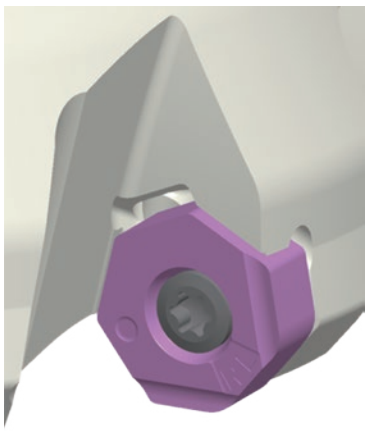


Fig.1



Fig.2

Note 1) The specifications for these wipers are right hand body 2 corners and left hand body 2 corners. Refer to Figure 1.
Note 2) Satisfactory finish surface can be achieved with one wiper insert.
However, if the feed rate per revolution will be equal to or greater than the width of the wiper edge, it is recommended to install the second and further wiper inserts spaced evenly within the cutting body.

RECOMMENDED CUTTING CONDITIONS

Dry Cutting

(inch)

	Work Material	Hardness	Grade	vc (SFM)	fz (IPT)	ap
P	Mild Steel	≤180HB	**MP6120,VP15TF**	820 (655—985)	.012 (.008—.016)	≤.118
			MP6130	785 (620—950)	.012 (.008—.016)	≤.118
	Carbon Steel,Alloy Steel	180—280HB	**MP6120,VP15TF**	720 (560—885)	.012 (.008—.016)	≤.118
			MP6130	655 (490—820)	.012 (.008—.016)	≤.118
	Carbon Steel,Alloy Steel	280—350HB	**MP6120,VP15TF**	460 (330—590)	.012 (.008—.016)	≤.118
			MP6130	395 (295—490)	.012 (.008—.016)	≤.118
	Alloy Tool Steel	≤350HB (Annealing)	**MP6120,VP15TF**	460 (330—590)	.006 (.004—.008)	≤.039
			MP6130	395 (295—490)	.006 (.004—.008)	≤.039
	Pre-hardened Steel	35—45HRC	**MP6120,VP15TF**	460 (330—590)	.006 (.004—.008)	≤.039
			MP6130	395 (295—490)	.006 (.004—.008)	≤.039
M	Austenitic Stainless Steel	≤200HB	**MP7130,VP15TF**	655 (490—820)	.008 (.004—.012)	≤.118
			MP7140	590 (395—755)	.008 (.004—.012)	≤.118
		> 200HB	**MP7130,VP15TF**	490 (330—655)	.008 (.004—.012)	≤.118
			MP7140	425 (260—590)	.008 (.004—.012)	≤.118
	Ferritic and Maltensitic Stainless Steel	≤200HB	**MP7130,VP15TF**	655 (490—820)	.008 (.004—.012)	≤.118
			MP7140	590 (395—755)	.008 (.004—.012)	≤.118
		> 200HB	**MP7130,VP15TF**	490 (330—655)	.008 (.004—.012)	≤.118
			MP7140	425 (260—590)	.008 (.004—.012)	≤.118
	Two-phase Stainless Steel	≤280HB	**MP7130,VP15TF**	460 (330—590)	.006 (.002—.010)	≤.118
			MP7140	395 (260—525)	.006 (.002—.010)	≤.118
	Precipitation Hardening Stainless Steel	< 450HB	**MP7130,VP15TF**	425 (330—525)	.006 (.002—.010)	≤.118
			MP7140	360 (260—460)	.006 (.002—.010)	≤.118
K	Gray Cast Iron	Tensile Strength ≤350MPa	**MC5020**	720 (490—985)	.012 (.008—.016)	≤.118
			VP15TF	590 (425—755)	.012 (.008—.016)	≤.118
	Ductile Cast Ilon	Tensile Strength ≤450MPa	**MC5020**	655 (490—820)	.008 (.004—.012)	≤.118
			VP15TF	560 (395—720)	.008 (.004—.012)	≤.118
	Ductile Cast Ilon	Tensile Strength ≤800MPa	**MC5020**	560 (490—655)	.008 (.004—.012)	≤.118
			VP15TF	460 (330—590)	.008 (.004—.012)	≤.118
H	Hardened Steel	40—55HRC	**VP15TF**	260 (195—330)	.006 (.004—.008)	≤.039

Wet Cutting

(inch)

	Work Material	Hardness	Grade	vc (SFM)	fz (IPT)	ap
M	Austenitic Stainless Steel	≤200HB	**MP7130,VP15TF**	410 (330—490)	.006 (.004—.008)	≤.118
			MP7140	330 (260—460)	.045 (.004—.008)	≤.118
		> 200HB	**MP7130,VP15TF**	330 (245—410)	.006 (.004—.008)	≤.118
			MP7140	260 (180—345)	.006 (.004—.008)	≤.118
	Ferritic and Maltensitic Stainless Steel	≤200HB	**MP7130,VP15TF**	410 (330—490)	.006 (.004—.008)	≤.118
			MP7140	330 (260—460)	.006 (.004—.008)	≤.118
		> 200HB	**MP7130,VP15TF**	330 (245—410)	.006 (.004—.008)	≤.118
			MP7140	260 (180—345)	.006 (.004—.008)	≤.118
	Two-phase Stainless Steel	≤280HB	**MP7130,VP15TF**	260 (195—330)	.004 (.002—.006)	≤.118
			MP7140	195 (130—260)	.004 (.002—.006)	≤.118
	Precipitation Hardening Stainless Steel	< 450HB	**MP7130,VP15TF**	230 (165—295)	.004 (.002—.006)	≤.118
			MP7140	165 (100—230)	.004 (.002—.006)	≤.118

Note 1) Refer to the above table and set up cutting conditions according to cutting applications.
Note 2) When placing emphasis on surface finish quality, wet cutting is recommended. (tool life is lowered as compared to dry cutting)
Note 3) The recommended depth of cut differs according to insert geometry.
Note 4) When clamp rigidity is low and tool overhang is long, we recommended to reduce the cutting speed and the feed rate by 30%.
Note 5) Recommended wet cutting for good surface finishing of stainless steel. (Tool life is short compared to wet cutting.)

Cutting Conditions with Wiper Insert

(inch)

	Work Material	Hardness	Grade	vc (SFM)	fz (IPT)	ap
P	Mild Steel	≤180HB	**MP6120,VP15TF**	820 (655—985)	.012 (.008—.016)	≤.020
	Carbon Steel,Alloy Steel	180—280HB	**MP6120,VP15TF**	720 (560—885)	.012 (.008—.016)	≤.020
		280—350HB	**MP6120,VP15TF**	460 (330—590)	.012 (.008—.016)	≤.020
	Alloy Tool Steel	≤350HB (Annealing)	**MP6120,VP15TF**	460 (330—590)	.006 (.004—.008)	≤.020
	Pre-hardened Steel	35—45HRC	**MP6120,VP15TF**	460 (330—590)	.006 (.004—.008)	≤.020
M	Austenitic Stainless Steel	≤200HB	**VP15TF**	410 (330—490)	.006 (.004—.008)	≤.020
		> 200HB	**VP15TF**	330 (245—410)	.006 (.004—.008)	≤.020
	Ferritic and Maltensitic Stainless Steel	≤200HB	**VP15TF**	410 (330—490)	.006 (.004—.008)	≤.020
		> 200HB	**VP15TF**	330 (245—410)	.006 (.004—.008)	≤.020
	Two-phase Stainless Steel	≤280HB	**VP15TF**	260 (195—330)	.004 (.002—.006)	≤.020
	Precipitation Hardening Stainless Steel	< 450HB	**VP15TF**	230 (165—295)	.004 (.002—.006)	≤.020
K	Gray Cast Iron	Tensile Strength ≤350MPa	**MC5020**	1050 (820—1310)	.012 (.008—.016)	≤.020
			VP15TF	720 (490—985)	.012 (.008—.016)	≤.020
	Ductile Cast Ilon	Tensile Strength ≤450MPa	**MC5020**	820 (655—985)	.008 (.004—.012)	≤.020
			VP15TF	655 (490—820)	.008 (.004—.012)	≤.020
		Tensile Strength ≤800MPa	**MC5020**	720 (655—820)	.008 (.004—.012)	≤.020
			VP15TF	560 (490—655)	.008 (.004—.012)	≤.020
H	Hardened Steel	40—55HRC	**VP15TF**	260 (195—330)	.006 (.004—.008)	≤.020

Note 1) Refer to the above table and set up cutting conditions according to cutting applications.
Note 2) When placing emphasis on surface finish quality, wet cutting is recommended. (tool life is lowered as compared to dry cutting)
Note 3) The recommended depth of cut differs according to insert geometry.
Note 4) When clamp rigidity is low and tool overhang is long, we recommended to reduce the cutting speed and the feed rate by 30%.
Note 5) Recommended wet cutting for good surface finishing of stainless steel. (Tool life is short compared to wet cutting.)

OPTIONAL PARTS

(inch)

Tool Holder Number	Set Bolt		Fig.	a	b	c	d	e	f	g	Geometry
	With Coolant Hole	Without Coolant Hole									
	Order Number	Order Number									
AHX440S-040A○○AR	HSC08025H	HSC08040	1	.512	M8×1.25	1.299	.315	.197	–	–	Fig.1
AHX440S-050A○○AR	HSC10030H	HSC10035	1	.630	M10×1.5	1.575	.394	.236	–	–	
AHX440S-063A○○AR	HSC10030H	HSC10035	1	.630	M10×1.5	1.575	.394	.236	–	–	
AHX440S-080A○○AR	HSC12035H	HSC12035 HSC12045	1	.709	M12×1.75	1.850 2.244	.472	.394	–	–	
AHX440S-100B○○AR	MBA16033H	–	2	1.575	M16×2	1.693	.394	.551	.236	.906	
AHX440S-125B○○AR	MBA20040H	–	2	1.969	M20×2.5	2.126	.551	.669	.236	1.063	Fig.2
AHX440S-160C○○NR	No coolant hole	–	2	1.969	M20×2.5	2.126	.551	.669	.236	1.063	
AHX440SR080○○CA	HSC12035H	HSC12035 HSC12045	1	.709	M12×1.75	1.850 2.244	.472	.394	–	–	
AHX440SR100○○DA	MBA16033H	–	2	1.575	M16×2	1.693	.394	.551	.236	.906	
AHX440SR125○○EA	MBA20040H	–	2	1.969	M20×2.5	2.126	.551	.669	.236	1.063	
AHX440SR160○○FA	MBA24045H	–	2	2.559	M24×3	2.323	.551	.669	.394	1.457	

Note 1) Internal coolant is necessary with the set bolt.

FACE MILLING
<HIGH FEED CUTTING FOR CAST IRON>

15° KAPR

AHX475S

P	M	K	N	S	H
Steel		Cast Iron			Hardened Steel



Fig.1

ø2.000"
ø2.500"
ø3.000"
ø4.000"

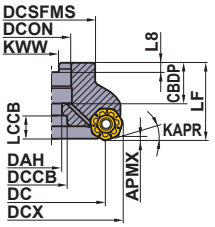
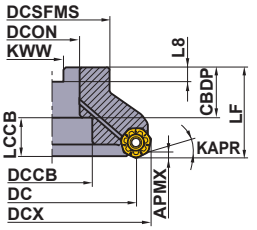


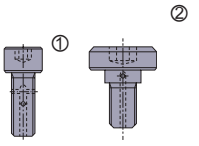
Fig.2

ø5.000"
ø6.000"



Right hand tool holder only.

DC	Set Bolt	Geometry
ϕ2.000	HSCU37513H	①
ϕ2.500	HSCU50014H	①
ϕ3.000	HSCU50014H	①
ϕ4.000	MBAU75016H	②
ϕ5.000	MBAU75016H	②
ϕ6.000	MBAU75016H	②



KAPR :15°
GAMP :-6°
GAMF :-10°
DC = inch size, DCON = Inch size

(inch)

DC	Order Number	Stock	* Coolant Thru	Number of Teeth	LF	DCX	DCON	Fig.	WT(lbs)	APMX
2.000	**AHX475SUR0204AA**	●	Y	4	2.000	2.616	.750	1	1.5	.063
	AHX475SUR0205AA	●	Y	5	2.000	2.616	.750	1	1.4	.063
2.500	**AHX475SUR2505CA**	●	Y	5	2.000	3.116	1.000	1	2.2	.063
	AHX475SUR2506CA	●	Y	6	2.000	3.116	1.000	1	2.2	.063
3.000	**AHX475SUR0306CA**	●	Y	6	2.000	3.614	1.000	1	3.2	.063
	AHX475SUR0308CA	●	Y	8	2.000	3.614	1.000	1	3.1	.063
	AHX475SUR0306DA	●	Y	6	2.500	3.614	1.250	1	4.1	.063
	AHX475SUR0308DA	●	Y	8	2.500	3.614	1.250	1	4.0	.063
4.000	**AHX475SUR0407EA**	●	Y	7	2.500	4.616	1.500	1	7.0	.063
	AHX475SUR0409EA	●	Y	9	2.500	4.616	1.500	1	6.9	.063
5.000	**AHX475SUR0508EA**	●	Y	8	2.500	5.616	1.500	2	8.8	.063
	AHX475SUR0510EA	●	Y	10	2.500	5.616	1.500	2	8.8	.063
6.000	**AHX475SUR0610FA**	●	Y	10	2.500	6.616	2.000	2	12.4	.063
	AHX475SUR0612FA	●	Y	12	2.500	6.616	2.000	2	12.5	.063

* Y=Yes

Note 1) The cutter body includes a set bolt for an arbor.



Fig.1

ø50
ø63
ø80
ø100

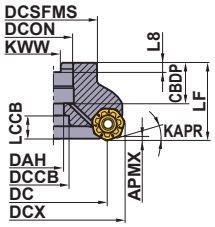
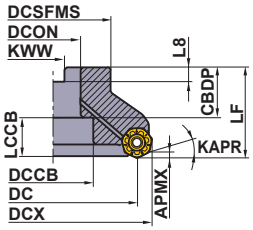


Fig.2

ø125
ø160



Right hand tool holder only.

Metric Standard

For inch arbors

KAPR :15°
GAMP:-6°
GAMF:-10°
DC=mm size, DCON=Inch size

(mm)

DC	Order Number	Stock	* Coolant Thru	Number of Teeth	LF	DCX	DCON	Fig.	WT(kg)	APMX
80	**AHX475SR08006DA**	★	Y	6	63	95.6	31.75 [1.25"]	1	2.0	1.6
	AHX475SR08008DA	★	Y	8	63	95.6	31.75 [1.25"]	1	2.0	1.6
100	**AHX475SR10007DA**	★	Y	7	63	115.6	31.75 [1.25"]	1	3.2	1.6
	AHX475SR10009DA	★	Y	9	63	115.6	31.75 [1.25"]	1	3.2	1.6
125	**AHX475SR12508EA**	★	Y	8	63	140.6	38.1 [1.50"]	2	4.0	1.6
	AHX475SR12510EA	★	Y	10	63	140.6	38.1 [1.50"]	2	4.0	1.6
160	**AHX475SR16010FA**	★	Y	10	63	175.6	50.8 [2.0"]	2	5.5	1.6
	AHX475SR16012FA	★	Y	12	63	175.6	50.8 [2.0"]	2	5.5	1.6

★ Y=Yes
Note 1) Set bolt not included.

Metric Standard

For metric arbors

DC=mm size, DCON=mm size

(mm)

DC	Order Number	Stock	* Coolant Thru	Number of Teeth	LF	DCX	DCON	Fig.	WT(kg)	APMX
50	**AHX475S-050A04AR**	★	Y	4	50	65.7	22	1	0.6	1.6
	AHX475S-050A05AR	★	Y	5	50	65.7	22	1	0.6	1.6
63	**AHX475S-063A05AR**	★	Y	5	50	78.7	22	1	1.0	1.6
	AHX475S-063A06AR	★	Y	6	50	78.7	22	1	1.0	1.6
80	**AHX475S-080A06AR**	★	Y	6	50	95.6	27	1	1.6	1.6
	AHX475S-080A08AR	★	Y	8	50	95.6	27	1	1.6	1.6
100	**AHX475S-100A07AR**	★	Y	7	63	115.6	32	1	3.3	1.6
	AHX475S-100A09AR	★	Y	9	63	115.6	32	1	3.3	1.6
125	**AHX475S-125B08AR**	★	Y	8	63	140.6	40	2	4.0	1.6
	AHX475S-125B10AR	★	Y	10	63	140.6	40	2	4.0	1.6
160	**AHX475S-160B10AR**	★	Y	10	63	175.6	40	2	6.0	1.6
	AHX475S-160B12AR	★	Y	12	63	175.6	40	2	6.0	1.6

★ Y=Yes
Note 1) Set bolt not included.

MOUNTING DIMENSION ➤ L056, L058
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

SPARE PARTS

Tool Holder Number	 * Clamp Screw	 Wrench (Insert)
AHX475S	TS35R	TKY15T

* Clamp Torque (lbf-in) : TS35R=31

OPTIONAL PARTS

(inch)

Tool Holder Number	Set Bolt: With Coolant Hole – Order Number	Set Bolt: Without Coolant Hole – Order Number	Fig.	Reference Dimensions a	b	c	d	e	f	g
AHX475S-050A○○AR	HSC10030H	HSC10035	1	.630	M10×1.5	1.575	.394	.236	–	–
AHX475S-063A○○AR	HSC10030H	HSC10035	1	.630	M10×1.5	1.575	.394	.236	–	–
AHX475S-080A○○AR	HSC12035H	HSC12035 HSC12045	1	.709	M12×1.75	2.244	.472	.394	–	–
AHX475S-100B○○AR	HSC16040H	–	1	.945	M16×2	2.205	.630	.551	–	–
AHX475S-125B○○AR	MBA20040H	–	2	1.969	M20×2.5	2.126	.551	.669	.236	1.063
AHX475S-160C○○AR	MBA20040H	–	2	1.969	M20×2.5	2.126	.551	.669	.236	1.063
AHX475SR080○○DA	HSC16040H	–	1	.945	M16×2	2.205	.630	.551	–	–
AHX475SR100○○DA	HSC16040H	–	1	.945	M16×2	2.205	.630	.551	–	–
AHX475SR125○○EA	MBA20040H	–	2	1.969	M20×2.5	2.126	.551	.669	.236	1.063
AHX475SR160○○FA	MBA24045H	–	2	2.559	M24×3	2.323	.551	.669	.394	1.457

Geometry

Fig.1

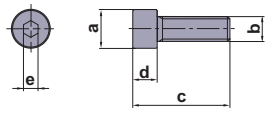
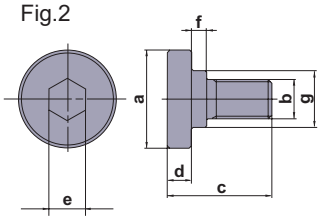


Fig.2



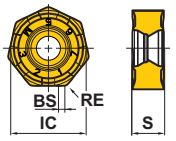
Note 1) Internal coolant is necessary with the set bolt.

INSERTS

(mm)

Work Material		
P	Steel	
K	Cast Iron	
H	Hardened Steel	

Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting ✲ : Unstable Cutting
Honing : E : Round

Application	Shape	Order Number	Class	Honing	Coated MP6120	MP6130	MC5020	VP15TF	Dimensions (mm) IC	RE	BS	S	APMX	Geometry
General Cutting		**NNMU130532ZEN-M**	M	E	●	●	●	★	.528	.126	–	.219	.063	
Unstable Cutting		**NNMU130532ZEN-R**	M	E	●	●	●	★	.528	.126	–	.215	.063	

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

SPARE PARTS ➢ N001
TECHNICAL DATA ➢ P001

RECOMMENDED CUTTING CONDITIONS

Dry Cutting

(inch)

	Work Material	Hardness	Grade	Breaker	vc (SFM)	fz (IPT)	ap	ae
P	Mild Steel	≤180HB	**MP6120**	**R**	490 (330—655)	.024	≤.063	≤0.5DC
			MP6120	**R**	490 (330—655)	.031	≤.063	0.5—0.8DC
			MP6120	**M**	490 (330—655)	.039	≤.063	0.8—1DC
			MP6130	**R**	425 (260—590)	.024	≤.063	≤0.5DC
			MP6130	**R**	425 (260—590)	.031	≤.063	0.5—0.8DC
			MP6130	**M**	425 (260—590)	.039	≤.063	0.8—1DC
	Carbon Steel,Alloy Steel	180—280HB	**MP6120**	**R**	425 (260—590)	.024	≤.063	≤0.5DC
			MP6120	**R**	425 (260—590)	.031	≤.063	0.5—0.8DC
			MP6120	**M**	425 (260—590)	.039	≤.063	0.8—1DC
			MP6130	**R**	360 (195—525)	.024	≤.063	≤0.5DC
			MP6130	**R**	360 (195—525)	.031	≤.063	0.5—0.8DC
			MP6130	**M**	360 (195—525)	.039	≤.063	0.8—1DC
	Carbon Steel,Alloy Steel	280—350HB	**MP6120**	**R**	330 (165—490)	.020	≤.063	≤0.5DC
			MP6120	**R**	330 (165—490)	.024	≤.063	0.5—0.8DC
			MP6120	**R**	330 (165—490)	.028	≤.063	0.8—1DC
			MP6130	**R**	260 (100—425)	.020	≤.063	≤0.5DC
			MP6130	**R**	260 (100—425)	.024	≤.063	0.5—0.8DC
			MP6130	**R**	260 (100—425)	.028	≤.063	0.8—1DC
	Alloy Tool Steel	≤350HB (Annealing)	**MP6120**	**R**	330 (165—490)	.020	≤.063	≤0.5DC
			MP6120	**R**	330 (165—490)	.024	≤.063	0.5—0.8DC
			MP6120	**R**	330 (165—490)	.028	≤.063	0.8—1DC
			MP6130	**R**	260 (100—395)	.020	≤.063	≤0.5DC
			MP6130	**R**	260 (100—395)	.024	≤.063	0.5—0.8DC
			MP6130	**R**	260 (100—395)	.028	≤.063	0.8—1DC
	Pre-hardened Steel	35—45HRC	**MP6120**	**R**	330 (230—425)	.020	≤.063	≤0.5DC
			MP6120	**R**	330 (230—425)	.024	≤.063	0.5—0.8DC
			MP6120	**R**	330 (230—425)	.028	≤.063	0.8—1DC
			MP6130	**R**	260 (165—360)	.020	≤.063	≤0.5DC
			MP6130	**R**	260 (165—360)	.024	≤.063	0.5—0.8DC
			MP6130	**R**	260 (165—360)	.028	≤.063	0.8—1DC
K	Gray Cast Iron	Tensile Strength ≤350MPa	**MC5020**	**R**	490 (330—655)	.024	≤.063	≤0.5DC
			MC5020	**R**	490 (330—655)	.031	≤.063	0.5—0.8DC
			MC5020	**M**	490 (330—655)	.039	≤.063	0.8—1DC
			VP15TF	**M**	395 (260—525)	.024	≤.063	≤0.5DC
			VP15TF	**M**	395 (260—525)	.031	≤.063	0.5—0.8DC
			VP15TF	**M**	395 (260—525)	.039	≤.063	0.8—1DC
	Ductile Cast Ilon	Tensile Strength ≤450MPa	**MC5020**	**R**	490 (330—655)	.024	≤.063	≤0.5DC
			MC5020	**R**	490 (330—655)	.031	≤.063	0.5—0.8DC
			MC5020	**M**	490 (330—655)	.039	≤.063	0.8—1DC
			VP15TF	**R**	395 (260—525)	.024	≤.063	≤0.5DC
			VP15TF	**R**	395 (260—525)	.031	≤.063	0.5—0.8DC
			VP15TF	**M**	395 (260—525)	.039	≤.063	0.8—1DC
	Ductile Cast Ilon	Tensile Strength ≤800MPa	**MC5020**	**R**	490 (330—655)	.020	≤.063	≤0.5DC
			MC5020	**R**	490 (330—655)	.024	≤.063	0.5—0.8DC
			MC5020	**R**	490 (330—655)	.028	≤.063	0.8—1DC
			VP15TF	**R**	395 (260—525)	.020	≤.063	≤0.5DC
			VP15TF	**R**	395 (260—525)	.024	≤.063	0.5—0.8DC
			VP15TF	**R**	395 (260—525)	.028	≤.063	0.8—1DC
H	Hardened Steel	40—55HRC	**VP15TF**	**R**	230 (165—295)	.016	≤.063	≤0.5DC
			VP15TF	**R**	230 (165—295)	.020	≤.063	0.5—0.8DC
			VP15TF	**R**	230 (165—295)	.024	≤.063	0.8—1DC

Note 1) When clamp rigidity is low and tool overhang is long, we recommended to reduce the cutting speed and the feed rate by 30%.

FACE MILLING
<GENERAL CUTTING>

50° KAPR

F R

AHX640S

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron		Heat Resistant Alloy	Hardened Steel



Fig. 1
ø2.500"
ø3.000"

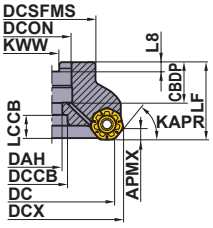


Fig. 2
ø4.000"
ø5.000"
ø6.000"

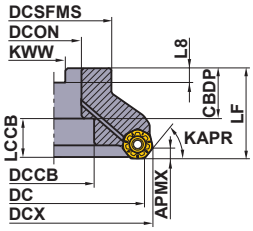
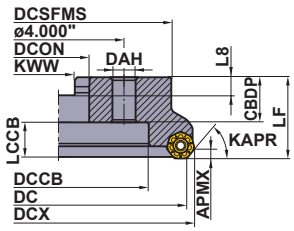


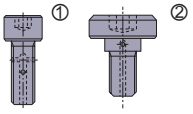
Fig. 3
ø8.000"



Right hand tool holder shown.

KAPR : 50°
GAMP: -6°
GAMF: -5°
DC=Inch size, DCON=Inch size

DC	Set Bolt	Geometry
ϕ2.500	HSCU37513H	①
ϕ3.000	HSCU62516H	①
ϕ4.000	HSCU75016H	①
ϕ5.000	MBAU75016H	②
ϕ6.000	MBAU100016H	②
ϕ8.000	—	—



(inch)

DC	Order Number	Stock	* Coolant Thru	Number of Teeth	Type	LF	DCX	DCON	Fig.	WT(lbs)	APMX
2.500	**AHX640SUR2504AA**	●	Y	4	R	2.000	2.994	.750	1	2.0	.236
	AHX640SUL2504AA	□	Y	4	L	2.000	2.994	.750	1	2.0	.236
	AHX640SUR2505AA	●	Y	5	R	2.000	2.994	.750	1	1.8	.236
	AHX640SUL2505AA	□	Y	5	L	2.000	2.994	.750	1	1.8	.236
3.000	**AHX640SUR0304DA**	●	Y	4	R	2.500	3.494	1.250	1	3.7	.236
	AHX640SUL0304DA	□	Y	4	L	2.500	3.494	1.250	1	3.7	.236
	AHX640SUR0306DA	●	Y	6	R	2.500	3.494	1.250	1	3.5	.236
	AHX640SUL0306DA	□	Y	6	L	2.500	3.494	1.250	1	3.5	.236
4.000	**AHX640SUR0405EA**	●	Y	5	R	2.500	4.494	1.500	2	6.4	.236
	AHX640SUL0405EA	□	Y	5	L	2.500	4.494	1.500	2	6.4	.236
	AHX640SUR0407EA	●	Y	7	R	2.500	4.494	1.500	2	6.4	.236
	AHX640SUL0407EA	□	Y	7	L	2.500	4.494	1.500	2	6.4	.236

* Y=Yes
Note 1) The cutter body includes a set bolt for an arbor.
Note 2) The above "APMX" will vary depending on the breaker insert.



Fig. 1
ø2.500"
ø3.000"

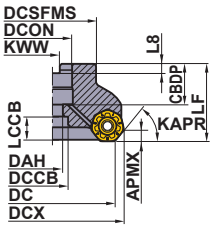


Fig. 2
ø4.000"
ø5.000"
ø6.000"

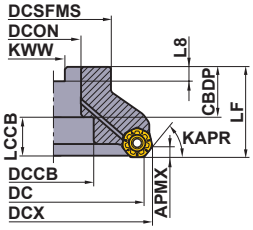
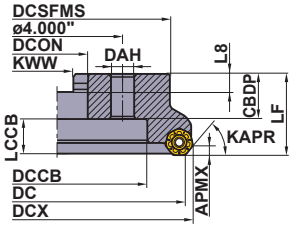
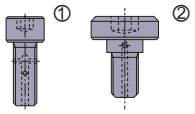


Fig. 3
ø8.000"



Right hand tool holder shown.

DC	Set Bolt	Geometry
ϕ2.500	HSCU37513H	①
ϕ3.000	HSCU62516H	①
ϕ4.000	HSCU75016H	①
ϕ5.000	MBAU75016H	②
ϕ6.000	MBAU100016H	②
ϕ8.000	—	—



KAPR : 50°
GAMP: -6°
GAMF: -5°
DC=Inch size, DCON=Inch size

(inch)

DC	Order Number	Stock	* Coolant Thru	Number of Teeth	Type	LF	DCX	DCON	Fig.	WT(lbs)	APMX
5.000	**AHX640SUR0506EA**	●	Y	6	R	2.500	5.494	1.500	2	8.2	.236
	AHX640SUL0506EA	□	Y	6	L	2.500	5.494	1.500	2	8.2	.236
	AHX640SUR0508EA	●	Y	8	R	2.500	5.494	1.500	2	7.9	.236
	AHX640SUL0508EA	□	Y	8	L	2.500	5.494	1.500	2	7.9	.236
6.000	**AHX640SUR0607FA**	●	Y	7	R	2.500	6.494	2.000	2	11.7	.236
	AHX640SUL0607FA	□	Y	7	L	2.500	6.494	2.000	2	11.7	.236
	AHX640SUR0610FA	●	Y	10	R	2.500	6.494	2.000	2	11.2	.236
	AHX640SUL0610FA	□	Y	10	L	2.500	6.494	2.000	2	11.2	.236
8.000	**AHX640SUR0808MN**	●	N	8	R	2.500	8.494	2.500	3	18.5	.236
	AHX640SUL0808MN	□	N	8	L	2.500	8.494	2.500	3	18.5	.236
	AHX640SUR0812MN	●	N	12	R	2.500	8.494	2.500	3	18.3	.236
	AHX640SUL0812MN	□	N	12	L	2.500	8.494	2.500	3	18.3	.236

* Y=Yes, N=No
Note 1) The cutter body includes a set bolt for an arbor.

SPARE PARTS

Tool Holder Number	* 	
	Clamp Screw	Wrench (Insert)
AHX640S	CS5015060T	TKY20T

* Clamp Torque (lbf-in) : CS5015060T=44

MOUNTING DIMENSION ➢ L056
SPARE PARTS ➢ N001
TECHNICAL DATA ➢ P001



Metric Standard

For inch arbors

Fig. 1
ø63
ø80

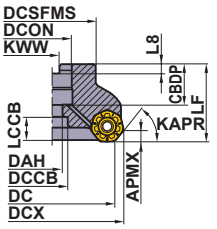


Fig. 2
ø100
ø125
ø160

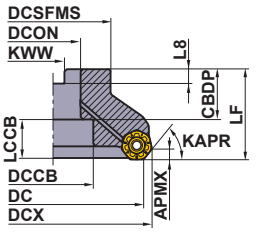
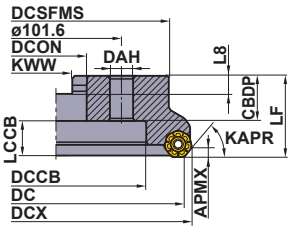
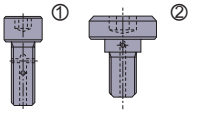


Fig. 3
ø200



Right hand tool holder only.

DC	Set Bolt	Geometry
ϕ63	HSC10030H	①
ϕ80	HSC12035H	
ϕ100	MBA16033H	②
ϕ125	MBA20040H	
ϕ160	MBA24045H	
ϕ200	—	—



KAPR : 50°
GAMP: -6°
GAMF: -5°
DC=mm size, DCON=Inch size

(mm)

DC	Order Number	Stock	* Coolant Thru	Number of Teeth	LF	DCX	DCON	Fig.	WT(kg)	APMX
80	**AHX640SR08004CA**	★	Y	4	50	92.55	25.4 [1.0"]	1	1.1	6
	AHX640SR08006CA	★	Y	6	50	92.55	25.4 [1.0"]	1	1.0	6
100	**AHX640SR10005DA**	★	Y	5	50	112.55	31.75 [1.25"]	2	1.7	6
	AHX640SR10007DA	★	Y	7	50	112.55	31.75 [1.25"]	2	1.5	6
125	**AHX640SR12506EA**	★	Y	6	63	137.55	38.1 [1.50"]	2	3.0	6
	AHX640SR12508EA	★	Y	8	63	137.55	38.1 [1.50"]	2	2.9	6
160	**AHX640SR16007FA**	★	Y	7	63	172.55	50.8 [2.0"]	2	4.9	6
	AHX640SR16010FA	★	Y	10	63	172.55	50.8 [2.0"]	2	4.7	6
200	**AHX640SR20008KN**	★	N	8	63	212.55	47.625 [1.875"]	3	8.2	6
	AHX640SR20012KN	★	N	12	63	212.55	47.625 [1.875"]	3	7.9	6

* Y=Yes, N=No
Note 1) Set bolt not included.

SPARE PARTS

Tool Holder Number	* 	
	Clamp Screw	Wrench (Insert)
AHX640S	CS5015060T	TKY20T

* Clamp Torque (lbf-in) : CS5015060T=44



Metric Standard

For metric arbors

Fig. 1
ø63
ø80

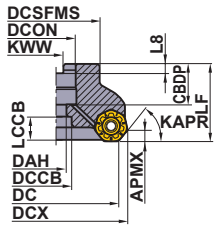


Fig. 2
ø100
ø125

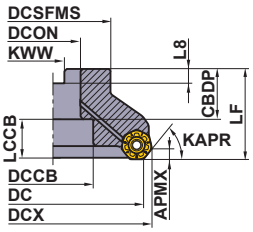


Fig. 3
ø160

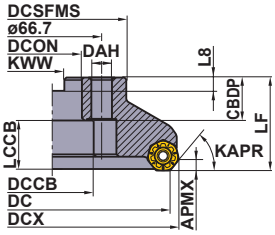
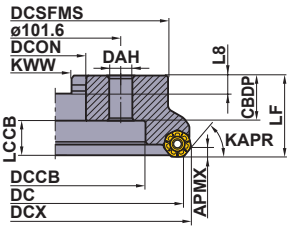
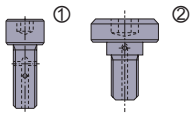


Fig. 4
ø200



Right hand tool holder only.

DC	Set Bolt	Geometry
ϕ63	HSC10030H	①
ϕ80	HSC12035H	
ϕ100	MBA16033H	②
ϕ125	MBA20040H	
ϕ160	—	—
ϕ200	—	—



KAPR : 50°
GAMP: -6°
GAMF: -5°
DC=mm size, DCON=mm size

(mm)

DC	Order Number	Stock	* Coolant Thru	Number of Teeth	LF	DCX	DCON	Fig.	WT(kg)	APMX
63	**AHX640S-063A04AR**	★	Y	4	50	75.55	22	1	0.7	6
	AHX640S-063A05AR	★	Y	5	50	75.55	22	1	0.6	6
80	**AHX640S-080A04AR**	★	Y	4	50	92.55	27	1	1.1	6
	AHX640S-080A06AR	★	Y	6	50	92.55	27	1	1.0	6
100	**AHX640S-100B05AR**	★	Y	5	50	112.55	32	2	1.7	6
	AHX640S-100B07AR	★	Y	7	50	112.55	32	2	1.6	6
125	**AHX640S-125B06AR**	★	Y	6	63	137.55	40	2	3.1	6
	AHX640S-125B08AR	★	Y	8	63	137.55	40	2	3.0	6
160	**AHX640S-160C07NR**	★	N	7	63	172.55	40	3	5.4	6
	AHX640S-160C10NR	★	N	10	63	172.55	40	3	5.2	6
200	**AHX640S-200C08NR**	★	N	8	63	212.55	60	4	7.8	6
	AHX640S-200C12NR	★	N	12	63	212.55	60	4	7.5	6

* Y=Yes, N=No
Note 1) Set bolt not included.

SPARE PARTS

Tool Holder Number	* Clamp Screw	Wrench (Insert)
AHX640S	CS5015060T	TKY20T

* Clamp Torque (lbf-in) : CS5015060T=44

MOUNTING DIMENSION ➢ L058
SPARE PARTS ➢ N001
TECHNICAL DATA ➢ P001

INSERTS

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	
H	Hardened Steel	

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✣ : Unstable Cutting

Honing :
E : Round

Application	Shape	Order Number	Class	Honing	Coated								Dimensions (inch)					Geometry
					MP6120	MP6130	MP7030	MP9120	MP9130	MC5020	VP15TF	VP20RT	IC	RE	BS	S	APMX	
For Steel General Cutting		**NNMU200708ZEN-M**	M	E	●	●							.787	.031	.039	.315	.236	
For Steel General Cutting		**NNMU200708ZEN-MP**	M	E							●		.787	.031	.039	.315	.236	
For Stainless Steel		**NNMU200712ZER-MM**	M	E			●						.787	.047	.039	.315	.236	
For Cast Iron General Cutting		**NNMU200608ZEN-MK**	M	E						●	●	●	.787	.031	.039	.258	.236	
For Cast Iron Strong Cutting Edge Type		**NNMU200608ZEN-HK**	M	E						●	●	●	.787	.031	.039	.258	.236	
For Titanium Alloy and Heat Resistant Alloy		**NNMU200712ZER-L**	M	E				●	●				.787	.047	.039	.315	.236	
For Steel	Wiper	**WNEU2007ZEN7C-M**	E	E	●								.787	.031	.283	.272	.020	
General Cutting	Wiper	**WNEU2007ZEN7C-WP**	E	E							●		.787	.031	.280	.272	.020	
For Cast Iron	Wiper	**WNEU2006ZEN7C-WK**	E	E						●			.787	.031	.291	.258	.020	

Note 1) The height of cutter when setting MK, HK inserts are different from when setting MP, MM inserts.

● : USA Stock
<10 inserts in one case>

■ Instructions for use of wiper inserts

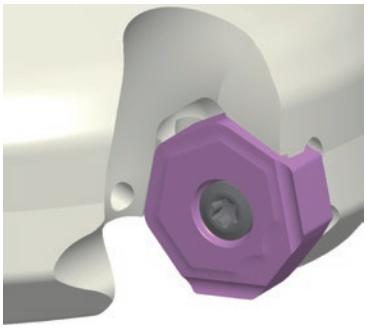


Fig.1

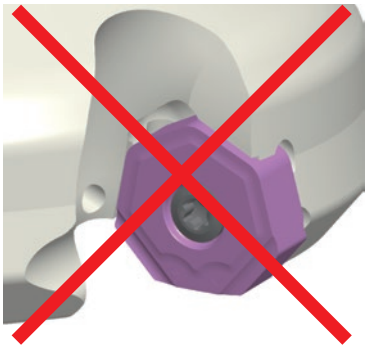


Fig.2

Note 1) The specifications for these wipers are right hand body 2 corners and left hand body 2 corners. Refer to Figure 1.
Note 2) A satisfactory finish surface can be achieved with one wiper insert.
However, if the feed rate per revolution will be equal to or greater than the width of the wiper edge, it is recommended to install the second and further wiper inserts spaced evenly within the cutting body.

RECOMMENDED CUTTING CONDITIONS

Dry Cutting

(inch)

	Work Material	Hardness	Grade	Breaker	vc (SFM)	fz (IPT)	ap	ae
P	Mild Steel	≤180HB	**MP6120**	**M**	820 (655—985)	.012 (.008—.016)	≤.197	≤0.8DC
			VP15TF	**MP**	820 (655—985)	.012 (.008—.016)	≤.197	≤0.8DC
			MP6130	**M**	720 (560—885)	.016 (.012—.020)	≤.197	≤0.8DC
	Carbon Steel,Alloy Steel	180—280HB	**MP6120**	**M**	720 (560—885)	.012 (.008—.016)	≤.197	≤0.8DC
			VP15TF	**MP**	720 (560—885)	.012 (.008—.016)	≤.197	≤0.8DC
			MP6130	**M**	620 (460—785)	.016 (.012—.020)	≤.197	≤0.8DC
	Carbon Steel,Alloy Steel	280—350HB	**MP6120**	**M**	460 (330—590)	.012 (.008—.016)	≤.197	≤0.8DC
			VP15TF	**MP**	460 (330—590)	.012 (.008—.016)	≤.197	≤0.8DC
			MP6130	**M**	360 (230—490)	.016 (.012—.020)	≤.197	≤0.8DC
	Alloy Tool Steel	≤350HB (Annealing)	**MP6120**	**M**	460 (330—590)	.006 (.004—.008)	≤.118	≤0.8DC
			VP15TF	**MP**	460 (330—590)	.006 (.004—.008)	≤.118	≤0.8DC
			MP6130	**M**	360 (230—490)	.010 (.008—.012)	≤.118	≤0.8DC
	Pre-hardened Steel	35—45HRC	**MP6120**	**M**	460 (330—590)	.006 (.004—.008)	≤.118	≤0.8DC
			VP15TF	**MP**	460 (330—590)	.006 (.004—.008)	≤.197	≤0.8DC
			MP6130	**M**	360 (230—490)	.010 (.008—.012)	≤.118	≤0.8DC
M	Austenitic Stainless Steel	≤200HB	**MP7030**	**MM**	655 (490—820)	.008 (.004—.012)	≤.197	≤0.8DC
	Austenitic Stainless Steel	> 200HB	**MP7030**	**MM**	490 (330—655)	.008 (.004—.012)	≤.197	≤0.8DC
	Two-phase Stainless Steel	≤280HB	**MP7030**	**MM**	460 (330—590)	.006 (.002—.010)	≤.197	≤0.8DC
	Ferritic and Maltensitic Stainless Steel	≤200HB	**MP7030**	**MM**	655 (490—820)	.008 (.004—.012)	≤.197	≤0.8DC
	Ferritic and Maltensitic Stainless Steel	> 200HB	**MP7030**	**MM**	490 (330—655)	.008 (.004—.012)	≤.197	≤0.8DC
	Precipitation Hardening Stainless Steel	< 450HB	**MP7030**	**MM**	425 (330—525)	.006 (.002—.010)	≤.197	≤0.8DC
K	Gray Cast Iron	Tensile Strength ≤350MPa	**MC5020**	**MK,HK**	720 (490—985)	.012 (.008—.016)	≤.197	≤0.8DC
			VP15TF,VP20RT	**MK,HK**	590 (425—755)	.012 (.008—.016)	≤.197	≤0.8DC
			VP15TF	**MP**	590 (425—755)	.012 (.008—.016)	≤.197	≤0.8DC
	Ductile Cast Ilon	Tensile Strength ≤450MPa	**MC5020**	**MK,HK**	655 (490—820)	.008 (.004—.012)	≤.197	≤0.8DC
			VP15TF,VP20RT	**MK,HK**	560 (395—720)	.008 (.004—.012)	≤.197	≤0.8DC
			VP15TF	**MP**	560 (395—720)	.008 (.004—.012)	≤.197	≤0.8DC
	Ductile Cast Ilon	Tensile Strength ≤800MPa	**MC5020**	**MK,HK**	560 (490—655)	.008 (.004—.012)	≤.197	≤0.8DC
			VP15TF,VP20RT	**MK,HK**	460 (330—590)	.008 (.004—.012)	≤.197	≤0.8DC
			VP15TF	**MP**	460 (330—590)	.008 (.004—.012)	≤.197	≤0.8DC
H	Hardened Steel	40—55HRC	**VP15TF**	**MP**	260 (195—330)	.006 (.004—.008)	≤.118	≤0.8DC

Note1) Recommended wet cutting for good surface finishing of stainless steel. (Tool life is short compared to wet cutting.)
Note2) We recommend wet cutting with internal coolant for titanium alloy and heat resistant alloy,
Note3) When clamp rigidity is low and tool overhang is long, we recommended to reduce the cutting speed and the feed rate by 30%.

Wet Cutting

(inch)

	Work Material	Hardness	Breaker	Grade	vc (SFM)	fz (IPT)	ap	ae
M	Austenitic Stainless Steel	≤200HB	**MP7030**	**MM**	410 (330—490)	.006 (.004—.008)	≤.197	≤0.8DC
	Austenitic Stainless Steel	> 200HB	**MP7030**	**MM**	330 (245—410)	.006 (.004—.008)	≤.197	≤0.8DC
	Two-phase Stainless Steel	≤280HB	**MP7030**	**MM**	260 (195—330)	.004 (.002—.006)	≤.197	≤0.8DC
	Ferritic and Maltensitic Stainless Steel	≤200HB	**MP7030**	**MM**	410 (330—490)	.006 (.004—.008)	≤.197	≤0.8DC
	Ferritic and Maltensitic Stainless Steel	> 200HB	**MP7030**	**MM**	330 (245—410)	.006 (.004—.008)	≤.197	≤0.8DC
	Precipitation Hardening Stainless Steel	< 450HB	**MP7030**	**MM**	230 (165—295)	.004 (.002—.006)	≤.197	≤0.8DC
S	Titanium Alloy	—	**MP7030**	**MM**	130 (65—165)	.006 (.004—.008)	≤.118	≤0.6DC
		—	**MP9120**	**L**	195 (165—230)	.004 (.002—.006)	≤.118	≤0.6DC
		—	**MP9130**	**L**	130 (65—165)	.006 (.004—.008)	≤.118	≤0.6DC
	Heat Resistant Alloy	—	**MP7030**	**MM**	130 (65—165)	.006 (.004—.008)	≤.118	≤0.6DC
		—	**MP9120**	**L**	195 (165—230)	.004 (.002—.006)	≤.118	≤0.6DC
		—	**MP9130**	**L**	130 (65—165)	.006 (.004—.008)	≤.118	≤0.6DC

Note1) Recommended wet cutting for good surface finishing of stainless steel. (Tool life is short compared to wet cutting.)
Note2) We recommend wet cutting with internal coolant for titanium alloy and heat resistant alloy.
Note3) When clamp rigidity is low and tool overhang is long, we recommended to reduce the cutting speed and the feed rate by 30%.

Cutting Conditions with Wiper Insert

(inch)

	Work Material	Hardness	Main Insert	Grade	Wiper Insert	Grade	vc (SFM)	fz (IPT)	ap	ae
P	Mild Steel	≤180HB	**VP15TF**	**MP**	**VP15TF**	**WP**	820 (655—985)	.012 (.008—.016)	≤.0197	≤0.8DC
			MP6120	**M**	**MP6120**	**M**	820 (655—985)	.012 (.008—.016)	≤.0197	≤0.8DC
	Carbon Steel,Alloy Steel	180—280HB	**VP15TF**	**MP**	**VP15TF**	**WP**	720 (560—885)	.012 (.008—.016)	≤.0197	≤0.8DC
			MP6120	**M**	**MP6120**	**M**	720 (560—885)	.012 (.008—.016)	≤.0197	≤0.8DC
	Carbon Steel,Alloy Steel	280—350HB	**VP15TF**	**MP**	**VP15TF**	**WP**	460 (330—590)	.012 (.008—.016)	≤.0197	≤0.8DC
			MP6120	**M**	**MP6120**	**M**	460 (330—590)	.012 (.008—.016)	≤.0197	≤0.8DC
K	Gray Cast Iron	Tensile Strength ≤350MPa	**MC5020**	**MK,HK**	**MC5020**	**WK**	1050 (820—1310)	.012 (.008—.016)	≤.0197	≤0.8DC
			VP15TF	**MP**	**VP15TF**	**WP**	720 (490—985)	.012 (.008—.016)	≤.0197	≤0.8DC
	Ductile Cast Ilon	Tensile Strength ≤450MPa	**MC5020**	**MK,HK**	**MC5020**	**WK**	820 (655—985)	.008 (.004—.012)	≤.0197	≤0.8DC
			VP15TF	**MP**	**VP15TF**	**WP**	655 (490—820)	.008 (.004—.012)	≤.0197	≤0.8DC
	Ductile Cast Ilon	Tensile Strength ≤800MPa	**MC5020**	**MK,HK**	**MC5020**	**WK**	720 (655—820)	.008 (.004—.012)	≤.0197	≤0.8DC
			VP15TF	**MP**	**VP15TF**	**WP**	560 (490—655)	.008 (.004—.012)	≤.0197	≤0.8DC
S	Heat Resistant Alloy	—	**VP15TF**	**MP**	**VP15TF**	**WP**	130 (65—165)	.006 (.004—.008)	≤.0197	≤0.8DC
H	Hardened Steel	40—55HRC	**VP15TF**	**MP**	**VP15TF**	**WP**	260 (195—330)	.006 (.004—.008)	≤.0197	≤0.8DC

Note 1) When clamp rigidity is low and tool overhang is long, we recommended to reduce the cutting speed and the feed rate by 30%.
Note 2) Please use WP geometry insert in combination with MP or M geometry inserts, and use WK geometry insert in combination with MK or HK geometry inserts

AHX440S, AHX475S, AHX640S Mounting Dimension

Fig. 1

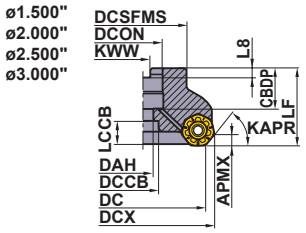


Fig. 2

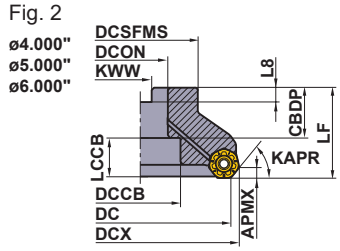
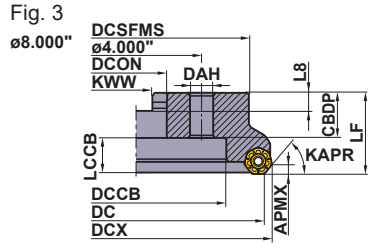


Fig. 3



Right hand tool holder shown.

(inch)

DCON	DC	Order Number	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
.500	1.500	**AHX440SUR1503SA**	.630	.276	.433	.602	1.44	.250	.156	1
.500	1.500	**AHX440SUR1504SA**	.630	.276	.433	.602	1.44	.250	.156	1
.750	2.000	**AHX440SUR0204AA**	.748	.413	.630	.642	1.75	.313	.187	1
.750	2.000	**AHX440SUR0205AA**	.748	.413	.630	.642	1.75	.313	.187	1
.750	2.000	**AHX440SUR0206AA**	.748	.413	.630	.642	1.75	.313	.187	1
.750	2.000	**AHX475SUR0204AA**	.748	.413	.630	.609	1.88	.313	.187	4
.750	2.000	**AHX475SUR0205AA**	.748	.413	.630	.609	1.88	.313	.187	4
.750	2.500	**AHX640SUL2504AA**	.748	.413	.630	.591	1.75	.313	.187	1
.750	2.500	**AHX640SUL2505AA**	.748	.413	.630	.591	1.75	.313	.187	1
.750	2.500	**AHX640SUR2504AA**	.748	.413	.630	.591	1.75	.313	.187	1
.750	2.500	**AHX640SUR2505AA**	.748	.413	.630	.591	1.75	.313	.187	1
1.000	2.500	**AHX440SUR2505CA**	.945	.539	.787	.695	2.19	.375	.219	1
1.000	2.500	**AHX440SUR2506CA**	.945	.539	.787	.695	2.19	.375	.219	1
1.000	2.500	**AHX440SUR2508CA**	.945	.539	.787	.695	2.19	.375	.219	1
1.000	2.500	**AHX475SUR2505CA**	.945	.539	.787	.688	2.38	.375	.219	4
1.000	2.500	**AHX475SUR2506CA**	.945	.539	.787	.688	2.38	.375	.219	4
1.000	3.000	**AHX440SUR0306CA**	.945	.539	.787	.695	2.19	.375	.219	1
1.000	3.000	**AHX440SUR0308CA**	.945	.539	.787	.695	2.19	.375	.219	1
1.000	3.000	**AHX440SUR0310CA**	.945	.539	.787	.695	2.19	.375	.219	1
1.000	3.000	**AHX475SUR0306CA**	.945	.539	.787	.688	2.75	.375	.219	4
1.000	3.000	**AHX475SUR0308CA**	.945	.539	.787	.688	2.75	.375	.219	4
1.250	3.000	**AHX475SUR0306DA**	1.260	.669	1.024	.794	2.88	.500	.281	4
1.250	3.000	**AHX475SUR0308DA**	1.260	.669	1.024	.794	2.88	.500	.281	4
1.250	3.000	**AHX640SUL0304DA**	1.260	.669	1.024	.776	2.88	.500	.281	1
1.250	3.000	**AHX640SUL0306DA**	1.260	.669	1.024	.776	2.88	.500	.281	1
1.250	3.000	**AHX640SUR0304DA**	1.260	.669	1.024	.776	2.88	.500	.281	1
1.250	3.000	**AHX640SUR0306DA**	1.260	.669	1.024	.776	2.88	.500	.281	1
1.500	4.000	**AHX440SUR0407EA**	1.417	—	1.500	.801	3.50	.625	.375	2
1.500	4.000	**AHX440SUR0410EA**	1.417	—	1.500	.801	3.50	.625	.375	2

Fig.4

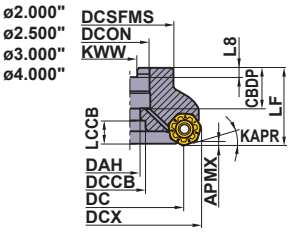
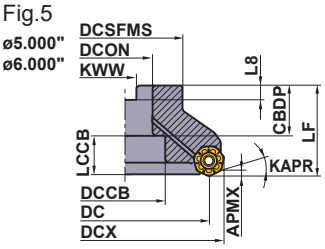


Fig.5



Right hand tool holder only.

(inch)

DCON	DC	Order Number	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
1.500	4.000	**AHX440SUR0412EA**	1.417	—	1.500	.801	3.50	.625	.375	2
1.500	4.000	**AHX475SUR0407EA**	1.181	.787	1.181	.952	3.75	.625	.375	4
1.500	4.000	**AHX475SUR0409EA**	1.181	.787	1.181	.952	3.75	.625	.375	4
1.500	4.000	**AHX640SUL0405EA**	1.181	—	.787	.933	3.81	.625	.375	2
1.500	4.000	**AHX640SUL0407EA**	1.181	—	.787	.933	3.81	.625	.375	2
1.500	4.000	**AHX640SUR0405EA**	1.181	—	.787	.933	3.81	.625	.375	2
1.500	4.000	**AHX640SUR0407EA**	1.181	—	.787	.933	3.81	.625	.375	2
1.500	5.000	**AHX440SUR0508EA**	1.417	—	1.500	.801	3.81	.625	.375	2
1.500	5.000	**AHX440SUR0512EA**	1.417	—	1.500	.801	3.81	.625	.375	2
1.500	5.000	**AHX440SUR0514EA**	1.417	—	1.500	.801	3.81	.625	.375	2
1.500	5.000	**AHX475SUR0508EA**	1.417	—	1.500	.794	3.81	.625	.375	5
1.500	5.000	**AHX475SUR0510EA**	1.417	—	1.500	.794	3.81	.625	.375	5
1.500	5.000	**AHX640SUL0506EA**	1.575	—	2.205	.855	3.81	.625	.375	2
1.500	5.000	**AHX640SUL0508EA**	1.575	—	2.205	.855	3.81	.625	.375	2
1.500	5.000	**AHX640SUR0506EA**	1.575	—	2.205	.855	3.81	.625	.375	2
1.500	5.000	**AHX640SUR0508EA**	1.575	—	2.205	.855	3.81	.625	.375	2
1.500	6.000	**AHX440SUR0610EA**	1.417	—	1.500	.801	3.81	.625	.375	2
1.500	6.000	**AHX440SUR0614EA**	1.417	—	1.500	.801	3.81	.625	.375	2
1.500	6.000	**AHX440SUR0616EA**	1.417	—	1.500	.801	3.81	.625	.375	2
2.000	6.000	**AHX475SUR0610FA**	1.417	—	3.228	.755	4.88	.750	.437	5
2.000	6.000	**AHX475SUR0612FA**	1.417	—	3.228	.755	4.88	.750	.437	5
2.000	6.000	**AHX640SUL0607FA**	1.693	—	3.228	.737	4.88	.750	.437	2
2.000	6.000	**AHX640SUL0610FA**	1.693	—	3.228	.737	4.88	.750	.437	2
2.000	6.000	**AHX640SUR0607FA**	1.693	—	3.228	.737	4.88	.750	.437	2
2.000	6.000	**AHX640SUR0610FA**	1.693	—	3.228	.737	4.88	.750	.437	2
2.500	8.000	**AHX640SUL0808MN**	1.378	—	5.512	1.052	6.89	1.000	.560	3
2.500	8.000	**AHX640SUL0812MN**	1.378	—	5.512	1.052	6.89	1.000	.560	3
2.500	8.000	**AHX640SUR0808MN**	1.378	—	5.512	1.052	6.89	1.000	.560	3
2.500	8.000	**AHX640SUR0812MN**	1.378	—	5.512	1.052	6.89	1.000	.560	3

AHX440S, AHX475S, AHX640S Mounting Dimension

Fig. 1

ø40
ø50
ø63
ø80

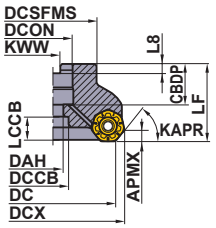


Fig. 2

ø100
ø125
ø160

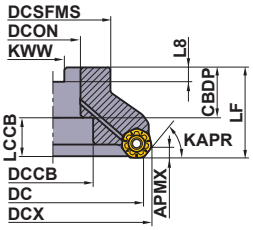
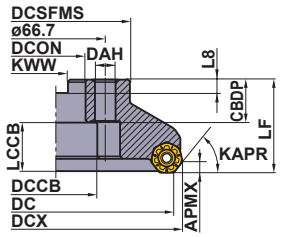


Fig. 3

ø160



Right hand tool holder only.

(mm)

DCON	DC	Order Number	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
16	40	**AHX440S-040A03AR**	18	9	14	13.9	37	8.4	5.6	1
16	40	**AHX440S-040A04AR**	18	9	14	13.9	37	8.4	5.6	1
22	50	**AHX440S-050A04AR**	20	11	17	11.9	47	10.4	6.3	1
22	50	**AHX440S-050A05AR**	20	11	17	11.9	47	10.4	6.3	1
22	50	**AHX440S-050A06AR**	20	11	17	11.9	47	10.4	6.3	1
22	50	**AHX475S-050A04AR**	20	11	17	16.7	47	10.4	6.3	5
22	50	**AHX475S-050A05AR**	20	11	17	16.7	47	10.4	6.3	5
22	63	**AHX440S-063A05AR**	20	11	17	11.9	50	10.4	6.3	1
22	63	**AHX440S-063A06AR**	20	11	17	11.9	50	10.4	6.3	1
22	63	**AHX440S-063A08AR**	20	11	17	11.9	50	10.4	6.3	1
22	63	**AHX475S-063A05AR**	20	11	17	16.7	60	10.4	6.3	5
22	63	**AHX475S-063A06AR**	20	11	17	16.7	60	10.4	6.3	5
22	63	**AHX640S-063A04AR**	20	11	17	16.2	50	10.4	6.3	1
22	63	**AHX640S-063A05AR**	20	11	17	16.2	50	10.4	6.3	1
25.4	80	**AHX440SR08006CA**	26	13	20	14.9	56	9.5	6	1
25.4	80	**AHX440SR08008CA**	26	13	20	14.9	56	9.5	6	1
25.4	80	**AHX440SR08010CA**	26	13	20	14.9	56	9.5	6	1
25.4	80	**AHX640SR08004CA**	26	13	20	14.2	56	9.5	6	1
25.4	80	**AHX640SR08006CA**	26	13	20	14.2	56	9.5	6	1
27	80	**AHX440S-080A06AR**	23	13	20	14.9	56	12.4	7	1
27	80	**AHX440S-080A08AR**	23	13	20	14.9	56	12.4	7	1
27	80	**AHX440S-080A10AR**	23	13	20	14.9	56	12.4	7	1
27	80	**AHX475S-080A06AR**	23	13	20	14.7	76	12.4	7	5
27	80	**AHX475S-080A08AR**	23	13	20	14.7	76	12.4	7	5
27	80	**AHX640S-080A04AR**	23	13	20	15.2	56	12.4	7	1
27	80	**AHX640S-080A06AR**	23	13	20	15.2	56	12.4	7	1
31.75	80	**AHX475SR08006DA**	32	17	26	19.7	76	12.7	8	5
31.75	80	**AHX475SR08008DA**	32	17	26	19.7	76	12.7	8	5
31.75	100	**AHX440SR10007DA**	37	—	45	11.9	70	12.7	8	2
31.75	100	**AHX440SR10010DA**	37	—	45	11.9	70	12.7	8	2
31.75	100	**AHX440SR10012DA**	37	—	45	11.9	70	12.7	8	2
31.75	100	**AHX475SR10007DA**	32	17	26	19.7	96	12.7	8	5
31.75	100	**AHX475SR10009DA**	32	17	26	19.7	96	12.7	8	5
31.75	100	**AHX640SR10005DA**	35	—	45	13.2	70	12.7	8	2
31.75	100	**AHX640SR10007DA**	35	—	45	13.2	70	12.7	8	2
32	100	**AHX440S-100B07AR**	32	—	45	16.9	78	14.4	8	2
32	100	**AHX440S-100B10AR**	32	—	45	16.9	78	14.4	8	2
32	100	**AHX440S-100B12AR**	32	—	45	16.9	78	14.4	8	2

Fig. 4
ø200

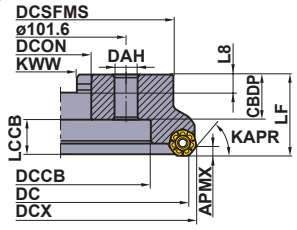


Fig.5
ø50
ø63
ø80
ø100

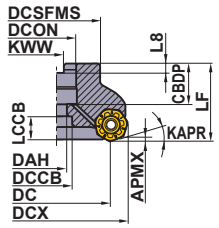
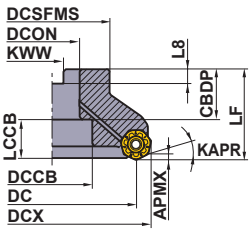


Fig.6
ø125
ø160



Right hand tool holder only.

(mm)

DCON	DC	Order Number	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
32	100	**AHX475S-100A07AR**	26	17	26	25.7	96	14.4	8	5
32	100	**AHX475S-100A09AR**	26	17	26	25.7	96	14.4	8	5
32	100	**AHX640S-100B05AR**	32	—	45	16.2	78	14.4	8	2
32	100	**AHX640S-100B07AR**	32	—	45	16.2	78	14.4	8	2
38.1	125	**AHX440SR12508EA**	42	—	56	19.9	80	15.9	10	2
38.1	125	**AHX440SR12512EA**	42	—	56	19.9	80	15.9	10	2
38.1	125	**AHX440SR12514EA**	42	—	56	19.9	80	15.9	10	2
38.1	125	**AHX475SR12508EA**	42	—	56	19.7	100	15.9	10	6
38.1	125	**AHX475SR12510EA**	42	—	56	19.7	100	15.9	10	6
38.1	125	**AHX640SR12506EA**	42	—	56	19.2	80	15.9	10	2
38.1	125	**AHX640SR12508EA**	42	—	56	19.2	80	15.9	10	2
40	125	**AHX440S-125B08AR**	40	—	56	21.9	89	16.4	9	2
40	125	**AHX440S-125B12AR**	40	—	56	21.9	89	16.4	9	2
40	125	**AHX440S-125B14AR**	40	—	56	21.9	89	16.4	9	2
40	125	**AHX475S-125B08AR**	40	—	56	21.7	100	16.4	9	6
40	125	**AHX475S-125B10AR**	40	—	56	21.7	100	16.4	9	6
40	125	**AHX640S-125B06AR**	42	—	56	19.2	89	16.4	9	2
40	125	**AHX640S-125B08AR**	42	—	56	19.2	89	16.4	9	2
40	160	**AHX440S-160C10NR**	40	14	56	21.9	100	16.4	9	3
40	160	**AHX440S-160C14NR**	40	14	56	21.9	100	16.4	9	3
40	160	**AHX440S-160C16NR**	40	14	56	21.9	100	16.4	9	3
40	160	**AHX475S-160B10AR**	40	—	56	21.7	100	16.4	9	6
40	160	**AHX475S-160B12AR**	40	—	56	21.7	100	16.4	9	6
40	160	**AHX640S-160C07NR**	29	14	56	32.2	120	16.4	9	3
40	160	**AHX640S-160C10NR**	29	14	56	32.2	120	16.4	9	3
47.625	200	**AHX640SR20008KN**	35	18	140	26.2	175	25.4	14.22	4
47.625	200	**AHX640SR20012KN**	35	18	140	26.2	175	25.4	14.22	4
50.8	160	**AHX440SR16010FA**	45	—	72	16.9	100	19.1	11	2
50.8	160	**AHX440SR16014FA**	45	—	72	16.9	100	19.1	11	2
50.8	160	**AHX440SR16016FA**	45	—	72	16.9	100	19.1	11	2
50.8	160	**AHX475SR16010FA**	45	—	72	16.7	100	19.1	11	6
50.8	160	**AHX475SR16012FA**	45	—	72	16.7	100	19.1	11	6
50.8	160	**AHX640SR16007FA**	43	—	72	18.2	100	19.1	11	2
50.8	160	**AHX640SR16010FA**	43	—	72	18.2	100	19.1	11	2
60	200	**AHX640S-200C08NR**	32	18	140	29.2	175	25.7	14.22	4
60	200	**AHX640S-200C12NR**	32	18	140	29.2	175	25.7	14.22	4

FACE MILLING

<HIGH FEED CUTTING FOR CAST IRON>

50° KAPR

AHX640W

P | M | **K** | N | S | H

Cast Iron



KAPR : 50°
GAMP : -6°
GAMF : -4°
DC=Inch size, DCON=Inch size

Fig.1
ø3.000"
ø4.000"

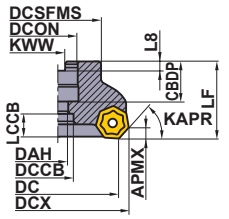


Fig.2
ø5.000"
ø6.000"

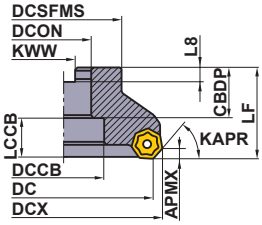


Fig.3
ø8.000"
ø10.000"

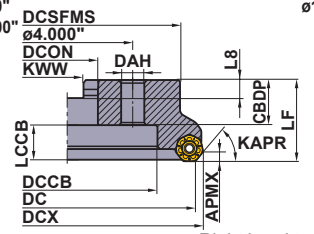
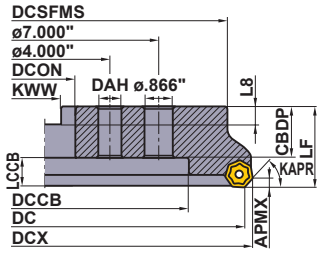


Fig.4
ø12.000"



Right hand tool holder shown.

(inch)

DC	Order Number	Stock	* Coolant Thru	Number of Teeth	Type	LF	DCX	DCON	Fig.	WT(lbs)	APMX
3.000	**AHX640WR0308D**	●	N	8	R	2.500	3.494	1.250	1	4.2	.236
	AHX640WL0308D	□	N	8	L	2.500	3.494	1.250	1	4.2	.236
	AHX640WR0310D	●	N	10	R	2.500	3.494	1.250	1	4.2	.236
	AHX640WL0310D	□	N	10	L	2.500	3.494	1.250	1	4.2	.236
4.000	**AHX640WR0410E**	●	N	10	R	2.500	4.494	1.500	1	7.3	.236
	AHX640WL0410E	□	N	10	L	2.500	4.494	1.500	1	7.3	.236
	AHX640WR0414E	●	N	14	R	2.500	4.494	1.500	1	7.3	.236
	AHX640WL0414E	□	N	14	L	2.500	4.494	1.500	1	7.3	.236
5.000	**AHX640WR0512E**	●	N	12	R	2.500	5.494	1.500	2	8.8	.236
	AHX640WL0512E	□	N	12	L	2.500	5.494	1.500	2	8.8	.236
	AHX640WR0518E	●	N	18	R	2.500	5.494	1.500	2	8.8	.236
	AHX640WL0518E	□	N	18	L	2.500	5.494	1.500	2	8.8	.236
6.000	**AHX640WR0614F**	●	N	14	R	2.500	6.494	2.000	2	12.6	.236
	AHX640WL0614F	□	N	14	L	2.500	6.494	2.000	2	12.6	.236
	AHX640WR0620F	●	N	20	R	2.500	6.494	2.000	2	12.6	.236
	AHX640WL0620F	□	N	20	L	2.500	6.494	2.000	2	12.6	.236

* N=No
Note 1) Set bolt not included.



Fig.1
ø3.000"
ø4.000"

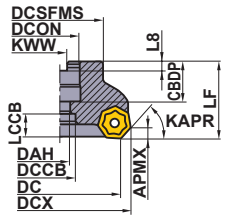


Fig.2
ø5.000"
ø6.000"

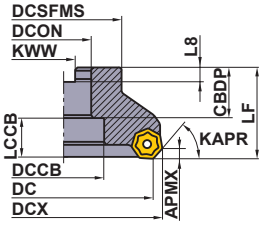


Fig.3
ø8.000"
ø10.000"

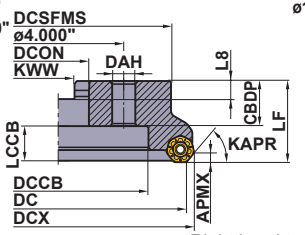
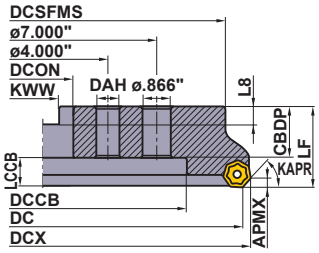


Fig.4
ø12.000"



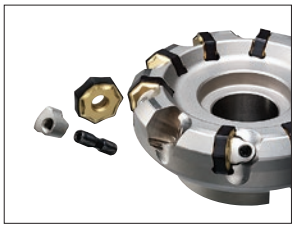
Right hand tool holder shown.

KAPR : 50°
GAMP : -6°
GAMF : -4°
DC=Inch size, DCON=Inch size

(inch)

DC	Order Number	Stock	* Coolant Thru	Number of Teeth	Type	LF	DCX	DCON	Fig.	WT(lbs)	APMX
8.000	**AHX640WR0820M**	●	N	20	R	2.500	8.494	2.500	3	19.6	.236
	AHX640WL0820M	□	N	20	L	2.500	8.494	2.500	3	19.6	.236
	AHX640WR0828M	●	N	28	R	2.500	8.494	2.500	3	19.6	.236
	AHX640WL0828M	□	N	28	L	2.500	8.494	2.500	3	19.6	.236
10.000	**AHX640WR1024M**	●	N	24	R	2.500	10.494	2.500	3	32.0	.236
	AHX640WL1024M	□	N	24	L	2.500	10.494	2.500	3	32.0	.236
	AHX640WR1036M	●	N	36	R	2.500	10.494	2.500	3	32.0	.236
	AHX640WL1036M	□	N	36	L	2.500	10.494	2.500	3	32.0	.236
12.000	**AHX640WR1228M**	●	N	28	R	2.500	12.494	2.500	4	49.2	.236
	AHX640WL1228M	□	N	28	L	2.500	12.494	2.500	4	49.2	.236
	AHX640WR1242M	●	N	42	R	2.500	12.494	2.500	4	49.2	.236
	AHX640WL1242M	□	N	42	L	2.500	12.494	2.500	4	49.2	.236

* N=No
Note 1) Set bolt not included.



SPARE PARTS

Tool Holder Number		* 	
	Wedge	Clamp Screw	Wrench
AHX640W Type	CWAHX640WN	LS0622T	TKY15T

* Clamp Torque (lbf-in) : LS0622T=53

L

INDEXABLE MILLING

MOUNTING DIMENSION ➢ L066
SPARE PARTS ➢ N001
TECHNICAL DATA ➢ P001



Metric Standard

For inch arbors

KAPR : 50°
GAMP: -6°
GAMF: -4°
DC=mm size, DCON=Inch size

Fig.1
ø80

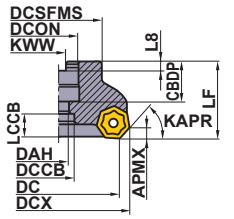


Fig.2
ø100
ø125
ø160

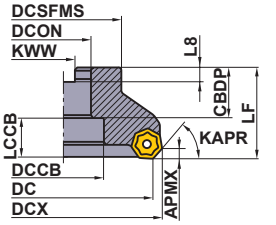


Fig.3
ø200
ø250

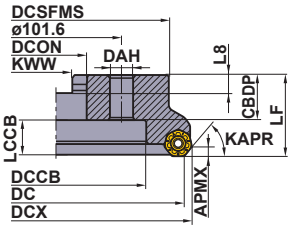
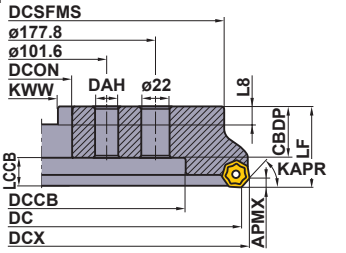


Fig.4
ø315



Right hand tool holder shown.

(mm)

DC	Order Number	Stock	★ Coolant Thru	Number of Teeth	Type	LF	DCX	DCON	Fig.	WT(kg)	APMX
80	**AHX640WR08008C**	★	N	8	R	50	92.6	25.4 [1.0"]	1	1.5	6
	AHX640WL08008C	★	N	8	L	50	92.6	25.4 [1.0"]	1	1.5	6
	AHX640WR08010C	★	N	10	R	50	92.6	25.4 [1.0"]	1	1.5	6
	AHX640WL08010C	★	N	10	L	50	92.6	25.4 [1.0"]	1	1.5	6
100	**AHX640WR10010D**	★	N	10	R	50	112.6	31.75 [1.25"]	2	2.1	6
	AHX640WL10010D	★	N	10	L	50	112.6	31.75 [1.25"]	2	2.1	6
	AHX640WR10014D	★	N	14	R	50	112.6	31.75 [1.25"]	2	2.1	6
	AHX640WL10014D	★	N	14	L	50	112.6	31.75 [1.25"]	2	2.1	6
125	**AHX640WR12512E**	★	N	12	R	63	137.6	38.1 [1.50"]	2	3.5	6
	AHX640WL12512E	★	N	12	L	63	137.6	38.1 [1.50"]	2	3.5	6
	AHX640WR12518E	★	N	18	R	63	137.6	38.1 [1.50"]	2	3.5	6
	AHX640WL12518E	★	N	18	L	63	137.6	38.1 [1.50"]	2	3.5	6
160	**AHX640WR16016F**	★	N	16	R	63	172.6	50.8 [2.0"]	2	5.6	6
	AHX640WL16016F	★	N	16	L	63	172.6	50.8 [2.0"]	2	5.6	6
	AHX640WR16022F	★	N	22	R	63	172.6	50.8 [2.0"]	2	5.6	6
	AHX640WL16022F	★	N	22	L	63	172.6	50.8 [2.0"]	2	5.6	6
200	**AHX640WR20020K**	★	N	20	R	63	212.6	47.625 [1.875"]	3	9.0	6
	AHX640WL20020K	★	N	20	L	63	212.6	47.625 [1.875"]	3	9.0	6
	AHX640WR20028K	★	N	28	R	63	212.6	47.625 [1.875"]	3	9.0	6
	AHX640WL20028K	★	N	28	L	63	212.6	47.625 [1.875"]	3	9.0	6
250	**AHX640WR25024K**	★	N	24	R	63	262.6	47.625 [1.875"]	3	14.4	6
	AHX640WL25024K	★	N	24	L	63	262.6	47.625 [1.875"]	3	14.4	6
	AHX640WR25036K	★	N	36	R	63	262.6	47.625 [1.875"]	3	14.4	6
	AHX640WL25036K	★	N	36	L	63	262.6	47.625 [1.875"]	3	14.4	6
315	**AHX640WR31528P**	★	N	28	R	63	327.6	47.625 [1.875"]	4	23.8	6
	AHX640WL31528P	★	N	28	L	63	327.6	47.625 [1.875"]	4	23.8	6
	AHX640WR31544P	★	N	44	R	63	327.6	47.625 [1.875"]	4	23.8	6
	AHX640WL31544P	★	N	44	L	63	327.6	47.625 [1.875"]	4	23.8	6

★ N=No
Note 1) Set bolt not included.



Fig.1
ø80

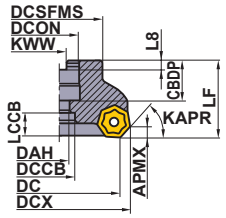


Fig.2
ø100
ø125

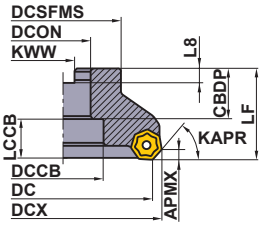


Fig.3
ø160

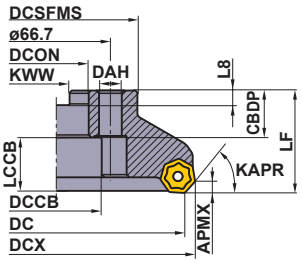


Fig.4
ø200
ø250

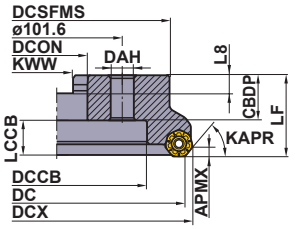
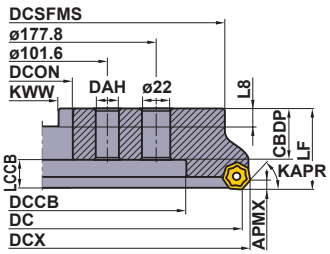


Fig.5
ø315



Metric Standard

For metric arbors

KAPR : 50°
GAMP: -6°
GAMF: -4°
DC=mm size, DCON=mm size

Right hand tool holder shown.

(mm)

DC	Order Number	Stock	* Coolant Thru	Number of Teeth	Type	LF	DCX	DCON	Fig.	WT(kg)	APMX
80	**AHX640W-080A08R**	★	N	8	R	50	92.6	27	1	1.5	6
	AHX640W-080A08L	★	N	8	L	50	92.6	27	1	1.5	6
	AHX640W-080A10R	★	N	10	R	50	92.6	27	1	1.5	6
	AHX640W-080A10L	★	N	10	L	50	92.6	27	1	1.5	6
100	**AHX640W-100B10R**	★	N	10	R	50	112.6	32	2	2.1	6
	AHX640W-100B10L	★	N	10	L	50	112.6	32	2	2.1	6
	AHX640W-100B14R	★	N	14	R	50	112.6	32	2	2.1	6
	AHX640W-100B14L	★	N	14	L	50	112.6	32	2	2.1	6
125	**AHX640W-125B12R**	★	N	12	R	63	137.6	40	2	3.1	6
	AHX640W-125B12L	★	N	12	L	63	137.6	40	2	3.1	6
	AHX640W-125B18R	★	N	18	R	63	137.6	40	2	3.1	6
	AHX640W-125B18L	★	N	18	L	63	137.6	40	2	3.1	6
160	**AHX640W-160C16R**	★	N	16	R	63	172.6	40	3	5.6	6
	AHX640W-160C16L	★	N	16	L	63	172.6	40	3	5.6	6
	AHX640W-160C22R	★	N	22	R	63	172.6	40	3	5.6	6
	AHX640W-160C22L	★	N	22	L	63	172.6	40	3	5.6	6
200	**AHX640W-200C20R**	★	N	20	R	63	212.6	60	4	8.0	6
	AHX640W-200C20L	★	N	20	L	63	212.6	60	4	8.0	6
	AHX640W-200C28R	★	N	28	R	63	212.6	60	4	8.0	6
	AHX640W-200C28L	★	N	28	L	63	212.6	60	4	8.0	6
250	**AHX640W-250C24R**	★	N	24	R	63	262.6	60	4	12.6	6
	AHX640W-250C24L	★	N	24	L	63	262.6	60	4	12.6	6
	AHX640W-250C36R	★	N	36	R	63	262.6	60	4	12.6	6
	AHX640W-250C36L	★	N	36	L	63	262.6	60	4	12.6	6
315	**AHX640W-315C28R**	★	N	28	R	80	327.6	60	5	31.5	6
	AHX640W-315C28L	★	N	28	L	80	327.6	60	5	31.5	6
	AHX640W-315C44R	★	N	44	R	80	327.6	60	5	31.5	6
	AHX640W-315C44L	★	N	44	L	80	327.6	60	5	31.5	6

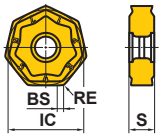
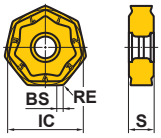
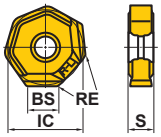
* N=No
Note 1) Set bolt not included.

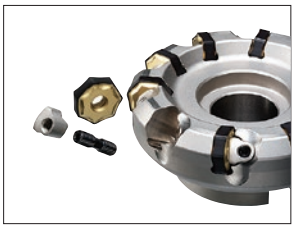
MOUNTING DIMENSION ➢ L067
SPARE PARTS ➢ N001
TECHNICAL DATA ➢ P001

INSERTS

Work Material	K	Cast Iron

Cutting Conditions (Guide) : ● : Stable Cutting ◔ : General Cutting ✱ : Unstable Cutting
Honing : E : Round

Shape	Order Number	Class	Honing	Coated			Dimensions(inch)					Geometry
				MC5020	VP15TF	VP20RT	IC	RE	BS	S	APMX	
 General Cutting	**NNMU200608ZEN-MK**	M	E	●	●	●	.787	.031	.039	.258	.236	
 Strong Cutting Edge Type	**NNMU200608ZEN-HK**	M	E	●	●	●	.787	.031	.039	.258	.236	
 Wiper	**WNEU2006ZEN7C-WK**	E	E	●			.787	.031	.291	.258	.020	



SPARE PARTS

Tool Holder Number	 Wedge	 * Clamp Screw	 Wrench
AHX640W	CWAHX640WN	LS0622T	TKY15T

* Clamp Torque (lbf-in) : LS0622T=53

L

INDEXABLE MILLING

● : USA Stock
<10 inserts in one case>

RECOMMENDED CUTTING CONDITIONS

■ Dry·Wet Cutting

(inch)

Work Material		Tensile Strength	Grade	vc (SFM)	fz (IPT)
K	Gray Cast Iron	≤350MPa	**MC5020**	720 (490—985)	.012 (.008—.016)
			VP15TF VP20RT	590 (425—755)	.012 (.008—.016)
	Ductile Cast Iron	≤450MPa	**MC5020**	655 (490—820)	.008 (.004—.012)
			VP15TF VP20RT	560 (395—720)	.008 (.004—.012)
		≤800MPa	**MC5020**	560 (490—655)	.008 (.004—.012)
			VP15TF VP20RT	460 (330—590)	.008 (.004—.012)

■ Finishing (Use of Wiper Inserts)

(inch)

Work Material		Grade	ap	vc (SFM)	fz (IPT)
K	Gray Cast Iron	**MC5020**	<.0197	1050 (820—1310)	.008 (.004—.012)
			.0197—.118	855 (655—1150)	
	Ductile Cast Iron		<.0197	855 (655—1150)	
			.0197—.118	720 (655—820)	

*In the case of IPR > .236 IPR, it is possible to use 2 or 3 wiper inserts for finish machining.

Note 1) With reference to the above examples, adjust the cutting conditions according to the use environment.
Note 2) Tool life when wet cutting is short compared to dry cutting.

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

AHX640W Mounting Dimension

Fig.1

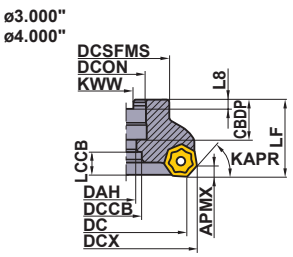


Fig.2

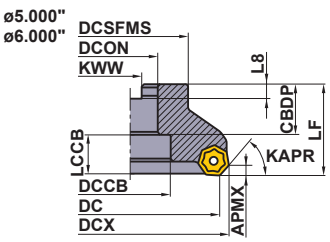


Fig.3

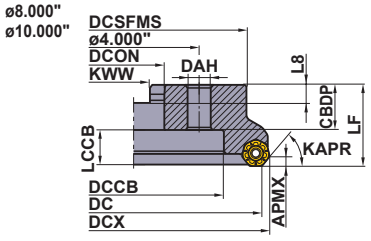
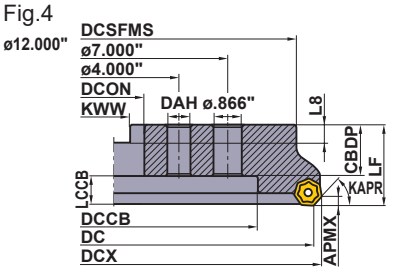


Fig.4



Right hand tool holder shown.

(inch)

DCON	DC	Order Number	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
1.250	3.000	**AHX640WL0308D**	1.260	.669	1.024	.800	2.87	.500	.281	1
1.250	3.000	**AHX640WL0310D**	1.260	.669	1.024	.800	2.87	.500	.281	1
1.250	3.000	**AHX640WR0308D**	1.260	.669	1.024	.800	2.87	.500	.281	1
1.250	3.000	**AHX640WR0310D**	1.260	.669	1.024	.800	2.87	.500	.281	1
1.500	4.000	**AHX640WL0410E**	1.181	.787	1.181	.879	3.80	.625	.375	1
1.500	4.000	**AHX640WL0414E**	1.181	.787	1.181	.879	3.80	.625	.375	1
1.500	4.000	**AHX640WR0410E**	1.181	.787	1.181	.879	3.80	.625	.375	1
1.500	4.000	**AHX640WR0414E**	1.181	.787	1.181	.879	3.80	.625	.375	1
1.500	5.000	**AHX640WL0512E**	1.378	—	2.362	1.076	3.80	.625	.375	2
1.500	5.000	**AHX640WL0518E**	1.378	—	2.362	1.076	3.80	.625	.375	2
1.500	5.000	**AHX640WR0512E**	1.378	—	2.362	1.076	3.80	.625	.375	2
1.500	5.000	**AHX640WR0518E**	1.378	—	2.362	1.076	3.80	.625	.375	2
2.000	6.000	**AHX640WL0614F**	1.496	—	3.150	.958	4.72	.750	.437	2
2.000	6.000	**AHX640WL0620F**	1.496	—	3.150	.958	4.72	.750	.437	2
2.000	6.000	**AHX640WR0614F**	1.496	—	3.150	.958	4.72	.750	.437	2
2.000	6.000	**AHX640WR0620F**	1.496	—	3.150	.958	4.72	.750	.437	2
2.500	8.000	**AHX640WL0820M**	1.378	—	5.512	1.076	6.89	1.000	.560	3
2.500	8.000	**AHX640WL0828M**	1.378	—	5.512	1.076	6.89	1.000	.560	3
2.500	8.000	**AHX640WR0820M**	1.378	—	5.512	1.076	6.89	1.000	.560	3
2.500	8.000	**AHX640WR0828M**	1.378	—	5.512	1.076	6.89	1.000	.560	3
2.500	10.000	**AHX640WL1024M**	1.378	—	7.087	1.076	8.66	1.000	.560	3
2.500	10.000	**AHX640WL1036M**	1.378	—	7.087	1.076	8.66	1.000	.560	3
2.500	10.000	**AHX640WR1024M**	1.378	—	7.087	1.076	8.66	1.000	.560	3
2.500	10.000	**AHX640WR1036M**	1.378	—	7.087	1.076	8.66	1.000	.560	3
2.500	12.000	**AHX640WL1228M**	1.575	—	9.646	.879	11.22	1.000	.560	4
2.500	12.000	**AHX640WL1242M**	1.575	—	9.646	.879	11.22	1.000	.560	4
2.500	12.000	**AHX640WR1228M**	1.575	—	9.646	.879	11.22	1.000	.560	4
2.500	12.000	**AHX640WR1242M**	1.575	—	9.646	.879	11.22	1.000	.560	4

AHX640W Mounting Dimension

Fig.1

ø80

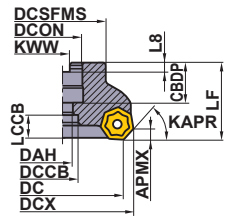


Fig.2

ø100
ø125
ø160

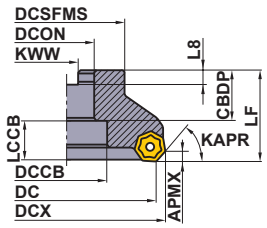


Fig.3

ø160

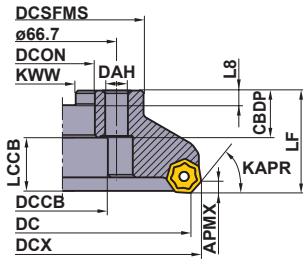


Fig.4

ø200
ø250

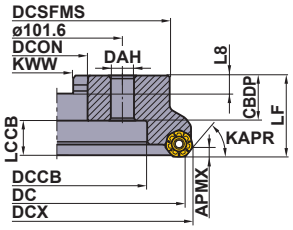
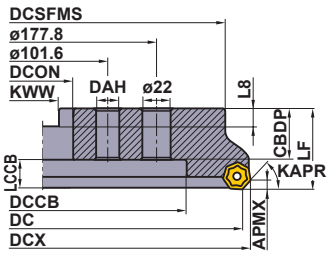


Fig.5

ø315



Right hand tool holder shown.

(mm)

DCON	DC	Order Number	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
25.4	80	**AHX640WL08008C**	26	13	20	14.8	56	9.5	6	1
25.4	80	**AHX640WL08010C**	26	13	20	14.8	56	9.5	6	1
25.4	80	**AHX640WR08008C**	26	13	20	14.8	56	9.5	6	1
25.4	80	**AHX640WR08010C**	26	13	20	14.8	56	9.5	6	1
27	80	**AHX640W-080A08L**	23	13	20	14.8	56	12.4	7	1
27	80	**AHX640W-080A08R**	23	13	20	14.8	56	12.4	7	1
27	80	**AHX640W-080A10L**	23	13	20	14.8	56	12.4	7	1
27	80	**AHX640W-080A10R**	23	13	20	14.8	56	12.4	7	1
31.75	100	**AHX640WL10010D**	32	—	45	16.8	70	12.7	8	2
31.75	100	**AHX640WL10014D**	32	—	45	16.8	70	12.7	8	2
31.75	100	**AHX640WR10010D**	32	—	45	16.8	70	12.7	8	2
31.75	100	**AHX640WR10014D**	32	—	45	16.8	70	12.7	8	2
32	100	**AHX640W-100B10L**	32	—	45	16.8	70	14.4	8	2
32	100	**AHX640W-100B10R**	32	—	45	16.8	70	14.4	8	2
32	100	**AHX640W-100B14L**	32	—	45	16.8	70	14.4	8	2
32	100	**AHX640W-100B14R**	32	—	45	16.8	70	14.4	8	2
38.1	125	**AHX640WL12512E**	35	—	56	26.8	80	15.9	10	2
38.1	125	**AHX640WL12518E**	35	—	56	26.8	80	15.9	10	2
38.1	125	**AHX640WR12512E**	35	—	56	26.8	80	15.9	10	2
38.1	125	**AHX640WR12518E**	35	—	56	26.8	80	15.9	10	2
40	125	**AHX640W-125B12L**	32	—	56	29.8	80	16.4	9	2
40	125	**AHX640W-125B12R**	32	—	56	29.8	80	16.4	9	2
40	125	**AHX640W-125B18L**	32	—	56	29.8	80	16.4	9	2
40	125	**AHX640W-125B18R**	32	—	56	29.8	80	16.4	9	2
40	160	**AHX640W-160C16L**	29	14	56	32.8	100	16.4	9	3
40	160	**AHX640W-160C16R**	29	14	56	32.8	100	16.4	9	3
40	160	**AHX640W-160C22L**	29	14	56	32.8	100	16.4	9	3
40	160	**AHX640W-160C22R**	29	14	56	32.8	100	16.4	9	3

AHX640W Mounting Dimension

Fig.1

ø80

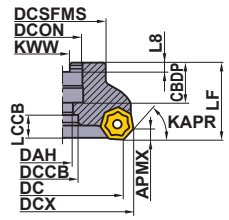


Fig.2

ø100
ø125
ø160

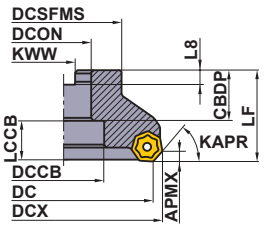


Fig.3

ø160

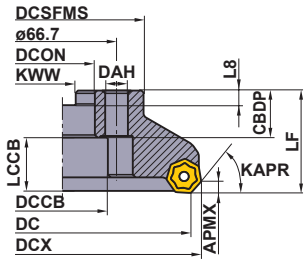


Fig.4

ø200
ø250

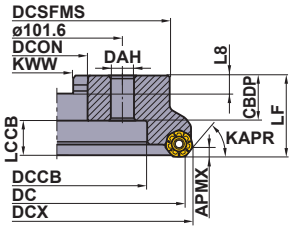
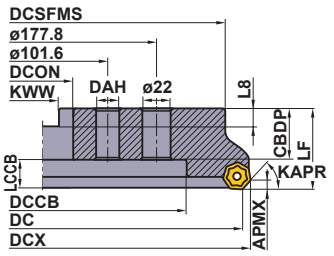


Fig.5

ø315



Right hand tool holder shown.

(mm)

DCON	DC	Order Number	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
47.625	200	**AHX640WL20020K**	35	18	140	26.8	175	25.4	14.22	4
47.625	200	**AHX640WL20028K**	35	18	140	26.8	175	25.4	14.22	4
47.625	200	**AHX640WR20020K**	35	18	140	26.8	175	25.4	14.22	4
47.625	200	**AHX640WR20028K**	35	18	140	26.8	175	25.4	14.22	4
47.625	250	**AHX640WL25024K**	35	18	180	26.8	220	25.4	14.22	4
47.625	250	**AHX640WL25036K**	35	18	180	26.8	220	25.4	14.22	4
47.625	250	**AHX640WR25024K**	35	18	180	26.8	220	25.4	14.22	4
47.625	250	**AHX640WR25036K**	35	18	180	26.8	220	25.4	14.22	4
47.625	315	**AHX640WL31528P**	40	18	225	21.8	285	25.4	14.22	5
47.625	315	**AHX640WL31544P**	40	18	225	21.8	285	25.4	14.22	5
47.625	315	**AHX640WR31528P**	40	18	225	21.8	285	25.4	14.22	5
47.625	315	**AHX640WR31544P**	40	18	225	21.8	285	25.4	14.22	5
50.8	160	**AHX640WL16016F**	38	—	72	23.8	100	19.1	11	2
50.8	160	**AHX640WL16022F**	38	—	72	23.8	100	19.1	11	2
50.8	160	**AHX640WR16016F**	38	—	72	23.8	100	19.1	11	2
50.8	160	**AHX640WR16022F**	38	—	72	23.8	100	19.1	11	2
60	200	**AHX640W-200C20L**	32	18	135	29.8	155	25.7	14	4
60	200	**AHX640W-200C20R**	32	18	135	29.8	155	25.7	14	4
60	200	**AHX640W-200C28L**	32	18	135	29.8	155	25.7	14	4
60	200	**AHX640W-200C28R**	32	18	135	29.8	155	25.7	14	4
60	250	**AHX640W-250C24L**	32	18	180	29.8	200	25.7	14	4
60	250	**AHX640W-250C24R**	32	18	180	29.8	200	25.7	14	4
60	250	**AHX640W-250C36L**	32	18	180	29.8	200	25.7	14	4
60	250	**AHX640W-250C36R**	32	18	180	29.8	200	25.7	14	4
60	315	**AHX640W-315C28L**	57	18	225	21.8	285	25.7	14	5
60	315	**AHX640W-315C28R**	57	18	225	21.8	285	25.7	14	5
60	315	**AHX640W-315C44L**	57	18	225	21.8	285	25.7	14	5
60	315	**AHX640W-315C44R**	57	18	225	21.8	285	25.7	14	5

FACE MILLING
<HIGH EFFICIENCY CUTTING FOR CAST IRON>

45° KAPR F R

AOX445

P M **K** N S H

Cast Iron



Fig.1
ø63

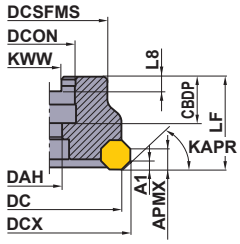
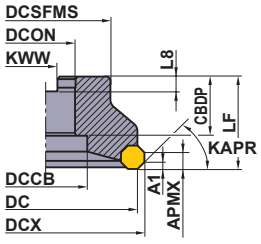


Fig.2
ø80
ø100
ø125
ø160



Metric Standard

KAPR :45°
GAMP :-5°
GAMF :-9°—-6°

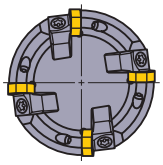
■ ARBOR TYPE

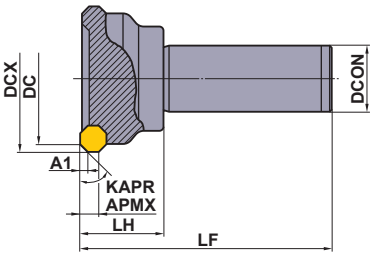
Right hand tool holder only.

Type	Order Number	Stock R	Number of Teeth	Dimensions (mm) [inch] DC	DCX	LF	DCON	CBDP	DAH	DCCB	DCSFMS	KWW	L8	WT (kg)	Max. Depth of Cut (mm) A1	APMX	Max. Spindle Speed (min^{-1})	Type (Fig.)
Coarse Pitch	AOX445-063A04R	★	4	63	70.75	40	22	20	11	—	50	10.4	6.3	0.6	3	8	12000	1
	AOX445R08006C	★	6	80	87.73	50	25.4 [1.0"]	26	—	38	60	9.5	6	1.2	3	8	11000	2
	AOX445R10008D	★	8	100	107.73	50	31.75 [1.25"]	32	—	45	70	12.7	8	1.8	3	8	9300	2
	AOX445R12510E	★	10	125	132.71	63	38.1 [1.5"]	35	—	60	80	15.9	10	3.0	3	8	8300	2
	AOX445R16012F	★	12	160	167.71	63	50.8 [2.0"]	38	—	80	100	19.1	11	4.9	3	8	7200	2

Note 1) When machining with a depth of cut of over 3 mm, 16 corners cannot be used.







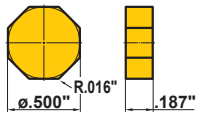
Metric Standard

■ SHANK TYPE

Right hand tool holder only.

Type	Order Number	Stock R	Number of Teeth	Dimensions (mm) DC	DCX	LF	DCON	LH	WT (kg)	Max. Depth of Cut (mm) A1	APMX	Max. Spindle Speed (min^{-1})
Coarse Pitch	AOX445R503S32	★	3	50	57.75	125	32	40	1.1	3	8	13000
	AOX445R634S32	★	4	63	70.75	125	32	40	1.4	3	8	12000

INSERTS

Order Number	Class	CBN BC5030	Geometry
SL-ONEN120404ASN	E	★	

SPARE PARTS

Tool Holder Number	Wedge	Clamp Screw *	Wrench
AOX445	CWAOX445N	LS15T	TKY25T

* Clamp Torque (lbf-in) : LS15T=71

RECOMMENDED CUTTING CONDITIONS

Work Material		Tensile Strength	Grade	Cutting Speed (SFM)	Feed per Tooth (IPT)
K	Gray Cast Iron	≤200MPa	BC5030	3280 (2625—4920)	.004 (.002—.006)
		250—350 MPa			

★ : Stocked in Japan
<1 insert in one case for CBN>

FACE MILLING
<HIGH FEED FINISHING>

90° KAPR | F

FMAX
For Compact and Smaller Machining Centers **NEW**

P | M | K | **N** | S | H

Non-ferrous Metal



Fig.1
ø3.000"
ø4.000"

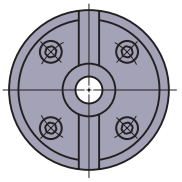
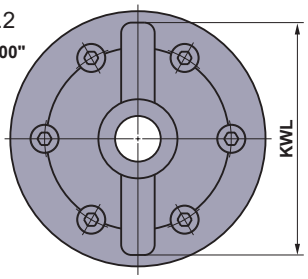
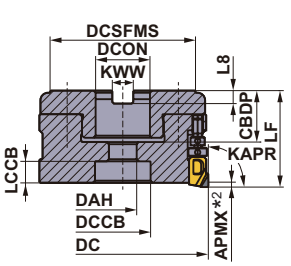
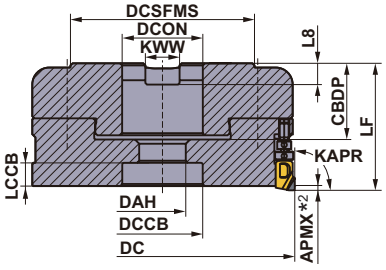


Fig.2
ø5.000"







■ ARBOR TYPE

DC=Inch, DCON=Inch GAMP: +5° GAMF: 0° Right hand tool holder only. (inch)

DC	Order Number	Stock	∗1 Coolant Thru	Number of Teeth	LF	DCON	WT (lbs)	RPMX (min^{-1})	Fig.
3.000	**FMAXUR0310C**	●	Y	10	1.772	1.000	2.2	24500	1
3.000	**FMAXUR0314C**	●	Y	14	1.772	1.000	2.1	24500	1
4.000	**FMAXUR0412D**	●	Y	12	1.969	1.250	4.2	22000	1
4.000	**FMAXUR0418D**	●	Y	18	1.969	1.250	4.1	22000	1
5.000	**FMAXUR0516E**	●	Y	16	2.362	1.500	7.6	19600	2
5.000	**FAMXUR0524E**	●	Y	24	2.362	1.500	7.5	19600	2

∗1 Y=Yes
∗2 For the maximum depth of cut (**APMX**), please refer to recommended cutting conditions (**ap**).
Note 1) The maximum depth of cut for should be .079 inch or less for ultra high efficiency machining with table feed (**vf** ≥ 787 IPM).

Mounting Dimensions

(inch)

DCON	DC	Tool Holder Type	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	KWL	Fig.
1.000	3.000	**FMAXUR03**	.945	.539	1.024	.433	2.677	.375	.219	—	1
1.250	4.000	**FMAXUR04**	1.260	.669	1.260	.394	3.465	.500	.281	—	1
1.500	5.000	**FMAXUR05**	1.417	.787	1.496	.472	3.465	.625	.375	4.409	2

SPARE PARTS

(inch)

DC	Tool Holder Type	Insert Clamp Screw ∗	Micro Adjustment Nut	Large Adjustment Screw	Balance Adjustment Screw	Cutter Set Bolt	Wrench T10	Wrench ø.098"
								
3.000	**FMAXUR03**	TSS04505S	KSN2	KSS2	HSS05005G	HSCXU50012H	TKY10T	RKY25S
4.000	**FMAXUR04**	TSS04505S	KSN2	KSS2	HSS06006G	HSCXU62514H	TKY10T	RKY25S
5.000	**FMAXUR05**	TSS04505S	KSN2	KSS2	HSS08008G	HSCXU75017H	TKY10T	RKY25S

∗ Clamp Torque (lbf-in) : TSS04505S=31
Note 1) Refer to the instruction manual included in the cutter body for how to locate the insert and adjust the run-out.
Note 2) The cutter body includes a set bolt for an arbor.
● : USA Stock ★ : Stocked in Japan

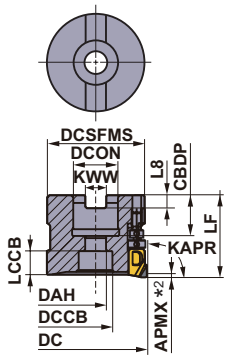


Metric Standard

For Metric Arbors

Fig.1

ø40
ø50
ø63



Right hand tool holder only.

■ARBOR TYPE

DC=mm, DCON=mm GAMP: +5° GAMF: -6°– -3° (mm)

DC	Order Number	Stock	∗1 Coolant Thru	Number of Teeth	LF	DCON	WT (kg)	RPMX (min^{-1})	Fig.
NEW 40	**FMAX-040A04R**	★	Y	4	40	16	0.24	30000	1
NEW 40	**FMAX-040A06R**	★	Y	6	40	16	0.23	30000	1
50	**FMAX-050A08R**	★	Y	8	40	22	0.37	30000	1
50	**FMAX-050A10R**	★	Y	10	40	22	0.35	30000	1
63	**FMAX-063A10R**	★	Y	10	40	22	0.67	27000	1
63	**FMAX-063A12R**	★	Y	12	40	22	0.66	27000	1

∗1 Y=Yes

∗2 For the maximum depth of cut (**APMX**), please refer to recommended cutting conditions (**ap**).

Note 1) The maximum depth of cut for should be 2 mm or less for ultra high efficiency machining with table feed (**vf** ≥ 20000 mm/min).

Mounting Dimensions

(mm)

DCON	DC	Tool Holder Type	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	KWL	Fig.
16	40	**FMAX-040**	18	9	14	10	37	8.4	5.6	–	1
22	50	**FMAX-050**	20	11	17	12	47	10.4	6.3	–	1
22	63	**FMAX-063**	20	11	17	12	60	10.4	6.3	–	1

SPARE PARTS

(mm)

Insert Clamp Screw *	Micro Adjustment Nut	Large Adjustment Screw	Balance Adjustment Screw	Cutter Set Bolt	Wrench T10	Wrench ø2.5
						
TSS04505S	KSN2	KSS2	HSS04004G	HSC10030H	TKY10T	RKY25S

∗ Clamp Torque (lbf-in) : TSS04505S=31

Note 1) Refer to the instruction manual included in the cutter body for how to locate the insert and adjust the run-out.

Note 2) The cutter body includes a set bolt for an arbor.

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001



Metric Standard

For Inch Arbors

Fig.1
ø80

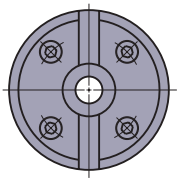
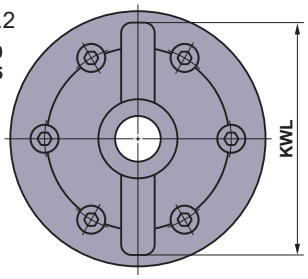
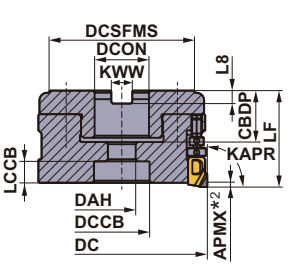
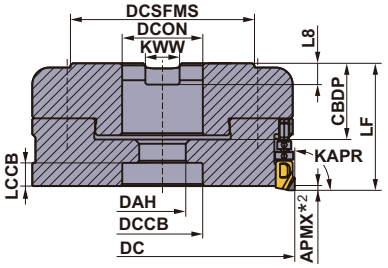


Fig.2
ø100
ø125







■ARBOR TYPE

DC=mm, DCON=Inch　　GAMP: +5°　GAMF: 0°　　Right hand tool holder only.　　(mm)

DC	Order Number	Stock	∗1 Coolant Thru	Number of Teeth	LF	DCON	WT (kg)	RPMX (min-1)	Fig.
80	**FMAXR08010C**	★	Y	10	45	25.4 [1.00"]	1.11	24500	1
80	**FMAXR08014C**	★	Y	14	45	25.4 [1.00"]	1.09	24500	1
100	**FMAXR10012D**	★	Y	12	50	31.75 [1.25"]	1.85	22000	2
100	**FMAXR10018D**	★	Y	18	50	31.75 [1.25"]	1.81	22000	2
125	**FMAXR12516E**	★	Y	16	60	38.1 [1.50"]	3.33	19600	2
125	**FMAXR12524E**	★	Y	24	60	38.1 [1.50"]	3.27	19600	2

∗1 Y=Yes
∗2 For the maximum depth of cut (**APMX**), please refer to recommended cutting conditions (**ap**).
Note 1) The maximum depth of cut for should be 2mm or less for ultra high efficiency machining with table feed (**vf** ≥ 20000mm/min).

Mounting Dimensions

(mm)

DCON	DC	Tool Holder Type	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	KWL	Fig.
25.4 [1.00"]	80	**FMAXR080**	24	13	26	11	68	9.5	6	—	1
31.75 [1.25"]	100	**FMAXR100**	32	17	32	10	79	12.7	8	90	2
38.1 [1.50"]	125	**FMAXR125**	36	22	38	12	88	15.9	10	112	2

SPARE PARTS

(mm)

DC	Tool Holder Type	Insert Clamp Screw∗	Micro Adjustment Nut	Large Adjustment Screw	Balance Adjustment Screw	Cutter Set Bolt	Wrench T10	Wrench ø2.5
								
80	**FMAXR080**	TSS04505S	KSN2	KSS2	HSS05005G	HSCX12030H	TKY10T	RKY25S
100	**FMAXR100**	TSS04505S	KSN2	KSS2	HSS06006G	HSCX16035H	TKY10T	RKY25S
125	**FMAXR125**	TSS04505S	KSN2	KSS2	HSS08008G	HSCX20035H	TKY10T	RKY25S

∗ Clamp Torque (lbf-in) : TSS04505S=31
Note 1) Refer to the instruction manual included in the cutter body for how to locate the insert and adjust the run-out.
Note 2) The cutter body includes a set bolt for an arbor.

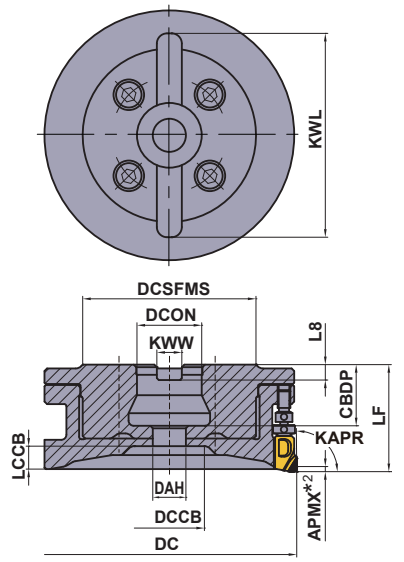
★ : **Stocked in Japan**



Metric Standard

For Inch Arbors

Fig.1
ø100
ø125



Right hand tool holder only.

■ARBOR TYPE

DC=mm, DCON=Inch GAMP: +5° GAMF: 0°

(mm)

DC	Order Number	Stock	∗1 Coolant Thru	Number of Teeth	LF	DCON	WT (kg)	RPMX (min-1)	Fig.
100	**FMAXR10010CLW**	★	Y	10	42	25.4	1.06	22000	1
100	**FMAXR10016CLW**	★	Y	16	42	25.4	1.11	22000	1
125	**FMAXR12514CLW**	★	Y	14	42	25.4	1.44	19600	1
125	**FMAXR12520CLW**	★	Y	20	42	25.4	1.48	19600	1

∗1 Y=Yes

∗2 For the maximum depth of cut (**APMX**), please refer to recommended cutting conditions (**ap**).

Note 1) The maximum depth of cut for should be 2 mm or less for ultra high efficiency machining with table feed (**vf** ≥ 20000 mm/min).

Mounting Dimensions

(mm)

DCON	DC	Order Number	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	KWL	Fig.
25.4	100	**FMAXR10010CLW**	24	13	27	9	68	9.5	6	80	1
25.4	100	**FMAXR10016CLW**	24	13	27	9	68	9.5	6	80	1
25.4	125	**FMAXR12514CLW**	24	13	52	9	68	9.5	6	80	1
25.4	125	**FMAXR12520CLW**	24	13	52	9	68	9.5	6	80	1

SPARE PARTS

(mm)

Insert Clamp Screw *	Micro Adjustment Nut	Large Adjustment Screw	Balance Adjustment Screw	Cutter Set Bolt	Wrench T10	Wrench ø2.5
						
TSS04505S	KSN3	KSS2	HSS04004G	HSCX12030H	TKY10T	RKY25S

∗ Clamp Torque (lbf-in) : TSS04505S=31

Note 1) Refer to the instruction manual included in the cutter body for how to locate the insert and adjust the run-out.

Note 2) The cutter body includes a set bolt for an arbor.

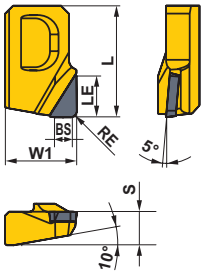
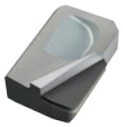
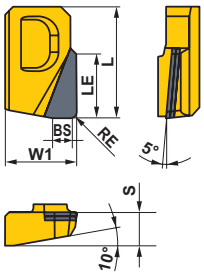
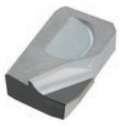
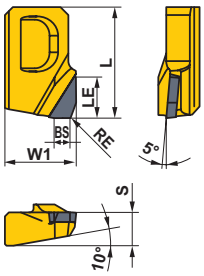
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

INSERTS

(inch)

Work Material	N	Non-ferrous Metal		

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✣ : Unstable Cutting

Shape	Order Number	NEW MD220	MD2030	L	LE	W1	S	BS	RE	Geometry
 General Purpose	**GOER1404PXFR2**	●	●	.551	.197	.354	.165	.079	.016	
	GOER1408PXFR2	●	●	.551	.197	.354	.165	.079	.031	
NEW  Long Edge	**GOER1408PXFR2-8**	●		.551	.315	.354	.165	.079	.031	
NEW  Burr Prevention	**GOER1401ZXFR2**	●		.551	.197	.354	.165	.079	.004	

Note 1) If general purpose inserts (RE = .016", .031"), burr prevention inserts and long edge inserts are used together, they will not be able to sufficiently display their full performance. Inserts of the same shape should be used according to the application.
Note 2) The cutting diameter will change depending on the shape.
Be particularly careful when cutting near vertical walls, since there is a possibility of interference with the holder.
Note 3) The long edge inserts corresponds to the gate remainder and can not be used for constant depth cutting.

● : USA Stock
<PCD inserts are available with 1 piece in one case.>

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

RECOMMENDED CUTTING CONDITIONS

■ Wet Cutting

(inch)

	Work Material	Properties	Grade	Cutting Speed **vc** (SFM)	Width of Cut **ae**	Depth of Cut **ap**	Feed per Tooth **fz** (IPT)
N	Aluminum Alloy	Content Si < 5%	**MD2030 MD220**	8200 (6560—9840)	≤ 0.2 DC	≤ .118 (.020—.118)	.003 (.002—.008)
					≤ 0.5 DC	≤ .098 (.020—.098)	
					≤ 0.8 DC	≤ .079 (.020—.079)	
		Content 5% ≤ Si ≤ 10%	**MD2030 MD220**	8200 (6560—9840)	≤ 0.2 DC	≤ .118 (.020—.118)	.003 (.002—.008)
					≤ 0.5 DC	≤ .098 (.020—.098)	
					≤ 0.8 DC	≤ .079 (.020—.079)	
		Content 10% < Si < 15%	**MD220 MD2030**	1970 (1310—2625)	≤ 0.2 DC	≤ .118 (.020—.118)	.003 (.002—.008)
					≤ 0.5 DC	≤ .098 (.020—.098)	
					≤ 0.8 DC	≤ .079 (.020—.079)	
		Content Si ≥ 15%	**MD220 MD2030**	1970 (1310—2625)	≤ 0.2 DC	≤ .118 (.020—.118)	.003 (.002—.008)
					≤ 0.5 DC	≤ .098 (.020—.098)	
					≤ 0.8 DC	≤ .079 (.020—.079)	

Note 1) Please adjust the depth of cut **ap** depending on the width of cut **ae**.
Note 2) Wet cutting is recommended.

SHOULDER MILLING
<STRONG EDGE TYPE FOR CAST IRON>

90° KAPR

VOX400

P | M | **K** | N | S | H

Cast Iron

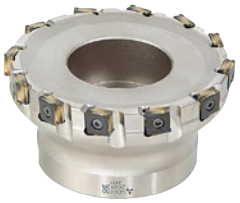


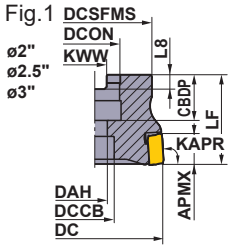
Fig.1


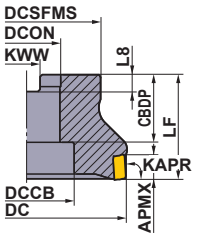
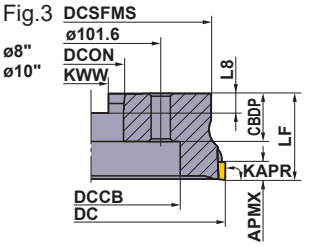
Fig.2


Fig.3


■ ARBOR TYPE

Right hand tool holder only.

Type	Order Number	Stock R	Number of Teeth	Dimensions (inch) DC	LF	DCON	CBDP	DAH	DCCB	DCSFMS	KWW	L8	WT (lbs)	APMX (inch)	Type (Fig.)
Coarse Pitch	**VOX400UR0203C**	●	3	2.000	2.000	1.000	1.339	.539	.787	1.93	.375	.219	.8	.394	1
	VOX400UR2504C	●	4	2.500	2.000	1.000	1.339	.539	.787	2.19	.375	.219	1.7	.394	1
	VOX400UR0304C	●	4	3.000	2.000	1.000	1.339	.539	.787	2.19	.375	.219	2.2	.394	1
	VOX400UR0406E	●	6	4.000	2.000	1.500	1.024	—	2.205	3.81	.625	.375	4.3	.394	2
	VOX400UR0508E	●	8	5.000	2.000	1.500	1.024	—	2.205	3.81	.625	.375	6.0	.394	2
	VOX400UR0610F	●	10	6.000	2.500	2.000	1.024	—	3.228	4.88	.750	.437	10.2	.394	2
	VOX400UR0812M	●	12	8.000	2.500	2.500	1.378	—	5.512	6.89	1.000	.560	17.6	.394	3
	VOX400UR1016M	●	16	10.000	2.500	2.500	1.378	—	7.078	8.66	1.000	.560	29.4	.394	3
Fine Pitch	**VOX400UR0205C**	●	5	2.000	2.000	1.000	1.339	.539	.787	1.93	.375	.219	.8	.394	1
	VOX400UR2506C	●	6	2.500	2.000	1.000	1.339	.539	.787	2.19	.375	.219	1.7	.394	1
	VOX400UR0308C	●	8	3.000	2.000	1.000	1.339	.539	.787	2.19	.375	.219	2.2	.394	1
	VOX400UR0410E	●	10	4.000	2.000	1.500	1.024	—	2.205	3.81	.625	.375	4.3	.394	2
	VOX400UR0512E	●	12	5.000	2.000	1.500	1.024	—	2.205	3.81	.625	.375	6.0	.394	2
	VOX400UR0616F	●	16	6.000	2.500	2.000	1.024	—	3.228	4.88	.750	.437	10.2	.394	2
	VOX400UR0820M	●	20	8.000	2.500	2.500	1.378	—	5.512	6.89	1.000	.560	17.6	.394	3
	VOX400UR1024M	●	24	10.000	2.500	2.500	1.378	—	7.078	8.66	1.000	.560	29.4	.394	3
Extra Fine Pitch	**VOX400UR2508C**	●	8	2.500	2.000	1.000	1.024	.539	.787	2.19	.375	.219	1.5	.394	1
	VOX400UR0310C	●	10	3.000	2.000	1.000	1.024	.539	.787	2.19	.375	.219	2.0	.394	1
	VOX400UR0412E	●	12	4.000	2.000	1.500	1.024	—	2.205	3.81	.625	.375	4.1	.394	2
	VOX400UR0516E	●	16	5.000	2.000	1.500	1.024	—	2.205	3.81	.625	.375	5.6	.394	2
	VOX400UR0620F	●	20	6.000	2.500	2.000	1.024	—	3.228	4.88	.750	.437	9.8	.394	2
	VOX400UR0826M	●	26	8.000	2.500	2.500	1.378	—	5.512	6.89	1.000	.560	17.1	.394	3
	VOX400UR1034M	●	34	10.000	2.500	2.500	1.378	—	7.087	8.66	1.000	.560	28.7	.394	3

Note 1) Set bolt not included.



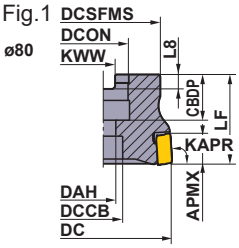
Fig.1


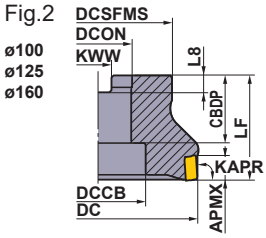
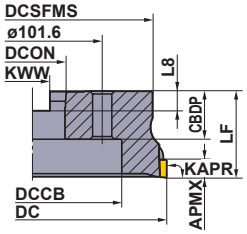
Fig.2


Fig.3


Right hand tool holder only.

Metric Standard

For inch arbors

■ ARBOR TYPE

Type	Order Number	Stock	Number of Teeth	Dimensions (mm) [inch]									WT (kg)	APMX (mm)	Type (Fig.)
		R		DC	LF	DCON	CBDP	DAH	DCCB	DCSFMS	KWW	L8			
Coarse Pitch	**VOX400R08004C**	★	4	80	50	25.4 [1.0"]	26	13	20	55	9.5	6	1.0	10	1
	VOX400R10006D	★	6	100	50	31.75 [1.25"]	32	—	45	70	12.7	8	1.5	10	2
	VOX400R12508E	★	8	125	63	38.1 [1.5"]	40	—	60	80	15.9	10	2.7	10	2
	VOX400R16010F	★	10	160	63	50.8 [2.0"]	43	—	80	120	19.1	11	5.3	10	2
	VOX400R20012K	★	12	200	63	47.625 [1.875"]	35	—	130	175	25.4	14.22	8.5	10	3
	VOX400R25016K	★	16	250	63	47.625 [1.875"]	35	—	180	220	25.4	14.22	13.3	10	3
Fine Pitch	**VOX400R08008C**	★	8	80	50	25.4 [1.0"]	26	13	20	55	9.5	6	1.0	10	1
	VOX400R10010D	★	10	100	50	31.75 [1.25"]	32	—	45	70	12.7	8	1.5	10	2
	VOX400R12512E	★	12	125	63	38.1 [1.5"]	40	—	60	80	15.9	10	2.7	10	2
	VOX400R16016F	★	16	160	63	50.8 [2.0"]	43	—	80	120	19.1	11	5.3	10	2
	VOX400R20020K	★	20	200	63	47.625 [1.875"]	35	—	130	175	25.4	14.22	8.5	10	3
	VOX400R25024K	★	24	250	63	47.625 [1.875"]	35	—	180	220	25.4	14.22	13.3	10	3
Extra Fine Pitch	**VOX400R08010C**	★	10	80	50	25.4 [1.0"]	26	13	20	55	9.5	6	1.0	10	1
	VOX400R10012D	★	12	100	50	31.75 [1.25"]	32	—	45	70	12.7	8	1.4	10	2
	VOX400R12516E	★	16	125	63	38.1 [1.5"]	40	—	60	80	15.9	10	2.6	10	2
	VOX400R16020F	★	20	160	63	50.8 [2.0"]	43	—	80	120	19.1	11	5.1	10	2
	VOX400R20026K	★	26	200	63	47.625 [1.875"]	35	—	130	175	25.4	14.22	8.2	10	3
	VOX400R25034K	★	34	250	63	47.625 [1.875"]	35	—	180	220	25.4	14.22	13.0	10	3

Note 1) Set bolt not included.

SPARE PARTS

Tool Holder Number	 * Clamp Screw	 Wrench
VOX400	CS401160T	TKY15T

* Clamp Torque (lbf-in) : CS401160T=31

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001



Metric Standard

For metric arbors

Fig.1

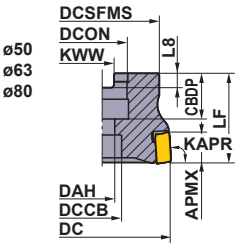
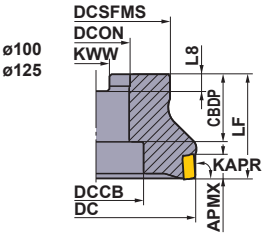
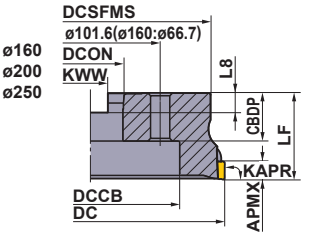


Fig.2



Right hand tool holder only.

Fig.3



■ ARBOR TYPE

Type	Order Number	Stock	Number of Teeth	Dimensions (mm)									WT (kg)	APMX (mm)	Type (Fig.)
		R		DC	LF	DCON	CBDP	DAH	DCCB	DCSFMS	KWW	L8			
Coarse Pitch	**VOX400-050A03R**	★	3	50	40	22	20	11	17	41	10.4	6.3	0.3	10	1
	VOX400-063A04R	★	4	63	40	22	20	11	17	50	10.4	6.3	0.6	10	1
	VOX400-080A04R	★	4	80	50	27	23	13	20	56	12.4	7	1	10	1
	VOX400-100B06R	★	6	100	50	32	32	—	45	78	14.4	8	1.7	10	2
	VOX400-125B08R	★	8	125	63	40	32	—	56	89	16.4	9	3	10	2
	VOX400-160C10R	★	10	160	63	40	29	—	56	120	16.4	9	5.4	10	3
	VOX400-200C12R	★	12	200	63	60	32	—	130	175	25.7	14.22	8.1	10	3
	VOX400-250C16R	★	16	250	63	60	32	—	180	210	25.7	14.22	11.8	10	3
Fine Pitch	**VOX400-050A05R**	★	5	50	40	22	20	11	17	41	10.4	6.3	0.3	10	1
	VOX400-063A06R	★	6	63	40	22	20	11	17	50	10.4	6.3	0.6	10	1
	VOX400-080A08R	★	8	80	50	27	23	13	20	56	12.4	7	1	10	1
	VOX400-100B10R	★	10	100	50	32	32	—	45	78	14.4	8	1.7	10	2
	VOX400-125B12R	★	12	125	63	40	32	—	56	89	16.4	9	3	10	2
	VOX400-160C16R	★	16	160	63	40	29	—	56	120	16.4	9	5.4	10	3
	VOX400-200C20R	★	20	200	63	60	32	—	130	175	25.7	14.22	8.1	10	3
	VOX400-250C24R	★	24	250	63	60	32	—	180	210	25.7	14.22	11.8	10	3
Extra Fine Pitch	**VOX400-063A08R**	★	8	63	40	22	20	11	17	50	10.4	6.3	0.5	10	1
	VOX400-080A10R	★	10	80	50	27	23	13	20	56	12.4	7	1.0	10	1
	VOX400-100B12R	★	12	100	50	32	32	—	45	78	14.4	8	1.6	10	2
	VOX400-125B16R	★	16	125	63	40	32	—	56	89	16.4	9	2.8	10	2
	VOX400-160C20R	★	20	160	63	40	29	—	56	120	16.4	9	5.2	10	3
	VOX400-200C26R	★	26	200	63	60	32	—	130	175	25.7	14.22	7.9	10	3
	VOX400-250C34R	★	34	250	63	60	32	—	180	210	25.7	14.22	11.5	10	3

Note 1) Set bolt not included.

SPARE PARTS

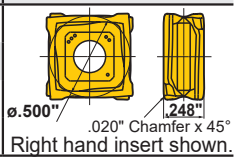
Tool Holder Number	 *	
	Clamp Screw	Wrench
VOX400	CS401160T	TKY15T

* Clamp Torque (lbf-in) : CS401160T=31

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

INSERTS

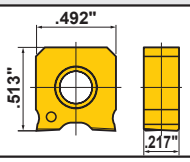
Work Material	K	Cast Iron				Cutting Conditions (Guide) : ●: Stable Cutting ◔: General Cutting ✣: Unstable Cutting
					◔	✣

Shape	Order Number	Class	Honing	Coated MC5020	Coated VP15TF	Geometry
	**SONX1206PER**	N	E	●	●	
	SONX1206PEL	N	E		★	

Right hand insert shown.

WIPER INSERTS

Work Material	K	Cast Iron				Cutting Conditions (Guide) : ●: Stable Cutting ◔: General Cutting ✣: Unstable Cutting
					◔	

Shape	Order Number	Class	Honing	Coated VP15TF	Geometry
	**WOEX1206PER5C**	E	E	●	

Note 1) Left hand insert used for special products. (Ex. Side cutter, Left hand cutter)
Note 2) SONX12 features 8 usable corners with high strength cutting edge.

RECOMMENDED CUTTING CONDITIONS

■ VOX400 (Standard pitch)

Work Material		Tensile Strength	Insert Grade	Cutting Speed (SFM)	ϕ2"–ϕ10"		
					Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)
K	Gray Cast Iron	≤200MPa	MC5020	985(820－1150)	≤DC	≤.394	.016(.012－.020)
			VP15TF	820(655－985)	≤DC	≤.394	.016(.012－.020)
		≤350MPa	MC5020	720(490－985)	≤DC	≤.394	.012(.008－.016)
			VP15TF	655(490－985)	≤DC	≤.394	.012(.008－.016)
	Ductile Cast Iron	≤450MPa	MC5020	655(490－820)	≤DC	≤.394	.012(.008－.016)
			VP15TF	555(490－655)	≤DC	≤.394	.012(.008－.016)
		≤800MPa	MC5020	555(490－655)	≤DC	≤.394	.008(.004－.012)
			VP15TF	490(330－655)	≤DC	≤.394	.008(.004－.012)

■ VOX400 (Fine pitch)

Work Material		Tensile Strength	Insert Grade	Cutting Speed (SFM)	ϕ2.5"			ϕ3"		
					Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)	Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)
K	Gray Cast Iron	≤200MPa	MC5020	985(820－1150)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
			VP15TF	820(655－985)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
		≤350MPa	MC5020	720(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
			VP15TF	655(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
	Ductile Cast Iron	≤450MPa	MC5020	655(490－820)	≤0.8DC	≤.394	.012(.008－.016)	≤0.6DC	≤.394	.012(.008－.016)
			VP15TF	555(490－655)	≤0.8DC	≤.394	.012(.008－.016)	≤0.6DC	≤.394	.012(.008－.016)
		≤800MPa	MC5020	555(490－655)	≤0.8DC	≤.394	.008(.004－.012)	≤0.6DC	≤.394	.008(.004－.012)
			VP15TF	490(330－655)	≤0.8DC	≤.394	.008(.004－.012)	≤0.6DC	≤.394	.008(.004－.012)

Work Material		Tensile Strength	Insert Grade	Cutting Speed (SFM)	ϕ4"			ϕ5"		
					Radial depth of cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)	Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)
K	Gray Cast Iron	≤200MPa	MC5020	985(820－1150)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
			VP15TF	820(655－985)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
		≤350MPa	MC5020	720(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
			VP15TF	655(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
	Ductile Cast Iron	≤450MPa	MC5020	655(490－820)	≤0.5DC	≤.394	.012(.008－.016)	≤0.4DC	≤.394	.012(.008－.016)
			VP15TF	555(490－655)	≤0.5DC	≤.394	.012(.008－.016)	≤0.4DC	≤.394	.012(.008－.016)
		≤800MPa	MC5020	555(490－655)	≤0.5DC	≤.394	.008(.004－.012)	≤0.4DC	≤.394	.008(.004－.012)
			VP15TF	490(330－655)	≤0.5DC	≤.394	.008(.004－.012)	≤0.4DC	≤.394	.008(.004－.012)

Work Material		Tensile Strength	Insert Grade	Cutting Speed (SFM)	ϕ6"			ϕ8", ϕ10"		
					Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)	Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)
K	Gray Cast Iron	≤200MPa	MC5020	985(820－1150)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
			VP15TF	820(655－985)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
		≤350MPa	MC5020	720(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
			VP15TF	655(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
	Ductile Cast Iron	≤450MPa	MC5020	655(490－820)	≤0.3DC	≤.394	.012(.008－.016)	≤0.2DC	≤.394	.012(.008－.016)
			VP15TF	555(490－655)	≤0.3DC	≤.394	.012(.008－.016)	≤0.2DC	≤.394	.012(.008－.016)
		≤800MPa	MC5020	555(490－655)	≤0.3DC	≤.394	.008(.004－.012)	≤0.2DC	≤.394	.008(.004－.012)
			VP15TF	490(330－655)	≤0.3DC	≤.394	.008(.004－.012)	≤0.2DC	≤.394	.008(.004－.012)

Note 1) DC is cutter diameter.
Note 2) When using wiper insert, please reduce the feed per tooth to half the normal rate.

■ VOX400 (Extra fine pitch)

	Work Material	Tensile Strength	Insert Grade	Cutting Speed (SFM)	ϕ2.5"			ϕ3"		
					Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)	Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)
K	Gray Cast Iron	≤200MPa	**MC5020**	985(820－1150)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
			VP15TF	820(655－985)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
		≤350MPa	**MC5020**	720(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
			VP15TF	655(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
	Ductile Cast Iron	≤450MPa	**MC5020**	655(490－820)	≤0.6DC	≤.394	.012(.008－.016)	≤0.5DC	≤.394	.012(.008－.016)
			VP15TF	555(490－655)	≤0.6DC	≤.394	.012(.008－.016)	≤0.5DC	≤.394	.012(.008－.016)
		≤800MPa	**MC5020**	555(490－655)	≤0.6DC	≤.394	.008(.004－.012)	≤0.5DC	≤.394	.008(.004－.012)
			VP15TF	490(330－655)	≤0.6DC	≤.394	.008(.004－.012)	≤0.5DC	≤.394	.008(.004－.012)

	Work Material	Tensile Strength	Insert Grade	Cutting Speed (SFM)	ϕ4"			ϕ5"		
					Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)	Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)
K	Gray Cast Iron	≤200MPa	**MC5020**	985(820－1150)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
			VP15TF	820(655－985)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
		≤350MPa	**MC5020**	720(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
			VP15TF	655(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
	Ductile Cast Iron	≤450MPa	**MC5020**	655(490－820)	≤0.4DC	≤.394	.012(.008－.016)	≤0.3DC	≤.394	.012(.008－.016)
			VP15TF	555(490－655)	≤0.4DC	≤.394	.012(.008－.016)	≤0.3DC	≤.394	.012(.008－.016)
		≤800MPa	**MC5020**	555(490－655)	≤0.4DC	≤.394	.008(.004－.012)	≤0.3DC	≤.394	.008(.004－.012)
			VP15TF	490(330－655)	≤0.4DC	≤.394	.008(.004－.012)	≤0.3DC	≤.394	.008(.004－.012)

	Work Material	Tensile Strength	Insert Grade	Cutting Speed (SFM)	ϕ6"			ϕ8", ϕ10"		
					Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)	Radial Depth of Cut ae (mm)	Depth of Cut ap (inch)	Feed per Tooth (IPT)
K	Gray Cast Iron	≤200MPa	**MC5020**	985(820－1150)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
			VP15TF	820(655－985)	≤DC	≤.394	.016(.012－.020)	≤DC	≤.394	.016(.012－.020)
		≤350MPa	**MC5020**	720(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
			VP15TF	655(490－985)	≤DC	≤.394	.012(.008－.016)	≤DC	≤.394	.012(.008－.016)
	Ductile Cast Iron	≤450MPa	**MC5020**	655(490－820)	≤0.25DC	≤.394	.012(.008－.016)	≤0.15DC	≤.394	.012(.008－.016)
			VP15TF	555(490－655)	≤0.25DC	≤.394	.012(.008－.016)	≤0.15DC	≤.394	.012(.008－.016)
		≤800MPa	**MC5020**	555(490－655)	≤0.25DC	≤.394	.008(.004－.012)	≤0.15DC	≤.394	.008(.004－.012)
			VP15TF	490(330－655)	≤0.25DC	≤.394	.008(.004－.012)	≤0.15DC	≤.394	.008(.004－.012)

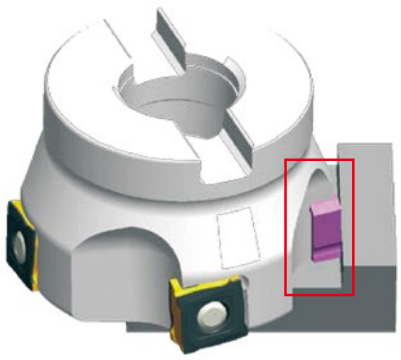
Note 1) DC is cutter diameter.

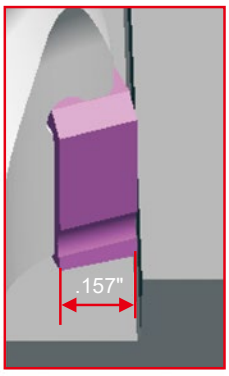
Note 2) When using wiper insert, please reduce the feed per tooth to half the normal rate.

■ Usable cutting edge width of wiper inserts

The width of the wiper insert itself is .217 inch, however the actual functioning cutting edge width after installation to the body is .177 inch, as shown in the diagram.

With one wiper insert, it is possible to machine up to fr=.157 inch feed per revolution. When exceeding fr=.157 inch, use two or more wiper inserts. Note that there is a possibility to exceed fr=.157 inch when using a holder with more than 24 inserts.





SHOULDER MILLING
<GENERAL CUTTING>

90° KAPR

ASX400

P Steel | M Stainless Steel | K Cast Iron | N Non-ferrous Metal | S Heat Resistant Alloy | H Hardened Steel



KAPR :0°
GAMP :+11°
GAMF :-9°–-11°

Fig.1 ø2" ø2.5"

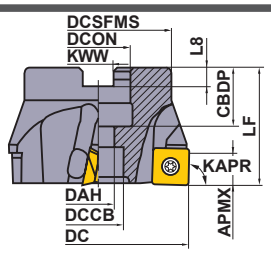


Fig.2 ø3" ø4" ø5" ø6"

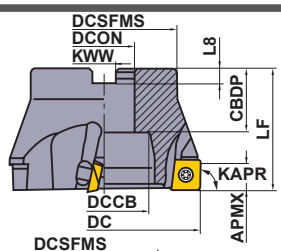
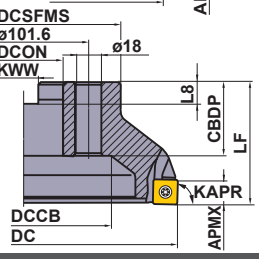


Fig.3 ø8" ø10"



Right hand tool holder only.

■ARBOR TYPE

Type	Order Number	Stock R	Number of Teeth	DC	LF	DCON	CBDP	DAH	DCCB	KWW	L8	APMX (inch)	WT (lbs)	Type (Fig.)
Coarse Pitch	**ASX400R0203**	●	3	2.000	1.575	.750	.748	.415	—	.313	.187	.394	.8	1
	ASX400R2504	●	4	2.500	1.575	.750	.748	.415	—	.313	.187	.394	1.1	1
	ASX400R0304C	●	4	3.000	1.969	1.000	1.024	—	1.496	.375	.219	.394	2.2	2
	ASX400R0405E	●	5	4.000	1.969	1.500	1.378	—	2.362	.625	.375	.394	3.3	2
	ASX400R0506E	●	6	5.000	2.480	1.500	1.378	—	2.362	.625	.375	.394	5.5	2
	ASX400R0608E	●	8	6.000	2.480	1.500	1.378	—	2.362	.625	.375	.394	8.8	2
	ASX400R0810M	●	10	8.000	2.480	2.500	1.378	—	5.315	1.000	.560	.394	15.0	3
	ASX400R1012M	●	12	10.000	2.480	2.500	1.378	—	7.087	1.000	.560	.394	26.0	3
Fine Pitch	**ASX400R0204**	●	4	2.000	1.575	.750	.748	.415	—	.313	.187	.394	.8	1
	ASX400R2505	●	5	2.500	1.575	.750	.748	.415	—	.313	.187	.394	1.1	1
	ASX400R0306C	●	6	3.000	1.969	1.000	1.024	—	1.496	.375	.219	.394	2.2	2
	ASX400R0407E	●	7	4.000	1.969	1.500	1.378	—	2.362	.625	.375	.394	3.3	2
	ASX400R0508E	●	8	5.000	2.480	1.500	1.378	—	2.362	.625	.375	.394	5.5	2
	ASX400R0612E	●	12	6.000	2.480	1.500	1.378	—	2.362	.625	.375	.394	8.8	2
	ASX400R0816M	●	16	8.000	2.480	2.500	1.378	—	5.315	1.000	.560	.394	15.0	3
	ASX400R1018M	●	18	10.000	2.480	2.500	1.378	—	7.087	1.000	.560	.394	26.0	3
Extra Fine Pitch	**ASX400R0205**	●	5	2.000	1.575	.750	.748	.415	—	.313	.187	.394	.8	1
	ASX400R2506	●	6	2.500	1.575	.750	.748	.415	—	.313	.187	.394	1.1	1
	ASX400R0308C	●	8	3.000	1.969	1.000	1.024	—	1.496	.375	.219	.394	2.2	2
	ASX400R0410E	●	10	4.000	1.969	1.500	1.378	—	2.362	.625	.375	.394	3.3	2
	ASX400R0512E	●	12	5.000	2.480	1.500	1.378	—	2.362	.625	.375	.394	5.5	2
	ASX400R0615E	●	15	6.000	2.480	1.500	1.378	—	2.362	.625	.375	.394	8.8	2
	ASX400R0819M	●	19	8.000	2.480	2.500	1.378	—	5.315	1.000	.560	.394	15.0	3
	ASX400R1022M	●	22	10.000	2.480	2.500	1.378	—	7.087	1.000	.560	.394	26.0	3

Note 1) Set bolt not included.

● : USA Stock ★ : Stocked in Japan



Fig.1
ø80
ø100
ø125
ø160

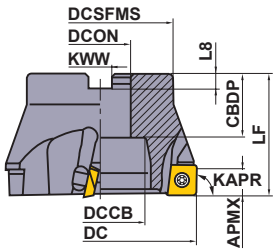
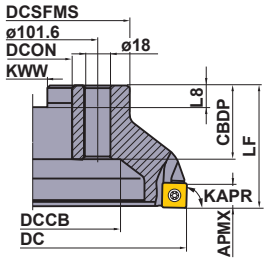


Fig.2
ø200
ø250



Right hand tool holder only.

Metric Standard

For inch arbors

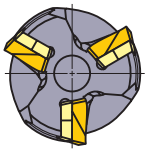
KAPR :0°
GAMP :+11°
GAMF :-9°—-11°

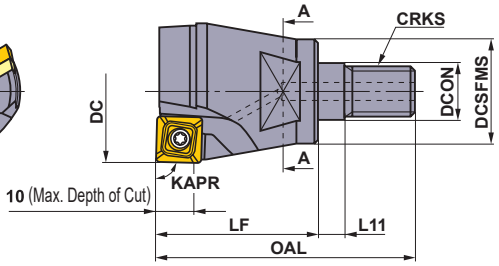
■ ARBOR TYPE

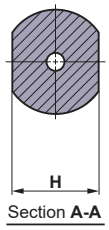
Type	Order Number	Stock	Number of Teeth	Dimensions (mm) [inch]								APMX (mm)	WT (kg)	Type (Fig.)
		R		DC	LF	DCON	CBDP	DCCB	DCSFMS	KWW	L8			
Coarse Pitch	**ASX400R08004C**	★	4	80	50	25.4 [1.0"]	26	38	60	9.5	6	10	1.0	1
	ASX400R10005D	★	5	100	50	31.75 [1.25"]	32	45	70	12.7	8	10	1.5	1
	ASX400R12506E	★	6	125	63	38.1 [1.5"]	35	60	80	15.9	10	10	2.5	1
	ASX400R16008F	★	8	160	63	50.8 [2.0"]	38	90	100	19.1	11	10	4.0	1
	ASX400R20010K	★	10	200	63	47.625 [1.875"]	35	135	160	25.4	14.22	10	7.0	2
	ASX400R25012K	★	12	250	63	47.625 [1.875"]	35	180	210	25.4	14.22	10	12.0	2
Fine Pitch	**ASX400R08006C**	★	6	80	50	25.4 [1.0"]	26	38	60	9.5	6	10	1.0	1
	ASX400R10007D	★	7	100	50	31.75 [1.25"]	32	45	70	12.7	8	10	1.5	1
	ASX400R12508E	★	8	125	63	38.1 [1.5"]	35	60	80	15.9	10	10	2.5	1
	ASX400R16012F	★	12	160	63	50.8 [2.0"]	38	90	100	19.1	11	10	4.0	1
	ASX400R20016K	★	16	200	63	47.625 [1.875"]	35	135	160	25.4	14.22	10	7.0	2
	ASX400R25018K	★	18	250	63	47.625 [1.875"]	35	180	210	25.4	14.22	10	12.0	2

Note 1) Set bolt not included.









Metric Standard

■ SCREW-IN TYPE

Right hand tool holder only.

Order Number	Stock	Coolant Thru *3	Number of Teeth	Dimensions (mm)								WT	Shim	Shim Screw *1	Insert Screw *1	Wrench (Insert)	Wrench (Shim)
	R			DC	DCON	DCSFMS	OAL	LF	L11	H	CRKS *2	(kg)					
ASX400R322AM1640	★	Y	2	32	17	29	63	40	6	24	M16	0.3	—	WCS503507H	TPS35	TIP15T	HKY35R
ASX400R403AM1645	★	Y	3	40	17	29	68	45	6	24	M16	0.3	STASX400N	WCS503507H	TPS35	TIP15T	HKY35R

*1 Clamp Torque (lbf-in) : WCS503507H=44, TPS35=31
*2 Clamp Torque of the Head (lbf-ft) : M16=66.7
*3 Y=Yes

SCREW-IN HOLDERS ➤ L294
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001



Metric Standard

For metric arbors

KAPR :0°
GAMP :+11°
GAMF :-9°–-11°

Fig.1 ø50 ø63

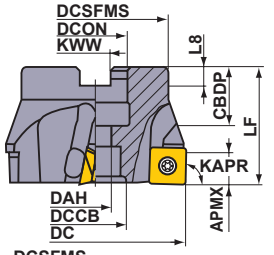


Fig.2 ø80 ø100 ø125

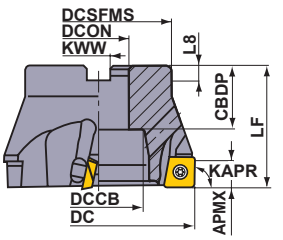


Fig.3 ø160

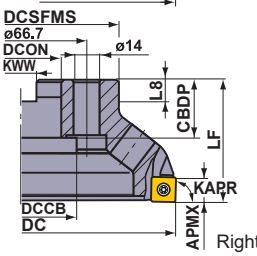
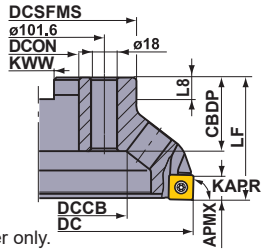


Fig.4 ø200 ø250



■ ARBOR TYPE

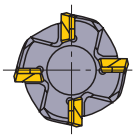
Right hand tool holder only.

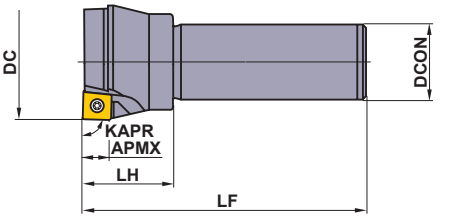
Type	Order Number	Stock	Number of Teeth	Dimensions (mm)									APMX (mm)	WT (kg)	Type (Fig.)
		R		DC	LF	DCON	CBDP	DAH	DCCB	DCSFMS	KWW	L8			
Coarse Pitch	ASX400-050A03R	★	3	50	40	22	20	11	—	41	10.4	6.3	10	0.3	1
	ASX400-063A04R	★	4	63	40	22	20	11	—	50	10.4	6.3	10	0.5	1
	ASX400-080B04R	★	4	80	50	27	29	—	38	60	12.4	7	10	0.9	2
	ASX400-100B05R	★	5	100	50	32	32	—	45	70	14.4	8	10	1.4	2
	ASX400-125B06R	★	6	125	63	40	32	—	60	80	16.4	9	10	2.3	2
	ASX400-160C08R	★	8	160	63	40	29	—	56	100	16.4	9	10	3.6	3
	ASX400-200C10R	★	10	200	63	60	32	—	135	160	25.7	14.22	10	6.3	4
	ASX400-250C12R	★	12	250	63	60	32	—	180	210	25.7	14.22	10	10.8	4
Fine Pitch	ASX400-050A04R	★	4	50	40	22	20	11	—	41	10.4	6.3	10	0.3	1
	ASX400-063A05R	★	5	63	40	22	20	11	—	50	10.4	6.3	10	0.5	1
	ASX400-080B06R	★	6	80	50	27	29	—	38	60	12.4	7	10	0.9	2
	ASX400-100B07R	★	7	100	50	32	32	—	45	70	14.4	8	10	1.4	2
	ASX400-125B08R	★	8	125	63	40	32	—	60	80	16.4	9	10	2.2	2
	ASX400-160C12R	★	12	160	63	40	29	—	56	100	16.4	9	10	3.5	3
	ASX400-200C16R	★	16	200	63	60	32	—	135	160	25.7	14.22	10	6.2	4
	ASX400-250C18R	★	18	250	63	60	32	—	180	210	25.7	14.22	10	10.7	4
Extra Fine Pitch	ASX400-050A05R	★	5	50	40	22	20	11	—	41	10.4	6.3	10	0.3	1
	ASX400-063A06R	★	6	63	40	22	20	11	—	50	10.4	6.3	10	0.5	1
	ASX400-080B08R	★	8	80	50	27	29	—	38	60	12.4	7	10	0.9	2
	ASX400-100B10R	★	10	100	50	32	32	—	45	70	14.4	8	10	1.4	2
	ASX400-125B12R	★	12	125	63	40	32	—	60	80	16.4	9	10	2.1	2
	ASX400-160C15R	★	15	160	63	40	29	—	56	100	16.4	9	10	3.4	3
	ASX400-200C19R	★	19	200	63	60	32	—	135	160	25.7	14.22	10	6.2	4
	ASX400-250C22R	★	22	250	63	60	32	—	180	210	25.7	14.22	10	10.5	4

Note 1) Set bolt not included.



Metric Standard





■ SHANK TYPE

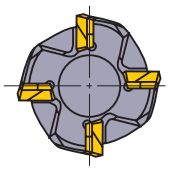
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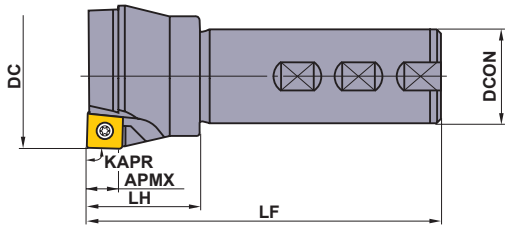
Type	Order Number	Stock	Number of Teeth	Dimensions (mm)					Shim	Shim Screw *	Insert Screw *	Wrench (Insert)	Wrench (Shim)	Insert
		R		DC	LF	DCON	LH	APMX						
Coarse Pitch	ASX400R403S32	★	3	40	125	32	40	10	STASX400N	WCS503507H	TPS35	TIP15T	HKY35R	SO○T12T3○○ PE○R-○○
	ASX400R503S32	★	3	50	125	32	40	10	STASX400N	WCS503507H	TPS35	TIP15T	HKY35R	
	ASX400R634S32	★	4	63	125	32	40	10	STASX400N	WCS503507H	TPS35	TIP15T	HKY35R	
	ASX400R804S32	★	4	80	125	32	40	10	STASX400N	WCS503507H	TPS35	TIP15T	HKY35R	
Fine Pitch	ASX400R504S32	★	4	50	125	32	40	10	STASX400N	WCS503507H	TPS35	TIP15T	HKY35R	SO○T12T3○○ PE○R-○○
	ASX400R635S32	★	5	63	125	32	40	10	STASX400N	WCS503507H	TPS35	TIP15T	HKY35R	
	ASX400R806S32	★	6	80	125	32	40	10	STASX400N	WCS503507H	TPS35	TIP15T	HKY35R	

* Clamp Torque (lbf-in) : WCS503507H=44, TPS35=31

● : USA Stock ★ : Stocked in Japan







Right hand tool holder only.

■ WELDON SHANK TYPE

Order Number	Stock	Number of Teeth	Dimensions (inch)					Shim	Shim Screw *	Insert Screw *	Wrench (Insert)	Wrench (Shim)	Insert
	R		DC	LF	DCON	LH	APMX	Shim	Shim Screw	Insert Screw	Wrench (Insert)	Wrench (Shim)	Insert
ASX400R202W20	●	2	1.250	4.750	1.250	1.500	.394	STASX400N	WCS503507H	TPS35	TIP15T	HKY35R	SO◌T12T3◌◌ PE◌R-◌◌
ASX400R243W20	●	3	1.500	4.750	1.250	1.500	.394	STASX400N	WCS503507H	TPS35	TIP15T	HKY35R	
ASX400R324W20	●	4	2.000	4.750	1.250	1.575	.394	STASX400N	WCS503507H	TPS35	TIP15T	HKY35R	

* Clamp Torque (lbf-in) : WCS503507H=44, TPS35=31

SPARE PARTS

Tool Holder Number	Shim	Shim Screw *	Insert Screw *	Wrench (Insert)	Wrench (Shim)	Insert
ASX400R Type	STASX400N	WCS503507H	TPS35	TIP15T	HKY35R	SO◌T12T3◌◌ PE◌R-◌◌

* Clamp Torque (lbf-in) : WCS503507H=44, TPS35=31

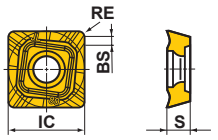
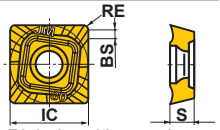
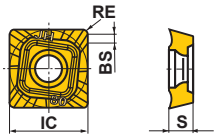
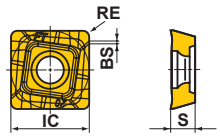
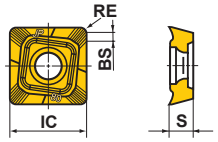
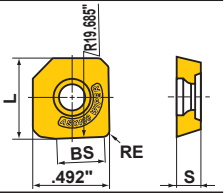
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

INSERTS

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat-resistant Alloy, Titanium Alloy	
H	Hardened Steel	

Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting
✣ : Unstable Cutting

Honing :
E : Round **F :** Sharp **T :** Chamfer

Application	Shape	Order Number	Class	Honing	Coated											Cermet		Carbide		Dimensions (inch)					Geometry
					F7010	F7030	MC5020	MP6120	MP6130	MP7130	MP7140	MP9120	MP9130	VP15TF	VP30RT	NX4545	NX2525	HTi10	HTi05T	L	IC	S	BS	RE	
Finish–Light Cutting	**JL** Breaker 	**SOET12T308PEER-JL**	E	E		●		●	●	●	●	●	●	●	●	●				–	.500	.156	.055	.031	
Light–Rough Cutting	**JM** Breaker 	**SOMT12T308PEER-JM**	M	E	●	●	●	●	●	●	●	●	●	●	●	●				–	.500	.156	.055	.031	 Right hand insert shown.
		SOMT12T308PEEL-JM	M	E										★						–	.500	.156	.055	.031	
Medium–Heavy Cutting	**JH** Breaker 	**SOMT12T308PEER-JH**	M	E		●	●	●	●	●	●	●	●	●	●					–	.500	.156	.055	.031	
Heavy Interrupted Cutting	**FT** Breaker 	**SOMT12T320PEER-FT**	M	E			●	●				●	●	●						–	.500	.156	.020	.079	
For Aluminum Alloy	**JP** Breaker 	**SOGT12T308PEFR-JP**	G	F														●		–	.500	.156	.055	.031	
Wiper		**WOEW12T308PEER8C**	E	E															●	.520	–	.156	.315	.031	
		WOETR8C	E	T													●			.520	–	.156	.315	.031	

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

RECOMMENDED CUTTING CONDITIONS

	Work Material	Hardness	Grade	Cutting Speed (SFM)	Finish—Light Cutting		Light—Rough Cutting		Medium—Heavy Cutting	
					Feed per Tooth (inch/tooth)	Breaker	Feed per Tooth (inch/tooth)	Breaker	Feed per Tooth (inch/tooth)	Breaker
P	Mild Steel	≤180HB	**F7030**	920 (690—1150)	.007 (.003—.011)	**JL**	.008 (.004—.012)	**JM**	.010 (.008—.014)	**JH**
			MP6120 VP15TF	820 (655—985)	.007 (.003—.011)	**JL**	.008 (.004—.012)	**JM**	.010 (.004—.014)	**JH**
			MP6130	780 (652—950)	.007 (.003—.011)	**JL**	.008 (.004—.012)	**JM**	.010 (.004—.014)	**JH**
			VP30RT	755 (590—920)	.007 (.003—.011)	**JL**	.008 (.004—.012)	**JM**	.010 (.004—.014)	**JH**
			NX4545	590 (425—755)	.006 (.003—.009)	**JL**	.007 (.004—.011)	**JM**	—	—
	Carbon Steel Alloy Steel	180—280HB	**F7030**	820 (655—985)	.006 (.003—.009)	**JL**	.007 (.004—.011)	**JM**	.008 (.004—.012)	**JH**
			MP6120 VP15TF	720 (560—885)	.006 (.003—.009)	**JL**	.007 (.004—.011)	**JM**	.008 (.004—.012)	**JH**
			MP6130	600 (480—740)	.006 (.003—.009)	**JL**	.007 (.004—.011)	**JM**	.008 (.004—.012)	**JH**
			VP30RT	490 (395—590)	.005 (.002—.008)	**JL**	.006 (.004—.010)	**JM**	—	—
			NX4545	490 (390—590)	.005 (.002—.008)	**JL**	.006 (.004—.010)	**JM**	—	—
		280—350HB	**F7030**	590 (425—755)	.005 (.002—.008)	**JL**	.006 (.004—.010)	**JM**	.007 (.004—.011)	**JH**
			MP6120 VP15TF	460 (330—590)	.005 (.002—.008)	**JL**	.006 (.004—.010)	**JM**	.007 (.004—.011)	**JH**
			MP6130	510 (290—560)	.005 (.002—.008)	**JL**	.006 (.004—.010)	**JM**	.007 (.004—.011)	**JH**
			VP30RT	390 (260—525)	.005 (.002—.008)	**JL**	.006 (.004—.010)	**JM**	.007 (.004—.011)	**JH**
			NX4545	330 (260—395)	.004 (.002—.006)	**JL**	.005 (.004—.008)	**JM**	—	—
M	Stainless Steel	≤270HB	**MP7130 VP15TF**	720 (560—885)	.006 (.003—.009)	**JL**	.007 (.004—.011)	**JM**	.008 (.004—.012)	**JH**
			MP7140 VP30RT	490 (395—590)	.006 (.003—.009)	**JL**	.007 (.004—.011)	**JM**	—	—
			NX4545	490 (390—590)	.006 (.003—.009)	**JL**	.007 (.004—.011)	**JM**	—	—
K	Cast Iron Ductile Cast Iron	Tensile Strength ≤450MPa	**MC5020**	655 (490—820)	—	—	.008 (.004—.012)	**JM**	.010 (.004—.014)	**JH FT**
			VP15TF NX4545	590 (425—820)	.007 (.004—.011)	**JL**	.008 (.004—.012)	**JM**	.010 (.004—.014)	**JH**
N	Aluminum Alloy	—	**HTi10**	2130 (1000—3300)	.006 (.004—.008)	**JP**	.008 (.004—.012)	**JP**	.012 (.008—.016)	**JP**
S	Titanium Alloy	—	**MP9120 VP15TF**	165 (130—195)	.005 (.002—.008)	**JL**	.006 (.003—.009)	**JM**	—	—
			MP9130	140 (100—180)	.005 (.002—.008)	**JL**	.006 (.003—.009)	**JM**	—	—
	Heat Resistant Alloy	—	**MP9120 VP15TF**	130 (65—165)	.004 (.002—.006)	**JL**	.005 (.003—.008)	**JM**	—	—
			MP9130	110 (55—140)	.004 (.002—.006)	**JL**	.005 (.003—.008)	**JM**	—	—
H	Hardened Steel	40—55HRC	**VP15TF**	200 (120—280)	.003 (.002—.005)	**JL**	.004 (.002—.006)	**JM**	.005 (.003—.007)	**JH**

INSTRUCTIONS FOR USING INSERTS

■ INSTRUCTIONS FOR USE OF THE JP BREAKER

- The JP breaker has sharp cutting edges. Wear gloves when handling.
- When machining aluminum alloy, welding to the cutting edge tends to occur, often leading to insert failure. To prevent this, wet cutting is recommended.

■ INSTRUCTIONS FOR USE OF WIPER INSERTS



- Wiper inserts for the ASX400 are single-cornered.
- When installing the wiper insert, place the insert so that the small chamfer is located as shown.

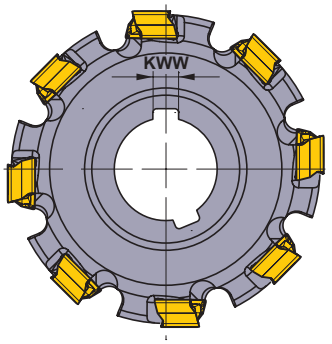
SIDE CUTTER

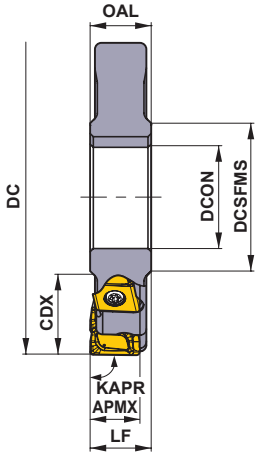
90° KAPR

VAS400

P Steel | M | K Cast Iron | N | S | H







■HALF SIDE

GAMP:+3°
GAMF:+8°

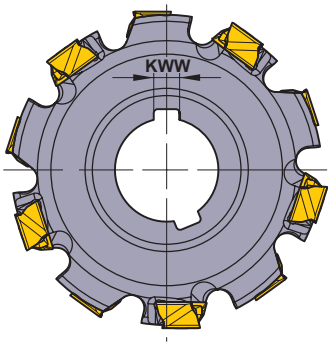
Max. Depth of Cut **APMX** : RE<.118" .480"
RE≥.118" .449"

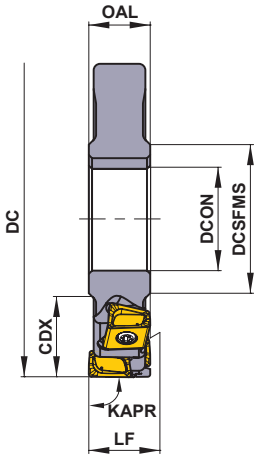
(inch)

DC	Order Number	Hand	Stock	No. of Teeth	LF	CDX	DCON	DCSFMS	OAL	KWW	Insert Type
4.000	**VAS400UA041010L0.75D**	L	□	10	.750	1.040	1.250	1.750	.750	.318	LNGU13
4.000	**VAS400UA041010R0.75D**	R	□	10	.750	1.040	1.250	1.750	.750	.318	LNGU13
4.000	**VAS400UA041010L1.00D**	L	□	10	1.000	1.040	1.250	1.750	1.000	.318	LNGU13
4.000	**VAS400UA041010R1.00D**	R	□	10	1.000	1.040	1.250	1.750	1.000	.318	LNGU13
5.000	**VAS400UA051212L0.75E**	L	□	12	.750	1.380	1.500	2.120	.750	.385	LNGU13
5.000	**VAS400UA051212R0.75E**	R	□	12	.750	1.380	1.500	2.120	.750	.385	LNGU13
5.000	**VAS400UA051212L1.00E**	L	□	12	1.000	1.380	1.500	2.120	1.000	.385	LNGU13
5.000	**VAS400UA051212R1.00E**	R	□	12	1.000	1.380	1.500	2.120	1.000	.385	LNGU13
6.000	**VAS400UA061414L0.75E**	L	□	14	.750	1.890	1.500	2.120	.750	.385	LNGU13
6.000	**VAS400UA061414R0.75E**	R	□	14	.750	1.890	1.500	2.120	.750	.385	LNGU13
6.000	**VAS400UA061414L1.00E**	L	□	14	1.000	1.890	1.500	2.120	1.000	.385	LNGU13
6.000	**VAS400UA061414R1.00E**	R	□	14	1.000	1.890	1.500	2.120	1.000	.385	LNGU13
8.000	**VAS400UA082020L0.75F**	L	□	20	.750	2.560	2.000	2.750	.750	.510	LNGU13
8.000	**VAS400UA082020R0.75F**	R	□	20	.750	2.560	2.000	2.750	.750	.510	LNGU13
8.000	**VAS400UA082020L1.00F**	L	□	20	1.000	2.560	2.000	2.750	1.000	.510	LNGU13
8.000	**VAS400UA082020R1.00F**	R	□	20	1.000	2.560	2.000	2.750	1.000	.510	LNGU13

● : USA Stock □ : Made to Order







■FULL SIDE

GAMP:+3°
GAMF:+8°

(inch)

DC	Order Number	Stock	Effective No. of Teeth	Total No. of Teeth	LF	CDX	DCON	DCSFMS	OAL	KWW	Insert Type
4.000	**VAS400UA041005N0.75D**	●	5	10	.750	1.040	1.250	1.750	.750	.318	LNGU13
4.000	**VAS400UA041005N1.00D**	●	5	10	1.000	1.040	1.250	1.750	1.000	.318	LNGU13
5.000	**VAS400UA051206N0.75E**	●	6	12	.750	1.380	1.500	2.120	.750	.385	LNGU13
5.000	**VAS400UA051206N1.00E**	●	6	12	1.000	1.380	1.500	2.120	1.000	.385	LNGU13
6.000	**VAS400UA061407N0.75E**	●	7	14	.750	1.890	1.500	2.120	.750	.385	LNGU13
6.000	**VAS400UA061407N1.00E**	●	7	14	1.000	1.890	1.500	2.120	1.000	.385	LNGU13
8.000	**VAS400UA082010N0.75F**	●	10	20	.750	2.560	2.000	2.750	.750	.510	LNGU13
8.000	**VAS400UA082010N1.00F**	●	10	20	1.000	2.560	2.000	2.750	1.000	.510	LNGU13

SPARE PARTS

Arbor Type	 *	
	Clamp Screw	Wrench (Insert)
VAS400UA	TS405	TKY15T

* Clamp Torque (lbf-in) : TS405=31

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

SIDE CUTTER

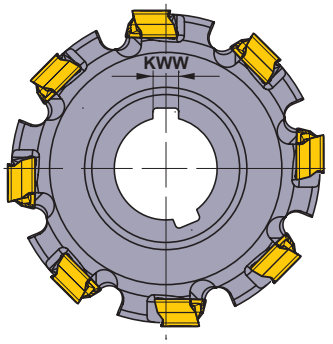
90° KAPR

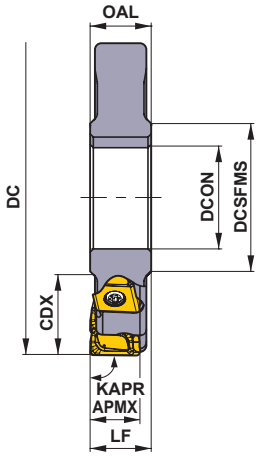
VAS400 Engineering Specials

P Steel | M | K Cast Iron | N | S | H



Metric Standard





■ HALF SIDE

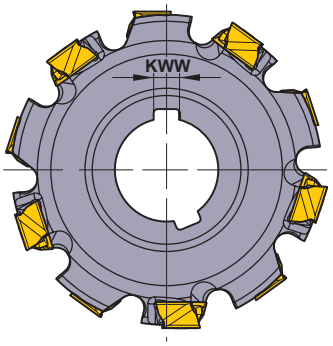
GAMP:+3°
GAMF:+8°

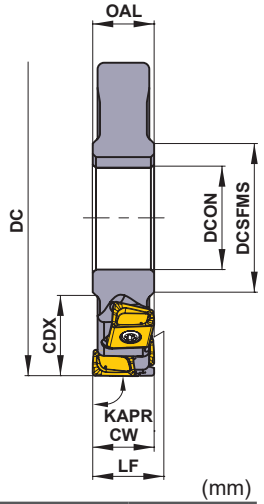
Max. Cutting Diameter **DC** : ø400 mm
Max. Depth of Cut **APMX** : RE<3.0 mm 12.2 mm
RE≥3.0 mm 11.4 mm

(mm)

DC	No. of Teeth	LF	CDX	DCON	DCSFMS	OAL	KWW	Insert Type
80	8	≥18	20	27	40	≥18	7	LNGU13
100	10	≥18	27	32	46	≥18	8	LNGU13
125	12	≥18	35	40	55	≥18	10	LNGU13
160	14	≥18	52.5	40	55	≥18	10	LNGU13







■ FULL SIDE

GAMP:+3°
GAMF:+8°

Largest Width **CW** : 100 mm
Max. Cutting Diameter **DC** : ø400 mm

(mm)

DC	Effective No. of Teeth	Total No. of Teeth	LF ✶1	CW ✶2	CDX	DCON	DCSFMS	OAL	KWW	Insert Type
80	4	8	≥18	18 – 24	20	27	40	≥18	7	LNGU13
100	5	10	≥18	18 – 24	27	32	46	≥18	8	LNGU13
125	6	12	≥18	18 – 24	35	40	55	≥18	10	LNGU13
160	7	14	≥18	18 – 24	52.5	40	55	≥18	10	LNGU13

✶1 In case of adjustment piece specification. **LF** : ≥24

✶2 **CW** of RE<3.0 mm is 24 mm, and RE≤3.0 mm is 22.8 mm. Multilevel designs available for **CW** over each sizes.

Note 1) Please contact us for details of any geometry.

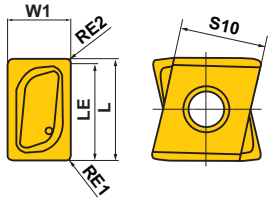
INSERTS

Work Material		
	P	Steel
	K	Cast Iron

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✱ : Unstable Cutting

Honing :
E : Round

Shape	Order Number	Hand	Class	Honing	Coated			Dimensions (inch)							Geometry
					MP6120	VP15TF		L	LE	S	S10	RE1	RE2	W1	
Low Resistance Type M Breaker	**LNGU130804PNER-M**	R	G	E		●		.512	.480	.315	.433	.016	.031	.315	
	LNGU130804PNEL-M	L	G	E		●		.512	.480	.315	.433	.016	.031	.315	
	LNGU130808PNER-M	R	G	E		●		.512	.480	.315	.433	.031	.031	.315	
	LNGU130808PNEL-M	L	G	E		●		.512	.480	.315	.433	.031	.031	.315	
	LNGU130812PNER-M	R	G	E		●		.512	.480	.315	.433	.047	.031	.315	
	LNGU130812PNEL-M	L	G	E		●		.512	.480	.315	.433	.047	.031	.315	
	LNGU130816PNER-M	R	G	E		●		.512	.480	.315	.433	.063	.031	.315	
	**LNGU130816PNEL-M**	L	G	E		●		.512	.480	.315	.433	.063	.031	.315	
	LNGU130820PNER-M	R	G	E		●		.512	.480	.315	.433	.079	.031	.315	
	LNGU130820PNEL-M	L	G	E		●		.512	.480	.315	.433	.079	.031	.315	
	LNGU130824PNER-M	R	G	E		●		.512	.480	.315	.433	.094	.031	.315	
	LNGU130824PNEL-M	L	G	E		●		.512	.480	.315	.433	.094	.031	.315	
	LNGU130830PNER-M	R	G	E		●		.512	.449	.315	.433	.118	.063	.315	
	LNGU130830PNEL-M	L	G	E		●		.512	.449	.315	.433	.118	.063	.315	
	LNGU130840PNER-M	R	G	E		●		.512	.449	.315	.433	.157	.063	.315	
	LNGU130840PNEL-M	L	G	E		●		.512	.449	.315	.433	.157	.063	.315	
	LNGU130850PNER-M	R	G	E		●		.512	.449	.315	.433	.197	.063	.315	
	LNGU130850PNEL-M	L	G	E		●		.512	.449	.315	.433	.197	.063	.315	
Strong Cutting Edge Type R Breaker	**LNGU130804PNER-R**	R	G	E	●	●		.512	.480	.315	.433	.016	.031	.315	
	LNGU130804PNEL-R	L	G	E	●	●		.512	.480	.315	.433	.016	.031	.315	
	LNGU130808PNER-R	R	G	E	●	●		.512	.480	.315	.433	.031	.031	.315	
	LNGU130808PNEL-R	L	G	E	●	●		.512	.480	.315	.433	.031	.031	.315	
	LNGU130812PNER-R	R	G	E	●	●		.512	.480	.315	.433	.047	.031	.315	
	LNGU130812PNEL-R	L	G	E	●	●		.512	.480	.315	.433	.047	.031	.315	
NEW	**LNGU130816PNER-R**	R	G	E	●	●		.512	.480	.315	.433	.063	.031	.315	
	**LNGU130816PNEL-R**	L	G	E	●	●		.512	.480	.315	.433	.063	.031	.315	
	LNGU130820PNER-R	R	G	E	●	●		.512	.480	.315	.433	.079	.031	.315	
	LNGU130820PNEL-R	L	G	E	●	●		.512	.480	.315	.433	.079	.031	.315	
	LNGU130824PNER-R	R	G	E	●	●		.512	.480	.315	.433	.094	.031	.315	
	LNGU130824PNEL-R	L	G	E	●	●		.512	.480	.315	.433	.094	.031	.315	
	LNGU130830PNER-R	R	G	E	●	●		.512	.449	.315	.433	.118	.063	.315	
	LNGU130830PNEL-R	L	G	E	●	●		.512	.449	.315	.433	.118	.063	.315	
	LNGU130840PNER-R	R	G	E	●	●		.512	.449	.315	.433	.157	.063	.315	
	LNGU130840PNEL-R	L	G	E	●	●		.512	.449	.315	.433	.157	.063	.315	
	LNGU130850PNER-R	R	G	E	●	●		.512	.449	.315	.433	.197	.063	.315	
	LNGU130850PNEL-R	L	G	E	●	●		.512	.449	.315	.433	.197	.063	.315	



Right hand insert shown.

● : USA Stock
<10 inserts in one case>

SIDE CUTTER

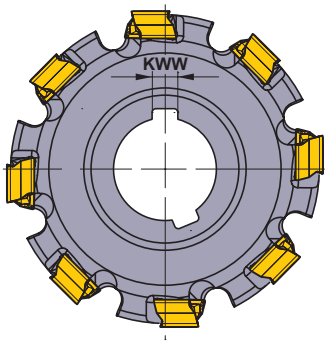
90° KAPR

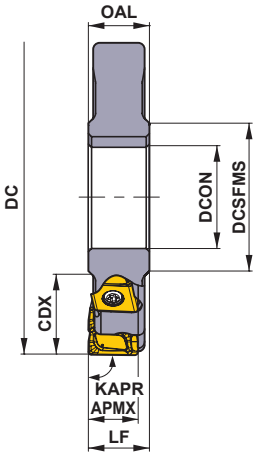
VAS500 Engineering Specials

P Steel | M | K Cast Iron | N | S | H



Metric Standard





■ HALF SIDE

GAMP:+3°
GAMF:+8°

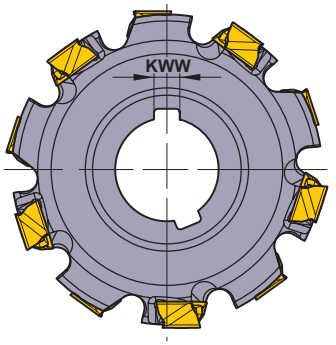
Max. Cutting Diameter **DC** : ø660 mm
Max. Depth of Cut **APMX** : RE<3.0 mm 16.2 mm
RE≥3.0 mm 15.4 mm

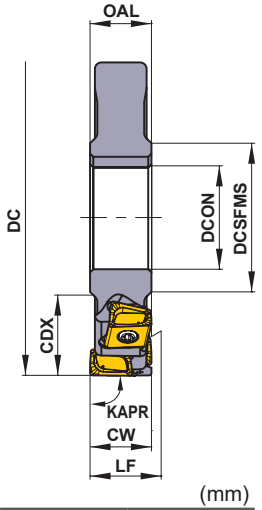
(mm)

DC	No. of Teeth	LF	CDX	DCON	DCSFMS	OAL	KWW	Insert Type
100	8	≥23	27	32	46	≥23	8	LNGU17
125	10	≥23	35	40	55	≥23	10	LNGU17
160	12	≥23	52.5	40	55	≥23	10	LNGU17
200	16	≥23	65	50	70	≥23	12	LNGU17

∗ In case of adjustment piece specification. **LF** : ≥29







■ FULL SIDE

GAMP:+3°
GAMF:+8°

Largest Width **CW** : 100 mm
Max. Cutting Diameter **DC** : ø660 mm

(mm)

DC	Effective No. of Teeth	Total No. of Teeth	LF ∗1	CW ∗2	CDX	DCON	DCSFMS	OAL	KWW	Insert Type
100	4	8	≥23	23 – 32	27	32	46	≥23	8	LNGU17
125	5	10	≥23	23 – 32	35	40	55	≥23	10	LNGU17
160	6	12	≥23	23 – 32	52.5	40	55	≥23	10	LNGU17
200	8	16	≥23	23 – 32	65	50	70	≥23	12	LNGU17

∗1 In case of adjustment piece specification. **LF** : ≥29

∗2 **CW** of RE<3.0 mm is 32 mm, and RE≤3.0 mm is 30.8 mm.

Note 1) Please contact us for details of any geometry.

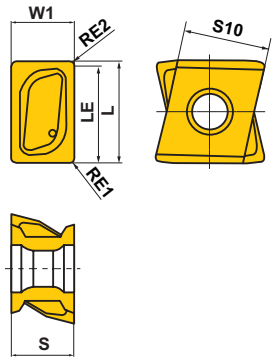
INSERTS

Work Material		
	P	Steel
	K	Cast Iron

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✱ : Unstable Cutting
Honing :
E : Round

Shape	Order Number	Hand	Class	Honing	Coated MP6120	Coated VP15TF		Dimensions (mm) L	LE	S	S10	RE1	RE2	W1	Geometry
Strong Cutting Edge Type **R** Breaker	**LNGU171004PNER-R**	R	G	E	★	★		17	16.2	10	13	0.4	0.8	10	
	LNGU171004PNEL-R	L	G	E	★	★		17	16.2	10	13	0.4	0.8	10	
	LNGU171008PNER-R	R	G	E	★	★		17	16.2	10	13	0.8	0.8	10	
	LNGU171008PNEL-R	L	G	E	★	★		17	16.2	10	13	0.8	0.8	10	
	LNGU171012PNER-R	R	G	E	★	★		17	16.2	10	13	1.2	0.8	10	
	LNGU171012PNEL-R	L	G	E	★	★		17	16.2	10	13	1.2	0.8	10	
	LNGU171016PNER-R	R	G	E	★	★		17	16.2	10	13	1.6	0.8	10	
	LNGU171016PNEL-R	L	G	E	★	★		17	16.2	10	13	1.6	0.8	10	
	LNGU171020PNER-R	R	G	E	★	★		17	16.2	10	13	2	0.8	10	
	LNGU171020PNEL-R	L	G	E	★	★		17	16.2	10	13	2	0.8	10	
	LNGU171024PNER-R	R	G	E	★	★		17	16.2	10	13	2.4	0.8	10	
	LNGU171024PNEL-R	L	G	E	★	★		17	16.2	10	13	2.4	0.8	10	
	LNGU171030PNER-R	R	G	E	★	★		17	15.4	10	13	3	1.6	10	
	LNGU171030PNEL-R	L	G	E	★	★		17	15.4	10	13	3	1.6	10	
	LNGU171040PNER-R	R	G	E	★	★		17	15.4	10	13	4	1.6	10	
	LNGU171040PNEL-R	L	G	E	★	★		17	15.4	10	13	4	1.6	10	
	LNGU171050PNER-R	R	G	E	★	★		17	15.4	10	13	5	1.6	10	
	LNGU171050PNEL-R	L	G	E	★	★		17	15.4	10	13	5	1.6	10	
	LNGU171060PNER-R	R	G	E	★	★		17	15.4	10	13	6	1.6	10	
	LNGU171060PNEL-R	L	G	E	★	★		17	15.4	10	13	6	1.6	10	
	LNGU171070PNER-R	R	G	E	★	★		17	15.4	10	13	7	1.6	10	
	LNGU171070PNEL-R	L	G	E	★	★		17	15.4	10	13	7	1.6	10	





Right hand insert shown.

★ : Stocked in Japan
<10 inserts in one case>

SIDE CUTTER

90° KAPR

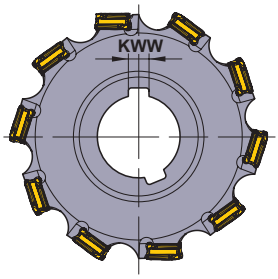
VOS400 Engineering Specials

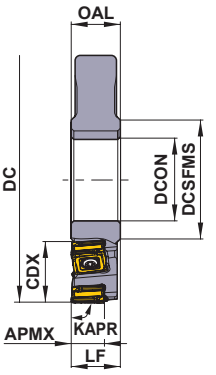
P | M | **K** | N | S | H

Cast Iron



Metric Standard





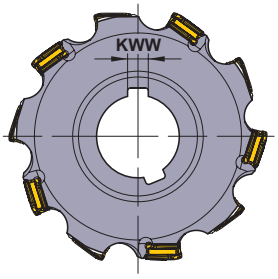
■ HALF SIDE

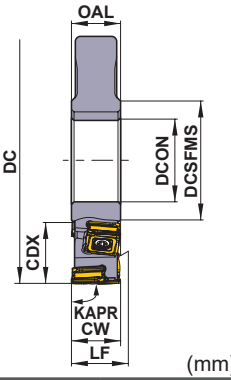
Max. Cutting Diameter **DC** : ø400 mm

(mm)

DC	No. of Teeth	LF	CDX	DCON	DCSFMS	OAL	KWW	APMX
80	8	≥16	20	27	40	≥16.8	7	10
100	10	≥16	27	32	46	≥16.8	8	10
125	12	≥16	35	40	55	≥16.8	10	10
160	14	≥16	52.5	40	55	≥16.8	10	10







■ FULL SIDE

Largest Width **CW** : 100 mm
Max. Cutting Diameter **DC** : ø400 mm

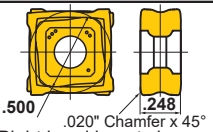
(mm)

DC	Effective No. of Teeth	Total No. of Teeth	LF	CW	CDX	DCON	DCSFMS	OAL	KWW
80	4	8	≥16	16 – 20	20	27	40	≥16	7
100	5	10	≥16	16 – 20	27	32	46	≥16	8
125	6	12	≥16	16 – 20	35	40	55	≥16	10
160	7	14	≥16	16 – 20	52.5	40	55	≥16	10

* Multilevel designs available for CW over 20 mm.
Note 1) Please contact us for detail of any geometry.

INSERT

(inch)

Shape	Order Number	Hand	Class	Horning	Coated VP15TF	Geometry
	**SONX1206PER**	R	N	E	●	
	SONX1206PEL	L	N	E	★	

Right hand insert shown.

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

SIDE CUTTER

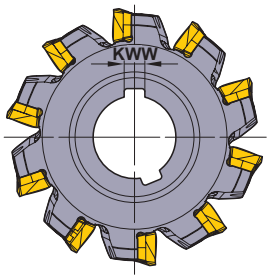
90° KAPR

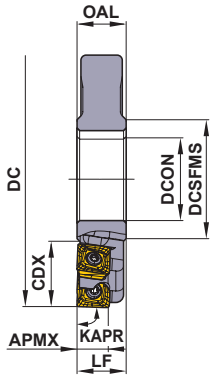
ASX400 Engineering Specials

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron			



Metric Standard





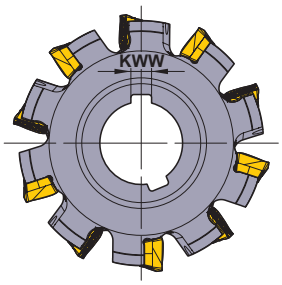
Max. Cutting Diameter **DC** : ø400 mm

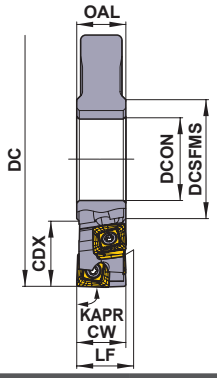
■ HALF SIDE

(mm)

DC	No. of Teeth	LF	CDX	DCON	DCSFMS	OAL	KWW	APMX
80	8	≥16	20	27	40	≥16.8	7	10
100	10	≥16	27	32	46	≥16.8	8	10
125	12	≥16	35	40	55	≥16.8	10	10
160	14	≥16	52.5	40	55	≥16.8	10	10







Largest Width **CW** : 100 mm
Max. Cutting Diameter **DC** : ø400 mm

■ FULL SIDE

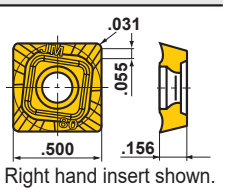
(mm)

DC	Effective No. of Teeth	Total No. of Teeth	LF	CW	CDX	DCON	DCSFMS	OAL	KWW
80	4	8	≥16	16 – 20	20	27	40	≥16	7
100	5	10	≥16	16 – 20	27	32	46	≥16	8
125	6	12	≥16	16 – 20	35	40	55	≥16	10
160	7	14	≥16	16 – 20	52.5	40	55	≥16	10

* Multilevel designs available for CW over 20 mm.
Note 1) Please contact us for detail of any geometry.

INSERT

(inch)

Shape	Order Number	Hand	Class	Horning	Coated VP15TF		Geometry
	SOMT12T308PEER-JM	R	M	E	●		
	SOMT12T308PEEL-JM	L	M	E	★		

Right hand insert shown.

MULTI-FUNCTIONAL MILLING

90° KAPR

APX3000

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron	Non-ferrous Metal	Heat Resistant Alloy	Hardened Steel



Fig.1

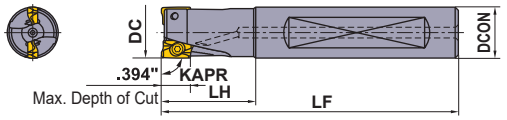


Fig.2

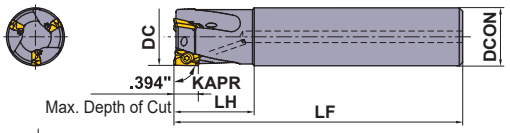


Fig.3

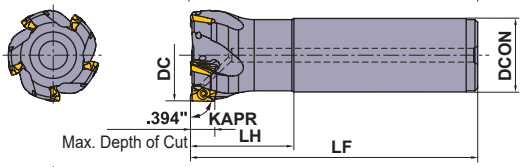
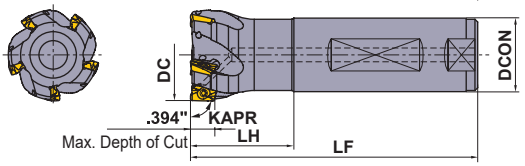


Fig.4



■ SHANK TYPE

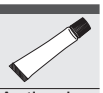
With Coolant Hole

Right hand tool holder only.

Type		RE (inch)	Order Number	Stock R	Number of Teeth	Dimensions(inch) DC	DCON	LF	LH	RMPX	Fig.	* Insert Screw	Wrench	Anti-seize Lubricant
Standard	A Holders	.008 | .079	**APX3000UR081FA10SA**	●	1	.500	.625	3.250	1.120	6°	1	TPS25	TIP07F	MK1KS
			APX3000UR081SA08SA	●	1	.500	.500	3.250	1.120	6°	2	TPS25	TIP07F	MK1KS
			APX3000UR102FA10SA	●	2	.625	.625	3.625	1.190	11.5°	1	TPS25	TIP07F	MK1KS
			APX3000UR102SA10SA	●	2	.625	.625	3.625	1.190	11.5°	2	TPS25	TIP07F	MK1KS
			APX3000UR122FA12SA	●	2	.750	.750	4.375	1.380	7.5°	1	TPS25	TIP07F	MK1KS
			APX3000UR122SA12SA	●	2	.750	.750	4.375	1.380	7.5°	2	TPS25	TIP07F	MK1KS
			APX3000UR123FA12SA	●	3	.750	.750	4.375	1.380	7.5°	1	TPS25	TIP07F	MK1KS
			APX3000UR123SA12SA	●	3	.750	.750	4.375	1.380	7.5°	2	TPS25	TIP07F	MK1KS
			APX3000UR163FA12SA	●	3	1.000	.750	4.375	1.570	4.5°	4	TPS25−1	TIP07F	MK1KS
			APX3000UR163SA12SA	●	3	1.000	.750	4.375	1.570	4.5°	3	TPS25−1	TIP07F	MK1KS
			APX3000UR164FA12SA	●	4	1.000	.750	4.375	1.570	4.5°	4	TPS25−1	TIP07F	MK1KS
			APX3000UR164SA12SA	●	4	1.000	.750	4.375	1.570	4.5°	3	TPS25−1	TIP07F	MK1KS
			APX3000UR163FA16SA	●	3	1.000	1.000	4.750	1.570	4.5°	1	TPS25−1	TIP07F	MK1KS
			APX3000UR163SA16SA	●	3	1.000	1.000	4.750	1.570	4.5°	2	TPS25−1	TIP07F	MK1KS
			APX3000UR164FA16SA	●	4	1.000	1.000	4.750	1.570	4.5°	1	TPS25−1	TIP07F	MK1KS
			APX3000UR164SA16SA	●	4	1.000	1.000	4.750	1.570	4.5°	2	TPS25−1	TIP07F	MK1KS
			APX3000UR205FA20SA	●	5	1.250	1.250	5.125	1.970	3.1°	1	TPS25−1	TIP07F	MK1KS
			APX3000UR205SA20SA	●	5	1.250	1.250	5.125	1.970	3.1°	2	TPS25−1	TIP07F	MK1KS
			APX3000UR246FA20SA	●	6	1.500	1.250	5.125	1.970	2.3°	4	TPS25−1	TIP07F	MK1KS
			APX3000UR246SA20SA	●	6	1.500	1.250	5.125	1.970	2.3°	3	TPS25−1	TIP07F	MK1KS
	B Holders	.094 | .126	**APX3000UR081SA08SB**	●	1	.500	.500	3.250	1.120	6°	2	TPS25	TIP07F	MK1KS
			APX3000UR102SA10SB	●	2	.625	.625	3.625	1.190	11.5°	2	TPS25	TIP07F	MK1KS
			APX3000UR122SA12SB	●	2	.750	.750	4.375	1.380	7.5°	2	TPS25	TIP07F	MK1KS
			APX3000UR123SA12SB	●	3	.750	.750	4.375	1.380	7.5°	2	TPS25	TIP07F	MK1KS
			APX3000UR163SA12SB	●	3	1.000	.750	4.375	1.570	4.5°	3	TPS25−1	TIP07F	MK1KS
			APX3000UR164SA12SB	●	4	1.000	.750	4.375	1.570	4.5°	3	TPS25−1	TIP07F	MK1KS
			APX3000UR163SA16SB	●	3	1.000	1.000	4.750	1.570	4.5°	2	TPS25−1	TIP07F	MK1KS
			APX3000UR164SA16SB	●	4	1.000	1.000	4.750	1.570	4.5°	2	TPS25−1	TIP07F	MK1KS
			APX3000UR205SA20SB	●	5	1.250	1.250	5.125	1.970	3.1°	2	TPS25−1	TIP07F	MK1KS
			APX3000UR246SA20SB	●	6	1.500	1.250	5.125	1.970	2.3°	3	TPS25−1	TIP07F	MK1KS

* Clamp Torque (lbf-in) : TPS25=8.9, TPS25−1=8.9

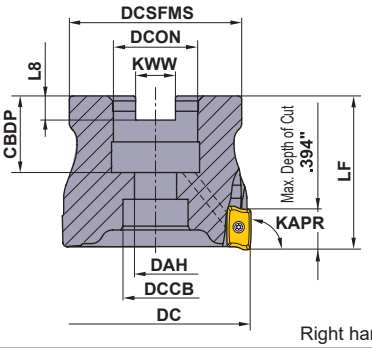
 ● : USA Stock

Type		RE (inch)	Order Number	Stock	Number of Teeth	Dimensions(inch)				RMPX	Fig.	 *		
				R		DC	DCON	LF	LH			Insert Screw	Wrench	Anti-seize Lubricant
Long	A Holders	.008 I .079	**APX3000UR122SA12LA**	●	2	.750	.750	7.250	1.380	7.5°	2	TPS25	TIP07F	MK1KS
			APX3000UR162SA16LA	●	2	1.000	1.000	8.500	1.570	4.5°	2	TPS25−1	TIP07F	MK1KS
			APX3000UR163SA16LA	●	3	1.000	1.000	8.500	1.570	4.5°	2	TPS25−1	TIP07F	MK1KS
			APX3000UR203SA20LA	●	3	1.250	1.250	9.000	1.970	3.1°	2	TPS25−1	TIP07F	MK1KS
			APX3000UR204SA20LA	●	4	1.250	1.250	9.000	1.970	3.1°	2	TPS25−1	TIP07F	MK1KS
			APX3000UR243SA20LA	●	3	1.500	1.250	9.000	1.970	2.3°	3	TPS25−1	TIP07F	MK1KS
			APX3000UR244SA20LA	●	4	1.500	1.250	9.000	1.970	2.3°	3	TPS25−1	TIP07F	MK1KS
	B Holders	.094 I .126	**APX3000UR122SA12LB**	●	2	.750	.750	7.250	1.380	7.5°	2	TPS25	TIP07F	MK1KS
			APX3000UR162SA16LB	●	2	1.000	1.000	8.500	1.570	4.5°	2	TPS25−1	TIP07F	MK1KS
			APX3000UR163SA16LB	●	3	1.000	1.000	8.500	1.570	4.5°	2	TPS25−1	TIP07F	MK1KS
			APX3000UR203SA20LB	●	3	1.250	1.250	9.000	1.970	3.1°	2	TPS25−1	TIP07F	MK1KS
			APX3000UR204SA20LB	●	4	1.250	1.250	9.000	1.970	3.1°	2	TPS25−1	TIP07F	MK1KS
			APX3000UR243SA20LB	●	3	1.500	1.250	9.000	1.970	2.3°	3	TPS25−1	TIP07F	MK1KS
			APX3000UR244SA20LB	●	4	1.500	1.250	9.000	1.970	2.3°	3	TPS25−1	TIP07F	MK1KS

* Clamp Torque (lbf-in) : TPS25=8.9, TPS25−1=8.9

OPERATION GUIDANCE ➢ L123
SPARE PARTS ➢ N001
TECHNICAL DATA ➢ P001





■ ARBOR TYPE

With Coolant Hole

KAPR : 90°
GAMP :+7°—+21°
GAMF : +15°—+27°

Right hand tool holder only.

Type	RE (inch)	Order Number	Stock	Number of Teeth	Dimensions (inch)									RMPX	*			
			R		DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	DCCB		Insert Screw	Wrench	Anti-seize Lubricant	Coolant thru Set Bolt
A Holders	.008 I .079	**APX3000R1504A**	●	4	1.500	1.575	.750	.748	.415	1.320	.313	.187	.600	2.4°	TPS25—1	TIP07F	MK1KS	HSCU37513H
		APX3000R1505A	●	5	1.500	1.575	.750	.748	.415	1.320	.313	.187	.600	2.4°	TPS25—1	TIP07F	MK1KS	HSCU37513H
		APX3000R1506A	●	6	1.500	1.575	.750	.748	.415	1.320	.313	.187	.600	2.4°	TPS25—1	TIP07F	MK1KS	HSCU37513H
		APX3000R0205A	●	5	2.000	1.575	.750	.748	.415	1.811	.313	.187	.600	1.6°	TPS25—1	TIP07F	MK1KS	HSCU37513H
		APX3000R0207A	●	7	2.000	1.575	.750	.748	.415	1.811	.313	.187	.600	1.6°	TPS25—1	TIP07F	MK1KS	HSCU37513H
		APX3000R2506A	●	6	2.500	1.969	1.000	1.024	.539	2.360	.375	.219	.787	1.3°	TPS25—1	TIP07F	MK1KS	HSCU50014H
		APX3000R0306A	●	6	3.000	1.969	1.000	1.024	.539	2.756	.375	.219	.787	1.0°	TPS25—1	TIP07F	MK1KS	HSCU50014H
		APX3000R0309A	●	9	3.000	1.969	1.000	1.024	.539	2.756	.375	.219	.787	1.0°	TPS25—1	TIP07F	MK1KS	HSCU50014H
B Holders	.094 I .126	**APX3000R1504B**	●	4	1.500	1.575	.750	.748	.415	1.320	.313	.187	.600	2.5°	TPS25—1	TIP07F	MK1KS	HSCU37513H
		APX3000R1505B	●	5	1.500	1.575	.750	.748	.415	1.320	.313	.187	.600	2.5°	TPS25—1	TIP07F	MK1KS	HSCU37513H
		APX3000R1506B	●	6	1.500	1.575	.750	.748	.415	1.320	.313	.187	.600	2.5°	TPS25—1	TIP07F	MK1KS	HSCU37513H
		APX3000R0205B	●	5	2.000	1.575	.750	.748	.415	1.811	.313	.187	.600	1.6°	TPS25—1	TIP07F	MK1KS	HSCU37513H
		APX3000R0207B	●	7	2.000	1.575	.750	.748	.415	1.811	.313	.187	.600	1.6°	TPS25—1	TIP07F	MK1KS	HSCU37513H
		APX3000R2506B	●	6	2.500	1.969	1.000	1.024	.539	2.360	.375	.219	.787	1.3°	TPS25—1	TIP07F	MK1KS	HSCU50014H
		APX3000R0306B	●	6	3.000	1.969	1.000	1.024	.539	2.756	.375	.219	.787	1.0°	TPS25—1	TIP07F	MK1KS	HSCU50014H
		APX3000R0309B	●	9	3.000	1.969	1.000	1.024	.539	2.756	.375	.219	.787	1.0°	TPS25—1	TIP07F	MK1KS	HSCU50014H

* Clamp Torque (lbf-in) : TPS25—1=8.9

Note 1) The cutter body includes a set bolt for an arbor.

■ Combination of Holder and Insert Corner Radius

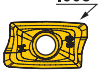
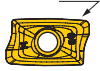
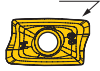
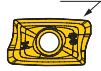
Holder	A Holder							B Holder		
	APX3000○○○○○○○○A							APX3000○○○○○○○○B		
Insert Corner Radius (RE)	.008"	.016"	.031"	.039"	.047"	.063"	.079"	.094"	.118"	.126"
										



Fig.1



Fig.2

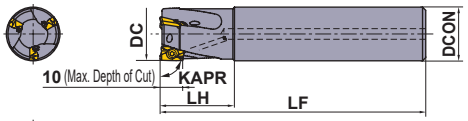
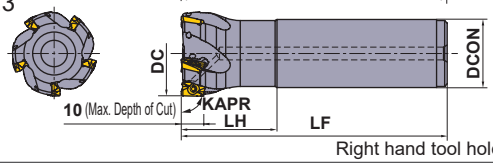


Fig.3



Metric Standard

■ STRAIGHT SHANK TYPE (A Holders)

With Coolant Hole

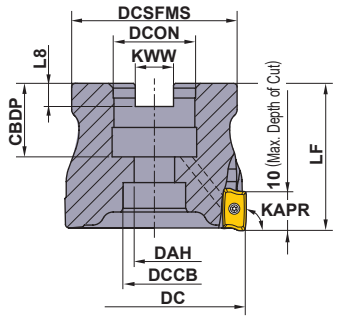
Right hand tool holder only.

Type	RE (inch)	Order Number	Stock	Number of Teeth	Dimensions (mm)				RMPX	Fig.	*			
			R		DC	DCON	LF	LH			Insert Screw	Wrench	Anti-seize Lubricant	Insert Type
Standard	.008 – .079	**APX3000R121SA16SA**	★	1	12	16	85	25	6.0°	1	TPS25	TIP07F	MK1KS	
		APX3000R141SA16SA	★	1	14	16	85	25	6.0°	1	TPS25	TIP07F	MK1KS	
		APX3000R162SA16SA	★	2	16	16	85	25	11.3°	2	TPS25	TIP07F	MK1KS	
		APX3000R182SA16SA	★	2	18	16	85	25	8.6°	3	TPS25	TIP07F	MK1KS	
		APX3000R202SA20SA	★	2	20	20	100	30	6.9°	2	TPS25	TIP07F	MK1KS	
		APX3000R203SA20SA	★	3	20	20	100	30	6.9°	2	TPS25	TIP07F	MK1KS	
		APX3000R223SA20SA	★	3	22	20	115	30	5.7°	3	TPS25−1	TIP07F	MK1KS	
		APX3000R252SA25SA	★	2	25	25	115	35	4.6°	2	TPS25−1	TIP07F	MK1KS	
		APX3000R253SA25SA	★	3	25	25	115	35	4.6°	2	TPS25−1	TIP07F	MK1KS	
		APX3000R254SA25SA	★	4	25	25	115	35	4.6°	2	TPS25−1	TIP07F	MK1KS	
		APX3000R284SA25SA	★	4	28	25	115	35	3.8°	3	TPS25−1	TIP07F	MK1KS	
		APX3000R304SA32SA	★	4	30	32	125	45	3.4°	2	TPS25−1	TIP07F	MK1KS	
		APX3000R323SA32SA	★	3	32	32	125	45	3.1°	2	TPS25−1	TIP07F	MK1KS	
		APX3000R324SA32SA	★	4	32	32	125	45	3.1°	2	TPS25−1	TIP07F	MK1KS	
		APX3000R325SA32SA	★	5	32	32	125	45	3.1°	2	TPS25−1	TIP07F	MK1KS	
		APX3000R403SA32SA	★	3	40	32	125	45	2.2°	3	TPS25−1	TIP07F	MK1KS	
		APX3000R405SA32SA	★	5	40	32	125	45	2.2°	3	TPS25−1	TIP07F	MK1KS	
		APX3000R406SA32SA	★	6	40	32	125	45	2.2°	3	TPS25−1	TIP07F	MK1KS	
		APX3000R507SA32SA	★	7	50	32	125	45	1.7°	3	TPS25−1	TIP07F	MK1KS	
		APX3000R638SA32SA	★	8	63	32	125	45	1.3°	3	TPS25−1	TIP07F	MK1KS	
Long	.008 – .079	**APX3000R182SA16LA**	★	2	18	16	120	25	8.6°	3	TPS25	TIP07F	MK1KS	AO□T1236
		APX3000R202SA20LA	★	2	20	20	150	60	6.9°	2	TPS25	TIP07F	MK1KS	
		APX3000R222SA20LA	★	2	22	20	150	30	5.7°	3	TPS25−1	TIP07F	MK1KS	
		APX3000R252SA25LA	★	2	25	25	170	70	4.6°	2	TPS25−1	TIP07F	MK1KS	
		APX3000R253SA25LA	★	3	25	25	170	70	4.6°	2	TPS25−1	TIP07F	MK1KS	
		APX3000R282SA25LA	★	2	28	25	170	35	3.8°	3	TPS25−1	TIP07F	MK1KS	
		APX3000R283SA25LA	★	3	28	25	170	35	3.8°	3	TPS25−1	TIP07F	MK1KS	
		APX3000R322SA32LA	★	2	32	32	190	90	3.1°	2	TPS25−1	TIP07F	MK1KS	
		APX3000R323SA32LA	★	3	32	32	190	90	3.1°	2	TPS25−1	TIP07F	MK1KS	
		APX3000R352SA32LA	★	2	35	32	190	45	2.7°	3	TPS25−1	TIP07F	MK1KS	
		APX3000R353SA32LA	★	3	35	32	190	45	2.7°	3	TPS25−1	TIP07F	MK1KS	
Extra Long	.008 – .079	**APX3000R182SA16ELA**	★	2	18	16	180	25	8.6°	3	TPS25	TIP07F	MK1KS	
		APX3000R202SA20ELA	★	2	20	20	200	70	6.9°	2	TPS25	TIP07F	MK1KS	
		APX3000R222SA20ELA	★	2	22	20	200	30	5.7°	3	TPS25−1	TIP07F	MK1KS	
		APX3000R252SA25ELA	★	2	25	25	220	80	4.6°	2	TPS25−1	TIP07F	MK1KS	
		APX3000R253SA25ELA	★	3	25	25	220	80	4.6°	2	TPS25−1	TIP07F	MK1KS	
		APX3000R282SA25ELA	★	2	28	25	220	35	3.8°	3	TPS25−1	TIP07F	MK1KS	
		APX3000R283SA25ELA	★	3	28	25	220	35	3.8°	3	TPS25−1	TIP07F	MK1KS	
		APX3000R322SA32ELA	★	2	32	32	260	100	3.1°	2	TPS25−1	TIP07F	MK1KS	
		APX3000R323SA32ELA	★	3	32	32	260	100	3.1°	2	TPS25−1	TIP07F	MK1KS	
		APX3000R352SA32ELA	★	2	35	32	260	45	2.7°	3	TPS25−1	TIP07F	MK1KS	
		APX3000R353SA32ELA	★	3	35	32	260	45	2.7°	3	TPS25−1	TIP07F	MK1KS	

* Clamp Torque (lbf-in) : TPS25=8.9, TPS25−1=8.9

Note 1) When using inserts with corner radius RE≥.094"(2.4 mm), B-Holders are required as shown on page L103.





Metric Standard

For Metric Arbors

■ ARBOR TYPE (A Holders)

With Coolant Hole

KAPR : 90°
GAMP : +7°—+21°
GAMF : +15°—+27°

Right hand tool holder only.

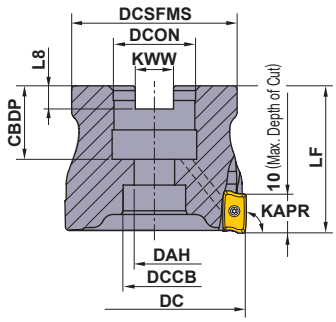
RE (inch)	Order Number	Stock	Number of Teeth	Dimensions (mm)									RMPX	* Insert Screw	Wrench	Anti-seize Lubricant	Coolant thru Set Bolt
		R		DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	DCCB					
.008 I .079	**APX3000-032A05RA**	★	5	32	40	16	18	9	30	8.4	5.6	14	3.1°	TPS25—1	TIP07F	MK1KS	HSC08030H
	APX3000-040A06RA	★	6	40	40	16	18	9	34	8.4	5.6	14	2.2°	TPS25—1	TIP07F	MK1KS	HSC08030H
	APX3000-050A07RA	★	7	50	40	22	20	11	45	10.4	6.3	17	1.7°	TPS25—1	TIP07F	MK1KS	HSC10030H
	APX3000-063A08RA	★	8	63	40	22	20	11	55	10.4	6.3	17	1.3°	TPS25—1	TIP07F	MK1KS	HSC10030H
	APX3000-080A09RA	★	9	80	50	27	23	13	70	12.4	7	20	1.0°	TPS25—1	TIP07F	MK1KS	HSC12035H
	APX3000-100A11RA	★	11	100	63	32	26	17	80	14.4	8	26	0.8°	TPS25—1	TIP07F	MK1KS	HSC16040H

* Clamp Torque (lbf-in) : TPS25—1=8.9

Note 1) When using inserts with corner radius RE≥.094"(2.4 mm), B-Holders are required as shown on page L103.

Note 2) Set bolt not included.





Metric Standard

For Inch Arbors

■ ARBOR TYPE (A Holders)

With Coolant Hole

KAPR : 90°
GAMP : +7°—+21°
GAMF : +15°—+27°

Right hand tool holder only.

RE (inch)	Order Number	Stock	Number of Teeth	Dimensions (mm) [inch]									RMPX	*			
		R		DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	DCCB		Insert Screw	Wrench	Anti-seize Lubricant	Coolant thru Set Bolt
.008 | .079	**APX3000R08009CA**	★	9	80	50	25.4 [1.0"]	26	13	70	9.5	6	20	1.0°	TPS25—1	TIP07F	MK1KS	HSC12035H
	APX3000R10011DA	★	11	100	63	31.75 [1.25"]	32	17	80	12.7	8	26	0.8°	TPS25—1	TIP07F	MK1KS	HSC16040H

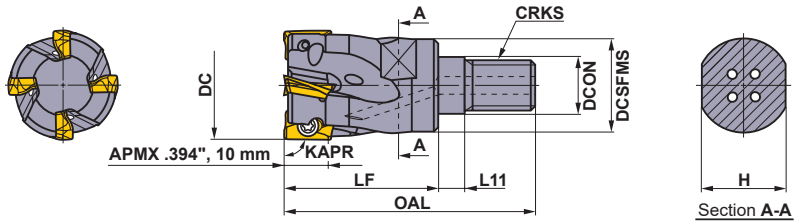
* Clamp Torque (lbf-in) : TPS25—1=8.9

Note 1) When using inserts with corner radius RE≥.094"(2.4 mm), B-Holders are required as shown on page L103.

Note 2) Set bolt not included.

OPERATION GUIDANCE ➤ L123
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001





■ SCREW-IN TYPE

With Coolant Hole

Right hand tool holder only.

DC	Order Number	Stock	Number of Teeth	Dimensions (inch)							WT	*1			
				LF	OAL	DCON	DCSFMS	L11	H	CRKS *2	(lbs)	Insert Screw	Wrench	Anti-seize Lubricant	Insert Type
.625	**APX3000UR102AM08A30**	●	2	1.181	1.890	.335	.512	.236	.394	M8	.2	TPS25	TIP07F	MK1KS	AO□T1236
.750	**APX3000UR122AM10A30**	●	2	1.181	1.929	.413	.709	.236	.551	M10	.2	TPS25	TIP07F	MK1KS	AO□T1236
.750	**APX3000UR123AM10A30**	●	3	1.181	1.929	.413	.709	.236	.551	M10	.2	TPS25	TIP07F	MK1KS	AO□T1236
.875	**APX3000UR142AM10A30**	●	2	1.181	1.929	.413	.709	.236	.551	M10	.2	TPS25-1	TIP07F	MK1KS	AO□T1236
.875	**APX3000UR143AM10A30**	●	3	1.181	1.929	.413	.709	.236	.551	M10	.2	TPS25-1	TIP07F	MK1KS	AO□T1236
1.000	**APX3000UR163AM12A35**	●	3	1.378	2.244	.492	.827	.236	.748	M12	.4	TPS25-1	TIP07F	MK1KS	AO□T1236
1.000	**APX3000UR164AM12A35**	●	4	1.378	2.244	.492	.827	.236	.748	M12	.4	TPS25-1	TIP07F	MK1KS	AO□T1236
1.125	**APX3000UR184AM12A35**	●	4	1.378	2.244	.492	.827	.236	.748	M12	.4	TPS25-1	TIP07F	MK1KS	AO□T1236
1.250	**APX3000UR205AM16A40**	●	5	1.575	2.480	.669	1.142	.236	.945	M16	.7	TPS25-1	TIP07F	MK1KS	AO□T1236
1.375	**APX3000UR225AM16A40**	●	5	1.575	2.480	.669	1.142	.236	.945	M16	.7	TPS25-1	TIP07F	MK1KS	AO□T1236

*1 Clamp Torque (lbf-in) : TPS25=8.9, TPS25−1=8.9
*2 Clamp Torque of the Head (lbf-ft) : M8=17.1, M10=33.8, M12=59.2, M16=66.7

Metric Standard

■ SCREW-IN TYPE

With Coolant Hole

DC	Order Number	Stock	Number of Teeth	Dimensions (mm)							WT	*1			
				LF	OAL	DCON	DCSFMS	L11	H	CRKS *2	(kg)	Insert Screw	Wrench	Anti-seize Lubricant	Insert Type
16	**APX3000R162M08A30**	★	2	30	48	8.5	13	6	10	M8	0.1	TPS25	TIP07F	MK1KS	AO□T1236
18	**APX3000R182M08A30**	★	2	30	48	8.5	13	6	10	M8	0.1	TPS25	TIP07F	MK1KS	AO□T1236
20	**APX3000R203M10A30**	★	3	30	49	10.5	18	6	14	M10	0.1	TPS25	TIP07F	MK1KS	AO□T1236
22	**APX3000R223M10A30**	★	3	30	49	10.5	18	6	14	M10	0.1	TPS25-1	TIP07F	MK1KS	AO□T1236
25	**APX3000R254M12A35**	★	4	35	57	12.5	21	6	19	M12	0.2	TPS25-1	TIP07F	MK1KS	AO□T1236
28	**APX3000R284M12A35**	★	4	35	57	12.5	21	6	19	M12	0.2	TPS25-1	TIP07F	MK1KS	AO□T1236
30	**APX3000R304M16A40**	★	4	40	63	17	29	6	24	M16	0.3	TPS25-1	TIP07F	MK1KS	AO□T1236
32	**APX3000R325M16A40**	★	5	40	63	17	29	6	24	M16	0.3	TPS25-1	TIP07F	MK1KS	AO□T1236
35	**APX3000R355M16A40**	★	5	40	63	17	29	6	24	M16	0.3	TPS25-1	TIP07F	MK1KS	AO□T1236
40	**APX3000R406M16A40**	★	6	40	63	17	29	6	24	M16	0.3	TPS25-1	TIP07F	MK1KS	AO□T1236

*1 Clamp Torque (lbf-in) : TPS25=8.9, TPS25−1=8.9
*2 Clamp Torque of the Head (lbf-ft) : M8=17.1, M10=33.8, M12=59.2, M16=66.7

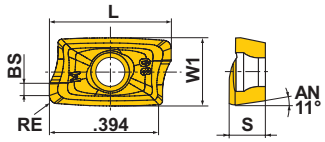
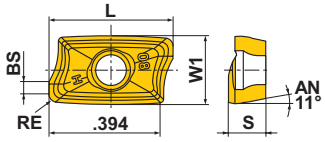
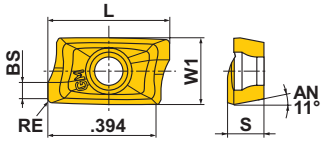
● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

INSERTS

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat Resistant Alloy, Titanium Alloy	
H	Hardened Steel	

Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting ✠ : Unstable Cutting

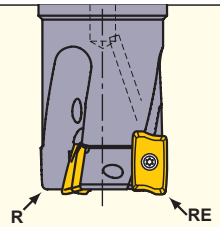
Edge Preparation :
E : Round **F :** Sharp Edge

Shape	Order Number	Class	Edge Preparation	Coated								Carbide		Dimensions (inch)					Geometry
				MC5020	MP6120	MP6130	MP7130	MP9120	MP9130	VP15TF	VP20RT	TF15		L	W1	S	BS	RE	
General **M** Breaker	**AOMT123602PEER-M**	M	E		●	●	●	●	●	●	●			.472	.260	.142	.071	.008	
	AOMT123604PEER-M	M	E		●	●	●	●	●	●	●			.472	.260	.142	.063	.016	
	AOMT123608PEER-M	M	E		●	●	●	●	●	●	●			.472	.260	.142	.047	.031	
	AOMT123610PEER-M	M	E		●	●	●	●	●	★	★			.472	.260	.142	.039	.039	
	**AOMT123612PEER-M**	M	E		●	●	●	●	●	●	●			.472	.260	.142	.031	.047	
	AOMT123616PEER-M	M	E		●	●	●	●	●	●	●			.472	.260	.142	.016	.063	
	AOMT123620PEER-M	M	E		●	●	●	●	●	●	●			.472	.260	.142	.016	.079	
	AOMT123624PEER-M	M	E		●	●	●	●	●	●	●			.472	.260	.142	.016	.094	
	AOMT123630PEER-M	M	E		●	●	●	●	●	●	●			.472	.260	.142	.016	.118	
	AOMT123632PEER-M	M	E		●	●	●	●	●	●	●			.472	.260	.142	.016	.126	
Strong Cutting Edge Type **H** Breaker	**AOMT123604PEER-H**	M	E	●	●	●	●	●	●	●	●			.472	.260	.142	.063	.016	
	AOMT123608PEER-H	M	E	●	●	●	●	●	●	●	●			.472	.260	.142	.047	.031	
	**AOMT123616PEER-H**	M	E	●	●	●	●	●	●	●	●			.472	.260	.142	.016	.063	
For Machining of Aluminum Alloy **GM** Breaker	**AOGT123602PEFR-GM**	G	F									●		.472	.260	.142	.071	.008	
	AOGT123604PEFR-GM	G	F									●		.472	.260	.142	.063	.016	
	**AOGT123608PEFR-GM**	G	F									●		.472	.260	.142	.047	.031	

Note 1) For large R inserts
APX offers various nose radii for inserts, however one holder can not secure every insert radius.
We offer A-Holders that properly secures up to .079" radius.
We offer B-Holders that secures .094", .118" and .126" radius, only for popular inch sizes.
Customers may modify holders as below, so that larger nose radii can be secured.

Note on Use of Inserts with Large Corner Radii

When using inserts with corner radius RE≥R.094", please machine the holder with a radius form as shown on the right table.



RE	R
.094"	.106" (B-Holder)
.118"	
.126"	

R : Holder End Radius
RE : Insert Corner Radius

Or additional B-Holders are available as non stock, produced to order only.
"Order numbers"; Please add "B" to the end of the order number of A-Holders.
Ex) APX3000R160M08A30→APX3000R162M08A30B

SCREW-IN HOLDERS	➤ L294
OPERATION GUIDANCE	➤ L123
SPARE PARTS	➤ N001
TECHNICAL DATA	➤ P001

RECOMMENDED CUTTING CONDITIONS

■ CUTTING SPEED

(inch)

	Work Material	Properties	Insert Grade Priority 1st	Insert Grade Priority 2nd	Chip Breaker		Cutting Width **ae** ≤.25DC	.25–.5DC	.5–.75DC	DC (Slot)
							Cutting Speed **vc** (SFM)			
P	Mild Steel	≤180HB	MP6120	VP15TF	M	H	755(590–885)	720(560–850)	590(460–690)	590(460–690)
			MP6130	VP20RT	M	H	655(490–785)	620(460–755)	490(360–590)	490(370–600)
	Carbon Steel Alloy Steel	180–350HB	MP6120	VP15TF	M	H	590(460–690)	560(425–655)	460(360–525)	460(360–525)
			MP6130	VP20RT	M	H	490(360–590)	460(330–560)	360(260–425)	360(260–425)
M	Stainless Steel	≤270HB	MP7130	VP20RT	M	H	590(460–690)	560(425–655)	460(360–525)	460(360–525)
K	Gray Cast Iron	≤350MPa	MC5020	VP15TF	H		820(655–985)	785(620–950)	690(525–850)	460(360–525)
	Ductile Cast Iron	≤800MPa	MC5020	VP15TF	H		425(330–490)	395(295–460)	330(260–395)	330(260–395)
N	Aluminum Alloy	–	TF15		GM		1640(655–3280)	1640(655–3280)	1640(655–3280)	1640(655–3280)
S	Titanium Alloy	≤350HB	MP9120	VP15TF	M	H	165(130–230)			165(130–230)
			MP9130	VP20RT	M	H	130(100–195)			130(100–195)
	Heat Resistant Alloy	–	MP9120	VP15TF	M	H	130(100–195)			130(100–195)
			MP9130	VP20RT	M	H	100(65–130)			100(65–130)
H	Hardened Steel	40–55HRC	VP15TF		H		295(230–330)	280(195–330)	230(165–260)	230(165–260)

■ DEPTH OF CUT / FEED PER TOOTH

(inch)

	Work Material	Properties	Cutting Width **ae**	DC ϕ.500"–ϕ.625"(ϕ12–ϕ16 mm) Depth of Cut **ap**	DC ϕ.500"–ϕ.625"(ϕ12–ϕ16 mm) Feed per Tooth **fz** (IPT)	DC ϕ.750"–ϕ1.000"(ϕ20–ϕ25 mm) Depth of Cut **ap**	DC ϕ.750"–ϕ1.000"(ϕ20–ϕ25 mm) Feed per Tooth **fz** (IPT)	DC ϕ1.250"–ϕ3.000"(ϕ28–ϕ100 mm) Depth of Cut **ap**	DC ϕ1.250"–ϕ3.000"(ϕ28–ϕ100 mm) Feed per Tooth **fz** (IPT)
P	Mild Steel Carbon Steel Alloy Steel	≤180HB 180–350HB	≤.25DC	≤.157	.006	≤.197	.010	≤.197	.008
				.157–.276	.004	.197–.276	.008	.197–.276	.006
						.276–.335	.006	.276–.335	.004
						.335–.394	.004	.335–.394	.003
			.25–.5DC	≤.079	.006	≤.118	.010	≤.118	.008
				.078–.197	.004	.118–.217	.008	.118–.217	.006
						.217–.315	.006	.217–.315	.004
						.315–.394	.004	.315–.394	.003
			.5–.75DC	≤.157	.004	≤.157	.006	≤.118	.004
						.157–.394	.004	.118–.276	.003
			DC (Slot)	≤.118	.004	≤.157	.004	≤.118	.004
						.157–.276	.003	.118–.197	.003
M	Stainless Steel	≤270HB	≤.25DC	≤.157	.006	≤.197	.008	≤.197	.008
				.157–.276	.004	.197–.276	.006	.197–.276	.006
						.276–.335	.004	.276–.335	.004
						.335–.394	.003	.335–.394	.004
			.25–.5DC	≤.079	.006	≤.118	.008	≤.118	.008
				.078–.197	.004	.118–.217	.006	.118–.217	.006
						.217–.315	.004	.217–.315	.004
						.315–.394	.003	.315–.394	.003
			.5–.75DC	≤.157	.004	≤.157	.004	≤.118	.004
						.157–.394	.003	.118–.276	.003
			DC (Slot)	≤.157	.004	≤.157	.004	≤.118	.004
						.157–.276	.003	.118–.197	.003
K	Gray Cast Iron	Tensile Strength ≤350MPa	≤.25DC	≤.157	.006	≤.197	.010	≤.197	.008
				.157–.276	.004	.197–.276	.008	.197–.276	.006
						.276–.335	.006	.276–.335	.004
						.335–.394	.004	.335–.394	.003
			.25–.5DC	≤.079	.006	≤.118	.010	≤.118	.008
				.079–.197	.004	.118–.217	.008	.118–.217	.006
						.217–.315	.006	.217–.315	.004
						.315–.394	.004	.315–.394	.003
			.5–.75DC	≤.157	.004	≤.157	.006	≤.118	.004
						.157–.394	.004	.118–.276	.003
			DC (Slot)	≤.118	.004	≤.157	.004	≤.118	.004
						.157–.276	.003	.118–.197	.003
	Ductile Cast Iron	Tensile Strength ≤800MPa	≤.25DC	≤.157	.004	≤.197	.008	≤.197	.008
				.157–.276	.003	.197–.276	.006	.197–.276	.006
						.276–.335	.004	.276–.335	.004
						.335–.394	.003	.335–.394	.003
			.25–.5DC	≤.079	.004	≤.118	.008	≤.118	.008
				.079–197	.003	.118–.217	.006	.118–.217	.006
						.217–.315	.004	.217–.315	.004
						.315–.394	.003	.315–.394	.003
			.5–.75DC	≤.157	.003	≤.157	.004	≤.118	.004
						.315–.394	.003	.118–.276	.003
			DC (Slot)	≤.118	.003	≤.157	.004	≤.118	.004
						.157–.276	.003	.118–.197	.003

■ CUTTING CONDITIONS FOR SLOT MILLING

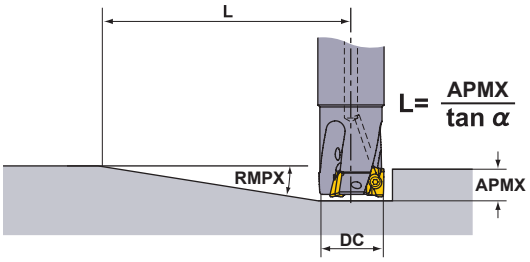
(inch)

Work Material		Properties	Cutting Width **ae**	DC					
				ϕ.500"–ϕ.625"(ϕ12–ϕ16 mm)		**ϕ.750"–ϕ1.000"(ϕ20–ϕ25 mm)**		**ϕ1.250"–ϕ3.000"(ϕ28–ϕ100 mm)**	
				Depth of Cut **ap**	Feed per Tooth **fz** (IPT)	Depth of Cut **ap**	Feed per Tooth **fz** (IPT)	Depth of Cut **ap**	Feed per Tooth **fz** (IPT)
N	Aluminum Alloy	–	≤.25DC	≤.157	.006	≤.157	.010	≤.157	.008
				.157–.276	.004	.157–.276	.006	.157–.276	.004
			.25–.5DC	≤.157	.004	≤.157	.008	≤.157	.008
				.157–.276	.004	.157–.276	.004	.157–.276	.004
			.5–.75DC	≤.197	.004	≤.197	.006	≤.197	.004
			DC (Slot)	≤.197	.004	≤.197	.008	≤.197	.006
S	Titanium Alloy	≤350HB	≤.25DC	≤.157	.006	≤.157	.006	≤.157	.004
				.157–.276	.004	.157–.276	.004	.157–.276	.003
			.25–.5DC	≤.118	.002	≤.118	.002	≤.118	.002
	Heat Resistant Alloy	–	.5–.75DC	≤.079	.004	≤.079	.002	≤.079	.002
			DC (Slot)	≤.039	.002	≤.039	.002	≤.039	.002
H	Hardened Steel	40–55HRC	≤.25DC	≤.157	.004	≤.197	.006	≤.197	.006
				.157–.276	.003	.197–.276	.004	.197–.276	.004
						.276–.335	.003		
			.25–.5DC	≤.079	.004	≤.118	.006	≤.118	.006
				.079–.197	.003	.118–.217	.004		
			.5–.75DC	≤.157	.003	≤.157	.003	≤.118	.003
			DC (Slot)	≤.118	.003	≤.157	.003	≤.118	.003

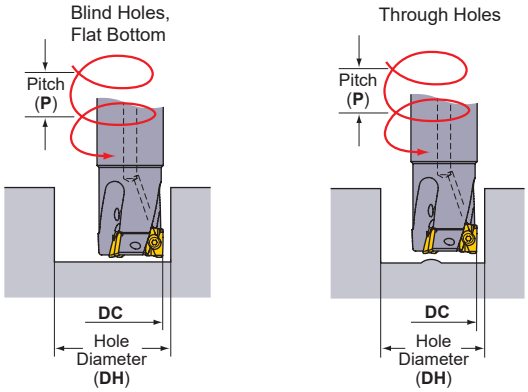
Note 1) These cutting conditions are a guide to the standard shank type and the arbor type.
Please make adjustments according to the machining conditions.
Note 2) Vibration is liable to occur in certain cases. Please reduce the depth of cut and / or reduce cutting conditions in the following cases.
• When using the long shank type and extra long shank type.
• When using long tool overhang with the standard or arbor type.
• When the application has poor clamping rigidity or when using a low rigidity machine.
Note 3) In case of coarse and fine pitch cutters, the coarse pitch type is recommended to prevent vibration.
Note 4) For heavy interrupted and unstable cutting, the H breaker is first recommendation.

■ RAMPING/HELICAL MILLING

● **Ramping**



● **Helical Milling**



Refer to the table below when using .031 inch radius for maximum ramping angle, pitch and minimum/maximum hole diameter. Use cutting conditions for slot milling to calculate speed and feed when ramping / helical milling.

Cutting Edge Diameter **DC** (inch)	Ramping		Helical Milling (Blind Hole, Flat Bottom)				Helical Milling (Through Hole)	
	Maximum Ramping Angle **RMPX**	Minimum Distance *1 **L** (inch)	Maximum Hole Diameter *2 **DH max.** (inch)	Maximum Pitch **P max.** (inch)	Minimum Hole Diameter **DH min.** (inch)	Maximum Pitch **P max.** (inch)	Minimum Hole Diameter **DH min.** (inch)	Maximum Pitch **P max.** (inch)
.500	6.0°	3.8	0.92	.09	.87	.07	.63	.020
.625	11.5°	1.9	1.17	.35	1.1	.27	.79	.079
.750	7.5°	3.0	1.42	.19	1.35	.17	1.03	.079
1.000	4.5°	5.0	1.92	.23	1.85	.19	1.58	.079
1.250	3.1°	7.3	2.42	.17	2.35	.15	2.05	.079
1.500	2.3°	9.8	2.92	.15	2.85	.13	2.56	.079
2.000	1.6°	14.1	3.92	.07	3.85	.07	3.55	.079
2.500	1.3°	17.4	4.92	.07	4.85	.07	4.56	.079
3.000	1.0°	22.6	5.92	.07	5.85	.07	5.52	.079

*1 L(=.394"/tanα). Cutters' moving distance until depth of cut reaches .394" at a maximum ramping angle.
*2 In case corner radius of .031". Other than that, find with the below formula.
{(cutting edge diameter DC) - (corner radius) - .008"} x 2
Note 1) When machining highly ductile materials with ramping angles above, chips could be continuous.
In this case, decrease the ramping angle or feed per tooth.

DEEP SHOULDER MILLING

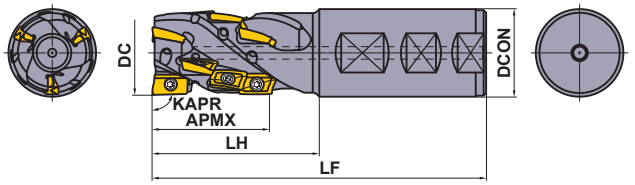
90° KAPR

APX3000 NEW

LONG CUTTING EDGE

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron	Non-ferrous Metal	Heat Resistant Alloy	





■SHANK TYPE (A Holders)

Right hand tool holder only.

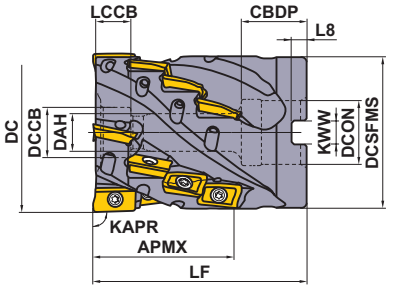
RE	Order Number	Stock	Coolant Hole	Number of Flutes	Total	Dimensions (inch)					*			
		R				DC	DCON	LF	LH	APMX	Insert Screw	Wrench	Anti-seize Lubricant	Insert Type
.008 ~ .079	APX3KUR121FN12S11A04	●	N	1	4	.750	.750	5.000	1.750	1.102	TPS25	TIP07F	MK1KS	AO□T1236
	APX3KUR162FA16S11A06	●	Y	2	6	1.000	1.000	5.000	1.750	1.102	TPS25-1	TIP07F	MK1KS	
	APX3KUR162FA16M14A08	●	Y	2	8	1.000	1.000	5.250	2.000	1.456	TPS25-1	TIP07F	MK1KS	
	APX3KUR202FA20S14A08	●	Y	2	8	1.250	1.250	5.250	2.000	1.456	TPS25-1	TIP07F	MK1KS	
	APX3KUR202FA20M18A10	●	Y	2	10	1.250	1.250	5.750	2.500	1.811	TPS25-1	TIP07F	MK1KS	
	APX3KUR243FA24S18A15	●	Y	3	15	1.500	1.500	5.750	2.500	1.811	TPS25-1	TIP07F	MK1KS	
	APX3KUR243FA24M21A18	●	Y	3	18	1.500	1.500	6.000	2.750	2.165	TPS25-1	TIP07F	MK1KS	

Y=Yes, N=No ✶ Clamp Torque (lbf-in) : TPS25=8.9, TPS25-1=8.9

Note 1) When using inserts with corner radius RE≥.094", machining of the holder is required as shown on page L103.

Note 2) Corner radius RE .031" is recommended for the peripheral cutting edges except the bottom cutting edge (end cutting). Insert RE .008" and .016" can also be used.





Right hand tool holder only.

DC	Set Bolt	Geometry
ϕ2.000"	HSCUF37520	

■SHELL TYPE (A Holders)

With Coolant Hole

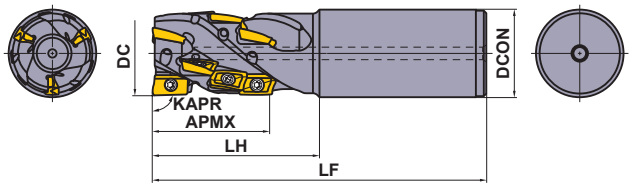
RE	Order Number	Stock	Number of Flutes	Total	Dimensions (inch)										*			
		R			DC	LF	DCON	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	APMX	Insert Screw	Wrench	Anti-seize Lubricant	Insert Type
.008 ~ .079	APX3KUR2.0004AA18A20	●	4	20	2.000	2.500	.750	.750	.395	.630	.457	1.936	.313	.187	1.811	TPS25-1	TIP07F	MK1KS	AO□T1236

✶ Clamp Torque (lbf-in) : TPS25-1 = 8.9

Note 1) When using inserts with corner radius RE≥.094", machining of the holder is required as shown on page L103.

Note 2) Corner radius RE .031" is recommended for the peripheral cutting edges except the bottom cutting edge (end cutting). Insert RE .008" and .016" can also be used.





Metric Standard

■SHANK TYPE (A Holders)

Right hand tool holder only.

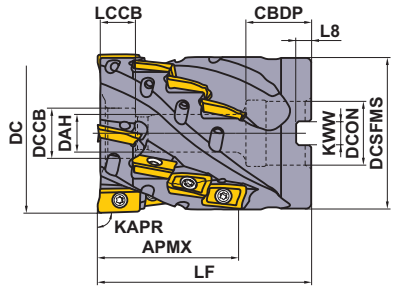
RE (inch)	Order Number	Stock R	Coolant Hole	Number of Flutes	Total	Dimensions (mm) DC	DCON	LF	LH	APMX	* Insert Screw	Wrench	Anti-seize Lubricant	Insert Type
.008 | .079	APX3KR2004SN20S028A	★	N	1	4	20	20	125	45	28	TPS25	TIP07F	MK1KS	AO□T1236
	APX3KR2506SA25S028A	★	Y	2	6	25	25	125	45	28	TPS25-1	TIP07F	MK1KS	
	APX3KR2508SA25M037A	★	Y	2	8	25	25	130	50	37	TPS25-1	TIP07F	MK1KS	
	APX3KR3208SA32S037A	★	Y	2	8	32	32	130	50	37	TPS25-1	TIP07F	MK1KS	
	APX3KR3210SA32M046A	★	Y	2	10	32	32	140	60	46	TPS25-1	TIP07F	MK1KS	
	APX3KR3212SA32S037A	★	Y	3	12	32	32	130	50	37	TPS25-1	TIP07F	MK1KS	
	APX3KR3215SA32M046A	★	Y	3	15	32	32	140	60	46	TPS25-1	TIP07F	MK1KS	
	APX3KR4015SA42S046A	★	Y	3	15	40	42	140	60	46	TPS25-1	TIP07F	MK1KS	
	APX3KR4018SA42M055A	★	Y	3	18	40	42	150	70	55	TPS25-1	TIP07F	MK1KS	

Y=Yes, N=No ✶ Clamp Torque (lbf-in) : TPS25=8.9, TPS25-1=8.9

Note 1) When using inserts with corner radius RE≥ .094", machining of the holder is required as shown on page L103.

Note 2) Corner radius RE .031" is recommended for the peripheral cutting edges except the bottom cutting edge (end cutting). Insert RE .008" and .016" can also be used.





Right hand tool holder only.

DC	Set Bolt	Geometry
ϕ40mm	HSC08040	
ϕ50mm	HSC10045	

The bore diameter (DCON) is equivalent to a metric size.

Metric Standard For Metric Arbors

■SHELL TYPE (A Holders)

With Coolant Hole

RE (inch)	Order Number	Stock R	Number of Flutes	Total	Dimensions (mm) DC	LF	DCON	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	APMX	* Insert Screw	Wrench	Anti-seize Lubricant	Insert Type
.008 | .079	APX3K-040A16A037RA	★	4	16	40	50	16	18	9	14	9.9	38.5	8.4	5.6	37	TPS25-1	TIP07F	MK1KS	AO□T1236
	APX3K-050A20A046RA	★	4	20	50	60	22	20	11	17	11.9	48.4	10.4	6.3	46	TPS25-1	TIP07F	MK1KS	

✶ Clamp Torque (lbf-in) : TPS25-1 = 8.9

Note 1) When using inserts with corner radius RE≥ .094", machining of the holder is required as shown on page L103.

Note 2) Corner radius RE .031" is recommended for the peripheral cutting edges except the bottom cutting edge (end cutting). Insert RE .008" and .016" can also be used.

INSERTS	➤ L103
OPERATION GUIDANCE	➤ L123
SPARE PARTS	➤ N001
TECHNICAL DATA	➤ P001

RECOMMENDED CUTTING CONDITIONS

■ Cutting Speed

(inch)

	Work Material	Insert				Cutting Width **ae**		
		Grade Priority		Chip Breaker		≤.25DC	.25—.75DC	DC (Slot)
		1st	2nd			Cutting Speed **vc** (SFM)		
P	Mild Steel	MP6120	VP15TF	M	H	590(460—720)	490(360—590)	395(330—460)
		MP6130	VP20RT	M	H	525(395—655)	425(330—525)	330(260—395)
	Carbon Steel Alloy Steel, Alloy Tool Steel	MP6120	VP15TF	M	H	490(330—655)	395(295—490)	330(260—395)
		MP6130	VP20RT	M	H	425(295—560)	295(230—360)	260(195—330)
	Pre-hardened Steel	MP6120	VP15TF	M	H	395(260—525)	330(230—425)	295(165—395)
		MP6130	VP20RT	M	H	330(230—425)	295(195—395)	230(165—330)
M	Stainless Steel	MP7130		M		490(395—590)	395(330—460)	330(260—395)
K	Gray Cast Iron	MC5020		H		655(490—820)	590(490—690)	
		VP15TF		M	H	590(395—785)	490(330—655)	330(195—460)
	Ductile Cast Iron	VP15TF		M	H	525(395—655)	460(330—590)	260(195—330)
N	Aluminum Alloy	TF15	MP9120	GM	M	1310(655—2625)	1310(655—2625)	1310(655—2625)
S	Titanium Alloy	MP9130		M		130(100—195)		130(100—195)
		MP9120		M		165(130—230)		165(130—230)
	Heat Resistant Alloy	MP9120	VP15TF	M	H	130(100—195)		130(100—195)
		MP9130	VP20RT	M	H	100(65—130)		100(65—130)

■ Depth of Cut / Feed per Tooth

(inch)

	Work Material	Properties	Cutting Width **ae**	DC					
				ø.750"(ø20mm)		ø1.000"(ø25mm)		ø1.250"–ø2.000"(ø32mm–ø50mm)	
				Depth of Cut **ap**	Feed per Tooth **fz** (IPT)	Depth of Cut **ap**	Feed per Tooth **fz** (IPT)	Depth of Cut **ap**	Feed per Tooth **fz** (IPT)
P	Mild Steel	≤180HB	≤0.25DC	≤1.102	.006	≤1.457	.007	≤2.165	.008
			0.25-0.75DC	≤1.102	.005	≤1.457	.006	≤2.165	.007
			DC (Slot)	≤.709	.003	≤.709	.003	≤.709	.003
	Carbon Steel Alloy Steel	180–280HB	≤0.25DC	≤1.102	.005	≤1.457	.006	≤2.165	.007
			0.25-0.75DC	≤1.102	.004	≤1.457	.005	≤2.165	.006
			DC (Slot)	≤.709	.003	≤.709	.003	≤.709	.003
	Alloy Tool Steel	≤350HB (Annealing)	≤0.25DC	≤1.102	.005	≤1.457	.006	≤2.165	.007
			0.25-0.75DC	≤1.102	.004	≤1.457	.005	≤2.165	.006
			DC (Slot)	≤.709	.003	≤.709	.003	≤.709	.003
	Pre-hardened Steel	35–45HRC	≤0.25DC	≤1.102	.005	≤1.457	.006	≤2.165	.007
			0.25-0.75DC	≤1.102	.004	≤1.457	.005	≤2.165	.006
			DC (Slot)	≤.709	.003	≤.709	.003	≤.709	.003
M	Ferritic and Martensitic Stainless Steel	–	≤0.25DC	≤1.102	.005	≤1.457	.006	≤2.165	.007
			0.25-0.75DC	≤1.102	.004	≤1.457	.005	≤2.165	.006
			DC (Slot)	≤.709	.003	≤.709	.003	≤.709	.003
	Duplex Stainless Steel	≤280HB	≤0.25DC	≤1.102	.005	≤1.457	.006	≤2.165	.007
			0.25-0.75DC	≤1.102	.004	≤1.457	.005	≤2.165	.006
			DC (Slot)	≤.709	.003	≤.709	.003	≤.709	.003
	Precipitation Hardening Stainless Steel	<450HB	≤0.25DC	≤1.102	.005	≤1.457	.006	≤2.165	.007
			0.25-0.75DC	≤1.102	.004	≤1.457	.005	≤2.165	.006
			DC (Slot)	≤.709	.003	≤.709	.003	≤.709	.003
K	Gray Cast Iron	Tensile Strength ≤350MPa	≤0.25DC	≤1.102	.006	≤1.457	.007	≤2.165	.008
			0.25-0.75DC	≤1.102	.005	≤1.457	.006	≤2.165	.007
			DC (Slot)	≤.709	.004	≤.709	.004	≤.709	.004
	Ductile Cast Iron	Tensile Strength ≤800MPa	≤0.25DC	≤1.102	.005	≤1.457	.006	≤2.165	.007
			0.25-0.75DC	≤1.102	.004	≤1.457	.005	≤2.165	.006
			DC (Slot)	≤.709	.003	≤.709	.003	≤.709	.003
N	Aluminum Alloy		≤0.25DC	≤1.102	.006	≤1.457	.007	≤2.165	.008
			0.25-0.75DC			≤.354	.007	≤.354	.008
			DC (Slot)			≤.354	.007	≤.354	.008
S	Titanium Alloy	≤350HB	≤0.25DC	≤1.102	.004	≤1.457	.004	≤2.165	.004
			0.25-0.75DC						
			DC (Slot)	≤.709	.002	≤.709	.002	≤.709	.002
	Heat Resistant Alloy	–	≤0.25DC	≤1.102	.003	≤1.457	.003	≤2.165	.003
			0.25-0.75DC						
			DC (Slot)	≤.709	.002	≤.709	.002	≤.709	.002

Note 1) The above cutting conditons are determined based on high rigidity machine and work materials, where no vibration occurred. Please adjust processing conditions if the vibration is generated.

MULTI-FUNCTIONAL MILLING

APX4000

P Steel | M Stainless Steel | K Cast Iron | N | S Heat Resistant Alloy | H Hardened Steel



Fig.1

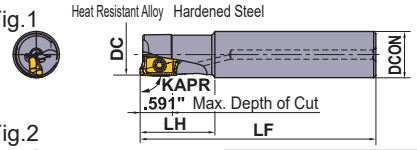


Fig.2

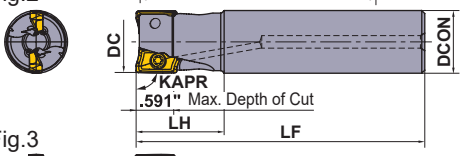


Fig.3

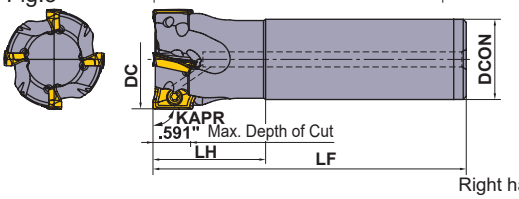


Fig.4

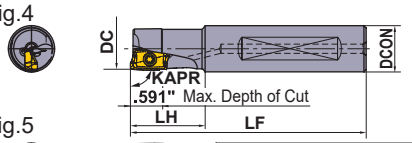


Fig.5

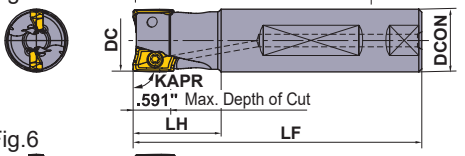
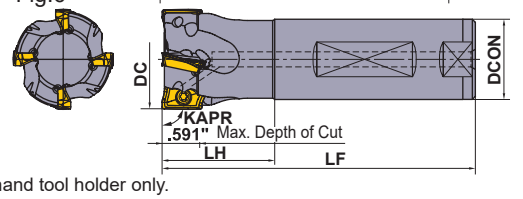


Fig.6



■ SHANK TYPE

With Coolant Hole

Right hand tool holder only.

•APX4000UR○○○SA○○ = Ground shank : See figure 1, 2 and 3.

•APX4000UR○○○FA○○ = Flat shank : See figure 4 and 5.

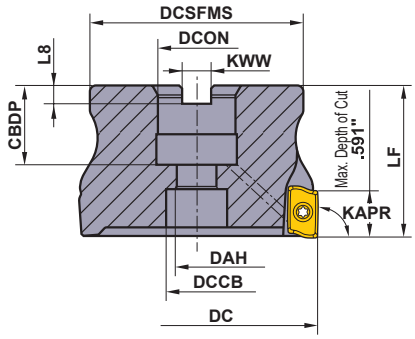
Type		RE (inch)	Order Number	Stock R	Number of Teeth	Dimensions (inch) DC	DCON	LF	LH	RMPX	Fig.	* Insert Screw	Wrench	Anti-seize Lubricant
Standard	A Holders	.016 | .079	APX4000UR121FA12SA	●	1	.750	.750	4.000	1.250	14°	4	TPS4S	TIP15W	MK1KS
			APX4000UR121SA12SA	●	1	.750	.750	4.000	1.250	14°	1	TPS4S	TIP15W	MK1KS
			APX4000UR162SA12SA	●	2	1.000	.750	4.000	1.250	11°	3	TPS4	TIP15W	MK1KS
			APX4000UR162FA16SA	●	2	1.000	1.000	4.500	1.250	11°	4	TPS4	TIP15W	MK1KS
			APX4000UR162SA16SA	●	2	1.000	1.000	4.500	1.250	11°	2	TPS4	TIP15W	MK1KS
			APX4000UR202FA20SA	●	2	1.250	1.250	5.000	1.750	7°	5	TPS4	TIP15W	MK1KS
			APX4000UR202SA20SA	●	2	1.250	1.250	5.000	1.750	7°	2	TPS4	TIP15W	MK1KS
			APX4000UR203FA20SA	●	3	1.250	1.250	5.000	1.750	7°	5	TPS4	TIP15W	MK1KS
			APX4000UR203SA20SA	●	3	1.250	1.250	5.000	1.750	7°	2	TPS4	TIP15W	MK1KS
			APX4000UR243FA20SA	●	3	1.500	1.250	5.000	1.750	7°	6	TPS43	TIP15W	MK1KS
			APX4000UR243SA20SA	●	3	1.500	1.250	5.000	1.750	7°	3	TPS43	TIP15W	MK1KS
			APX4000UR244FA20SA	●	4	1.500	1.250	5.000	1.750	7°	6	TPS43	TIP15W	MK1KS
			APX4000UR244SA20SA	●	4	1.500	1.250	5.000	1.750	7°	3	TPS43	TIP15W	MK1KS
	B Holders	.126 | .157	APX4000UR121FA12SB	●	1	.750	.750	4.000	1.250	14°	4	TPS4S	TIP15W	MK1KS
			APX4000UR162FA16SB	●	2	1.000	1.000	4.500	1.250	11°	5	TPS4	TIP15W	MK1KS
			APX4000UR202FA20SB	●	2	1.250	1.250	5.000	1.750	7°	5	TPS4	TIP15W	MK1KS
			APX4000UR203FA20SB	●	3	1.250	1.250	5.000	1.750	7°	5	TPS4	TIP15W	MK1KS
			APX4000UR243FA20SB	●	3	1.500	1.250	5.000	1.750	7°	6	TPS43	TIP15W	MK1KS
			APX4000UR244FA20SB	●	4	1.500	1.250	5.000	1.750	7°	6	TPS43	TIP15W	MK1KS
Long	A Holders	.016 | .079	APX4000UR162SA16LA	●	2	1.000	1.000	8.500	1.250	11°	2	TPS4	TIP15W	MK1KS
			APX4000UR202SA20LA	●	2	1.250	1.250	9.000	1.750	7°	2	TPS4	TIP15W	MK1KS
			APX4000UR203SA20LA	●	3	1.250	1.250	9.000	1.750	7°	2	TPS4	TIP15W	MK1KS
			APX4000UR243SA24LA	●	3	1.500	1.500	9.000	1.750	7°	2	TPS43	TIP15W	MK1KS
			APX4000UR244SA24LA	●	4	1.500	1.500	9.000	1.750	7°	2	TPS43	TIP15W	MK1KS
			APX4000UR243SA24ELA	●	3	1.500	1.500	14.000	1.750	7°	2	TPS43	TIP15W	MK1KS
	B Holders	.126 | .157	APX4000UR162SA16LB	●	2	1.000	1.000	8.500	1.250	11°	2	TPS4	TIP15W	MK1KS
			APX4000UR202SA20LB	●	2	1.250	1.250	9.000	1.750	7°	2	TPS4	TIP15W	MK1KS
			APX4000UR203SA20LB	●	3	1.250	1.250	9.000	1.750	7°	2	TPS4	TIP15W	MK1KS
			APX4000UR243SA24LB	●	3	1.500	1.500	9.000	1.750	7°	2	TPS43	TIP15W	MK1KS
			APX4000UR244SA24LB	●	4	1.500	1.500	9.000	1.750	7°	2	TPS43	TIP15W	MK1KS
			APX4000UR243SA24ELB	●	3	1.500	1.500	14.000	1.750	7°	2	TPS43	TIP15W	MK1KS

* Clamp Torque (lbf-in) : TPS4=35.6, TPS4S=31, TPS43=35.6

Note 1) When using inserts with corner radius RE≥.126"(3.2 mm), B-Holders or C-Holders are required as shown on page L117.

● : USA Stock





■ ARBOR TYPE

With Coolant Hole

KAPR:90°
GAMP:+15°—+22°
GAMF:+21°—+28°

Right hand tool holder only.

Type	RE (inch)	Order Number	Stock	Number of Teeth	Dimensions (inch)									RMPX	*			
			R		DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	DCCB		Insert Screw	Wrench	Anti-seize Lubricant	Coolant thru Set Bolt
A Holders	.016 | .079	APX4000UR0204A	●	4	2.000	1.625	.750	.748	.415	1.875	.313	.187	.600	4°	TPS43	TIP15W	MK1KS	HSCU37513H
		APX4000UR0205A	●	5	2.000	1.625	.750	.748	.415	1.875	.313	.187	.600	4°	TPS43	TIP15W	MK1KS	HSCU37513H
		APX4000UR2505CA	●	5	2.500	2.000	1.000	1.024	.539	2.375	.375	.219	.787	2°	TPS43	TIP15W	MK1KS	HSCU50014H
		APX4000UR0306DA	●	6	3.000	2.500	1.250	1.260	.669	2.874	.500	.281	1.024	2°	TPS43	TIP15W	MK1KS	HSCU62516H
		APX4000UR0307DA	●	7	3.000	2.500	1.250	1.260	.669	2.874	.500	.281	1.024	2°	TPS43	TIP15W	MK1KS	HSCU62516H
		APX4000UR0408EA	●	8	4.000	2.500	1.500	1.181	.787	3.799	.625	.375	1.181	1.5°	TPS43	TIP15W	MK1KS	HSCU75016H
B Holders	.126 | .157	APX4000UR0204B	●	4	2.000	1.625	.750	.748	.415	1.875	.313	.187	.600	4°	TPS43	TIP15W	MK1KS	HSCU37513H
		APX4000UR0205B	●	5	2.000	1.625	.750	.748	.415	1.875	.313	.187	.600	4°	TPS43	TIP15W	MK1KS	HSCU37513H
		APX4000UR2505CB	●	5	2.500	2.000	1.000	1.024	.539	2.375	.375	.219	.787	2°	TPS43	TIP15W	MK1KS	HSCU50014H
		APX4000UR0306DB	●	6	3.000	2.500	1.250	1.260	.669	2.874	.500	.281	1.024	2°	TPS43	TIP15W	MK1KS	HSCU62516H
		APX4000UR0307DB	●	7	3.000	2.500	1.250	1.260	.669	2.874	.500	.281	1.024	2°	TPS43	TIP15W	MK1KS	HSCU62516H
		APX4000UR0408EB	●	8	4.000	2.500	1.500	1.181	.787	3.799	.625	.375	1.181	1.5°	TPS43	TIP15W	MK1KS	HSCU75016H

* Clamp Torque (lbf-in) : TPS43=35.6

Note 1) When using inserts with corner radius RE≥.197"(5.0 mm), C-Holders are required as shown on page L117.

Note 2) The cutter body includes a set bolt for an arbor.

■ Combination of Holder and Insert Corner Radius

Holder	A Holder						B Holder		C Holder	
	APX4000UR○○○○○○A						APX4000UR○○○○○○B		APX4000UR○○○○○○C	
Insert Corner Radius (RE)	.016"	.031"	.039"	.047"	.063"	.079"	.126"	.157"	.197"	.250"

OPERATION GUIDANCE ➢ L123
SPARE PARTS ➢ N001
TECHNICAL DATA ➢ P001



Fig.1

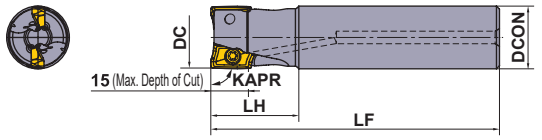
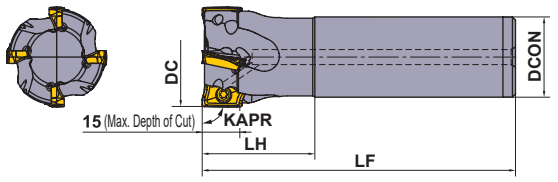


Fig.2



Metric Standard

■ STRAIGHT SHANK TYPE (A Holders)

With Coolant Hole

Right hand tool holder only.

Type	RE (inch)	Order Number	Stock	Number of Teeth	Dimensions (mm)				RMPX	Fig.	*			
			R		DC	DCON	LF	LH			Insert Screw	Wrench	Anti-seize Lubricant	Insert Type
Long	.016 I .079	**APX4000R252SA25SA**	★	2	25	25	115	35	11°	1	TPS4	TIP15W	MK1KS	
		APX4000R322SA32SA	★	2	32	32	125	45	7°	1	TPS4	TIP15W	MK1KS	
		APX4000R323SA32SA	★	3	32	32	125	45	7°	1	TPS4	TIP15W	MK1KS	
		APX4000R403SA32SA	★	3	40	32	125	45	6°	2	TPS43	TIP15W	MK1KS	
		APX4000R404SA32SA	★	4	40	32	125	45	6°	2	TPS43	TIP15W	MK1KS	
		APX4000R504SA32SA	★	4	50	32	125	45	4°	2	TPS43	TIP15W	MK1KS	
		APX4000R505SA32SA	★	5	50	32	125	45	4°	2	TPS43	TIP15W	MK1KS	
		APX4000R634SA32SA	★	4	63	32	125	45	3°	2	TPS43	TIP15W	MK1KS	
		APX4000R636SA32SA	★	6	63	32	125	45	3°	2	TPS43	TIP15W	MK1KS	
		APX4000R252SA25LA	★	2	25	25	170	35	11°	1	TPS4	TIP15W	MK1KS	
		APX4000R282SA25LA	★	2	28	25	170	35	9°	2	TPS4	TIP15W	MK1KS	
		APX4000R322SA32LA	★	2	32	32	190	45	7°	1	TPS4	TIP15W	MK1KS	
		APX4000R323SA32LA	★	3	32	32	190	45	7°	1	TPS4	TIP15W	MK1KS	
		APX4000R352SA32LA	★	2	35	32	190	45	6°	2	TPS4	TIP15W	MK1KS	AOMT1848
		APX4000R353SA32LA	★	3	35	32	190	45	6°	2	TPS4	TIP15W	MK1KS	
		APX4000R402SA32LA	★	2	40	32	190	45	6°	2	TPS43	TIP15W	MK1KS	
		APX4000R403SA32LA	★	3	40	32	190	45	6°	2	TPS43	TIP15W	MK1KS	
		APX4000R404SA32LA	★	4	40	32	190	45	6°	2	TPS43	TIP15W	MK1KS	
Extra Long	.016 I .079	**APX4000R252SA25ELA**	★	2	25	25	220	80	11°	1	TPS4	TIP15W	MK1KS	
		APX4000R282SA25ELA	★	2	28	25	220	35	9°	2	TPS4	TIP15W	MK1KS	
		APX4000R322SA32ELA	★	2	32	32	260	100	7°	1	TPS4	TIP15W	MK1KS	
		APX4000R323SA32ELA	★	3	32	32	260	100	7°	1	TPS4	TIP15W	MK1KS	
		APX4000R352SA32ELA	★	2	35	32	260	45	6°	2	TPS4	TIP15W	MK1KS	
		APX4000R353SA32ELA	★	3	35	32	260	45	6°	2	TPS4	TIP15W	MK1KS	
		APX4000R402SA32ELA	★	2	40	32	260	45	6°	2	TPS43	TIP15W	MK1KS	
		APX4000R403SA32ELA	★	3	40	32	260	45	6°	2	TPS43	TIP15W	MK1KS	
		APX4000R404SA32ELA	★	4	40	32	260	45	6°	2	TPS43	TIP15W	MK1KS	

* Clamp Torque (lbf-in) : TPS4=35.6, TPS43=35.6

Note 1) When using inserts with corner radius RE≥.126" (3.2 mm), B-Holders or C-Holders are required as shown on L117.



Fig.1

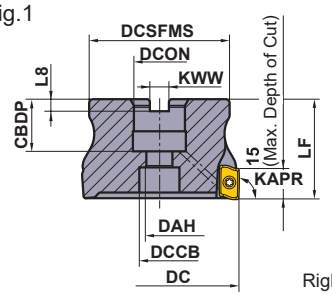
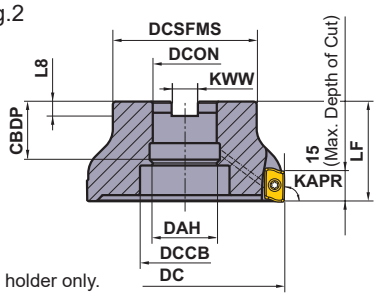
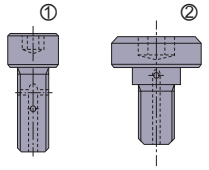


Fig.2



Right hand tool holder only.

Cutter Diameter DC	Set Bolt	Geometry
ϕ80	HSC12035H	①
ϕ100	HSC16040H	
ϕ125	MBA20040H	②
ϕ160	MBA24045H	



Metric Standard

For Inch Arbors

■ ARBOR TYPE (A Holders)

With Coolant Hole

KAPR:90°
GAMP:+15°—+22°
GAMF:+21°—+28°

RE (inch)	Order Number	Stock	Number of Teeth	Dimensions (mm) [inch]									WT	RMPX	Fig.	*			
		R		DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	DCCB	(kg)			Insert Screw	Wrench	Anti-seize Lubricant	Insert Type
.016 | .079	APX4000R08007CA	★	7	80	50	25.4 [1.0"]	26	13	70	9.5	6	20	1.2	2°	1	TPS43	TIP15W	MK1KS	AOMT1848
	APX4000R10008DA	★	8	100	63	31.75 [1.25"]	32	17	80	12.7	8	26	2.1	1.5°	1	TPS43	TIP15W	MK1KS	
	APX4000R12509EA	★	9	125	63	38.1 [1.5"]	40	40	100	15.9	10	56	3.3	1°	2	TPS43	TIP15W	MK1KS	
	APX4000R16010FA	★	10	160	63	50.8 [2.0"]	40	53	100	19.1	11	72	4.8	1°	2	TPS43	TIP15W	MK1KS	

* Clamp Torque (lbf-in) : TPS43=35.6

Note 1) When using inserts with corner radius RE≥.126"(3.2 mm), B-Holders or C-Holders are required as shown on L117.

Note 2) Set bolt not included.

OPERATION GUIDANCE ➤ L123
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001



Fig.1

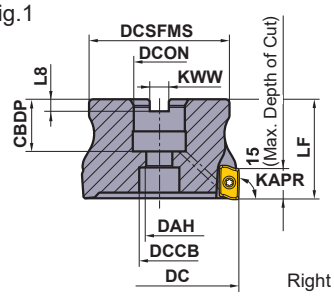
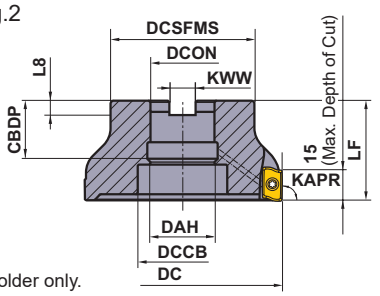


Fig.2



Right hand tool holder only.

Metric Standard

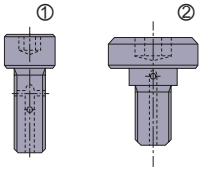
For Metric Arbors

■ ARBOR TYPE (A Holders)

With Coolant Hole

KAPR:90°
GAMP:+15°—+22°
GAMF:+21°—+28°

Cutter Diameter DC	Set Bolt	Geometry
ϕ40	HSC08030H	①
ϕ50, ϕ63	HSC10030H	
ϕ80	HSC12035H	
ϕ100	HSC16040H	
ϕ125	MBA20040H	②
ϕ160		



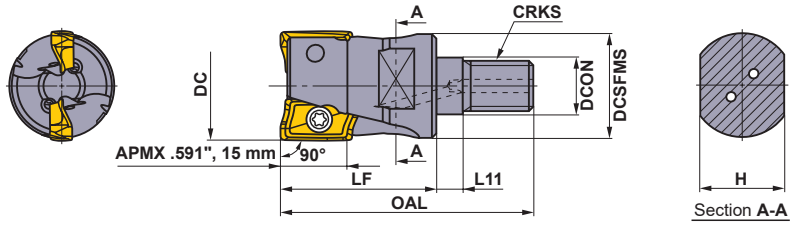
RE (inch)	Order Number	Stock	Number of Teeth	Dimensions (mm)									WT	RMPX	Fig.	*			
		R		DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	DCCB	(kg)			Insert Screw	Wrench	Anti-seize Lubricant	Insert Type
.016 I .079	APX4000-040A04RA	★	4	40	40	16	18	9	34	8.4	5.6	14	0.2	6°	1	TPS43	TIP15W	MK1KS	AOMT1848
	APX4000-050A05RA	★	5	50	40	22	20	11	45	10.4	6.3	17	0.3	4°	1	TPS43	TIP15W	MK1KS	
	APX4000-063A06RA	★	6	63	40	22	20	11	50	10.4	6.3	17	0.5	3°	1	TPS43	TIP15W	MK1KS	
	APX4000-080A07RA	★	7	80	50	27	23	13	60	12.4	7	20	1.2	2°	1	TPS43	TIP15W	MK1KS	
	APX4000-100A08RA	★	8	100	50	32	25	17	70	14.4	8	27	2.1	1.5°	1	TPS43	TIP15W	MK1KS	
	APX4000-125A09RA	★	9	125	63	40	40	42	90	16.4	9	56	3.3	1°	2	TPS43	TIP15W	MK1KS	
	APX4000-160A10RA	★	10	160	63	40	40	42	100	16.4	9	72	4.8	1°	2	TPS43	TIP15W	MK1KS	

* Clamp Torque (lbf-in) : TPS43=35.6

Note 1) When using inserts with corner radius RE≥.126"(3.2 mm), B-Holders or C-Holders are required as shown on page L117.

Note 2) Set bolt not included.





■ SCREW-IN TYPE

With Coolant Hole

Right hand tool holder only.

DC	Order Number	Stock	Number of Teeth	Dimensions (inch)							WT	*1			
				LF	OAL	DCON	DCSFMS	L11	H	CRKS*2	(lbs)	Insert Screw	Wrench	Anti-seize Lubricant	Insert Type
1.000	**APX4000UR162AM12A35**	●	2	1.378	2.244	.492	.925	.236	.748	M12	.4	TPS4	TIP15W	MK1KS	AOMT1848
1.125	**APX4000UR182AM12A35**	●	2	1.378	2.244	.492	.925	.236	.748	M12	.4	TPS4	TIP15W	MK1KS	AOMT1848
1.250	**APX4000UR203AM16A40**	●	3	1.575	2.480	.669	1.122	.236	.945	M16	.7	TPS4	TIP15W	MK1KS	AOMT1848
1.375	**APX4000UR223AM16A40**	●	3	1.575	2.480	.669	1.122	.236	.945	M16	.7	TPS4	TIP15W	MK1KS	AOMT1848

*1 Clamp Torque (lbf-in) : TPS4=35.6, TPS43=35.6
*2 Clamp Torque of the Head (lbf-ft) : M12=59.2, M16=66.7

Metric Standard

■ SCREW-IN TYPE

With Coolant Hole

DC	Order Number	Stock	Number of Teeth	Dimensions (mm)							WT	*1			
				LF	OAL	DCON	DCSFMS	L11	H	CRKS*2	(kg)	Insert Screw	Wrench	Anti-seize Lubricant	Insert Type
25	**APX4000R252M12A35**	★	2	35	57	12.5	23.5	6	19	M12	0.2	TPS4	TIP15W	MK1KS	AOMT1848
28	**APX4000R282M12A35**	★	2	35	57	12.5	23.5	6	19	M12	0.2	TPS4	TIP15W	MK1KS	AOMT1848
32	**APX4000R322M16A40**	★	2	40	63	17	28.5	6	24	M16	0.3	TPS4	TIP15W	MK1KS	AOMT1848
32	**APX4000R323M16A40**	★	3	40	63	17	28.5	6	24	M16	0.3	TPS4	TIP15W	MK1KS	AOMT1848
35	**APX4000R352M16A40**	★	2	40	63	17	28.5	6	24	M16	0.3	TPS4	TIP15W	MK1KS	AOMT1848
35	**APX4000R353M16A40**	★	3	40	63	17	28.5	6	24	M16	0.3	TPS4	TIP15W	MK1KS	AOMT1848
40	**APX4000R403M16A40**	★	3	40	63	17	28.5	6	24	M16	0.3	TPS43	TIP15W	MK1KS	AOMT1848
40	**APX4000R404M16A40**	★	4	40	63	17	28.5	6	24	M16	0.3	TPS43	TIP15W	MK1KS	AOMT1848

*1 Clamp Torque (N • m) : TPS4=35.6, TPS43=35.6
*2 Clamp Torque of the Head (N • m) : M12=59.2, M16=66.7

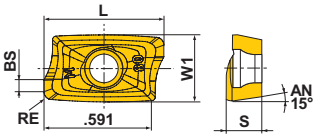
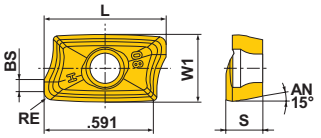
SCREW-IN HOLDERS ➤ L294
OPERATION GUIDANCE ➤ L123
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

INSERTS

Work Material			MC5020	MP6120	MP6130	MP7130	MP9120	MP9130	VP15TF	VP20RT
	P	Steel		◐	✣				◐	✣
	M	Stainless Steel				◔			◔	✣
	K	Cast Iron	◐						✣	
	S	Heat Resistant Alloy, Titanium Alloy					◐	✣	◐	
	H	Hardened Steel							◔	

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✣ : Unstable Cutting

Edge Preparation :
E : Round **F :** Sharp Edge

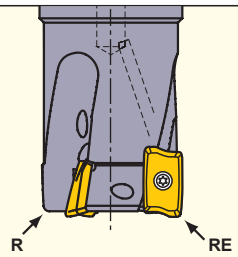
Shape	Order Number	Class	Edge Preparation	Coated								Dimensions (inch)					Geometry
				MC5020	MP6120	MP6130	MP7130	MP9120	MP9130	VP15TF	VP20RT	L	W1	S	BS	RE	
General **M** Breaker 	**AOMT184804PEER-M**	M	E		●	●	●	●	●	●	●	.709	.354	.189	.071	.016	
	AOMT184808PEER-M	M	E		●	●	●	●	●	●	●	.709	.354	.189	.055	.031	
	AOMT184810PEER-M	M	E		●			●	●	★		.709	.354	.189	.039	.039	
	AOMT184812PEER-M	M	E		●			●	●	●		.709	.354	.189	.031	.047	
	AOMT184816PEER-M	M	E		●	●	●	●	●	●	●	.709	.354	.189	.016	.063	
	AOMT184820PEER-M	M	E		●			●	●	★		.709	.354	.189	.016	.079	
Strong Cutting Edge Type **H** Breaker 	**AOMT184804PEER-H**	M	E	●	●	●	●	●	●	●	●	.709	.354	.189	.071	.016	
	AOMT184808PEER-H	M	E	●	●	●	●	●	●	●	●	.709	.354	.189	.055	.031	
	AOMT184816PEER-H	M	E	●	●	●	●	●	●	●	●	.709	.354	.189	.016	.063	
	AOMT184832PEER-H	M	E			●	●				●	.709	.354	.189	.016	.126	
	AOMT184840PEER-H	M	E			●	●				●	.709	.354	.189	.016	.157	
	AOMT184850PEER-H	M	E			●	●				●	.709	.354	.189	—	.197	
	AOMT184864PEER-H	M	E			●	●				●	.709	.354	.189	—	.250	

Note 1) For large R inserts
APX offers various nose radii for inserts, however one holder can not secure every insert radius.
We offer A-Holders that properly secures up to .079" radius.
We offer B-Holders that secures .126" and .157" radius, only for popular inch sizes.
Customers may modify holders as below, so that larger nose radii can be secured.

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

Note on Use of Inserts with Large Corner Radii

When using inserts with corner radius RE≥R.126", please machine the holder with a radius form as shown on the right table.



RE	R
.126"	.098" B-Holders
.157"	
.197"	.197" C-Holders
.250"	

R : Holder End Radius
RE : Insert Corner Radius

Or additional B-Holders and C-Holders are available as non stock, produced to order only.
"Order numbers"; Please replace the last letter "A" of A-Holders to "B" or "C".
In case of screw-in holders, please add "B" or "C" to the end of the order number of A-Holders.
Ex) APX4000R08007CA→APX4000R08007CC
APX4000R252M12A35→APX4000R252M12A35C

RECOMMENDED CUTTING CONDITIONS

■ Cutting Speed

(inch)

Work Material		Properties	Insert				Cutting Width **ae**			
			Grade Priority		Chip Breaker		≤.25DC	.25—.5DC	.5—.75DC	DC (Slot)
			1st	2nd			Cutting Speed **vc** (SFM)			
P	Mild Steel	≤180HB	MP6120	VP15TF	M	H	755(590—885)	720(560—850)	590(460—690)	590(460—690)
			MP6130	VP20RT	M	H	655(490—785)	620(460—755)	490(360—590)	490(360—590)
	Carbon Steel Alloy Steel	180—350HB	MP6120	VP15TF	M	H	590(460—690)	560(430—655)	460(360—525)	460(360—590)
			MP6130	VP20RT	M	H	490(360—590)	460(330—560)	360(260—425)	360(260—425)
M	Stainless Steel	≤270HB	MP7130	VP20RT	M	H	590(460—690)	560(425—655)	460(360—525)	460(360—525)
K	Gray Cast Iron	≤350MPa	MC5020	VP15TF	H		820(655—985)	785(620—950)	690(525—850)	460(360—525)
	Ductile Cast Iron	≤800MPa	MC5020	VP15TF	H		425(330—490)	395(295—460)	330(260—395)	330(260—395)
S	Titanium Alloy	≤350HB	MP9120	VP15TF	H	M	165(130—230)			165(130—230)
			MP9130	VP20RT	H	M	130(100—195)			130(100—195)
	Heat Resistant Alloy	—	MP9120	VP15TF	H	M	130(100—195)			130(100—195)
			MP9130	VP20RT	H	M	100(65—130)			100(65—130)
H	Hardened Steel	40—55HRC	VP15TF		H		295(230—330)	280(195—330)	230(165—260)	230(165—260)

RECOMMENDED CUTTING CONDITIONS

■ Depth of Cut / Feed per Tooth

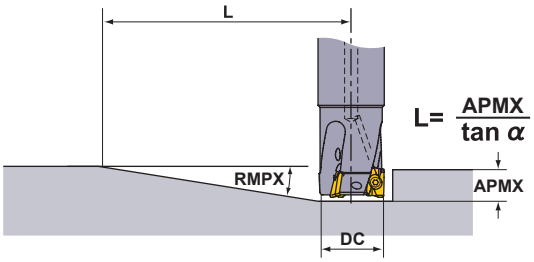
(inch)

	Work Material	Properties	Cutting Width **ae**	Depth of Cut **ap**	Feed per Tooth **fz** (IPT) DC		
					ϕ.750"–ϕ1.500"(ϕ25–ϕ40 mm)	ϕ2.000"–ϕ3.000"(ϕ50–ϕ80 mm)	ϕ4.000"(ϕ100–ϕ160 mm)
P	Mild Steel Carbon Steel Alloy Steel	≤180HB	≤.5DC	≤.197	.012	.012	.010
				.197–.295	.010	.010	.008
				.295–.394	.008	.008	.006
				.394–.492	.006	.006	.004
				.492–.591	.004	.004	.003
		180–350HB	.5–.75DC	≤.197	.008	.008	.006
				.295–.394	.006	.006	.004
				.394–.591	.004	.004	.003
			DC (Slot)	≤.197	.006	.006	.006
				.197–.295	.004	.004	.004
				.295–.394	.003	.003	.003
M	Stainless Steel	≤270HB	≤.5DC	≤.197	.012	.010	.010
				.197–.295	.010	.008	.008
				.295–.394	.008	.006	.006
				.394–.492	.006	.004	.004
				.492–.591	.004	.003	.003
			.5–.75DC	≤.197	.008	.006	.006
				.295–.394	.006	.004	.004
				.394–.591	.004	.003	.003
			DC (Slot)	≤.197	.006	.006	.006
				.197–.295	.004	.004	.004
				.295–.394	.003	.003	.003
K	Gray Cast Iron	Tensile Strength ≤350MPa	≤.5DC	≤.197	.012	.012	.010
				.197–.295	.010	.010	.008
				.295–.394	.008	.008	.006
				.394–.492	.006	.006	.004
				.492–.591	.004	.004	.003
			.5–.75DC	≤.197	.008	.008	.006
				.197–.394	.006	.006	.004
				.394–.591	.004	.004	.003
			DC (Slot)	≤.197	.006	.006	.006
				.197–.295	.004	.004	.004
				.295–.394	.003	.003	.003
	Ductile Cast Iron	Tensile Strength ≤800MPa	≤.5DC	≤.197	.010	.010	.010
				.197–.295	.008	.008	.008
				.295–.394	.006	.006	.006
				.394–.492	.004	.004	.004
				.492–.591	.003	.003	.003
			.5–.75DC	≤.197	.008	.008	.006
				.197–.394	.006	.006	.004
				.394–.591	.004	.004	.003
			DC (Slot)	≤.197	.006	.006	.006
				.197–.295	.004	.004	.004
				.295–.394	.003	.003	.003
S	Titanium Alloy	≤350HB	≤.25DC	≤.197	.006	.004	.004
				.197–.295	.004	.002	.002
				.295–.394	.002	–	–
			DC (Slot)	≤.197	.002	.002	.002
	Heat Resistant Alloy	–	≤.25DC	≤.079	.004	.002	.002
			DC (Slot)	≤.039	.002	.002	.002
H	Hardened Steel	40–55HRC	≤.25DC	≤.197	.006	.006	.006
				.197–.295	.004	.004	.004
				.295–.394	.003	.003	.003
			.25–.5DC	≤.197	.004	.004	.004
				.197–.295	.003	.003	.003
			.5–.75DC	≤.197	.003	.003	.003
			DC (Slot)	≤.197	.003	.003	.003

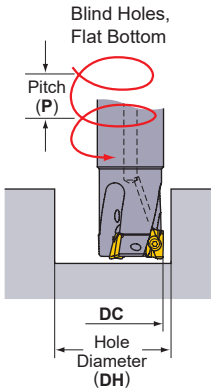
Note 1) These cutting conditions are a guide to the standard shank type and the arbor type.
Please make adjustments according to the machining conditions.
Note 2) Vibration is liable to occur in certain cases. Please reduce the depth of cut and / or reduce cutting conditions in the following cases.
• When using the long shank type and extra long shank type.
• When using long tool overhang with the standard or arbor type.
• When the application has poor clamping rigidity or when using a low rigidity machine.
Note 3) In case of coarse and fine pitch cutters, the coarse pitch type is recommended to prevent vibration.
Note 4) For heavy interrupted and unstable cutting, the H breaker is first recommendation.

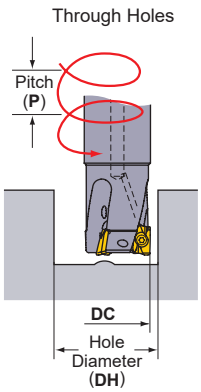
■ Ramping / Helical Milling

● Ramping



● Helical Milling





Refer to the table below when using .031 inch radius for maximum ramping angle, pitch and minimum/maximum hole diameter. Use cutting conditions for slot milling to calculate speed and feed when ramping / helical milling.

Cutting Edge Diameter **DC** (inch)	Ramping		Helical Milling (Blind Hole, Flat Bottom)				Helical Milling (Through Hole)	
	Maximum Ramping Angle **RMPX**	Minimum Distance *1 **L** (inch)	Maximum Hole Diameter *2 **DH max.** (inch)	Maximum Pitch **P max.** (inch)	Minimum Hole Diameter **DH min.** (inch)	Maximum Pitch **P max.** (inch)	Minimum Hole Diameter **DH min.** (inch)	Maximum Pitch **P max.** (inch)
.750	14°	2.7	1.42	.51	1.31	.43	.80	.019
1.000	11°	3.4	1.92	.55	1.81	.47	1.30	.157
1.250	7°	5.4	2.42	.43	2.31	.39	1.80	.196
1.500	7°	5.4	2.92	.51	2.81	.47	2.30	.275
2.000	4°	9.4	3.92	.39	3.81	.39	3.30	.275
2.500	2°	18.8	4.92	.23	4.81	.23	4.30	.157
3.000	2°	18.8	5.92	.31	5.81	.27	5.30	.236
4.000	1.5°	25.1	7.92	.31	7.81	.27	7.30	.236

*1 L(=.591"/tanα). Cutters' moving distance until depth of cut reaches .591" at a maximum ramping angle.
*2 In case corner radius of .031". Other than that, find with the below formula.
{(cutting edge diameter DC) - (corner radius) - .008"} x 2
Note 1) When machining highly ductile materials with ramping angles above, chips could be continuous.
In this case, decrease the ramping angle or feed per tooth.

DEEP SHOULDER MILLING

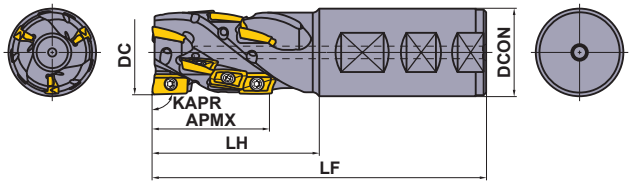
90° KAPR R

APX4000

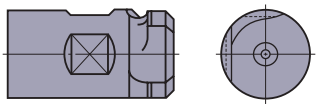
LONG CUTTING EDGE

P Steel | M Stainless Steel | K Cast Iron | N | S Heat Resistant Alloy | H





*1 Combination Type



Right hand tool holder only.

■SHANK TYPE (A Holders)

With Coolant Hole

Order Number	Stock	Number of Flutes	Total	Dimensions (inch)					*2			
	R			DC	DCON	LF	LH	APMX	Insert Screw	Wrench	Anti-seize Lubricant	Insert Type
APX4KUR2408WA24S35A	●	2	8	1.500	1.500	6.500	3.250	2.200	TPS43	TIP15W	MK1KS	AOMT1848
APX4KUR2412WA24S35A	●	3	12	1.500	1.500	6.500	3.250	2.200	TPS43	TIP15W	MK1KS	
*1 APX4KUR3212WA32S35A	●	3	12	2.000	2.000	6.500	3.250	2.200	TPS43	TIP15W	MK1KS	
*1 APX4KUR3218WA32M53A	●	3	18	2.000	2.000	7.750	4.500	3.300	TPS43	TIP15W	MK1KS	

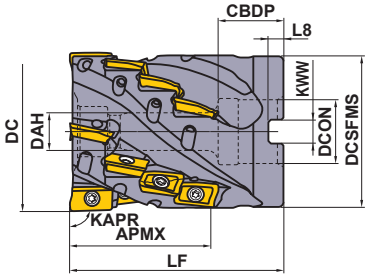
*2 Clamp Torque (lbf-in) : TPS43=35.4

Note 1) When using inserts with corner radius RE≥.126" on the bottom, B-Holders or C-Holders are required as shown on page L117.

Note 2) Only corner radius RE .016" and .031" can be used for the peripheral cutting edges expect the bottom cutting edge (the end cuttting edge).

Note 3) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.





Right hand tool holder only.

DC	Set Bolt	Geometry
ϕ2.000"	HSCUF37520	
ϕ2.500"	HSCUF50028	

■SHELL TYPE (A Holders)

With Coolant Hole

Order Number	Stock	Number of Flutes	Total	Dimensions (inch)									*			
	R			DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	APMX	Insert Screw	Wrench	Anti-seize Lubricant	Insert Type
APX4KUR0209A16A	●	3	9	2.000	2.500	.750	1.063	.415	1.918	.313	.187	1.650	TPS43	TIP15W	MK1KS	AOMT1848
APX4KUR2516CA22A	●	4	16	2.500	3.500	1.000	1.339	.539	2.409	.375	.219	2.200	TPS43	TIP15W	MK1KS	

* Clamp Torque (lbf-in) : TPS43=35.4

Note 1) When using inserts with corner radius Re≥.126" on the bottom, B-Holders or C-Holders are required as shown on page L117.

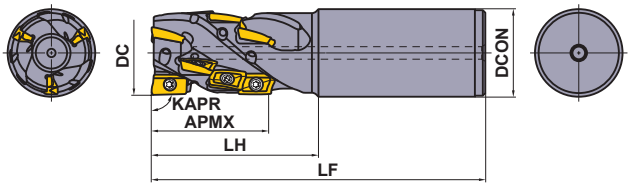
Note 2) Only corner radius Re .016" and .031" can be used for the peripheral cutting edges expect the bottom cutting edge (the end cuttting edge).

Note 3) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

Note 4) In case of internal coolant supply, please use a face mill arbor with through coolant channels; Regular center-thru or side-thru arbors can't be used.

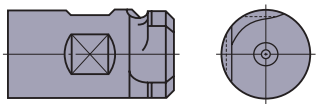
Note 5) The cutter body includes a non-coolant through set bolt for an arbor.





Metric Standard

∗1 Combination Type



■SHANK TYPE (A Holders)

With Coolant Hole

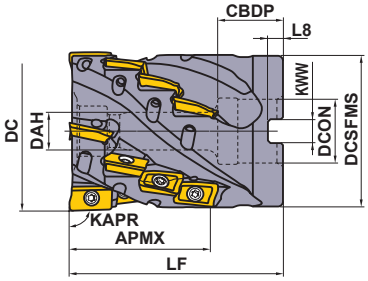
Right hand tool holder only.

Order Number	Stock	Number of Flutes	Total	Dimensions (mm) [inch]					∗2			
	R			DC	DCON	LF	LH	APMX	Insert Screw	Wrench	Anti-seize Lubricant	Insert Type
APX4KR4008SA42S056A	★	2	8	40	42	160	80	56	TPS43	TIP15W	MK1KS	AOMT1848
APX4KR4012SA42S056A	★	3	12	40	42	160	80	56	TPS43	TIP15W	MK1KS	
∗1 APX4KR5012WA508S056A	★	3	12	50	50.8 [2.0"]	160	80	56	TPS43	TIP15W	MK1KS	
∗1 APX4KR5018WA508M084A	★	3	18	50	50.8 [2.0"]	190	110	84	TPS43	TIP15W	MK1KS	

∗2 Clamp Torque (lbf-in) : TPS43=35.4

Note 1) When using inserts with corner radius RE≥.126" on the bottom, B-Holders or C-Holders are required as shown on page L117.
Note 2) Only corner radius RE .016" and .031" can be used for the peripheral cutting edges except the bottom cutting edge (the end cuttting edge).
Note 3) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.





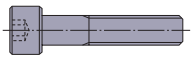
Metric Standard

For Inch Arbors

■SHELL TYPE (A Holders)

With Coolant Hole

Right hand tool holder only.

DC	Set Bolt	Geometry
ϕ50 mm	HSC10050	
ϕ63 mm	HSC12070	

The bore diameter (DCON) is equivalent to a metric size.

Order Number	Stock	Number of Flutes	Total	Dimensions (mm) [inch]									∗			
	R			DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	APMX	Insert Screw	Wrench	Anti-seize Lubricant	Insert Type
APX4KR06316CA056A	★	4	16	63	85	25.4 [1.0"]	26	13	60.7	9.5	6	56	TPS43	TIP15W	MK1KS	AOMT1848

∗ Clamp Torque (lbf-in) : TPS43=35.4

Metric Standard

For Metric Arbors

■SHELL TYPE (A Holders)

With Coolant Hole

Order Number	Stock	Number of Flutes	Total	Dimensions (mm)									∗			
	R			DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	APMX	Insert Screw	Wrench	Anti-seize Lubricant	Insert Type
APX4K-050A09A042RA	★	3	9	50	65	22	22	11	48	10.4	6.3	42	TPS43	TIP15W	MK1KS	AOMT1848
APX4K-063A16A056RA	★	4	16	63	85	27	28	13	60.7	12.4	7	56	TPS43	TIP15W	MK1KS	

∗ Clamp Torque (lbf-in) : TPS43=35.4

Note 1) When using inserts with corner radius RE≥.126" on the bottom, B-Holders or C-Holders are required as shown on page L117.
Note 2) Only corner radius RE .016" and .031" can be used for the peripheral cutting edges except the bottom cutting edge (the end cuttting edge).
Note 3) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.
Note 4) In case of internal coolant supply, please use a face mill arbor with through coolant channels; Regular center-thru or side-thru arbors can't be used.
Note 5) Set bolt not included.

INSERTS ➤ L116
OPERATION GUIDANCE ➤ L123
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

RECOMMENDED CUTTING CONDITIONS

■ Cutting Speed

(inch)

	Work Material	Properties	Insert Grade Priority 1st	Insert Grade Priority 2nd	Chip Breaker		Cutting Width **ae** ≤.15DC	Cutting Width **ae** .15—.3DC	Cutting Width **ae** DC (Slot)
							Cutting Speed **vc** (SFM)		
P	Mild Steel	≤180HB	MP6120	VP15TF	M	H	655(525—820)	525(395—655)	460(395—525)
			MP6130	VP20RT	M	H	560(425—720)	425(295—560)	360(295—425)
	Carbon Steel Alloy Steel	180—350HB	MP6120	VP15TF	M	H	525(395—655)	395(330—460)	330(260—395)
			MP6130	VP20RT	M	H	425(295—560)	295(230—360)	230(165—295)
M	Stainless Steel	≤270HB	MP7130	VP15TF	M	H	525(395—655)	395(330—460)	330(260—395)
K	Gray Cast Iron	≤350MPa	MC5020	VP15TF	H		755(590—920)	620(460—785)	620(460—785)
	Ductile Cast Iron	≤800MPa	MC5020	VP15TF	H		620(460—720)	560(395—720)	560(395—720)
S	Titanium Alloy	≤350HB	MP9120	VP15TF	H	M	165(130—230)		165(130—230)
			MP9130	VP20RT	H	M	130(100—195)		130(100—195)
	Heat Resistant Alloy	—	MP9120	VP15TF	H	M	130(100—195)		130(100—195)
			MP9130	VP20RT	H	M	100(65—130)		100(65—130)

■ Depth of Cut / Feed per Tooth

(inch)

	Work Material	Properties	Cutting Width **ae**	Depth of Cut **ap**	Feed per Tooth **fz** (IPT) DC ϕ1.5"(Max.ap=2.2") ϕ2.0"(Max.ap=1.65") ϕ40(Max.ap=56 mm(2.205") ϕ50 (Max.ap=42 mm(1.654")	Feed per Tooth **fz** (IPT) DC ϕ2.0"(Max.ap=2.2") ϕ2.5"(Max.ap=2.2") ϕ50(Max.ap=56 mm(2.205") ϕ63 (Max.ap=56 mm(2.205")	Feed per Tooth **fz** (IPT) DC ϕ2.0"(Max.ap=3.3") ϕ50(Max.ap=84 mm(3.307")
P	Mild Steel	≤180HB	≤.3DC	≤.787	.010	.010	.008
				.787—1.969	.008	.008	.006
				1.969—3.150			.004
			DC (Slot)	≤.787	.008	.008	.006
				.787—1.969	.006	.006	
	Carbon Steel Alloy Steel	180—350HB	≤.3DC	≤.787	.010	.010	.008
				.787—1.969	.008	.008	.006
				1.969—3.150			.004
			DC (Slot)	≤.787	.006	.006	.004
				.787—1.969	.004	.004	
M	Stainless Steel	≤270HB	≤.3DC	≤.787	.010	.010	.008
				.787—1.969	.008	.008	.006
				1.969—3.150			.004
			DC (Slot)	≤.394	.004	.004	.003
K	Gray Cast Iron	Tensile Strength ≤350MPa	≤.15DC	≤.394	.012	.012	.010
				.394—1.969	.010	.010	.008
				1.969—3.150			.006
			.15—.3DC	≤.394	.010	.010	.008
				.394—1.969	.008	.008	.006
				1.969—3.150			.004
			DC (Slot)	≤.394	.010	.010	.008
				.394—1.969	.008	.008	.006
	Ductile Cast Iron	Tensile Strength ≤800MPa	≤.15DC	≤.787	.010	.010	.008
				.787—1.969	.008	.008	.006
				1.969—3.150			.004
			.15—.3DC	≤.787	.008	.008	.006
				.787—1.969	.006	.006	.004
				1.969—3.150			.003
			DC (Slot)	≤.394	.006	.006	.004
				.394—1.969	.004	.004	
S	Titanium Alloy	≤350HB	≤.15DC	≤.787	.004	.004	
				.787—1.969	.004	.004	
			DC (Slot)	≤1.969	.003	.003	
	Heat Resistant Alloy	—	≤.15DC	≤.394	.003	.003	
			DC (Slot)	≤.787	.002	.002	

Note 1) The above cutting conditons are determined based on high rigidity machine and work material, where no vibration occurred.
Please adjust processing conditions if the vibration is generated.

OPERATIONAL GUIDANCE

- Use only specified inserts and parts.
- Clamp the inserts at a specified torque of only.
- The maximum spindle speeds **RPMX** are shown in Table 1. Ensure that the cutter operates under the maximum spindle speed **RPMX**.
  The maximum spindle speeds **RPMX** for safety purposes are determined in accordance with ISO15641 (Milling Cutters for high speed machining–Safety requirements).

(Table 1) Maximum Spindle Speed RPMX

Cutting Edge Diameter **DC**	ϕ.500"	ϕ.625"	ϕ.750"	ϕ1.000"	ϕ1.250"	ϕ1.500"	ϕ2.000"	ϕ2.500"	ϕ3.000"	ϕ4.000"
Max. Spindle Speed **RPMX** (min^{-1})	9900	19000	16000	12000	9500	7600	6000	4800	3800	3100

Cutting Edge Diameter **DC**(mm)	ø12	ø14	ø16	ø18	ø20	ø22	ø25	ø28	ø30
Max. Spindle Speed **RPMX** (min^{-1})	—	—	19000	17000	15000	14000	12000	11000	10000

Cutting Edge Diameter **DC**(mm)	ø32	ø35	ø40	ø50	ø63	ø80	ø100	ø125	ø160
Max. Spindle Speed **RPMX** (min^{-1})	9500	9000	7500	6000	5000	3500	3000	2500	1500

MULTI-FUNCTIONAL MILLING

90° KAPR

VPX200 NEW

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron	Non-ferrous Metal	Heat Resistant Alloy	Hardened Steel



Fig.1

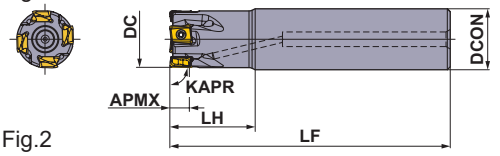


Fig.2

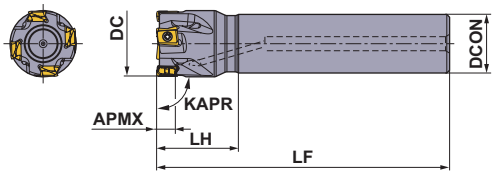


Fig.3

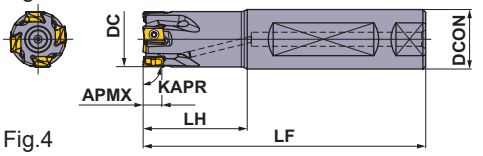
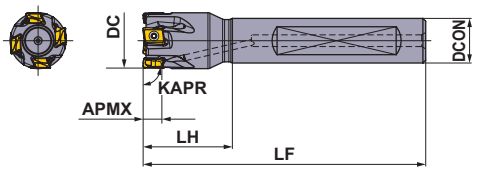


Fig.4



■SHANK TYPE

With Coolant Hole

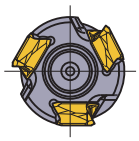
Right hand tool holder only.

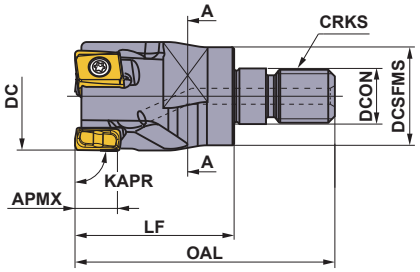
(inch)

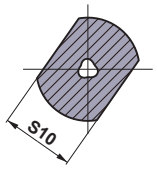
DC	Order Number	Stock R	Number of Teeth	DCON	LF	LH	APMX	RMPX	RPMX (min^{-1})	WT (lbs)	Fig.	Insert Type
.625	**VPX200UR1002FA10S**	●	2	.625	3.625	1.250	.315	1.87°	38100	.3	3	LOGU09
.625	**VPX200UR1002SA10S**	●	2	.625	3.625	1.250	.315	1.87°	38100	.3	1	LOGU09
.625	**VPX200UR1002SA10L**	●	2	.625	6.000	1.500	.315	1.87°	38100	.5	1	LOGU09
.750	**VPX200UR1202FA10S**	●	2	.625	4.375	1.250	.315	1.43°	34200	.3	4	LOGU09
.750	**VPX200UR1202SA10S**	●	2	.625	4.375	1.250	.315	1.43°	34200	.4	2	LOGU09
.750	**VPX200UR1203FA10S**	●	3	.625	4.375	1.250	.315	1.43°	34200	.3	4	LOGU09
.750	**VPX200UR1203SA10S**	●	3	.625	4.375	1.250	.315	1.43°	34200	.3	2	LOGU09
.750	**VPX200UR1202FA12S**	●	2	.750	4.375	1.500	.315	1.43°	34200	.4	3	LOGU09
.750	**VPX200UR1202SA12S**	●	2	.750	4.375	1.500	.315	1.43°	34200	.5	1	LOGU09
.750	**VPX200UR1203FA12S**	●	3	.750	4.375	1.500	.315	1.43°	34200	.4	3	LOGU09
.750	**VPX200UR1203SA12S**	●	3	.750	4.375	1.500	.315	1.43°	34200	.5	1	LOGU09
.750	**VPX200UR1202SA12L**	●	2	.750	7.250	2.000	.315	1.43°	34200	.8	1	LOGU09
.875	**VPX200UR1402SA12L**	●	2	.750	7.250	1.500	.315	1.14°	31200	.8	2	LOGU09
1.000	**VPX200UR1603FA12S**	●	3	.750	4.750	1.500	.315	.95°	28800	.6	4	LOGU09
1.000	**VPX200UR1603SA12S**	●	3	.750	4.750	1.500	.315	.95°	28800	.6	2	LOGU09
1.000	**VPX200UR1604FA12S**	●	4	.750	4.750	1.500	.315	.95°	28800	.6	4	LOGU09
1.000	**VPX200UR1604SA12S**	●	4	.750	4.750	1.500	.315	.95°	28800	.6	2	LOGU09
1.000	**VPX200UR1603SA12L**	●	3	.750	8.500	1.500	.315	.95°	28800	1.0	2	LOGU09
1.000	**VPX200UR1603FA16S**	●	3	1.000	4.750	1.750	.315	.95°	28800	.9	3	LOGU09
1.000	**VPX200UR1603SA16S**	●	3	1.000	4.750	1.750	.315	.95°	28800	.9	1	LOGU09
1.000	**VPX200UR1604FA16S**	●	4	1.000	4.750	1.750	.315	.95°	28800	.9	3	LOGU09
1.000	**VPX200UR1604SA16S**	●	4	1.000	4.750	1.750	.315	.95°	28800	.9	1	LOGU09
1.000	**VPX200UR1603SA16L**	●	3	1.000	8.500	2.500	.315	.95°	28800	1.7	1	LOGU09
1.125	**VPX200UR1803SA16L**	●	3	1.000	8.500	1.750	.315	.82°	26800	1.8	2	LOGU09
1.250	**VPX200UR2003FA16S**	●	3	1.000	5.125	1.750	.315	.71°	25200	1.1	4	LOGU09
1.250	**VPX200UR2003SA16S**	●	3	1.000	5.125	1.750	.315	.71°	25200	1.1	2	LOGU09
1.250	**VPX200UR2005FA16S**	●	5	1.000	5.125	1.750	.315	.71°	25200	1.1	4	LOGU09
1.250	**VPX200UR2005SA16S**	●	5	1.000	5.125	1.750	.315	.71°	25200	1.1	2	LOGU09
1.250	**VPX200UR2003SA16L**	●	3	1.000	9.000	1.750	.315	.71°	25200	1.9	2	LOGU09
1.250	**VPX200UR2003FA20S**	●	3	1.250	5.125	2.000	.315	.71°	25200	1.5	3	LOGU09
1.250	**VPX200UR2003SA20S**	●	3	1.250	5.125	2.000	.315	.71°	25200	1.6	1	LOGU09
1.250	**VPX200UR2004FA20S**	●	4	1.250	5.125	2.000	.315	.71°	25200	1.5	3	LOGU09
1.250	**VPX200UR2004SA20S**	●	4	1.250	5.125	2.000	.315	.71°	25200	1.6	1	LOGU09
1.250	**VPX200UR2005FA20S**	●	5	1.250	5.125	2.000	.315	.71°	25200	1.5	3	LOGU09
1.250	**VPX200UR2005SA20S**	●	5	1.250	5.125	2.000	.315	.71°	25200	1.6	1	LOGU09
1.250	**VPX200UR2003SA20L**	●	3	1.250	9.000	3.000	.315	.71°	25200	2.8	1	LOGU09
1.500	**VPX200UR2404FA20S**	●	4	1.250	5.125	2.000	.315	.57°	22600	1.7	4	LOGU09
1.500	**VPX200UR2404SA20S**	●	4	1.250	5.125	2.000	.315	.57°	22600	1.8	2	LOGU09
1.500	**VPX200UR2406FA20S**	●	6	1.250	5.125	2.000	.315	.57°	22600	1.7	4	LOGU09
1.500	**VPX200UR2406SA20S**	●	6	1.250	5.125	2.000	.315	.57°	22600	1.7	2	LOGU09
1.500	**VPX200UR2404SA20L**	●	4	1.250	9.000	2.000	.315	.57°	22600	3.1	2	LOGU09

Note 1) The maximum spindle speeds **RPMX** are set to ensure tool and insert stability.
Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.









A-A Section

Right hand tool holder only.

■ SCREW-IN TYPE

With Coolant Hole

(inch)

DC	Order Number	Stock R	Number of Teeth	DCON	DCSFMS	OAL	LF	S10	CRKS	WT (lbs)	APMX	RMPX	Insert Type
.625	**VPX200UR1002AM0830**	●	2	.335	.571	1.890	1.181	.394	M08	.1	.315	1.87°	LOGU09
.750	**VPX200UR1202AM1030**	●	2	.413	.728	1.929	1.181	.551	M10	.1	.315	1.43°	LOGU09
.750	**VPX200UR1203AM1030**	●	3	.413	.728	1.929	1.181	.551	M10	.1	.315	1.43°	LOGU09
.875	**VPX200UR1402AM1030**	●	2	.413	.728	1.929	1.181	.551	M10	.2	.315	1.14°	LOGU09
.875	**VPX200UR1403AM1030**	●	3	.413	.728	1.929	1.181	.551	M10	.1	.315	1.14°	LOGU09
1.000	**VPX200UR1603AM1235**	●	3	.492	.925	2.244	1.378	.748	M12	.2	.315	.95°	LOGU09
1.000	**VPX200UR1604AM1235**	●	4	.492	.925	2.244	1.378	.748	M12	.2	.315	.95°	LOGU09
1.125	**VPX200UR1803AM1235**	●	3	.492	.925	2.244	1.378	.748	M12	.3	.315	.82°	LOGU09
1.125	**VPX200UR1804AM1235**	●	4	.492	.925	2.244	1.378	.748	M12	.3	.315	.82°	LOGU09
1.250	**VPX200UR2003AM1640**	●	3	.669	1.122	2.480	1.575	.945	M16	.5	.315	.71°	LOGU09
1.250	**VPX200UR2004AM1640**	●	4	.669	1.122	2.480	1.575	.945	M16	.5	.315	.71°	LOGU09
1.250	**VPX200UR2005AM1640**	●	5	.669	1.122	2.480	1.575	.945	M16	.5	.315	.71°	LOGU09
1.375	**VPX200UR2203AM1640**	●	3	.669	1.122	2.480	1.575	.945	M16	.5	.315	.64°	LOGU09
1.375	**VPX200UR2205AM1640**	●	5	.669	1.122	2.480	1.575	.945	M16	.5	.315	.64°	LOGU09
1.500	**VPX200UR2404AM1640**	●	4	.669	1.122	2.480	1.575	.945	M16	.6	.315	.57°	LOGU09
1.500	**VPX200UR2406AM1640**	●	6	.669	1.122	2.480	1.575	.945	M16	.6	.315	.57°	LOGU09

Note 1) For screw-in type arbors, refer to page L294.

SPARE PARTS

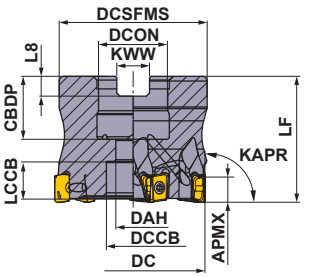
(inch)

DC	Tool Holder Type	* 		
		Clamp Screw	Wrench	Anti-seize Lubricant
.625	**VPX200UR10**	TPS27F1	TIP07F	MK1KS
.750	**VPX200UR12**	TPS27F1	TIP07F	MK1KS
.875	**VPX200UR14**	TPS27F2	TIP07F	MK1KS
1.000	**VPX200UR16**	TPS27F2	TIP07F	MK1KS
1.125	**VPX200UR18**	TPS27F2	TIP07F	MK1KS
1.250	**VPX200UR20**	TPS27F2	TIP07F	MK1KS
1.375	**VPX200UR22**	TPS27F2	TIP07F	MK1KS
1.500	**VPX200UR24**	TPS27F2	TIP07F	MK1KS

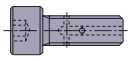
* Clamp Torque (lbf-in) : TPS27F1 = 8.9,TPS27F2 = 8.9

SCREW-IN HOLDERS ➢ L294
SPARE PARTS ➢ N001
TECHNICAL DATA ➢ P001





Right hand tool holder only.

DCON	Set Bolt	Geometry
ϕ.500"	HSCU25011H	
ϕ.750"	HSCU37513H	
ϕ1.000"	HSCU50014H	

■ARBOR TYPE

With Coolant Hole

GAMP : –6°
GAMF : –25°

DC = Inch, DCON = Inch

(inch)

DC	Order Number	Stock R	Number of Teeth	LF	DCON	WT (lbs)	APMX	RMPX	RPMX (min^{-1})	Insert Type
1.250	**VPX200UR1.2503SA**	●	3	1.375	.500	.120	.315	.72°	25200	LOGU09
1.250	**VPX200UR1.2505SA**	●	5	1.375	.500	.120	.315	.72°	25200	LOGU09
1.500	**VPX200UR1.5004SA**	●	4	1.750	.500	.260	.315	.57°	22600	LOGU09
1.500	**VPX200UR1.5006SA**	●	6	1.750	.500	.250	.315	.57°	22600	LOGU09
1.500	**VPX200UR1.5004AA**	●	4	1.750	.750	.220	.315	.57°	22600	LOGU09
1.500	**VPX200UR1.5006AA**	●	6	1.750	.750	.210	.315	.57°	22600	LOGU09
2.000	**VPX200UR2.0005AA**	●	5	1.750	.750	.410	.315	.41°	19000	LOGU09
2.000	**VPX200UR2.0007AA**	●	7	1.750	.750	.410	.315	.41°	19000	LOGU09
2.500	**VPX200UR2.5006CA**	●	6	2.000	1.000	.740	.315	.32°	16700	LOGU09
2.500	**VPX200UR2.5009CA**	●	9	2.000	1.000	.740	.315	.32°	16700	LOGU09

Note 1) The maximum spindle speeds **RPMX** are set to ensure tool and insert stability.
Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

MOUNTING DIMENSIONS

(inch)

DC	Order Number	DCON	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8
1.250	**VPX200UR1.2503SA**	.500	.630	.276	.433	.304	1.125	.250	.156
1.250	**VPX200UR1.2505SA**	.500	.630	.276	.433	.304	1.125	.250	.156
1.500	**VPX200UR1.5004SA**	.500	.630	.276	.433	.679	1.438	.250	.156
1.500	**VPX200UR1.5006SA**	.500	.630	.276	.433	.679	1.438	.250	.156
1.500	**VPX200UR1.5004AA**	.750	.748	.413	.630	.561	1.438	.313	.187
1.500	**VPX200UR1.5006AA**	.750	.748	.413	.630	.561	1.438	.313	.187
2.000	**VPX200UR2.0005AA**	.750	.748	.413	.630	.561	1.750	.313	.187
2.000	**VPX200UR2.0007AA**	.750	.748	.413	.630	.561	1.750	.313	.187
2.500	**VPX200UR2.5006CA**	1.000	.945	.539	.787	.693	2.188	.375	.219
2.500	**VPX200UR2.5009CA**	1.000	.945	.539	.787	.693	2.188	.375	.219

SPARE PARTS

Tool Holder Type	 *		
	Clamp Screw	Wrench	Anti-seize Lubricant
VPX200	TPS27F2	TIP07F	MK1KS

* Clamp Torque (lbf-in) : TPS27F2 = 8.9



Fig.1



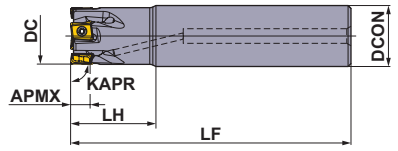
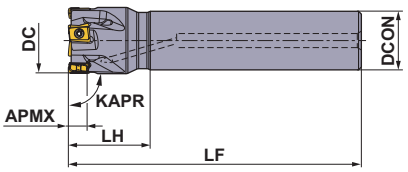


Fig.2





Right hand tool holder only.

Metric Standard

■SHANK TYPE

With Coolant Hole

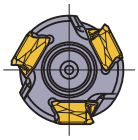
(mm)

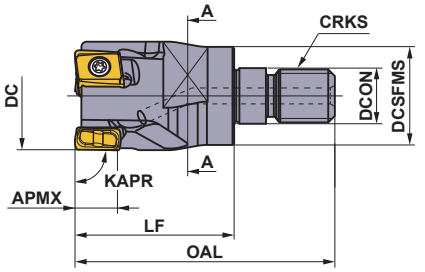
DC	Order Number	Stock R	Number of Teeth	DCON	LF	LH	APMX	RMPX	RPMX (min^{-1})	WT (kg)	Fig.	Insert Type
16	**VPX200R1602SA16S**	★	2	16	85	25	8	1.85°	37900	0.11	1	LOGU09
18	**VPX200R1802SA16S**	★	2	16	85	25	8	1.56°	35300	0.12	2	LOGU09
18	**VPX200R1802SA16L**	★	2	16	120	25	8	1.56°	35300	0.17	2	LOGU09
20	**VPX200R2002SA16S**	★	2	16	100	25	8	1.35°	33200	0.14	2	LOGU09
20	**VPX200R2003SA16S**	★	3	16	100	25	8	1.35°	33200	0.14	2	LOGU09
20	**VPX200R2002SA20S**	★	2	20	100	30	8	1.35°	33200	0.21	1	LOGU09
20	**VPX200R2003SA20S**	★	3	20	100	30	8	1.35°	33200	0.21	1	LOGU09
20	**VPX200R2002SA20L**	★	2	20	150	60	8	1.35°	33200	0.32	1	LOGU09
22	**VPX200R2202SA20S**	★	2	20	115	30	8	1.16°	31400	0.26	2	LOGU09
22	**VPX200R2203SA20S**	★	3	20	115	30	8	1.16°	31400	0.25	2	LOGU09
22	**VPX200R2202SA20L**	★	2	20	150	30	8	1.16°	31400	0.34	2	LOGU09
25	**VPX200R2503SA20S**	★	3	20	115	30	8	0.97°	29000	0.26	2	LOGU09
25	**VPX200R2504SA20S**	★	4	20	115	30	8	0.97°	29000	0.26	2	LOGU09
25	**VPX200R2503SA25S**	★	3	25	115	35	8	0.97°	29000	0.39	1	LOGU09
25	**VPX200R2504SA25S**	★	4	25	115	35	8	0.97°	29000	0.39	1	LOGU09
25	**VPX200R2503SA25L**	★	3	25	170	70	8	0.97°	29000	0.57	1	LOGU09
28	**VPX200R2803SA25S**	★	3	25	115	35	8	0.84°	27200	0.41	2	LOGU09
28	**VPX200R2804SA25S**	★	4	25	115	35	8	0.84°	27200	0.41	2	LOGU09
28	**VPX200R2803SA25L**	★	3	25	170	35	8	0.84°	27200	0.61	2	LOGU09
30	**VPX200R3003SA25S**	★	3	25	125	35	8	0.77°	26000	0.46	2	LOGU09
30	**VPX200R3004SA25S**	★	4	25	125	35	8	0.77°	26000	0.46	2	LOGU09
32	**VPX200R3203SA32S**	★	3	32	125	45	8	0.71°	25100	0.70	1	LOGU09
32	**VPX200R3204SA32S**	★	4	32	125	45	8	0.71°	25100	0.70	1	LOGU09
32	**VPX200R3205SA32S**	★	5	32	125	45	8	0.71°	25100	0.70	1	LOGU09
32	**VPX200R3203SA32L**	★	3	32	190	90	8	0.71°	25100	1.06	1	LOGU09
35	**VPX200R3503SA32L**	★	3	32	190	45	8	0.63°	23800	1.14	2	LOGU09
40	**VPX200R4004SA32S**	★	4	32	125	45	8	0.54°	22000	0.81	2	LOGU09
40	**VPX200R4006SA32S**	★	6	32	125	45	8	0.54°	22000	0.80	2	LOGU09
50	**VPX200R5005SA32S**	★	5	32	125	45	8	0.42°	19200	0.91	2	LOGU09
50	**VPX200R5007SA32S**	★	7	32	125	45	8	0.42°	19200	0.91	2	LOGU09

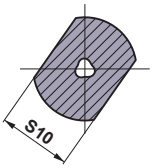
Note 1) The maximum spindle speeds **RPMX** are set to ensure tool and insert stability.
Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001









A-A Section

Right hand tool holder only.

Metric Standard

■ SCREW-IN TYPE

With Coolant Hole

(mm)

DC	Order Number	Stock R	Number of Teeth	DCON	DCSFMS	OAL	LF	S10	CRKS	WT (kg)	APMX	RMPX	Insert Type
16	**VPX200R1602AM0830**	★	2	8.5	14.5	48	30	10	M08	0.03	8	1.85°	LOGU09
18	**VPX200R1802AM0830**	★	2	8.5	14.5	48	30	10	M08	0.04	8	1.56°	LOGU09
20	**VPX200R2002AM1030**	★	2	10.5	18.5	49	30	14	M10	0.06	8	1.35°	LOGU09
20	**VPX200R2003AM1030**	★	3	10.5	18.5	49	30	14	M10	0.06	8	1.35°	LOGU09
22	**VPX200R2202AM1030**	★	2	10.5	18.5	49	30	14	M10	0.06	8	1.16°	LOGU09
22	**VPX200R2203AM1030**	★	3	10.5	18.5	49	30	14	M10	0.06	8	1.16°	LOGU09
25	**VPX200R2503AM1235**	★	3	12.5	23.5	57	35	19	M12	0.11	8	0.97°	LOGU09
25	**VPX200R2504AM1235**	★	4	12.5	23.5	57	35	19	M12	0.11	8	0.97°	LOGU09
32	**VPX200R3203AM1640**	★	3	17.0	28.5	63	40	24	M16	0.21	8	0.71°	LOGU09
32	**VPX200R3204AM1640**	★	4	17.0	28.5	63	40	24	M16	0.21	8	0.71°	LOGU09
32	**VPX200R3205AM1640**	★	5	17.0	28.5	63	40	24	M16	0.21	8	0.71°	LOGU09
35	**VPX200R3503AM1640**	★	3	17.0	28.5	63	40	24	M16	0.24	8	0.63°	LOGU09
35	**VPX200R3505AM1640**	★	5	17.0	28.5	63	40	24	M16	0.23	8	0.63°	LOGU09
40	**VPX200R4004AM1640**	★	4	17.0	28.5	63	40	24	M16	0.26	8	0.54°	LOGU09
40	**VPX200R4006AM1640**	★	6	17.0	28.5	63	40	24	M16	0.26	8	0.54°	LOGU09

Note 1) For screw-in type arbors, refer to page L294.

SPARE PARTS

(mm)

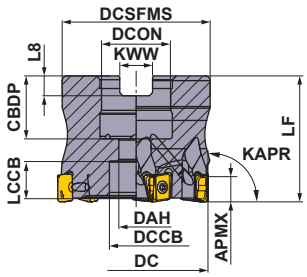
DC	Tool Holder Type	* Clamp Screw	Wrench	Anti-seize Lubricant
16	**VPX200R16**	TPS27F1	TIP07F	MK1KS
18	**VPX200R18**	TPS27F1	TIP07F	MK1KS
20	**VPX200R20**	TPS27F1	TIP07F	MK1KS
22	**VPX200R22**	TPS27F2	TIP07F	MK1KS
25	**VPX200R25**	TPS27F2	TIP07F	MK1KS
28	**VPX200R28**	TPS27F2	TIP07F	MK1KS
30	**VPX200R30**	TPS27F2	TIP07F	MK1KS
32	**VPX200R32**	TPS27F2	TIP07F	MK1KS
35	**VPX200R35**	TPS27F2	TIP07F	MK1KS
40	**VPX200R40**	TPS27F2	TIP07F	MK1KS
50	**VPX200R50**	TPS27F2	TIP07F	MK1KS

* Clamp Torque (lbf-in) : TPS27F1 = 8.9,TPS27F2 = 8.9

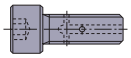


Metric Standard

For Metric Arbors



Right hand tool holder only.

DC	Set Bolt	Geometry
ϕ32, ϕ40	HSC08025H	
ϕ50, ϕ63	HSC10030H	

■ARBOR TYPE

With Coolant Hole

GAMP : –6°
GAMF : –25°

DC = mm, DCON = mm

(mm)

DC	Order Number	Stock R	Number of Teeth	LF	DCON	WT (kg)	APMX	RMPX	RPMX (min^{-1})	Insert Type
32	**VPX200-032A03AR**	★	3	35	16	0.11	8	0.71°	25100	LOGU09
32	**VPX200-032A05AR**	★	5	35	16	0.11	8	0.71°	25100	LOGU09
40	**VPX200-040A04AR**	★	4	40	16	0.23	8	0.54°	22000	LOGU09
40	**VPX200-040A06AR**	★	6	40	16	0.22	8	0.54°	22000	LOGU09
50	**VPX200-050A05AR**	★	5	40	22	0.36	8	0.42°	19200	LOGU09
50	**VPX200-050A07AR**	★	7	40	22	0.36	8	0.42°	19200	LOGU09
63	**VPX200-063A06AR**	★	6	40	22	0.66	8	0.32°	16700	LOGU09
63	**VPX200-063A09AR**	★	9	40	22	0.66	8	0.32°	16700	LOGU09

Note 1) The maximum spindle speeds **RPMX** are set to ensure tool and insert stability.
Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

MOUNTING DIMENSIONS

(mm)

DC	Order Number	DCON	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8
32	**VPX200-032A03AR**	16	18	9	14	8	30	8.4	5.6
32	**VPX200-032A05AR**	16	18	9	14	8	30	8.4	5.6
40	**VPX200-040A04AR**	16	18	9	14	13	37	8.4	5.6
40	**VPX200-040A06AR**	16	18	9	14	13	37	8.4	5.6
50	**VPX200-050A05AR**	22	20	11	17	11	47	10.4	6.3
50	**VPX200-050A07AR**	22	20	11	17	11	47	10.4	6.3
63	**VPX200-063A06AR**	22	20	11	17	11	60	10.4	6.3
63	**VPX200-063A09AR**	22	20	11	17	11	60	10.4	6.3

SPARE PARTS

Tool Holder Type	 * Clamp Screw	 Wrench	 Anti-seize Lubricant
VPX200	TPS27F2	TIP07F	MK1KS

* Clamp Torque (lbf-in) : TPS27F2 = 8.9

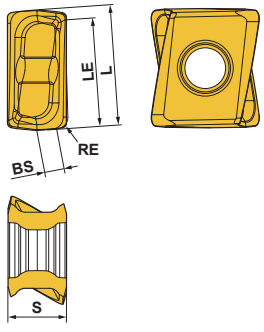
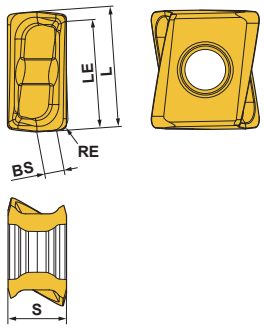
SCREW-IN HOLDERS ➢ L294
SPARE PARTS ➢ N001
TECHNICAL DATA ➢ P001

INSERTS

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Honing :
E : Round **F :** Sharp

Shape	Order Number	Class	Honing	Coated							Carbide		Dimensions(inch)					Geometry
				MC5020	MP6120	MP6130	MP7130	MP9120	MP9130	VP15TF		TF15	L	RE	LE	S	BS	
Low Cutting Resistance Type L Breaker	LOGU0904020PNER-L	G	E	●	●	●	●	●	●	●			.343	.008	.299	.169	.067	
	LOGU0904040PNER-L	G	E	●	●	●	●	●	●	●			.343	.016	.299	.169	.063	
	LOGU0904080PNER-L	G	E	●	●	●	●	●	●	●			.343	.031	.299	.169	.047	
	LOGU0904100PNER-L	G	E	●	●	●	●	●	●	●			.343	.039	.299	.169	.039	
	LOGU0904120PNER-L	G	E	●	●	●	●	●	●	●			.343	.047	.299	.169	.035	
	LOGU0904160PNER-L	G	E	●	●	●	●	●	●	●			.343	.063	.299	.169	.020	
	LOGU0904020PNFR-L	G	F									●	.343	.008	.299	.169	.067	
	LOGU0904040PNFR-L	G	F									●	.343	.016	.299	.169	.063	
	LOGU0904080PNFR-L	G	F									●	.343	.031	.299	.169	.047	
	LOGU0904100PNFR-L	G	F									●	.343	.039	.299	.169	.039	
	LOGU0904120PNFR-L	G	F									●	.343	.047	.299	.169	.035	
	LOGU0904160PNFR-L	G	F									●	.343	.063	.299	.169	.020	Right hand insert only.
General Use M Breaker	LOGU0904020PNER-M	G	E	●	●	●	●	●	●	●			.343	.008	.299	.169	.067	
	LOGU0904040PNER-M	G	E	●	●	●	●	●	●	●			.343	.016	.299	.169	.063	
	LOGU0904080PNER-M	G	E	●	●	●	●	●	●	●			.343	.031	.299	.169	.047	
	LOGU0904100PNER-M	G	E	●	●	●	●	●	●	●			.343	.039	.299	.169	.039	
	LOGU0904120PNER-M	G	E	●	●	●	●	●	●	●			.343	.047	.299	.169	.035	
	LOGU0904160PNER-M	G	E	●	●	●	●	●	●	●			.343	.063	.299	.169	.020	
	LOGU0904020PNFR-M	G	F									●	.343	.008	.299	.169	.067	
	LOGU0904040PNFR-M	G	F									●	.343	.016	.299	.169	.063	
	LOGU0904080PNFR-M	G	F									●	.343	.031	.299	.169	.047	
	LOGU0904100PNFR-M	G	F									●	.343	.039	.299	.169	.039	
	LOGU0904120PNFR-M	G	F									●	.343	.047	.299	.169	.035	
	LOGU0904160PNFR-M	G	F									●	.343	.063	.299	.169	.020	Right hand insert only.

● : USA Stock
<10 inserts in one case>

Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting ✲ : Unstable Cutting

CHIP BREAKER RECOMMENDATION

■ Chip Breaker Selection Table

	Work Material	Properties	Cutting Conditions	Chip Breaker		Grade	
				1st Recommended	2nd Recommended	1st Recommended	2nd Recommended
P	Mild Steel	Hardness ≤180HB	● ◔	L	M	MP6120	VP15TF
			✲	M	L	MP6130	–
	Carbon Steel Alloy Steel Alloy Tool Steel	Hardness 180-350HB ≤350HB (Annealing)	●	L	M	MP6120	VP15TF
			◔	M	L	MP6120	VP15TF
			✲	M	L	MP6130	–
	Pre-hardened Steel	Hardness 35–45HRC	● ◔	M	L	MP6120	VP15TF
			✲	M	L	MP6130	–
M	Austenitic Stainless Steel	Hardness ≤280HB	● ◔	L	M	MP7130	VP15TF
			✲	M	L	MP7130	–
		Hardness >200HB	● ◔	L	M	MP7130	VP15TF
			✲	M	L	MP7130	–
	Duplex Stainless Steel	Hardness ≤280HB	● ◔	L	M	MP7130	VP15TF
			✲	M	L	MP7130	–
	Ferritic and Martensitic Stainless Steel	–	● ◔	L	M	MP7130	VP15TF
			✲	M	L	MP7130	–
	Precipitation Hardening Stainless Steel	Hardness <450HB	● ◔	L	M	MP7130	VP15TF
			✲	M	L	MP7130	–
K	Gray Cast Iron	Tensile Strength ≤350MPa	● ◔	M	L	MC5020	VP15TF
			✲	M	L	VP15TF	–
	Ductile Cast Iron	Tensile Strength ≤800MPa	● ◔	M	L	MC5020	VP15TF
			✲	M	L	VP15TF	–
N	Aluminum Alloy	Content Si<5%	● ◔	L	M	TF15	–
			✲	M	L	TF15	–
S	Titanium Alloy (Ti-6Al-4V,etc.)	–	● ◔	L	M	MP9120	VP15TF
			✲	M	L	MP9130	–
	Titanium Alloy (Ti-5Al-5V-5Mo-3Cr,etc.)	–	● ◔	L	M	MP9120	VP15TF
			✲	M	L	MP9130	–
	Heat Resistant Alloy	–	● ◔	M	L	MP9120	VP15TF
			✲	M	L	MP9130	–
H	Hardened Steel	Hardness 40–55HRC	● ◔ ✲	M	–	VP15TF	–

RECOMMENDED CUTTING CONDITIONS

■ Dry Cutting

Cutting Speed

(inch)

	Work Material	Properties	Cutting Conditions	Grade	Cutting Width **ae** ≤.25DC	.25—.5DC	.5—.75DC	DC(Slot)
					Cutting Speed **vc** (SFM)			
P	Mild Steel	Hardness ≤180HB	● ●	MP6120,VP15TF	755 (590—885)	720 (560—850)	590 (460—690)	590 (460—690)
			✻	MP6130	655 (490—785)	620 (460—755)	490 (360—590)	490 (360—590)
	Carbon Steel Alloy Steel Alloy Tool Steel	Hardness 180—350HB ≤350HB (Annealing)	● ●	MP6120,VP15TF	590 (460—690)	560 (425—655)	460 (360—525)	460 (360—525)
			✻	MP6130	490 (360—590)	460 (330—560)	360 (260—425)	360 (260—425)
	Pre-hardened Steel	Hardness 35—45HRC	● ●	MP6120,VP15TF	395 (295—460)	360 (260—425)	330 (230—395)	330 (230—395)
			✻	MP6130	330 (260—395)	295 (230—360)	260 (195—330)	260 (195—330)
M	Austenitic Stainless Steel	Hardness ≤200HB	● ● ✻	MP7130,VP15TF	590 (460—690)	560 (425—655)	460 (360—525)	460 (360—525)
		Hardness >200HB	● ● ✻	MP7130,VP15TF	490 (360—590)	460 (330—525)	360 (260—425)	360 (260—425)
	Duplex Stainless Steel	Hardness ≤280HB	● ● ✻	MP7130,VP15TF	460 (360—560)	425 (295—490)	330 (230—395)	330 (230—395)
	Ferritic and Martensitic Stainless Steel	—	● ● ✻	MP7130,VP15TF	590 (460—690)	560 (425—655)	460 (360—525)	460 (360—525)
	Precipitation Hardening Stainless Steel	Hardness <450HB	● ● ✻	MP7130,VP15TF	425 (330—525)	395 (260—460)	295 (195—360)	295 (195—360)
K	Gray Cast Iron	Tensile Strength ≤350MPa	● ●	MC5020	820 (655—985)	785 (620—950)	690 (525—850)	690 (525—850)
			● ● ✻	VP15TF	655 (490—820)	620 (460—785)	525 (360—690)	525 (360—690)
	Ductile Cast Iron	Tensile Strength ≤800MPa	● ●	MC5020	590 (490—655)	560 (460—620)	490 (395—560)	490 (395—560)
			● ● ✻	VP15TF	425 (330—490)	395 (295—460)	330 (260—395)	330 (260—395)
N	Aluminum Alloy	Content Si<5%	● ● ✻	TF15	1970 (1310—3280)	1970 (1310—3280)	1970 (1310—3280)	1970 (1310—3280)
H	Hardened Steel	Hardness 40—55HRC	● ● ✻	VP15TF	295 (230—330)	280 (195—330)	230 (165—260)	230 (165—260)

Note 1) These cutting conditions should be referenced for standard shank types (last letter in designation is S) and arbor shank types. If there is chatter, insert chipping, etc. during machining, alter conditions accordingly.

Note 2) Chattering vibration is more likely under the following circumstances. Use a cut and feed per tooth that are at minimum recommended conditions or below.
- When tool overhang is long (using a long shank, screw-in type, etc.)
- Rigidity of machine, work material or attachment of work material is low
- Corner radius during pocket milling

Note 3) A type with fewer teeth is recommended when the depth of cut in the radius direction (ae) is .5 DC or more.

Note 4) Wet cutting is recommended, when focusing on the surface finish. (Tool life is shorter than for dry cutting.)

Note 5) When using under higher than recommended cutting conditions, or for long periods of time, the clamp screw may become fatigued and break during machining. Please change out the clamp screw periodically.

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✱ : Unstable Cutting

Depth of Cut / Feed per Tooth

(inch)

Work Material		Properties	Cutting Width **ae**	Cutting Conditions	Cutter Diameter **DC** ø.625-ø.750(ø16 mm-ø18 mm) Depth of Cut **ap**	ø.625-ø.750(ø16 mm-ø18 mm) Feed per Tooth **fz** (IPT)	ø.875-ø1.000(ø20 mm-ø25 mm) Depth of Cut **ap**	ø.875-ø1.000(ø20 mm-ø25 mm) Feed per Tooth **fz** (IPT)	ø1.125-ø2.500(ø28 mm-ø63 mm) Depth of Cut **ap**	ø1.125-ø2.500(ø28 mm-ø63 mm) Feed per Tooth **fz** (IPT)
P	Mild Steel	Hardness ≤180HB	≤.25DC	● ◐ ✱	≤.236	.004—.006	≤.315	.004—.008	≤.315	.004—.010
			.25—.5DC	● ◐ ✱	≤.197	.003—.005	≤.315	.004—.006	≤.315	.004—.008
			.5—.75DC	● ◐ ✱	≤.157	.003—.005	≤.236	.003—.005	≤.236	.004—.006
			DC(Slot)	● ◐ ✱	≤.079	.002—.004	≤.157	.002—.004	≤.157	.003—.005
	Carbon Steel Alloy Steel Alloy Tool Steel	Hardness 180—280HB	≤.25DC	● ◐ ✱	≤.236	.004—.006	≤.315	.004—.008	≤.315	.004—.010
			.25—.5DC	● ◐ ✱	≤.197	.003—.005	≤.315	.004—.006	≤.315	.004—.008
			.5—.75DC	● ◐ ✱	≤.157	.003—.005	≤.236	.003—.005	≤.236	.004—.006
			DC(Slot)	● ◐ ✱	≤.079	.002—.004	≤.157	.002—.004	≤.157	.003—.005
	Carbon Steel Alloy Steel Alloy Tool Steel	Hardness 280—350HB ≤350HB (Annealing)	≤.25DC	● ◐ ✱	≤.236	.004—.006	≤.315	.004—.006	≤.315	.004—.008
			.25—.5DC	● ◐ ✱	≤.197	.003—.005	≤.315	.003—.005	≤.315	.004—.006
			.5—.75DC	● ◐ ✱	≤.157	.003—.005	≤.236	.002—.004	≤.236	.003—.005
			DC(Slot)	● ◐ ✱	≤.079	.002—.004	≤.157	.002—.004	≤.157	.002—.004
	Pre-hardened Steel	Hardness 35—45HRC	≤.25DC	● ◐ ✱	≤.236	.004—.006	≤.315	.004—.006	≤.315	.004—.008
			.25—.5DC	● ◐ ✱	≤.197	.003—.005	≤.315	.003—.005	≤.315	.004—.006
			.5—.75DC	● ◐ ✱	≤.157	.003—.005	≤.236	.002—.004	≤.236	.003—.005
			DC(Slot)	● ◐ ✱	≤.079	.002—.004	≤.157	.002—.004	≤.157	.002—.004
M	Austenitic Stainless Steel	—	≤.25DC	● ◐	≤.236	.004—.006	≤.315	.004—.008	≤.315	.004—.008
				✱	≤.236	.003—.005	≤.315	.003—.006	≤.315	.003—.006
			.25—.5DC	● ◐	≤.197	.003—.005	≤.315	.003—.006	≤.315	.003—.006
				✱	≤.197	.002—.004	≤.315	.003—.005	≤.315	.003—.005
			.5—.75DC	● ◐	≤.157	.002—.004	≤.236	.003—.005	≤.236	.003—.005
				✱	≤.157	.002—.003	≤.236	.002—.004	≤.236	.002—.004
			DC(Slot)	● ◐	≤.079	.002—.004	≤.157	.002—.004	≤.157	.002—.004
				✱	≤.079	.002—.003	≤.157	.002—.003	≤.157	.002—.003
	Duplex Stainless Steel	Hardness ≤280HB	≤.25DC	● ◐	≤.236	.004—.006	≤.315	.004—.008	≤.315	.004—.008
				✱	≤.236	.003—.005	≤.315	.003—.006	≤.315	.003—.006
			.25—.5DC	● ◐	≤.197	.003—.005	≤.315	.003—.006	≤.315	.003—.006
				✱	≤.197	.002—.004	≤.315	.003—.005	≤.315	.003—.005
			.5—.75DC	● ◐	≤.157	.002—.004	≤.236	.003—.005	≤.236	.003—.005
				✱	≤.157	.002—.003	≤.236	.002—.004	≤.236	.002—.004
			DC(Slot)	● ◐	≤.079	.002—.004	≤.157	.002—.004	≤.157	.002—.004
				✱	≤.079	.002—.003	≤.157	.002—.003	≤.157	.002—.003
	Ferritic and Martensitic Stainless Steel	—	≤.25DC	● ◐	≤.236	.004—.006	≤.315	.004—.008	≤.315	.004—.008
				✱	≤.236	.003—.005	≤.315	.003—.006	≤.315	.003—.006
			.25—.5DC	● ◐	≤.197	.003—.005	≤.315	.003—.006	≤.315	.003—.006
				✱	≤.197	.002—.004	≤.315	.003—.005	≤.315	.003—.005
			.5—.75DC	● ◐	≤.157	.002—.004	≤.236	.003—.005	≤.236	.003—.005
				✱	≤.157	.002—.003	≤.236	.002—.004	≤.236	.002—.004
			DC(Slot)	● ◐	≤.079	.002—.004	≤.157	.002—.004	≤.157	.002—.004
				✱	≤.079	.002—.003	≤.157	.002—.003	≤.157	.002—.003
	Precipitation Hardening Stainless Steel	Hardness <450HB	≤.25DC	● ◐	≤.236	.004—.006	≤.315	.004—.006	≤.315	.004—.006
				✱	≤.236	.003—.005	≤.315	.003—.005	≤.315	.003—.005
			.25—.5DC	● ◐	≤.197	.003—.005	≤.315	.003—.005	≤.315	.003—.005
				✱	≤.197	.002—.004	≤.315	.003—.005	≤.315	.003—.005
			.5—.75DC	● ◐	≤.157	.002—.004	≤.236	.002—.004	≤.236	.002—.004
				✱	≤.157	.002—.003	≤.236	.002—.003	≤.236	.002—.003
			DC(Slot)	● ◐	≤.079	.002—.004	≤.157	.002—.004	≤.157	.002—.004
				✱	≤.079	.002—.003	≤.157	.002—.003	≤.157	.002—.003

Note 1) These cutting conditions should be referenced for standard shank types (last letter in designation is S) and arbor shank types. If there is chatter, insert chipping, etc. during machining, alter conditions accordingly.
Note 2) Chattering vibration is more likely under the following circumstances. Use a cut and feed per tooth that are at minimum recommended conditions or below.
- When tool overhang is long (using a long shank, screw-in type, etc.)
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Note 3) A type with fewer teeth is recommended when the depth of cut in the radius direction (ae) is .5 DC or more.
Note 4) Wet cutting is recommended, when focusing on the surface finish. (Tool life is shorter than for dry cutting.)
Note 5) When using under higher than recommended cutting conditions, or for long periods of time, the clamp screw may become fatigued and break during machining. Please change out the clamp screw periodically.

RECOMMENDED CUTTING CONDITIONS

■ Dry Cutting

Depth of Cut / Feed per Tooth

(inch)

	Work Material	Properties	Cutting Width **ae**	Cutting Conditions	Cutter Diameter **DC** ø.625-ø.750(ø16 mm-ø18 mm) Depth of Cut **ap**	ø.625-ø.750(ø16 mm-ø18 mm) Feed per Tooth **fz** (IPT)	ø.875-ø1.000(ø20 mm-ø25 mm) Depth of Cut **ap**	ø.875-ø1.000(ø20 mm-ø25 mm) Feed per Tooth **fz** (IPT)	ø1.125-ø2.500(ø28 mm-ø63 mm) Depth of Cut **ap**	ø1.125-ø2.500(ø28 mm-ø63 mm) Feed per Tooth **fz** (IPT)
K	Gray Cast Iron	Tensile Strength ≤350MPa	≤.25DC	● ●	≤.236	.004—.006	≤.315	.004—.008	≤.315	.004—.010
				✱	≤.236	.003—.005	≤.315	.003—.006	≤.315	.004—.008
			.25—.5DC	● ●	≤.197	.003—.005	≤.315	.003—.006	≤.315	.004—.008
				✱	≤.197	.002—.004	≤.315	.003—.005	≤.315	.004—.006
			.5—.75DC	● ●	≤.157	.003—.005	≤.236	.003—.005	≤.236	.004—.006
				✱	≤.157	.003—.005	≤.236	.002—.004	≤.236	.003—.005
			DC(Slot)	● ●	≤.079	.002—.004	≤.157	.002—.004	≤.157	.003—.006
				✱	≤.079	.002—.003	≤.157	.002—.003	≤.157	.003—.004
	Ductile Cast Iron	Tensile Strength ≤800MPa	≤.25DC	● ●	≤.236	.004—.006	≤.315	.004—.008	≤.315	.004—.008
				✱	≤.236	.003—.005	≤.315	.004—.006	≤.315	.004—.006
			.25—.5DC	● ●	≤.197	.003—.005	≤.315	.004—.006	≤.315	.004—.006
				✱	≤.197	.002—.004	≤.315	.003—.005	≤.315	.003—.005
			.5—.75DC	● ●	≤.157	.003—.005	≤.236	.003—.005	≤.236	.003—.005
				✱	≤.157	.003—.005	≤.236	.002—.004	≤.236	.002—.004
			DC(Slot)	● ●	≤.079	.002—.004	≤.157	.002—.004	≤.157	.002—.004
				✱	≤.079	.002—.003	≤.157	.002—.003	≤.157	.002—.003
N	Aluminum Alloy	Content Si< 5%	≤.25DC	● ●	≤.236	.004—.008	≤.315	.004—.010	≤.315	.004—.010
				✱	≤.236	.004—.006	≤.315	.004—.008	≤.315	.004—.008
			.25—.5DC	● ●	≤.197	.004—.006	≤.315	.004—.008	≤.315	.004—.008
				✱	≤.197	.003—.005	≤.315	.004—.006	≤.315	.004—.006
			.5—.75DC	● ●	≤.157	.003—.005	≤.236	.002—.006	≤.236	.003—.006
				✱	≤.157	.002—.004	≤.236	.002—.006	≤.236	.003—.006
			DC(Slot)	● ●	≤.079	.002—.004	≤.157	.002—.006	≤.157	.003—.006
				✱	≤.079	.002—.003	≤.157	.002—.005	≤.157	.003—.005
H	Hardened Steel	Hardness 40—55HRC	≤.25DC	● ●	≤.157	.003—.006	≤.157	.003—.006	≤.157	.003—.006
				✱	≤.157	.003—.005	≤.157	.003—.005	≤.157	.003—.005
			.25—.5DC	● ●	≤.118	.003—.005	≤.118	.003—.005	≤.118	.003—.005
				✱	≤.118	.002—.004	≤.118	.003—.004	≤.118	.002—.004
			.5—.75DC	● ●	≤.079	.002—.004	≤.079	.003—.004	≤.079	.002—.004
				✱	≤.079	.002—.003	≤.079	.002—.003	≤.079	.002—.003
			DC(Slot)	● ●	≤.039	.002—.004	≤.039	.002—.004	≤.039	.002—.004
				✱	≤.039	.002—.003	≤.039	.002—.003	≤.039	.002—.003

Note 1) These cutting conditions should be referenced for standard shank types (last letter in designation is S) and arbor shank types. If there is chatter, insert chipping, etc. during machining, alter conditions accordingly.

Note 2) Chattering vibration is more likely under the following circumstances. Use a cut and feed per tooth that are at minimum recommended conditions or below.
- When tool overhang is long (using a long shank, screw-in type, etc.)
- Rigidity of machine, work material or attachment of work material is low
- Corner radius during pocket milling

Note 3) A type with fewer teeth is recommended when the depth of cut in the radius direction (ae) is .5 DC or more.

Note 4) Wet cutting is recommended, when focusing on the surface finish. (Tool life is shorter than for dry cutting.)

Note 5) When using under higher than recommended cutting conditions, or for long periods of time, the clamp screw may become fatigued and break during machining. Please change out the clamp screw periodically.

Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting ✠ : Unstable Cutting

■ Wet Cutting
Cutting Speed

(inch)

	Work Material	Properties	Cutting Conditions	Grade	Cutting Width **ae** ≤.25DC	.25—.5DC	.5—.75DC	DC(Slot)
					Cutting Speed **vc** (SFM)			
P	Mild Steel	Hardness ≤180HB	● ◔	MP6120	460 (330—620)	425 (295—590)	330 (230—395)	330 (230—395)
			● ◔	VP15TF				
			✠	MP6130				
	Carbon Steel Alloy Steel Alloy Tool Steel	Hardness 180—350HB ≤350HB (Annealing)	● ◔	MP6120	395 (295—460)	360 (260—425)	330 (230—395)	330 (230—395)
			● ◔	VP15TF				
			✠	MP6130				
	Pre-hardened Steel	Hardness 35—45HRC	● ◔	MP6120	330 (260—395)	295 (230—360)	260 (195—330)	260 (195—330)
			● ◔	VP15TF				
			✠	MP6130				
M	Austenitic Stainless Steel	Hardness ≤200HB	○ ◔ ✠	MP7130	395 (330—490)	360 (295—460)	295 (230—395)	295 (230—395)
			○ ◔	VP15TF				
		Hardness >200HB	○ ◔ ✠	MP7130	330 (260—425)	295 (230—360)	230 (165—330)	230 (165—330)
			○ ◔	VP15TF				
	Duplex Stainless Steel	Hardness ≤280HB	○ ◔ ✠	MP7130	330 (260—425)	295 (230—395)	230 (165—330)	230 (165—330)
			○ ◔	VP15TF				
	Ferritic and Martensitic Stainless Steel	—	○ ◔ ✠	MP7130	395 (330—490)	360 (295—460)	295 (230—395)	295 (230—395)
			○ ◔	VP15TF				
	Precipitation Hardening Stainless Steel	Hardness <450HB	○ ◔ ✠	MP7130	295 (230—395)	260 (195—360)	195 (130—295)	195 (130—295)
			○ ◔	VP15TF				
K	Gray Cast Iron	Tensile Strength ≤350MPa	● ◔	MC5020	590 (525—720)	560 (490—690)	490 (425—620)	490 (425—620)
			● ◔ ✠	VP15TF	425 (330—490)	395 (295—460)	330 (260—395)	330 (260—395)
	Ductile Cast Iron	Tensile Strength ≤800MPa	● ◔	MC5020	525 (460—590)	490 (425—560)	425 (360—490)	425 (360—490)
			● ◔ ✠	VP15TF	360 (260—460)	330 (230—425)	260 (195—395)	260 (195—395)
N	Aluminum Alloy	Content Si<5%	● ◔ ✠	TF15	1970 (1310—3280)	1970 (1310—3280)	1970 (1310—3280)	1970 (1310—3280)
S	Titanium Alloy (Ti-6Al-4V,etc.)	—	● ◔	MP9120	165 (130—230)	165 (130—230)	165 (130—230)	165 (130—230)
			● ◔	VP15TF	165 (130—230)	165 (130—230)	165 (130—230)	165 (130—230)
			✠	MP9130	130 (100—195)	130 (100—195)	130 (100—195)	130 (100—195)
	Titanium Alloy (Ti-5Al-5V-5Mo-3Cr,etc.)	—	● ◔	MP9120	100 (65—130)	100 (65—130)	100 (65—130)	100 (65—130)
			● ◔	VP15TF	100 (65—130)	100 (65—130)	100 (65—130)	100 (65—130)
			✠	MP9130	100 (65—130)	100 (65—130)	100 (65—130)	100 (65—130)
	Heat Resistant Alloy	—	● ◔	MP9120	130 (100—195)	130 (100—195)	130 (100—195)	130 (100—195)
			● ◔	VP15TF	130 (100—195)	130 (100—195)	130 (100—195)	130 (100—195)
			✠	MP9130	100 (65—130)	100 (65—130)	100 (65—130)	100 (65—130)
H	Hardened Steel	Hardness 40—55HRC	● ◔ ✠	VP15TF	295 (230—330)	280 (195—330)	230 (165—260)	230 (165—260)

Note 1) These cutting conditions should be referenced for standard shank types (last letter in designation is S) and arbor shank types. If there is chatter, insert chipping, etc. during machining, alter conditions accordingly.
Note 2) Chattering vibration is more likely under the following circumstances. Use a cut and feed per tooth that are at minimum recommended conditions or below.
- When tool overhang is long (using a long shank, screw-in type, etc.)
- Rigidity of machine, work material or attachment of work material is low
- Corner radius during pocket milling

Note 3) A type with fewer teeth is recommended when the depth of cut in the radius direction (ae) is .5 DC or more.
Note 4) Wet cutting is recommended, when focusing on the surface finish. (Tool life is shorter than for dry cutting.)
Note 5) When using under higher than recommended cutting conditions, or for long periods of time, the clamp screw may become fatigued and break during machining. Please change out the clamp screw periodically.

RECOMMENDED CUTTING CONDITIONS

■ Wet Cutting

Depth of Cut / Feed per Tooth

(inch)

Work Material		Properties	Cutting Width **ae**	Cutting Conditions	Cutter Diameter **DC** ø.625-ø.750(ø16 mm-ø18 mm) Depth of Cut **ap**	ø.625-ø.750(ø16 mm-ø18 mm) Feed per Tooth **fz** (IPT)	ø.875-ø1.000(ø20 mm-ø25 mm) Depth of Cut **ap**	ø.875-ø1.000(ø20 mm-ø25 mm) Feed per Tooth **fz** (IPT)	ø1.125-ø2.500(ø28 mm-ø63 mm) Depth of Cut **ap**	ø1.125-ø2.500(ø28 mm-ø63 mm) Feed per Tooth **fz** (IPT)
P	Mild Steel	Hardness ≤180HB	≤.25DC	● ◐ ✲	≤.236	.004—.006	≤.315	.004—.008	≤.315	.004—.010
			.25—.5DC	● ◐ ✲	≤.197	.004—.006	≤.315	.004—.006	≤.315	.004—.008
			.5—.75DC	● ◐ ✲	≤.157	.003—.005	≤.236	.003—.005	≤.236	.004—.006
			DC(Slot)	● ◐ ✲	≤.079	.002—.004	≤.157	.002—.004	≤.157	.003—.005
	Carbon Steel Alloy Steel Alloy Tool Steel	Hardness 180—280HB	≤.25DC	● ◐ ✲	≤.236	.004—.006	≤.315	.004—.008	≤.315	.004—.010
			.25—.5DC	● ◐ ✲	≤.197	.003—.005	≤.315	.004—.006	≤.315	.004—.008
			.5—.75DC	● ◐ ✲	≤.157	.003—.005	≤.236	.003—.005	≤.236	.004—.006
			DC(Slot)	● ◐ ✲	≤.079	.002—.004	≤.157	.002—.004	≤.157	.003—.005
	Carbon Steel Alloy Steel Alloy Tool Steel	Hardness 280—350HB ≤350HB (Annealing)	≤.25DC	● ◐ ✲	≤.236	.004—.006	≤.315	.004—.006	≤.315	.004—.008
			.25—.5DC	● ◐ ✲	≤.197	.003—.005	≤.315	.003—.005	≤.315	.004—.006
			.5—.75DC	● ◐ ✲	≤.157	.003—.005	≤.236	.002—.004	≤.236	.003—.005
			DC(Slot)	● ◐ ✲	≤.079	.002—.004	≤.157	.002—.004	≤.157	.002—.004
	Pre-hardened Steel	Hardness 35—45HRC	≤.25DC	● ◐ ✲	≤.236	.004—.006	≤.315	.004—.006	≤.315	.004—.008
			.25—.5DC	● ◐ ✲	≤.197	.003—.005	≤.315	.003—.005	≤.315	.004—.006
			.5—.75DC	● ◐ ✲	≤.157	.003—.005	≤.236	.002—.004	≤.236	.003—.005
			DC(Slot)	● ◐ ✲	≤.079	.002—.004	≤.157	.002—.004	≤.157	.002—.004
M	Austenitic Stainless Steel	—	≤.25DC	○ ◔	≤.236	.004—.006	≤.315	.004—.008	≤.315	.004—.008
				✲	≤.236	.003—.005	≤.315	.003—.006	≤.315	.003—.006
			.25—.5DC	○ ◔	≤.197	.003—.005	≤.315	.003—.006	≤.315	.003—.006
				✲	≤.197	.002—.004	≤.315	.003—.005	≤.315	.003—.005
			.5—.75DC	○ ◔	≤.157	.002—.004	≤.236	.003—.005	≤.236	.003—.005
				✲	≤.157	.002—.003	≤.236	.002—.004	≤.236	.002—.004
			DC(Slot)	○ ◔	≤.079	.002—.004	≤.157	.002—.004	≤.157	.002—.004
				✲	≤.079	.002—.003	≤.157	.002—.003	≤.157	.002—.003
	Duplex Stainless Steel	Hardness ≤280HB	≤.25DC	○ ◔	≤.236	.004—.006	≤.315	.004—.008	≤.315	.004—.008
				✲	≤.236	.003—.005	≤.315	.003—.006	≤.315	.003—.006
			.25—.5DC	○ ◔	≤.197	.003—.005	≤.315	.003—.006	≤.315	.003—.006
				✲	≤.197	.002—.004	≤.315	.003—.005	≤.315	.003—.005
			.5—.75DC	○ ◔	≤.157	.002—.004	≤.236	.003—.005	≤.236	.003—.005
				✲	≤.157	.002—.003	≤.236	.002—.004	≤.236	.002—.004
			DC(Slot)	○ ◔	≤.079	.002—.004	≤.157	.002—.004	≤.157	.002—.004
				✲	≤.079	.002—.003	≤.157	.002—.003	≤.157	.002—.003
	Ferritic and Martensitic Stainless Steel	—	≤.25DC	○ ◔	≤.236	.004—.006	≤.315	.004—.008	≤.315	.004—.008
				✲	≤.236	.003—.005	≤.315	.003—.006	≤.315	.003—.006
			.25—.5DC	○ ◔	≤.197	.003—.005	≤.315	.003—.006	≤.315	.003—.006
				✲	≤.197	.002—.004	≤.315	.003—.005	≤.315	.003—.005
			.5—.75DC	○ ◔	≤.157	.002—.004	≤.236	.003—.005	≤.236	.003—.005
				✲	≤.157	.002—.003	≤.236	.002—.004	≤.236	.002—.004
			DC(Slot)	○ ◔	≤.079	.002—.004	≤.157	.002—.004	≤.157	.002—.004
				✲	≤.079	.002—.003	≤.157	.002—.003	≤.157	.002—.003
	Precipitation Hardening Stainless Steel	Hardness <450HB	≤.25DC	○ ◔	≤.236	.004—.006	≤.315	.004—.006	≤.315	.004—.006
				✲	≤.236	.003—.005	≤.315	.003—.005	≤.315	.003—.005
			.25—.5DC	○ ◔	≤.197	.003—.005	≤.315	.003—.005	≤.315	.003—.005
				✲	≤.197	.002—.004	≤.315	.003—.005	≤.315	.003—.005
			.5—.75DC	○ ◔	≤.157	.002—.004	≤.236	.002—.004	≤.236	.002—.004
				✲	≤.157	.002—.003	≤.236	.002—.003	≤.236	.002—.003
			DC(Slot)	○ ◔	≤.079	.002—.004	≤.157	.002—.004	≤.157	.002—.004
				✲	≤.079	.002—.003	≤.157	.002—.003	≤.157	.002—.003

Note 1) These cutting conditions should be referenced for standard shank types (last letter in designation is S) and arbor shank types. If there is chatter, insert chipping, etc. during machining, alter conditions accordingly.

Note 2) Chattering vibration is more likely under the following circumstances. Use a cut and feed per tooth that are at minimum recommended conditions or below.
- When tool overhang is long (using a long shank, screw-in type, etc.)
- Rigidity of machine, work material or attachment of work material is low
- Corner radius during pocket milling

Note 3) A type with fewer teeth is recommended when the depth of cut in the radius direction (ae) is .5 DC or more.

Note 4) Wet cutting is recommended, when focusing on the surface finish. (Tool life is shorter than for dry cutting.)

Note 5) When using under higher than recommended cutting conditions, or for long periods of time, the clamp screw may become fatigued and break during machining. Please change out the clamp screw periodically.

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✲ : Unstable Cutting

(inch)

	Work Material	Properties	Cutting Width **ae**	Cutting Conditions	Cutter Diameter **DC** ø.625-ø.750(ø16 mm-ø18 mm) Depth of Cut **ap**	ø.625-ø.750(ø16 mm-ø18 mm) Feed per Tooth **fz** (IPT)	ø.875-ø1.000(ø20 mm-ø25 mm) Depth of Cut **ap**	ø.875-ø1.000(ø20 mm-ø25 mm) Feed per Tooth **fz** (IPT)	ø1.125-ø2.500(ø28 mm-ø63 mm) Depth of Cut **ap**	ø1.125-ø2.500(ø28 mm-ø63 mm) Feed per Tooth **fz** (IPT)
K	Gray Cast Iron	Tensile Strength ≤350MPa	≤.25DC	● ◐	≤.236	.004—.006	≤.315	.004—.008	≤.315	.004—.010
				✲	≤.236	.003—.005	≤.315	.003—.006	≤.315	.004—.008
			.25—.5DC	● ◐	≤.197	.003—.005	≤.315	.003—.006	≤.315	.004—.008
				✲	≤.197	.002—.004	≤.315	.003—.005	≤.315	.004—.006
			.5—.75DC	● ◐	≤.157	.003—.005	≤.236	.002—.004	≤.236	.004—.006
				✲	≤.157	.003—.005	≤.236	.002—.004	≤.236	.003—.005
			DC(Slot)	● ◐	≤.079	.002—.004	≤.157	.002—.004	≤.157	.003—.006
				✲	≤.079	.002—.003	≤.157	.002—.003	≤.157	.002—.004
	Ductile Cast Iron	Tensile Strength ≤800MPa	≤.25DC	● ◐	≤.236	.004—.006	≤.315	.004—.008	≤.315	.004—.008
				✲	≤.236	.003—.005	≤.315	.004—.006	≤.315	.004—.006
			.25—.5DC	● ◐	≤.197	.003—.005	≤.315	.004—.006	≤.315	.004—.006
				✲	≤.197	.002—.004	≤.315	.003—.005	≤.315	.003—.005
			.5—.75DC	● ◐	≤.157	.003—.005	≤.236	.003—.005	≤.236	.003—.005
				✲	≤.157	.003—.005	≤.236	.003—.005	≤.236	.002—.004
			DC(Slot)	● ◐	≤.079	.002—.004	≤.157	.002—.004	≤.157	.002—.004
				✲	≤.079	.002—.003	≤.157	.002—.003	≤.157	.002—.003
N	Aluminum Alloy	Content Si< 5%	≤.25DC	● ◐	≤.236	.004—.008	≤.315	.004—.010	≤.315	.004—.010
				✲	≤.236	.004—.006	≤.315	.004—.008	≤.315	.004—.008
			.25—.5DC	● ◐	≤.197	.004—.006	≤.315	.004—.008	≤.315	.004—.008
				✲	≤.197	.003—.005	≤.315	.004—.006	≤.315	.004—.006
			.5—.75DC	● ◐	≤.157	.003—.005	≤.236	.002—.006	≤.236	.003—.006
				✲	≤.157	.002—.004	≤.236	.002—.006	≤.236	.003—.006
			DC(Slot)	● ◐	≤.079	.002—.004	≤.157	.002—.006	≤.157	.003—.006
				✲	≤.079	.002—.003	≤.157	.002—.005	≤.157	.003—.005
S	Titanium Alloy (Ti-6Al-4V,etc.)	—	≤.25DC	● ◐ ✲	≤.236	.003—.006	≤.315	.003—.006	≤.315	.003—.006
			.25—.5DC	● ◐ ✲	≤.197	.003—.005	≤.315	.003—.005	≤.315	.003—.005
			.5—.75DC	● ◐ ✲	≤.157	.002—.004	≤.236	.002—.004	≤.236	.002—.004
			DC(Slot)	● ◐ ✲	≤.079	.002—.004	≤.157	.002—.004	≤.157	.002—.004
	Titanium Alloy (Ti-5Al-5V-5Mo-3Cr,etc.)	—	≤.25DC	● ◐ ✲	≤.236	.003—.005	≤.315	.003—.005	≤.315	.003—.005
			.25—.5DC	● ◐ ✲	≤.197	.003—.005	≤.315	.003—.005	≤.315	.003—.005
			.5—.75DC	● ◐ ✲	≤.157	.002—.004	≤.236	.002—.004	≤.236	.002—.004
			DC(Slot)	● ◐ ✲	≤.079	.002—.004	≤.157	.002—.004	≤.157	.002—.004
	Heat Resistant Alloy	—	≤.25DC	● ◐ ✲	≤.236	.003—.005	≤.315	.003—.005	≤.315	.003—.005
			.25—.5DC	● ◐ ✲	≤.197	.003—.005	≤.315	.003—.005	≤.315	.003—.005
			.5—.75DC	● ◐ ✲	≤.157	.002—.004	≤.236	.002—.004	≤.236	.002—.004
			DC(Slot)	● ◐ ✲	≤.079	.002—.004	≤.157	.002—.004	≤.157	.002—.004
H	Hardened Steel	Hardness 40—55HRC	≤.25DC	● ◐	≤.157	.003—.006	≤.157	.003—.006	≤.157	.003—.006
				✲	≤.157	.003—.005	≤.157	.003—.005	≤.157	.003—.005
			.25—.5DC	● ◐	≤.118	.003—.005	≤.118	.003—.005	≤.118	.003—.005
				✲	≤.118	.002—.004	≤.118	.002—.004	≤.118	.002—.004
			.5—.75DC	● ◐	≤.079	.002—.004	≤.079	.002—.004	≤.079	.002—.004
				✲	≤.079	.002—.004	≤.079	.002—.004	≤.079	.002—.004
			DC(Slot)	● ◐	≤.039	.002—.004	≤.039	.002—.004	≤.039	.002—.004
				✲	≤.039	.002—.004	≤.039	.002—.004	≤.039	.002—.004

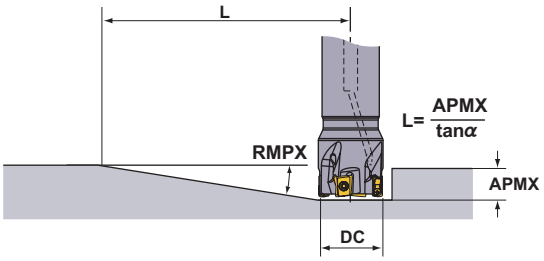
Note 1) These cutting conditions should be referenced for standard shank types (last letter in designation is S) and arbor shank types. If there is chatter, insert chipping, etc. during machining, alter conditions accordingly.
Note 2) Chattering vibration is more likely under the following circumstances. Use a cut and feed per tooth that are at minimum recommended conditions or below.
- When tool overhang is long (using a long shank, screw-in type, etc.)
- Rigidity of machine, work material or attachment of work material is low
- Corner radius during pocket milling

Note 3) A type with fewer teeth is recommended when the depth of cut in the radius direction (ae) is .5 DC or more.
Note 4) Wet cutting is recommended, when focusing on the surface finish. (Tool life is shorter than for dry cutting.)
Note 5) When using under higher than recommended cutting conditions, or for long periods of time, the clamp screw may become fatigued and break during machining. Please change out the clamp screw periodically.

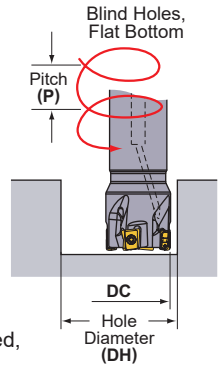
RECOMMENDED CUTTING CONDITIONS

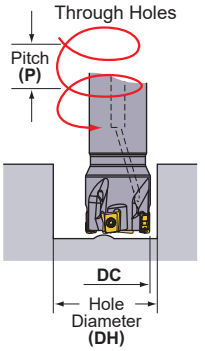
Ramping / Helical Milling

● **Ramping**



● **Helical Milling**





Refer to the table below for cutting conditions. For feed per tooth and cutting speed, follow the cutting conditions for slot milling.

(inch)

Cutting Edge Diameter **DC**	**RE**	Ramping		Helical Milling (Blind Hole, Flat Bottom)				Helical Milling (Through Hole)	
		Maximum Ramping Angle **RMPX**	Minimum * Distance **L**	Maximum Hole Diameter **DH max.**	Maximum Pitch **P max.**	Minimum Hole Diameter **DH min.**	Maximum Pitch **P max.**	Minimum Hole Diameter **DH min.**	Maximum Pitch **P max.**
.625	.008	1.87°	9.7	1.213	.060	1.072	.046	.942	.032
	.016	1.87°	9.7	1.197	.059	1.073	.046	.942	.032
	.031	1.87°	9.7	1.165	.055	1.073	.046	.942	.032
	.039	1.87°	9.7	1.150	.054	1.073	.046	.942	.032
	.047	1.87°	9.7	1.134	.052	1.073	.046	.942	.032
	.063	1.87°	9.7	1.102	.049	1.073	.046	.942	.032
.750	.008	1.43°	12.6	1.463	.056	1.323	.045	1.187	.034
	.016	1.43°	12.6	1.447	.055	1.323	.045	1.187	.034
	.031	1.43°	12.6	1.415	.052	1.323	.045	1.187	.034
	.039	1.43°	12.6	1.400	.051	1.323	.045	1.187	.034
	.047	1.43°	12.6	1.384	.050	1.323	.045	1.187	.034
	.063	1.43°	12.6	1.352	.047	1.323	.045	1.187	.034
.875	.008	1.14°	15.9	1.713	.052	1.574	.044	1.435	.035
	.016	1.14°	15.9	1.697	.051	1.574	.044	1.435	.035
	.031	1.14°	15.9	1.665	.049	1.574	.044	1.435	.035
	.039	1.14°	15.9	1.650	.048	1.574	.044	1.435	.035
	.047	1.14°	15.9	1.634	.047	1.574	.044	1.435	.035
	.063	1.14°	15.9	1.602	.045	1.575	.044	1.435	.035
1.000	.008	.95°	19.0	1.963	.050	1.824	.043	1.685	.036
	.016	.95°	19.0	1.947	.049	1.824	.043	1.685	.036
	.031	.95°	19.0	1.915	.048	1.824	.043	1.685	.036
	.039	.95°	19.0	1.900	.047	1.824	.043	1.685	.036
	.047	.95°	19.0	1.884	.046	1.824	.043	1.685	.036
	.063	.95°	19.0	1.852	.044	1.825	.043	1.685	.036
1.125	.008	.82°	22.0	2.213	.049	2.074	.043	1.935	.036
	.016	.82°	22.0	2.197	.048	2.074	.043	1.935	.036
	.031	.82°	22.0	2.165	.047	2.074	.043	1.935	.036
	.039	.82°	22.0	2.150	.046	2.074	.043	1.935	.036
	.047	.82°	22.0	2.134	.045	2.074	.043	1.935	.036
	.063	.82°	22.0	2.102	.044	2.075	.043	1.935	.036
1.250	.008	.71°	25.4	2.463	.047	2.320	.042	2.183	.036
	.016	.71°	25.4	2.447	.047	2.320	.042	2.183	.036
	.031	.71°	25.4	2.415	.045	2.320	.042	2.183	.036
	.039	.71°	25.4	2.400	.045	2.320	.042	2.183	.036
	.047	.71°	25.4	2.384	.044	2.320	.042	2.183	.036
	.063	.71°	25.4	2.352	.043	2.321	.042	2.183	.036

Note 1) When machining a highly ductile work material with the ramping angles in the table above, chips may be elongated.
* Shows the distance until a maximum depth of cut of .315" is achieved at the maximum ramping angle L (= .315"/tan α).

(inch)

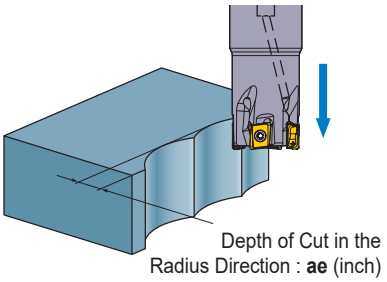
Cutting Edge Diameter **DC**	**RE**	Ramping		Helical Milling (Blind Hole, Flat Bottom)				Helical Milling (Through Hole)	
		Maximum Ramping Angle **RMPX**	Minimum * Distance **L**	Maximum Hole Diameter **DH max.**	Maximum Pitch **P max.**	Minimum Hole Diameter **DH min.**	Maximum Pitch **P max.**	Minimum Hole Diameter **DH min.**	Maximum Pitch **P max.**
1.375	.008	.64°	28.2	2.713	.047	2.574	.042	2.435	.037
	.016	.64°	28.2	2.697	.046	2.574	.042	2.435	.037
	.031	.64°	28.2	2.665	.045	2.574	.042	2.435	.037
	.039	.64°	28.2	2.650	.045	2.574	.042	2.435	.037
	.047	.64°	28.2	2.634	.044	2.574	.042	2.435	.037
	.063	.64°	28.2	2.602	.043	2.574	.042	2.435	.037
1.500	.008	.57°	31.7	2.963	.046	2.820	.041	2.683	.037
	.016	.57°	31.7	2.947	.045	2.820	.041	2.683	.037
	.031	.57°	31.7	2.915	.044	2.820	.041	2.683	.037
	.039	.57°	31.7	2.900	.044	2.820	.041	2.683	.037
	.047	.57°	31.7	2.884	.043	2.820	.041	2.683	.037
	.063	.57°	31.7	2.852	.042	2.821	.041	2.683	.037
2.000	.008	.41°	44.0	3.963	.044	3.820	.041	3.683	.038
	.016	.41°	44.0	3.947	.044	3.820	.041	3.683	.038
	.031	.41°	44.0	3.915	.043	3.820	.041	3.683	.038
	.039	.41°	44.0	3.900	.043	3.820	.041	3.683	.038
	.047	.41°	44.0	3.884	.042	3.820	.041	3.683	.038
	.063	.41°	44.0	3.852	.042	3.820	.041	3.683	.038
2.500	.008	.32°	56.4	4.963	.043	4.820	.041	4.683	.038
	.016	.32°	56.4	4.947	.043	4.820	.041	4.683	.038
	.031	.32°	56.4	4.915	.042	4.820	.041	4.683	.038
	.039	.32°	56.4	4.900	.042	4.820	.041	4.683	.038
	.047	.32°	56.4	4.884	.042	4.820	.041	4.683	.038
	.063	.32°	56.4	4.852	.041	4.820	.041	4.683	.038

Note 1) When machining a highly ductile work material with the ramping angles in the table above, chips may be elongated.
* Shows the distance until a maximum depth of cut of .315" is achieved at the maximum ramping angle L (= .315"/tan α).

For Plunging and Drilling

See the tables to the right for cutting conditions. Follow the cutting conditions for slot milling regarding feed per tooth and cutting speed.

● Plunging

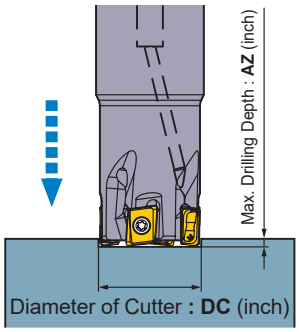


(inch)

DC	ae max.
.625	.154
.750	.154
.875	.157
1.000	.157
1.125	.157
1.250	.157
1.375	.157
1.500	.157
2.000	.157
2.500	.157

Note 1) No step feed necessary.

● Drilling



(inch)

DC	AZ max.
.625	.012
.750	.012
.875	.012
1.000	.012
1.125	.012
1.250	.012
1.375	.012
1.500	.012
2.000	.012
2.500	.012

Note 1) Exercise due caution as chips scatter easily.
Note 2) Use compressed air to eliminate chips
(or coolant for when machining aluminum alloy).

MULTI-FUNCTIONAL MILLING

90° KAPR

VPX300 NEW

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron	Non-ferrous Metal	Heat Resistant Alloy	Hardened Steel



Fig.1

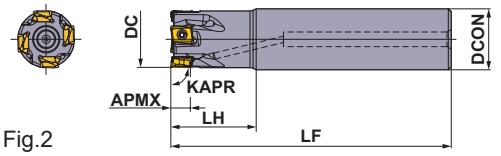


Fig.2

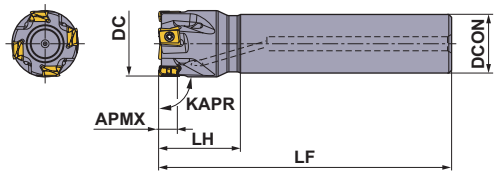


Fig.3

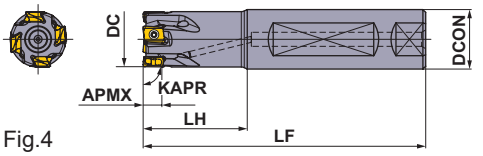
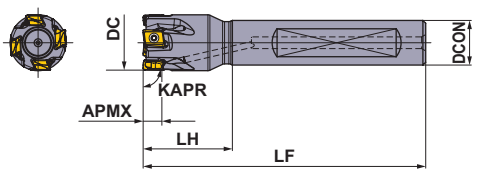


Fig.4



■SHANK TYPE

With Coolant Hole

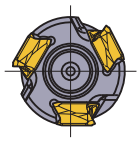
Right hand tool holder only.

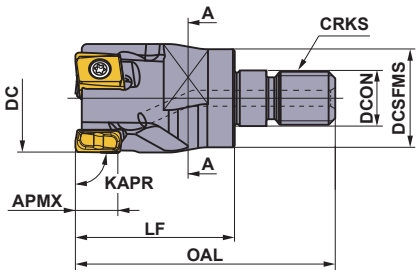
(inch)

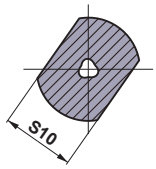
DC	Order Number	Stock R	Number of Teeth	DCON	LF	LH	APMX	RMPX	RPMX (min^{-1})	WT (lbs)	Fig.	Insert Type
1.000	**VPX300UR1602FA16S**	●	2	1.000	4.750	1.750	.433	2.07°	23900	.8	3	LOGU12
1.000	**VPX300UR1602SA16S**	●	2	1.000	4.750	1.750	.433	2.07°	23900	.9	1	LOGU12
1.000	**VPX300UR1602SA16L**	●	2	1.000	8.500	2.500	.433	2.07°	23900	1.7	1	LOGU12
1.125	**VPX300UR1802SA16L**	●	2	1.000	8.500	1.750	.433	1.73°	22200	1.9	2	LOGU12
1.250	**VPX300UR2002FA16S**	●	2	1.000	5.125	1.750	.433	1.49°	20700	1.1	4	LOGU12
1.250	**VPX300UR2002SA16S**	●	2	1.000	5.125	1.750	.433	1.49°	20700	1.1	2	LOGU12
1.250	**VPX300UR2003FA16S**	●	3	1.000	5.125	1.750	.433	1.49°	20700	1.1	4	LOGU12
1.250	**VPX300UR2003SA16S**	●	3	1.000	5.125	1.750	.433	1.49°	20700	1.1	2	LOGU12
1.250	**VPX300UR2003SA16L**	●	3	1.000	9.000	1.750	.433	1.49°	20700	1.9	2	LOGU12
1.250	**VPX300UR2002FA20S**	●	2	1.250	5.125	2.000	.433	1.49°	20700	1.5	3	LOGU12
1.250	**VPX300UR2002SA20S**	●	2	1.250	5.125	2.000	.433	1.49°	20700	1.5	1	LOGU12
1.250	**VPX300UR2003FA20S**	●	3	1.250	5.125	2.000	.433	1.49°	20700	1.5	3	LOGU12
1.250	**VPX300UR2003SA20S**	●	3	1.250	5.125	2.000	.433	1.49°	20700	1.5	1	LOGU12
1.250	**VPX300UR2003SA20L**	●	3	1.250	9.000	3.000	.433	1.49°	20700	2.8	1	LOGU12
1.500	**VPX300UR2402FA20S**	●	2	1.250	5.125	2.000	.433	1.13°	18500	1.7	4	LOGU12
1.500	**VPX300UR2402SA20S**	●	2	1.250	5.125	2.000	.433	1.13°	18500	1.7	2	LOGU12
1.500	**VPX300UR2403FA20S**	●	3	1.250	5.125	2.000	.433	1.13°	18500	1.7	4	LOGU12
1.500	**VPX300UR2403SA20S**	●	3	1.250	5.125	2.000	.433	1.13°	18500	1.7	2	LOGU12
1.500	**VPX300UR2403SA20L**	●	3	1.250	9.000	2.000	.433	1.13°	18500	3.0	2	LOGU12

Note 1) The maximum spindle speeds **RPMX** are set to ensure tool and insert stability.
Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.









A-A Section

Right hand tool holder only.

■ SCREW-IN TYPE

With Coolant Hole

(inch)

DC	Order Number	Stock R	Number of Teeth	DCON	DCSFMS	OAL	LF	S10	CRKS	WT (lbs)	APMX	RMPX	Insert Type
1.000	**VPX300UR1602AM1235**	●	2	.492	.925	2.244	1.378	.748	M12	.2	.433	2.07°	LOGU12
1.125	**VPX300UR1802AM1235**	●	2	.492	.925	2.244	1.378	.748	M12	.3	.433	1.73°	LOGU12
1.250	**VPX300UR2002AM1640**	●	2	.669	1.122	2.480	1.575	.945	M16	.4	.433	1.49°	LOGU12
1.250	**VPX300UR2003AM1640**	●	3	.669	1.122	2.480	1.575	.945	M16	.4	.433	1.49°	LOGU12
1.375	**VPX300UR2202AM1640**	●	2	.669	1.122	2.480	1.575	.945	M16	.5	.433	1.28°	LOGU12
1.375	**VPX300UR2203AM1640**	●	3	.669	1.122	2.480	1.575	.945	M16	.5	.433	1.28°	LOGU12
1.500	**VPX300UR2403AM1640**	●	3	.669	1.122	2.480	1.575	.945	M16	.5	.433	1.13°	LOGU12
1.500	**VPX300UR2404AM1640**	●	4	.669	1.122	2.480	1.575	.945	M16	.5	.433	1.13°	LOGU12

Note 1) For screw-in type arbors, refer to page L294.

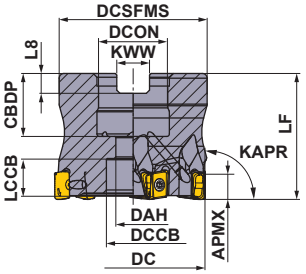
SPARE PARTS

Tool Holder Type	 *		
	Clamp Screw	Wrench	Anti-seize Lubricant
VPX300	TPS40F1	TIP15W	MK1KS

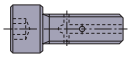
* Clamp Torque (lbf-in) : TPS40F1 = 26.6

SCREW-IN HOLDERS ➤ L294
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001





Right hand tool holder only.

DCON	Set Bolt	Geometry
ϕ.500"	HSCU25011H	
ϕ.750"	HSCU37513H	
ϕ1.000"	HSCU50014H	

■ARBOR TYPE

With Coolant Hole

GAMP : –6°
GAMF : –22.5°

DC = Inch, DCON = Inch

(inch)

DC	Order Number	Stock R	Number of Teeth	LF	DCON	WT (lbs)	APMX	RMPX	RPMX (min^{-1})	Insert Type
1.500	**VPX300UR1.5003SA**	●	3	1.750	.500	.240	.433	1.13°	18500	LOGU12
1.500	**VPX300UR1.5004SA**	●	4	1.750	.500	.240	.433	1.13°	18500	LOGU12
2.000	**VPX300UR2.0004AA**	●	4	1.750	.750	.400	.433	.78°	15400	LOGU12
2.000	**VPX300UR2.0006AA**	●	6	1.750	.750	.390	.433	.78°	15400	LOGU12
2.500	**VPX300UR2.5006CA**	●	6	2.000	1.000	.700	.433	.59°	13400	LOGU12
2.500	**VPX300UR2.5008CA**	●	8	2.000	1.000	.720	.433	.59°	13400	LOGU12
3.000	**VPX300UR3.0007CA**	●	7	2.000	1.000	.940	.433	.48°	11900	LOGU12
3.000	**VPX300UR3.0010CA**	●	10	2.000	1.000	.950	.433	.48°	11900	LOGU12

Note 1) The maximum spindle speeds **RPMX** are set to ensure tool and insert stability.
Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

MOUNTING DIMENSIONS

(inch)

DC	Order Number	DCON	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8
1.500	**VPX300UR1.5003SA**	.500	.630	.276	.433	.663	1.438	.250	.156
1.500	**VPX300UR1.5004SA**	.500	.630	.276	.433	.663	1.438	.250	.156
2.000	**VPX300UR2.0004AA**	.750	.748	.413	.630	.545	1.750	.313	.187
2.000	**VPX300UR2.0006AA**	.750	.748	.413	.630	.545	1.750	.313	.187
2.500	**VPX300UR2.5006CA**	1.000	.945	.539	.787	.677	2.188	.375	.219
2.500	**VPX300UR2.5008CA**	1.000	.945	.539	.787	.677	2.188	.375	.219
3.000	**VPX300UR3.0007CA**	1.000	.945	.539	.787	.677	2.188	.375	.219
3.000	**VPX300UR3.0010CA**	1.000	.945	.539	.787	.677	2.188	.375	.219

SPARE PARTS

Tool Holder Type	 *		
	Clamp Screw	Wrench	Anti-seize Lubricant
VPX300	TPS40F1	TIP15W	MK1KS

* Clamp Torque (lbf-in) : TPS40F1 = 26.6

SPARE PARTS ➢ N001
TECHNICAL DATA ➢ P001



Fig.1



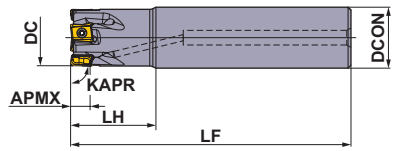
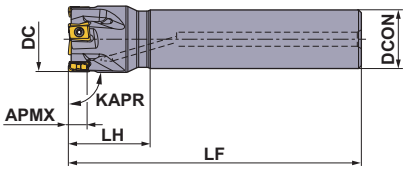


Fig.2





Right hand tool holder only.

Metric Standard

■SHANK TYPE

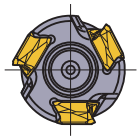
With Coolant Hole

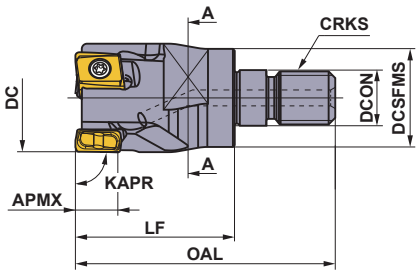
(mm)

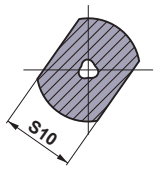
DC	Order Number	Stock R	Number of Teeth	DCON	LF	LH	APMX	RMPX	RPMX (min^{-1})	WT (kg)	Fig.	Insert Type
25	**VPX300R2502SA25S**	★	2	25	115	35	11	2.13°	24100	0.38	1	LOGU12
25	**VPX300R2502SA25L**	★	2	25	170	70	11	2.13°	24100	0.56	1	LOGU12
28	**VPX300R2802SA25S**	★	2	25	115	35	11	1.77°	22500	0.40	2	LOGU12
28	**VPX300R2802SA25L**	★	2	25	170	35	11	1.77°	22500	0.60	2	LOGU12
30	**VPX300R3002SA25S**	★	2	25	125	35	11	1.61°	21500	0.45	2	LOGU12
30	**VPX300R3003SA25S**	★	3	25	125	35	11	1.61°	21500	0.44	2	LOGU12
32	**VPX300R3202SA32S**	★	2	32	125	45	11	1.47°	20600	0.69	1	LOGU12
32	**VPX300R3203SA32S**	★	3	32	125	45	11	1.47°	20600	0.68	1	LOGU12
32	**VPX300R3203SA32L**	★	3	32	190	90	11	1.47°	20600	1.04	1	LOGU12
35	**VPX300R3503SA32L**	★	3	32	190	45	11	1.28°	19500	1.10	2	LOGU12
40	**VPX300R4003SA32S**	★	3	32	125	45	11	1.06°	17900	0.76	2	LOGU12
40	**VPX300R4004SA32S**	★	4	32	125	45	11	1.06°	17900	0.76	2	LOGU12
50	**VPX300R5004SA32S**	★	4	32	125	45	11	0.79°	15500	0.89	2	LOGU12
50	**VPX300R5006SA32S**	★	6	32	125	45	11	0.79°	15500	0.88	2	LOGU12

Note 1) The maximum spindle speeds **RPMX** are set to ensure tool and insert stability.
Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.









A-A Section

Metric Standard

Right hand tool holder only.

■ SCREW-IN TYPE

With Coolant Hole

(mm)

DC	Order Number	Stock R	Number of Teeth	DCON	DCSFMS	OAL	LF	S10	CRKS	WT (kg)	APMX	RMPX	Insert Type
25	**VPX300R2502AM1235**	★	2	12.5	23.5	57	35	19	M12	0.10	11	2.13°	LOGU12
28	**VPX300R2802AM1235**	★	2	12.5	23.5	57	35	19	M12	0.12	11	1.77°	LOGU12
32	**VPX300R3202AM1640**	★	2	17.0	28.5	63	40	24	M16	0.20	11	1.47°	LOGU12
32	**VPX300R3203AM1640**	★	3	17.0	28.5	63	40	24	M16	0.19	11	1.47°	LOGU12
35	**VPX300R3502AM1640**	★	2	17.0	28.5	63	40	24	M16	0.22	11	1.28°	LOGU12
35	**VPX300R3503AM1640**	★	3	17.0	28.5	63	40	24	M16	0.22	11	1.28°	LOGU12
40	**VPX300R4003AM1640**	★	3	17.0	28.5	63	40	24	M16	0.26	11	1.06°	LOGU12
40	**VPX300R4004AM1640**	★	4	17.0	28.5	63	40	24	M16	0.26	11	1.06°	LOGU12

Note 1) For screw-in type arbors, refer to page L294.

SPARE PARTS

Tool Holder Type	 *		
	Clamp Screw	Wrench	Anti-seize Lubricant
VPX300	TPS40F1	TIP15W	MK1KS

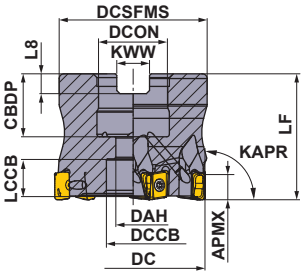
* Clamp Torque (lbf-in) : TPS40F1 = 26.6

SCREW-IN HOLDERS ➢ L294
SPARE PARTS ➢ N001
TECHNICAL DATA ➢ P001

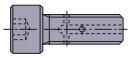


Metric Standard

For Metric Arbors



Right hand tool holder only.

DC	Set Bolt	Geometry
ϕ40	HSC08025H	
ϕ50, ϕ63	HSC10030H	
ϕ80	HSC12035H	

■ARBOR TYPE

With Coolant Hole

GAMP : –6°
GAMF : –22.5°

DC = mm, DCON = mm, DCON = Inch

(mm)

DC	Order Number	Stock R	Number of Teeth	LF	DCON	WT (kg)	APMX	RMPX	RPMX (min^{-1})	Insert Type
40	**VPX300-040A03AR**	★	3	40	16.0	0.21	11	1.06°	17900	LOGU12
40	**VPX300-040A04AR**	★	4	40	16.0	0.21	11	1.06°	17900	LOGU12
50	**VPX300-050A04AR**	★	4	40	22.0	0.34	11	0.79°	15500	LOGU12
50	**VPX300-050A06AR**	★	6	40	22.0	0.33	11	0.79°	15500	LOGU12
63	**VPX300-063A06AR**	★	6	40	22.0	0.61	11	0.60°	13400	LOGU12
63	**VPX300-063A08AR**	★	8	40	22.0	0.62	11	0.60°	13400	LOGU12
80	**VPX300R08007CA**	★	7	50	25.4[1.0"]	1.00	11	0.45°	11500	LOGU12
80	**VPX300R08010CA**	★	10	50	25.4[1.0"]	1.00	11	0.45°	11500	LOGU12
80	**VPX300-080A07AR**	★	7	50	27.0	0.99	11	0.45°	11500	LOGU12
80	**VPX300-080A10AR**	★	10	50	27.0	0.99	11	0.45°	11500	LOGU12

Note 1) The maximum spindle speeds **RPMX** are set to ensure tool and insert stability.
Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

MOUNTING DIMENSIONS

(mm)

DC	Order Number	DCON	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8
40	**VPX300-040A03AR**	16.0	18	9	14	12.4	37	8.4	5.6
40	**VPX300-040A04AR**	16.0	18	9	14	12.4	37	8.4	5.6
50	**VPX300-050A04AR**	22.0	20	11	17	10.4	47	10.4	6.3
50	**VPX300-050A06AR**	22.0	20	11	17	10.4	47	10.4	6.3
63	**VPX300-063A06AR**	22.0	20	11	17	10.4	60	10.4	6.3
63	**VPX300-063A08AR**	22.0	20	11	17	10.4	60	10.4	6.3
80	**VPX300R08007CA**	25.4[1.0"]	26	13	20	13.4	56	9.5	6.0
80	**VPX300R08010CA**	25.4[1.0"]	26	13	20	13.4	56	9.5	6.0
80	**VPX300-080A07AR**	27.0	23	13	20	13.4	56	12.4	7.0
80	**VPX300-080A10AR**	27.0	23	13	20	13.4	56	12.4	7.0

SPARE PARTS

Tool Holder Type	 *		
	Clamp Screw	Wrench	Anti-seize Lubricant
VPX300	TPS40F1	TIP15W	MK1KS

* Clamp Torque (lbf-in) : TPS40F1 = 26.6

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

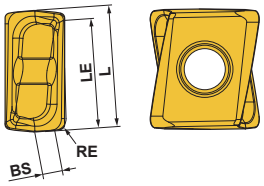
■ INSERTS

(inch)

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
N	Non-ferrous Metal	
S	Heat Resistant Alloy, Titanium Alloy	
H	Hardened Steel	

Cutting Conditions (Guide) :
● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

Edge Preparation :
E : Round **F :** Sharp Edge

Shape	Order Number	Class	Edge Preparation	Coated							Carbide		L	RE	LE	S	BS	Geometry
				MC5020	MP6120	MP6130	MP7130	MP9120	MP9130	VP15TF		TF15						
	LOGU1207020PNER-M	G	E	●	●	●	●	●	●	●			.488	.008	.445	.276	.118	
	LOGU1207040PNER-M	G	E	●	●	●	●	●	●	●			.488	.016	.445	.276	.110	
	LOGU1207080PNER-M	G	E	●	●	●	●	●	●	●			.488	.031	.445	.276	.094	
	LOGU1207100PNER-M	G	E	●	●	●	●	●	●	●			.488	.039	.445	.276	.091	
	LOGU1207120PNER-M	G	E	●	●	●	●	●	●	●			.488	.047	.445	.276	.083	
	LOGU1207160PNER-M	G	E	●	●	●	●	●	●	●			.488	.063	.445	.276	.067	
	LOGU1207200PNER-M	G	E	●	●	●	●	●	●	●			.488	.079	.445	.276	.055	
	LOGU1207240PNER-M	G	E	●	●	●	●	●	●	●			.488	.094	.445	.276	.039	
	LOGU1207300PNER-M	G	E	●	●	●	●	●	●	●			.488	.118	.445	.276	.020	
	LOGU1207320PNER-M	G	E	●	●	●	●	●	●	●			.488	.126	.445	.276	.012	
	LOGU1207020PNFR-M	G	F									●	.488	.008	.445	.276	.118	
	LOGU1207040PNFR-M	G	F									●	.488	.016	.445	.276	.110	
	LOGU1207080PNFR-M	G	F									●	.488	.031	.445	.276	.094	
	LOGU1207100PNFR-M	G	F									●	.488	.039	.445	.276	.091	
	LOGU1207120PNFR-M	G	F									●	.488	.047	.445	.276	.083	
	LOGU1207160PNFR-M	G	F									●	.488	.063	.445	.276	.067	
	LOGU1207200PNFR-M	G	F									●	.488	.079	.445	.276	.055	
	LOGU1207240PNFR-M	G	F									●	.488	.094	.445	.276	.039	
	LOGU1207300PNFR-M	G	F									●	.488	.118	.445	.276	.020	
	LOGU1207320PNFR-M	G	F									●	.488	.126	.445	.276	.012	Right hand insert only.

RECOMMENDED CUTTING CONDITIONS

■ Dry Cutting

Cutting Speed

(inch)

	Work Material	Properties	Cutting Conditions	Insert Grade	Insert Chip Breaker	Cutting Width **ae** ≤.25DC	.25—.5DC	.5—.75DC	DC(Slot)
						Cutting Speed **vc** (SFM)			
P	Mild Steel	Hardness ≤180HB	● ●	MP6120	M	755 (590—885)	720 (560—850)	590 (460—690)	590 (460—690)
			● ●	VP15TF	M	755 (590—885)	720 (560—850)	590 (460—690)	590 (460—690)
			✲	MP6130	M	655 (490—785)	620 (560—850)	490 (360—590)	490 (360—590)
	Carbon Steel Alloy Steel Alloy Tool Steel	Hardness 180—350HB ≤350HB (Annealing)	● ●	MP6120	M	590 (460—690)	560 (425—655)	460 (360—525)	460 (360—590)
			● ●	VP15TF	M	590 (460—690)	560 (425—655)	460 (360—525)	460 (360—590)
			✲	MP6130	M	490 (360—590)	460 (330—560)	360 (260—425)	360 (260—425)
	Pre-hardened Steel	Hardness 35—45HRC	● ●	MP6120	M	395 (295—460)	360 (260—425)	330 (230—395)	330 (230—395)
			● ●	VP15TF	M	395 (295—460)	360 (260—425)	330 (230—395)	330 (230—395)
			✲	MP6130	M	330 (260—395)	295 (230—360)	260 (195—330)	260 (195—330)
M	Austenitic Stainless Steel	Hardness ≤200HB	● ● ✲	MP7130	M	590 (460—690)	560 (425—655)	460 (360—525)	460 (360—525)
			● ●	VP15TF	M	590 (460—690)	560 (425—655)	460 (360—525)	460 (360—525)
		Hardness >200HB	● ● ✲	MP7130	M	490 (360—590)	460 (330—525)	360 (260—425)	360 (260—425)
			● ●	VP15TF	M	490 (360—590)	460 (330—525)	360 (260—425)	360 (260—425)
	Duplex Stainless Steel	Hardness ≤280HB	● ● ✲	MP7130	M	460 (360—560)	425 (295—490)	330 (230—395)	330 (230—395)
			● ●	VP15TF	M	460 (360—560)	425 (295—490)	330 (230—395)	330 (230—395)
	Ferritic and Martensitic Stainless Steel	—	● ● ✲	MP7130	M	590 (460—690)	560 (425—655)	460 (360—525)	460 (360—525)
			● ●	VP15TF	M	590 (460—690)	560 (425—655)	460 (360—525)	460 (360—525)
	Precipitation Hardening Stainless Steel	Hardness <450HB	● ● ✲	MP7130	M	425 (330—525)	395 (260—460)	295 (195—360)	295 (195—360)
			● ●	VP15TF	M	425 (330—525)	395 (260—460)	295 (195—360)	295 (195—360)
K	Gray Cast Iron	Tensile Strength ≤350MPa	● ●	MC5020	M	820 (655—985)	785 (620—950)	690 (525—850)	690 (525—850)
			● ● ✲	VP15TF	M	655 (490—820)	620 (460—785)	525 (360—690)	525 (360—690)
	Ductile Cast Iron	Tensile Strength ≤800MPa	● ●	MC5020	M	590 (490—655)	560 (460—620)	490 (395—560)	490 (395—560)
			● ● ✲	VP15TF	M	425 (330—490)	395 (295—460)	330 (260—395)	330 (260—395)
N	Aluminum Alloy	Content Si<5%	● ● ✲	TF15	M	1970 (1310—3280)	1970 (1310—3280)	1970 (1310—3280)	1970 (1310—3280)
H	Hardened Steel	Hardness 40—55HRC	● ● ✲	VP15TF	M	295 (230—330)	280 (195—330)	230 (165—260)	230 (165—260)

Note 1) These cutting conditions should be referenced for standard shank types (last letter in designation is S) and arbor shank types. If there is chatter, insert chipping, etc. during machining, alter conditions accordingly.

Note 2) Chattering vibration is more likely under the following circumstances. Use a cut and feed per tooth that are at minimum recommended conditions or below.
- When tool overhang is long (using a long shank, screw-in type, etc.)
- Rigidity of machine, work material or attachment of work material is low
- Corner radius during pocket milling

Note 3) A type with fewer teeth is recommended when the depth of cut in the radius direction (ae) is .5 DC or more.

Note 4) Wet cutting is recommended, when focusing on the surface finish. (Tool life is shorter than for dry cutting.)

Note 5) When using under higher than recommended cutting conditions, or for long periods of time, the clamp screw may become fatigued and break during machining. Please change out the clamp screw periodically.

Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting ✲ : Unstable Cutting

Depth of Cut / Feed per Tooth

(inch)

	Work Material	Properties	Cutting Width **ae**	Cutting Conditions	Cutter Diameter **DC** ø1.000 (ø25 mm) Depth of Cut **ap**	ø1.000 (ø25 mm) Feed per Tooth. **fz** (IPT)	ø1.125—ø3.000 (ø28 mm-ø80 mm) Depth of Cut **ap**	ø1.125—ø3.000 (ø28 mm-ø80 mm) Feed per Tooth. **fz** (IPT)
P	Mild Steel	Hardness ≤180HB	≤.25DC	● ◔ ✲	≤.433	.004—.008	≤.433	.004—.012
			.25—.5DC	● ◔ ✲	≤.433	.004—.006	≤.433	.004—.010
			.5—.75DC	● ◔ ✲	≤.315	.003—.005	≤.315	.004—.008
			DC(Slot)	● ◔ ✲	≤.197	.002—.004	≤.197	.003—.006
	Carbon Steel Alloy Steel Alloy Tool Steel	Hardness 180—280HB	≤.25DC	● ◔ ✲	≤.433	.004—.008	≤.433	.004—.012
			.25—.5DC	● ◔ ✲	≤.433	.004—.006	≤.433	.004—.010
			.5—.75DC	● ◔ ✲	≤.315	.003—.005	≤.315	.004—.008
			DC(Slot)	● ◔ ✲	≤.197	.002—.004	≤.197	.003—.006
	Carbon Steel Alloy Steel Alloy Tool Steel	Hardness 280—350HB ≤350HB (Annealing)	≤.25DC	● ◔ ✲	≤.433	.004—.006	≤.433	.004—.010
			.25—.5DC	● ◔ ✲	≤.433	.003—.005	≤.433	.004—.008
			.5—.75DC	● ◔ ✲	≤.315	.002—.004	≤.315	.004—.006
			DC(Slot)	● ◔ ✲	≤.197	.002—.004	≤.197	.003—.005
	Pre-hardened Steel	Hardness 35—45HRC	≤.25DC	● ◔ ✲	≤.433	.004—.006	≤.433	.004—.010
			.25—.5DC	● ◔ ✲	≤.433	.003—.005	≤.433	.004—.008
			.5—.75DC	● ◔ ✲	≤.315	.002—.004	≤.315	.004—.006
			DC(Slot)	● ◔ ✲	≤.197	.002—.004	≤.197	.003—.005
M	Austenitic Stainless Steel	—	≤.25DC	○ ◔	≤.433	.004—.008	≤.433	.004—.008
				✲	≤.433	.003—.006	≤.433	.003—.006
			.25—.5DC	○ ◔	≤.433	.003—.006	≤.433	.003—.006
				✲	≤.433	.003—.005	≤.433	.003—.005
			.5—.75DC	○ ◔	≤.315	.003—.005	≤.315	.003—.005
				✲	≤.315	.002—.004	≤.315	.002—.004
			DC(Slot)	○ ◔	≤.197	.002—.004	≤.197	.002—.004
				✲	≤.197	.002—.003	≤.197	.002—.003
	Duplex Stainless Steel	Hardness ≤280HB	≤.25DC	○ ◔	≤.433	.004—.008	≤.433	.004—.008
				✲	≤.433	.003—.006	≤.433	.003—.006
			.25—.5DC	○ ◔	≤.433	.003—.006	≤.433	.003—.006
				✲	≤.433	.003—.005	≤.433	.003—.005
			.5—.75DC	○ ◔	≤.315	.003—.005	≤.315	.003—.005
				✲	≤.315	.002—.004	≤.315	.002—.004
			DC(Slot)	○ ◔	≤.197	.002—.004	≤.197	.002—.004
				✲	≤.197	.002—.003	≤.197	.002—.003
	Ferritic and Martensitic Stainless Steel	—	≤.25DC	○ ◔	≤.433	.004—.008	≤.433	.004—.008
				✲	≤.433	.003—.006	≤.433	.003—.006
			.25—.5DC	○ ◔	≤.433	.003—.006	≤.433	.003—.006
				✲	≤.433	.003—.005	≤.433	.003—.005
			.5—.75DC	○ ◔	≤.315	.003—.005	≤.315	.003—.005
				✲	≤.315	.002—.004	≤.315	.002—.004
			DC(Slot)	○ ◔	≤.197	.002—.004	≤.197	.002—.004
				✲	≤.197	.002—.003	≤.197	.002—.003
	Precipitation Hardening Stainless Steel	Hardness <450HB	≤.25DC	○ ◔	≤.433	.004—.006	≤.433	.004—.006
				✲	≤.433	.003—.005	≤.433	.003—.005
			.25—.5DC	○ ◔	≤.433	.003—.005	≤.433	.003—.005
				✲	≤.433	.003—.005	≤.433	.002—.004
			.5—.75DC	○ ◔	≤.315	.002—.004	≤.315	.002—.004
				✲	≤.315	.002—.003	≤.315	.002—.003
			DC(Slot)	○ ◔	≤.197	.002—.004	≤.197	.002—.004
				✲	≤.197	.002—.003	≤.197	.002—.003

Note 1) These cutting conditions should be referenced for standard shank types (last letter in designation is S) and arbor shank types. If there is chatter, insert chipping, etc. during machining, alter conditions accordingly.
Note 2) Chattering vibration is more likely under the following circumstances. Use a cut and feed per tooth that are at minimum recommended conditions or below.
- When tool overhang is long (using a long shank, screw-in type, etc.)
- Rigidity of machine, work material or attachment of work material is low
- Corner radius during pocket milling

Note 3) A type with fewer teeth is recommended when the depth of cut in the radius direction (ae) is .5 DC or more.
Note 4) Wet cutting is recommended, when focusing on the surface finish. (Tool life is shorter than for dry cutting.)
Note 5) When using under higher than recommended cutting conditions, or for long periods of time, the clamp screw may become fatigued and break during machining. Please change out the clamp screw periodically.

RECOMMENDED CUTTING CONDITIONS

■ Dry Cutting

Depth of Cut / Feed per Tooth

(inch)

	Work Material	Properties	Cutting Width **ae**	Cutting Conditions	Cutter Diameter **DC**			
					ø1.000 (ø25 mm)		**ø1.125—ø3.000 (ø28 mm-ø80 mm)**	
					Depth of Cut **ap**	Feed per Tooth. **fz** (IPT)	Depth of Cut **ap**	Feed per Tooth. **fz** (IPT)
K	Gray Cast Iron	Tensile Strength ≤350MPa	≤.25DC	● ◐	≤.433	.004—.008	≤.433	.004—.012
				✱	≤.433	.003—.006	≤.433	.004—.010
			.25—.5DC	● ◐	≤.433	.003—.006	≤.433	.004—.010
				✱	≤.433	.003—.005	≤.433	.004—.008
			.5—.75DC	● ◐	≤.315	.003—.005	≤.315	.004—.008
				✱	≤.315	.002—.004	≤.315	.003—.006
			DC(Slot)	● ◐	≤.197	.002—.004	≤.197	.003—.006
				✱	≤.197	.002—.003	≤.197	.003—.005
	Ductile Cast Iron	Tensile Strength ≤800MPa	≤.25DC	● ◐	≤.433	.004—.008	≤.433	.004—.010
				✱	≤.433	.004—.006	≤.433	.004—.008
			.25—.5DC	● ◐	≤.433	.004—.006	≤.433	.004—.008
				✱	≤.433	.003—.005	≤.433	.004—.006
			.5—.75DC	● ◐	≤.315	.003—.005	≤.315	.004—.006
				✱	≤.315	.003—.005	≤.315	.003—.005
			DC(Slot)	● ◐	≤.197	.002—.004	≤.197	.003—.005
				✱	≤.197	.002—.003	≤.197	.002—.004
N	Aluminum Alloy	Content Si< 5%	≤.25DC	● ◐	≤.433	.004—.010	≤.433	.004—.010
				✱	≤.433	.004—.008	≤.433	.004—.008
			.25—.5DC	● ◐	≤.433	.004—.008	≤.433	.004—.008
				✱	≤.433	.004—.006	≤.433	.004—.006
			.5—.75DC	● ◐	≤.315	.002—.006	≤.315	.003—.006
				✱	≤.315	.002—.006	≤.315	.003—.006
			DC(Slot)	● ◐	≤.197	.002—.006	≤.197	.003—.006
				✱	≤.197	.002—.006	≤.197	.003—.005
H	Hardened Steel	Hardness 40—55HRC	≤.25DC	● ◐	≤.197	.003—.006	≤.197	.003—.006
				✱	≤.197	.003—.005	≤.197	.003—.005
			.25—.5DC	● ◐	≤.157	.003—.005	≤.157	.003—.005
				✱	≤.157	.002—.004	≤.157	.002—.004
			.5—.75DC	● ◐	≤.118	.002—.004	≤.118	.002—.004
				✱	≤.118	.002—.003	≤.118	.002—.003
			DC(Slot)	● ◐	≤.079	.002—.004	≤.079	.002—.004
				✱	≤.079	.002—.003	≤.079	.002—.003

Note 1) These cutting conditions should be referenced for standard shank types (last letter in designation is S) and arbor shank types. If there is chatter, insert chipping, etc. during machining, alter conditions accordingly.

Note 2) Chattering vibration is more likely under the following circumstances. Use a cut and feed per tooth that are at minimum recommended conditions or below.
- When tool overhang is long (using a long shank, screw-in type, etc.)
- Rigidity of machine, work material or attachment of work material is low
- Corner radius during pocket milling

Note 3) A type with fewer teeth is recommended when the depth of cut in the radius direction (ae) is .5 DC or more.

Note 4) Wet cutting is recommended, when focusing on the surface finish. (Tool life is shorter than for dry cutting.)

Note 5) When using under higher than recommended cutting conditions, or for long periods of time, the clamp screw may become fatigued and break during machining. Please change out the clamp screw periodically.

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✲ : Unstable Cutting

■ Wet Cutting
Cutting Speed

(inch)

	Work Material	Properties	Cutting Conditions	Insert Grade	Insert Chip Breaker	Cutting Width **ae** ≤.25DC	.25—.5DC	.5—.75DC	DC(Slot)
						Cutting Speed **vc** (SFM)			
P	Mild Steel	Hardness ≤180HB	● ◐	MP6120	M	460 (330—620)	425 (295—590)	330 (230—395)	330 (230—395)
			● ◐	VP15TF	M	460 (330—620)	425 (295—590)	330 (230—395)	330 (230—395)
			✲	MP6130	M	460 (330—620)	425 (295—590)	330 (230—395)	330 (230—395)
	Carbon Steel Alloy Steel Alloy Tool Steel	Hardness 180—350HB ≤350HB (Annealing)	● ◐	MP6120	M	395 (295—460)	360 (260—425)	330 (230—395)	330 (230—395)
			● ◐	VP15TF	M	395 (295—460)	360 (260—425)	330 (230—395)	330 (230—395)
			✲	MP6130	M	395 (295—460)	360 (260—425)	330 (230—395)	330 (230—395)
	Pre-hardened Steel	Hardness 35—45HRC	● ◐	MP6120	M	330 (260—395)	295 (230—360)	260 (195—330)	260 (195—330)
			● ◐	VP15TF	M	330 (260—395)	295 (230—360)	260 (195—330)	260 (195—330)
			✲	MP6130	M	330 (260—395)	295 (230—360)	260 (195—330)	260 (195—330)
M	Austenitic Stainless Steel	Hardness ≤200HB	○ ◐ ✲	MP7130	M	395 (330—490)	360 (295—460)	295 (230—395)	295 (230—395)
			○ ◐	VP15TF	M	395 (330—490)	360 (295—460)	295 (230—395)	295 (230—395)
		Hardness >200HB	○ ◐ ✲	MP7130	M	330 (260—425)	295 (230—395)	230 (165—330)	230 (165—330)
			○ ◐	VP15TF	M	330 (260—425)	295 (230—395)	230 (165—330)	230 (165—330)
	Duplex Stainless Steel	Hardness ≤280HB	○ ◐ ✲	MP7130	M	330 (260—425)	295 (230—395)	230 (165—330)	230 (165—330)
			○ ◐	VP15TF	M	330 (260—425)	295 (230—395)	230 (165—330)	230 (165—330)
	Ferritic and Martensitic Stainless Steel	—	○ ◐ ✲	MP7130	M	395 (330—490)	360 (295—460)	295 (230—395)	295 (230—395)
			○ ◐	VP15TF	M	395 (330—490)	360 (295—460)	295 (230—395)	295 (230—395)
	Precipitation Hardening Stainless Steel	Hardness <450HB	○ ◐ ✲	MP7130	M	295 (230—395)	260 (195—360)	195 (130—295)	195 (130—295)
			○ ◐	VP15TF	M	295 (230—395)	260 (195—360)	195 (130—295)	195 (130—295)
K	Gray Cast Iron	Tensile Strength ≤350MPa	● ◐	MC5020	M	590 (525—720)	560 (490—690)	490 (425—620)	490 (425—620)
			● ◐ ✲	VP15TF	M	425 (330—490)	395 (295—460)	330 (260—395)	330 (260—395)
	Ductile Cast Iron	Tensile Strength ≤800MPa	● ◐	MC5020	M	525 (460—590)	490 (425—560)	425 (360—490)	425 (360—490)
			● ◐ ✲	VP15TF	M	360 (260—460)	330 (230—425)	260 (195—395)	260 (195—395)
N	Aluminum Alloy	Content Si < 5%	● ◐ ✲	TF15	M	1970 (1310—3280)	1970 (1310—3280)	1970 (1310—3280)	1970 (1310—3280)
S	Titanium Alloy (Ti-6Al-4V,etc.)	—	● ◐	MP9120	M	165 (130—230)	165 (130—230)	165 (130—230)	165 (130—230)
			● ◐	VP15TF	M	165 (130—230)	165 (130—230)	165 (130—230)	165 (130—230)
			✲	MP9130	M	130 (100—195)	130 (100—195)	130 (100—195)	130 (100—195)
	Titanium Alloy (Ti-5Al-5V-5Mo-3Cr,etc.)	—	● ◐	MP9120	M	100 (65—130)	100 (65—130)	100 (65—130)	100 (65—130)
			● ◐	VP15TF	M	100 (65—130)	100 (65—130)	100 (65—130)	100 (65—130)
			✲	MP9130	M	100 (65—130)	100 (65—130)	100 (65—130)	100 (65—130)
	Heat Resistant Alloy	—	● ◐	MP9120	M	130 (100—195)	130 (100—195)	130 (100—195)	130 (100—195)
			● ◐	VP15TF	M	130 (100—195)	130 (100—195)	130 (100—195)	130 (100—195)
			✲	MP9130	M	100 (65—130)	100 (65—130)	100 (65—130)	100 (65—130)
H	Hardened Steel	Hardness 40—55HRC	○ ◐ ✲	VP15TF	M	295 (230—330)	280 (195—330)	230 (165—260)	230 (165—260)

Note 1) These cutting conditions should be referenced for standard shank types (last letter in designation is S) and arbor shank types. If there is chatter, insert chipping, etc. during machining, alter conditions accordingly.
Note 2) Chattering vibration is more likely under the following circumstances. Use a cut and feed per tooth that are at minimum recommended conditions or below.
- When tool overhang is long (using a long shank, screw-in type, etc.)
- Rigidity of machine, work material or attachment of work material is low
- Corner radius during pocket milling

Note 3) A type with fewer teeth is recommended when the depth of cut in the radius direction (ae) is .5 DC or more.
Note 4) Wet cutting is recommended, when focusing on the surface finish. (Tool life is shorter than for dry cutting.)
Note 5) When using under higher than recommended cutting conditions, or for long periods of time, the clamp screw may become fatigued and break during machining. Please change out the clamp screw periodically.

RECOMMENDED CUTTING CONDITIONS

■ Wet Cutting

Depth of Cut / Feed per Tooth

(inch)

Work Material		Properties	Cutting Width **ae**	Cutting Conditions	Cutter Diameter **DC**			
					ø1.000 (ø25 mm)		**ø1.125—ø3.000 (ø28 mm-ø80 mm)**	
					Depth of Cut **ap**	Feed per Tooth. **fz** (IPT)	Depth of Cut **ap**	Feed per Tooth. **fz** (IPT)
P	Mild Steel	Hardness ≤180HB	≤.25DC	● ◐ ✲	≤.433	.004—.008	≤.433	.004—.012
			.25—.5DC	● ◐ ✲	≤.433	.004—.006	≤.433	.004—.010
			.5—.75DC	● ◐ ✲	≤.315	.003—.005	≤.315	.004—.008
			DC(Slot)	● ◐ ✲	≤.197	.002—.004	≤.197	.003—.006
	Carbon Steel Alloy Steel Alloy Tool Steel	Hardness 180—280HB	≤.25DC	● ◐ ✲	≤.433	.004—.008	≤.433	.004—.012
			.25—.5DC	● ◐ ✲	≤.433	.004—.006	≤.433	.004—.010
			.5—.75DC	● ◐ ✲	≤.315	.003—.005	≤.315	.004—.008
			DC(Slot)	● ◐ ✲	≤.197	.002—.004	≤.197	.003—.006
	Carbon Steel Alloy Steel Alloy Tool Steel	Hardness 280—350HB ≤350HB (Annealing)	≤.25DC	● ◐ ✲	≤.433	.004—.006	≤.433	.004—.010
			.25—.5DC	● ◐ ✲	≤.433	.003—.005	≤.433	.004—.008
			.5—.75DC	● ◐ ✲	≤.315	.002—.004	≤.315	.004—.006
			DC(Slot)	● ◐ ✲	≤.197	.002—.004	≤.197	.003—.005
	Pre-hardened Steel	Hardness 35—45HRC	≤.25DC	● ◐ ✲	≤.433	.004—.006	≤.433	.004—.010
			.25—.5DC	● ◐ ✲	≤.433	.003—.005	≤.433	.004—.008
			.5—.75DC	● ◐ ✲	≤.315	.002—.004	≤.315	.004—.006
			DC(Slot)	● ◐ ✲	≤.197	.002—.004	≤.197	.003—.005
M	Austenitic Stainless Steel	—	≤.25DC	○ ◔	≤.433	.004—.008	≤.433	.004—.008
				✲	≤.433	.003—.006	≤.433	.003—.006
			.25—.5DC	○ ◔	≤.433	.003—.005	≤.433	.003—.006
				✲	≤.433	.002—.004	≤.433	.003—.005
			.5—.75DC	○ ◔	≤.315	.002—.004	≤.315	.003—.005
				✲	≤.315	.002—.004	≤.315	.002—.004
			DC(Slot)	○ ◔	≤.197	.002—.004	≤.197	.002—.004
				✲	≤.197	.002—.003	≤.197	.002—.003
	Duplex Stainless Steel	Hardness ≤280HB	≤.25DC	○ ◔	≤.433	.004—.008	≤.433	.004—.008
				✲	≤.433	.003—.006	≤.433	.003—.006
			.25—.5DC	○ ◔	≤.433	.003—.006	≤.433	.003—.006
				✲	≤.433	.003—.005	≤.433	.003—.005
			.5—.75DC	○ ◔	≤.315	.003—.005	≤.315	.003—.005
				✲	≤.315	.002—.004	≤.315	.002—.004
			DC(Slot)	○ ◔	≤.197	.002—.004	≤.197	.002—.004
				✲	≤.197	.002—.003	≤.197	.002—.003
	Ferritic and Martensitic Stainless Steel	—	≤.25DC	○ ◔	≤.433	.004—.008	≤.433	.004—.008
				✲	≤.433	.003—.006	≤.433	.003—.006
			.25—.5DC	○ ◔	≤.433	.003—.006	≤.433	.003—.006
				✲	≤.433	.003—.005	≤.433	.003—.005
			.5—.75DC	○ ◔	≤.315	.003—.005	≤.315	.003—.005
				✲	≤.315	.002—.004	≤.315	.002—.004
			DC(Slot)	○ ◔	≤.197	.002—.004	≤.197	.002—.004
				✲	≤.197	.002—.003	≤.197	.002—.003
	Precipitation Hardening Stainless Steel	Hardness <450HB	≤.25DC	○ ◔	≤.433	.004—.006	≤.433	.004—.006
				✲	≤.433	.003—.005	≤.433	.003—.005
			.25—.5DC	○ ◔	≤.433	.003—.005	≤.433	.003—.005
				✲	≤.433	.003—.005	≤.433	.003—.005
			.5—.75DC	○ ◔	≤.315	.002—.004	≤.315	.002—.004
				✲	≤.315	.002—.003	≤.315	.002—.003
			DC(Slot)	○ ◔	≤.197	.002—.004	≤.197	.002—.004
				✲	≤.197	.002—.003	≤.197	.002—.003

Note 1) These cutting conditions should be referenced for standard shank types (last letter in designation is S) and arbor shank types. If there is chatter, insert chipping, etc. during machining, alter conditions accordingly.

Note 2) Chattering vibration is more likely under the following circumstances. Use a cut and feed per tooth that are at minimum recommended conditions or below.
- When tool overhang is long (using a long shank, screw-in type, etc.)
- Rigidity of machine, work material or attachment of work material is low
- Corner radius during pocket milling

Note 3) A type with fewer teeth is recommended when the depth of cut in the radius direction (ae) is .5 DC or more.

Note 4) Wet cutting is recommended, when focusing on the surface finish. (Tool life is shorter than for dry cutting.)

Note 5) When using under higher than recommended cutting conditions, or for long periods of time, the clamp screw may become fatigued and break during machining. Please change out the clamp screw periodically.

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✠ : Unstable Cutting

(inch)

	Work Material	Properties	Cutting Width **ae**	Cutting Conditions	Cutter Diameter **DC**			
					ø1.000 (ø25 mm)		**ø1.125—ø3.000 (ø28 mm-ø80 mm)**	
					Depth of Cut **ap**	Feed per Tooth. **fz** (IPT)	Depth of Cut **ap**	Feed per Tooth. **fz** (IPT)
K	Gray Cast Iron	Tensile Strength ≤350MPa	≤.25DC	● ◐	≤.433	.004—.008	≤.433	.004—.012
				✠	≤.433	.003—.006	≤.433	.004—.010
			.25—.5DC	● ◐	≤.433	.003—.006	≤.433	.004—.010
				✠	≤.433	.003—.005	≤.433	.004—.008
			.5—.75DC	● ◐	≤.315	.003—.005	≤.315	.004—.008
				✠	≤.315	.002—.004	≤.315	.003—.006
			DC(Slot)	● ◐	≤.197	.002—.004	≤.197	.003—.006
				✠	≤.197	.002—.003	≤.197	.003—.005
	Ductile Cast Iron	Tensile Strength ≤800MPa	≤.25DC	● ◐	≤.433	.004—.008	≤.433	.004—.010
				✠	≤.433	.004—.006	≤.433	.004—.008
			.25—.5DC	● ◐	≤.433	.004—.006	≤.433	.004—.008
				✠	≤.433	.003—.005	≤.433	.004—.006
			.5—.75DC	● ◐	≤.315	.003—.005	≤.315	.004—.006
				✠	≤.315	.002—.004	≤.315	.003—.005
			DC(Slot)	● ◐	≤.197	.002—.004	≤.197	.003—.005
				✠	≤.197	.002—.003	≤.197	.002—.004
N	Aluminum Alloy	Content Si<5%	≤.25DC	● ◐	≤.433	.004—.010	≤.433	.004—.010
				✠	≤.433	.004—.008	≤.433	.004—.008
			.25—.5DC	● ◐	≤.433	.004—.008	≤.433	.004—.008
				✠	≤.433	.004—.006	≤.433	.004—.006
			.5—.75DC	● ◐	≤.315	.002—.006	≤.315	.003—.006
				✠	≤.315	.002—.006	≤.315	.003—.006
			DC(Slot)	● ◐	≤.197	.002—.006	≤.197	.003—.006
				✠	≤.197	.002—.006	≤.197	.003—.005
S	Titanium Alloy (Ti-6Al-4V,etc.)	—	≤.25DC	● ◐ ✠	≤.433	.003—.006	≤.433	.003—.006
			.25—.5DC	● ◐ ✠	≤.433	.003—.005	≤.433	.003—.005
			.5—.75DC	● ◐ ✠	≤.315	.002—.004	≤.315	.002—.004
			DC(Slot)	● ◐ ✠	≤.197	.002—.004	≤.197	.002—.004
	Titanium Alloy (Ti-5Al-5V-5Mo-3Cr,etc.)	—	≤.25DC	● ◐ ✠	≤.433	.003—.005	≤.433	.003—.005
			.25—.5DC	● ◐ ✠	≤.433	.003—.005	≤.433	.003—.005
			.5—.75DC	● ◐ ✠	≤.315	.002—.004	≤.315	.002—.004
			DC(Slot)	● ◐ ✠	≤.197	.002—.004	≤.197	.002—.004
	Heat Resistant Alloy	—	≤.25DC	● ◐ ✠	≤.433	.003—.005	≤.433	.003—.005
			.25—.5DC	● ◐ ✠	≤.433	.003—.005	≤.433	.003—.005
			.5—.75DC	● ◐ ✠	≤.315	.002—.004	≤.315	.002—.004
			DC(Slot)	● ◐ ✠	≤.197	.002—.004	≤.197	.002—.004
H	Hardened Steel	Hardness 40—55HRC	≤.25DC	● ◐	≤.197	.003—.006	≤.197	.003—.006
				✠	≤.197	.003—.005	≤.197	.003—.005
			.25—.5DC	● ◐	≤.157	.003—.005	≤.157	.003—.005
				✠	≤.157	.002—.004	≤.157	.002—.004
			.5—.75DC	● ◐	≤.118	.002—.004	≤.118	.002—.004
				✠	≤.118	.002—.004	≤.118	.002—.003
			DC(Slot)	● ◐	≤.079	.002—.004	≤.079	.002—.004
				✠	≤.079	.002—.004	≤.079	.002—.003

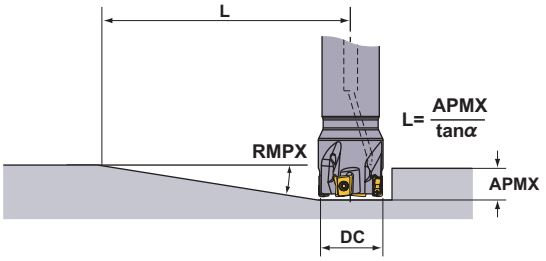
Note 1) These cutting conditions should be referenced for standard shank types (last letter in designation is S) and arbor shank types. If there is chatter, insert chipping, etc. during machining, alter conditions accordingly.
Note 2) Chattering vibration is more likely under the following circumstances. Use a cut and feed per tooth that are at minimum recommended conditions or below.
- When tool overhang is long (using a long shank, screw-in type, etc.)
- Rigidity of machine, work material or attachment of work material is low
- Corner radius during pocket milling

Note 3) A type with fewer teeth is recommended when the depth of cut in the radius direction (ae) is .5 DC or more.
Note 4) Wet cutting is recommended, when focusing on the surface finish. (Tool life is shorter than for dry cutting.)
Note 5) When using under higher than recommended cutting conditions, or for long periods of time, the clamp screw may become fatigued and break during machining. Please change out the clamp screw periodically.

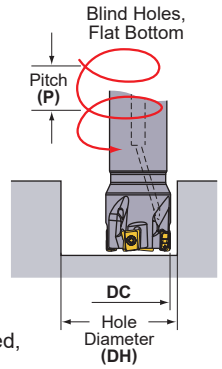
RECOMMENDED CUTTING CONDITIONS

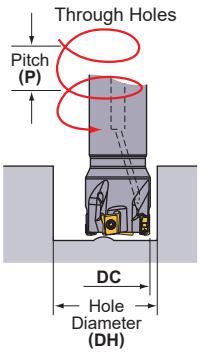
Ramping / Helical Milling

● **Ramping**



● **Helical Milling**





Refer to the table below for cutting conditions. For feed per tooth and cutting speed, follow the cutting conditions for slot milling.

(inch)

Cutting Edge Diameter **DC**	**RE**	Ramping		Helical Milling (Blind Hole, Flat Bottom)				Helical Milling (Through Hole)	
		Maximum Ramping Angle **RMPX**	Minimum * Distance **L**	Maximum Hole Diameter **DH max.**	Maximum Pitch **P max.**	Minimum Hole Diameter **DH min.**	Maximum Pitch **P max.**	Minimum Hole Diameter **DH min.**	Maximum Pitch **P max.**
1.000	.008	2.07°	12.0	1.963	.109	1.713	.081	1.483	.055
	.016	2.07°	12.0	1.947	.108	1.713	.081	1.483	.055
	.031	2.07°	12.0	1.915	.104	1.713	.081	1.483	.055
	.039	2.07°	12.0	1.900	.102	1.713	.081	1.483	.055
	.047	2.07°	12.0	1.884	.100	1.713	.081	1.483	.055
	.063	2.07°	12.0	1.852	.097	1.713	.081	1.483	.055
	.079	2.07°	12.0	1.821	.093	1.713	.081	1.483	.055
	.094	2.07°	12.0	1.789	.090	1.713	.081	1.483	.055
	.118	2.07°	12.0	1.742	.084	1.713	.081	1.483	.055
	.126	2.07°	12.0	1.726	.082	1.713	.081	1.483	.055
1.125	.008	1.73°	14.4	2.213	.103	1.963	.080	1.726	.057
	.016	1.73°	14.4	2.197	.102	1.963	.080	1.726	.057
	.031	1.73°	14.4	2.165	.099	1.963	.080	1.726	.057
	.039	1.73°	14.4	2.150	.097	1.963	.080	1.726	.057
	.047	1.73°	14.4	2.134	.096	1.963	.080	1.726	.057
	.063	1.73°	14.4	2.102	.093	1.963	.080	1.726	.057
	.079	1.73°	14.4	2.071	.090	1.963	.080	1.726	.057
	.094	1.73°	14.4	2.039	.087	1.963	.080	1.726	.057
	.118	1.73°	14.4	1.992	.082	1.963	.080	1.726	.057
	.126	1.73°	14.4	1.976	.081	1.963	.079	1.726	.057
1.250	.008	1.49°	16.7	2.463	.099	2.214	.079	1.973	.059
	.016	1.49°	16.7	2.447	.098	2.214	.079	1.973	.059
	.031	1.49°	16.7	2.415	.095	2.214	.079	1.973	.059
	.039	1.49°	16.7	2.400	.094	2.214	.079	1.973	.059
	.047	1.49°	16.7	2.384	.093	2.214	.079	1.973	.059
	.063	1.49°	16.7	2.352	.090	2.214	.079	1.973	.059
	.079	1.49°	16.7	2.321	.088	2.214	.079	1.973	.059
	.094	1.49°	16.7	2.289	.085	2.214	.079	1.973	.059
	.118	1.49°	16.7	2.242	.081	2.214	.079	1.973	.059
	.126	1.49°	16.7	2.226	.080	2.214	.079	1.973	.059
1.375	.008	1.28°	19.4	2.713	.094	2.465	.076	2.221	.059
	.016	1.28°	19.4	2.697	.093	2.465	.076	2.221	.059
	.031	1.28°	19.4	2.665	.091	2.465	.076	2.221	.059
	.039	1.28°	19.4	2.650	.089	2.465	.076	2.221	.059
	.047	1.28°	19.4	2.634	.088	2.465	.076	2.221	.059
	.063	1.28°	19.4	2.602	.086	2.465	.076	2.221	.059
	.079	1.28°	19.4	2.571	.084	2.465	.076	2.221	.059
	.094	1.28°	19.4	2.539	.082	2.465	.076	2.221	.059
	.118	1.28°	19.4	2.492	.078	2.465	.077	2.221	.059
	.126	1.28°	19.4	2.476	.077	2.465	.077	2.221	.059

Note 1) When machining a highly ductile work material with the ramping angles in the table above, chips may be elongated.
* Shows the distance until a maximum depth of cut of .433" is achieved at the maximum ramping angle L (= .433"/tan α).

(inch)

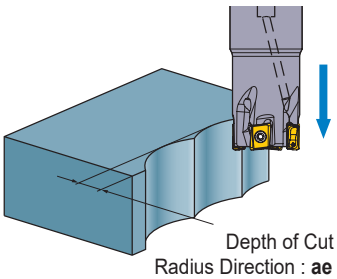
Cutting Edge Diameter **DC**	**RE**	Ramping		Helical Milling (Blind Hole, Flat Bottom)				Helical Milling (Through Hole)	
		Maximum Ramping Angle **RMPX**	Minimum * Distance **L**	Maximum Hole Diameter **DH max.**	Maximum Pitch **P max.**	Minimum Hole Diameter **DH min.**	Maximum Pitch **P max.**	Minimum Hole Diameter **DH min.**	Maximum Pitch **P max.**
1.500	.008	1.13°	22.0	2.963	.091	2.711	.075	2.469	.060
	.016	1.13°	22.0	2.947	.090	2.711	.075	2.469	.060
	.031	1.13°	22.0	2.915	.088	2.711	.075	2.469	.060
	.039	1.13°	22.0	2.900	.087	2.711	.075	2.469	.060
	.047	1.13°	22.0	2.884	.086	2.711	.075	2.469	.060
	.063	1.13°	22.0	2.852	.084	2.711	.075	2.469	.060
	.079	1.13°	22.0	2.821	.082	2.711	.075	2.469	.060
	.094	1.13°	22.0	2.789	.080	2.711	.075	2.469	.060
	.118	1.13°	22.0	2.742	.077	2.711	.075	2.469	.060
	.126	1.13°	22.0	2.726	.076	2.711	.075	2.469	.060
2.000	.008	.78°	31.8	3.963	.084	3.711	.073	3.469	.063
	.016	.78°	31.8	3.947	.083	3.711	.073	3.469	.063
	.031	.78°	31.8	3.915	.082	3.711	.073	3.469	.063
	.039	.78°	31.8	3.900	.081	3.711	.073	3.469	.063
	.047	.78°	31.8	3.884	.081	3.711	.073	3.469	.063
	.063	.78°	31.8	3.852	.079	3.711	.073	3.469	.063
	.079	.78°	31.8	3.821	.078	3.711	.073	3.469	.063
	.094	.78°	31.8	3.789	.077	3.711	.073	3.469	.063
	.118	.78°	31.8	3.742	.075	3.711	.073	3.469	.063
	.126	.78°	31.8	3.726	.074	3.711	.073	3.469	.063
2.500	.008	.59°	42.1	4.963	.080	4.711	.072	4.469	.064
	.016	.59°	42.1	4.947	.079	4.711	.072	4.469	.064
	.031	.59°	42.1	4.915	.078	4.711	.072	4.469	.064
	.039	.59°	42.1	4.900	.078	4.711	.072	4.469	.064
	.047	.59°	42.1	4.884	.077	4.711	.072	4.469	.064
	.063	.59°	42.1	4.852	.076	4.711	.072	4.469	.064
	.079	.59°	42.1	4.821	.075	4.711	.072	4.469	.064
	.094	.59°	42.1	4.789	.074	4.711	.072	4.469	.064
	.118	.59°	42.1	4.742	.073	4.711	.072	4.469	.064
	.126	.59°	42.1	4.726	.072	4.711	.072	4.469	.064
3.000	.008	.48°	51.7	5.955	.078	5.711	.071	5.469	.065
	.016	.48°	51.7	5.939	.077	5.711	.071	5.469	.065
	.031	.48°	51.7	5.907	.077	5.711	.071	5.469	.065
	.039	.48°	51.7	5.892	.076	5.711	.071	5.469	.065
	.047	.48°	51.7	5.876	.076	5.711	.071	5.469	.065
	.063	.48°	51.7	5.844	.075	5.711	.071	5.469	.065
	.079	.48°	51.7	5.813	.074	5.711	.071	5.469	.065
	.094	.48°	51.7	5.781	.073	5.711	.071	5.469	.065
	.118	.48°	51.7	5.734	.072	5.711	.071	5.469	.065
	.126	.48°	51.7	5.718	.072	5.711	.071	5.469	.065

Note 1) When machining a highly ductile work material with the ramping angles in the table above, chips may be elongated.
* Shows the distance until a maximum depth of cut of .433" is achieved at the maximum ramping angle L (= .433"/tan α).

For Plunging and Drilling

See the tables to the right for cutting conditions. Follow the cutting conditions for slot milling regarding feed per tooth and cutting speed.

● Plunging

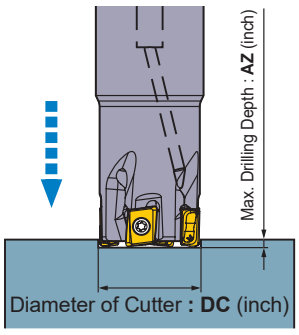


(inch)

DC	ae max.
1.000	.256
1.125	.260
1.250	.260
1.375	.260
1.500	.264
2.000	.264
2.500	.264
3.000	.264

Note 1) No step feed necessary.

● Drilling



(inch)

DC	AZ max.
1.000	.022
1.125	.022
1.250	.022
1.375	.022
1.500	.022
2.000	.022
2.500	.022
3.000	.022

Note 1) Exercise due caution as chips scatter easily.
Note 2) Use compressed air to eliminate chips (or coolant for when machining aluminum alloy).

MULTI FUNCTIONAL MILLING

<ALUMINUM ALLOY TO DIFFICULT-TO-CUT MATERIAL CUTTING>

90° KAPR

AXD4000

P Steel | M | K | N Non-ferrous Metal | S Heat Resistant Alloy | H



Fig. 1

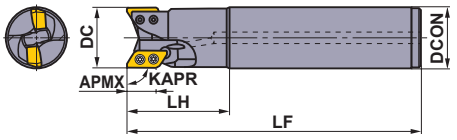
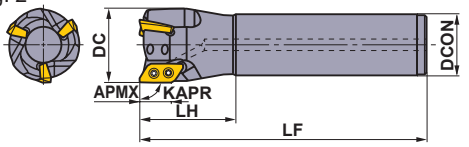


Fig. 2



■ SHANK TYPE

Right hand tool holder only.

Type	RE	Order Number	Stock R	Number of Teeth	Dimensions (inch) DC	LF	LH	DCON	APMX (inch)	Max. Spindle Speed (min^{-1})	Type (Fig.)	* Insert Screw	Wrench	Anti-seize Lubricant	Insert
A Holders	.016 I .126	**AXD4000UR162SA12SA**	●	2	1.000	6.000	2.000	.750	.610	49000	2	TS3SB	TKY08D	MK1KS	XDGX1750○○ PD○R-○○
		AXD4000UR162SA16SA	●	2	1.000	6.000	2.000	1.000	.610	49000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR162SA16LA	●	2	1.000	8.500	3.000	1.000	.610	49000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR202SA20SA	●	2	1.250	6.000	2.000	1.250	.610	48000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR202SA20LA	●	2	1.250	9.000	3.500	1.250	.610	48000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR243SA20SA	●	3	1.500	6.000	2.000	1.250	.610	41000	2	TS3SB	TKY08D	MK1KS	
		AXD4000UR243SA20LA	●	3	1.500	9.000	2.000	1.250	.610	41000	2	TS3SB	TKY08D	MK1KS	
B Holders	.157 I .197	**AXD4000UR162SA12SB**	●	2	1.000	6.000	2.000	.750	.583	49000	2	TS3SB	TKY08D	MK1KS	
		AXD4000UR162SA16SB	●	2	1.000	6.000	2.000	1.000	.583	49000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR162SA16LB	●	2	1.000	8.500	3.000	1.000	.583	49000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR202SA20SB	●	2	1.250	6.000	2.000	1.250	.583	48000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR202SA20LB	●	2	1.250	9.000	3.500	1.250	.583	48000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR243SA20SB	●	3	1.500	6.000	2.000	1.250	.583	41000	2	TS3SB	TKY08D	MK1KS	
		AXD4000UR243SA20LB	●	3	1.500	9.000	2.000	1.250	.583	41000	2	TS3SB	TKY08D	MK1KS	

* Clamp Torque (lbf-in) : TS3SB=13

Note 1) The maximum spindle speeds are set to ensure tool and insert stability.
Before operating this tool read the operation guidance on page L174.

Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

Note 3) Note for insert with a corner radius of .063" and above, as corner radius increases the LF and LH dimension decreases.



Fig. 1

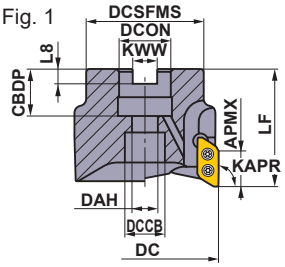
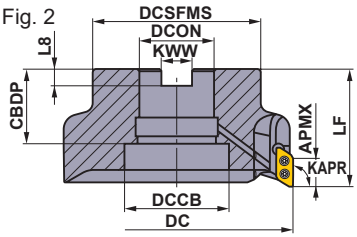
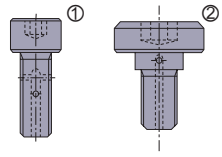


Fig. 2



Right hand tool holder only.

Cutter Diameter DC	Set Bolt	Geometry
ϕ1.5"	HSCU25014H	①
ϕ2"	HSCU37513H	
ϕ2.5", ϕ3"	HSCU50014H	
ϕ3"	HSCU62516H	
ϕ4"	HSCU75016H	
ϕ5"	MBAU75016H	②



KAPR :90°
GAMP :+14°—15°
GAMF :+21°—+26°

■ ARBOR TYPE

Type	RE	Order Number	Stock R	Number of Teeth	Dimensions (inch) DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	DCCB	WT (lbs)	APMX (inch)	Max. Spindle Speed (min^{-1})	Type (Fig.)	* Insert Screw	Wrench	Anti-seize Lubricant	Insert
A Holders	.016 — .126	AXD4000UR1502A	●	2	1.500	2.000	.500	.630	.276	1.440	.250	.156	.433	.6	.610	41000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR1503A	●	3	1.500	2.000	.500	.630	.276	1.440	.250	.156	.433	.6	.610	41000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0202A	●	2	2.000	2.000	.750	.748	.413	1.750	.313	.187	.630	.9	.610	35000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0203A	●	3	2.000	2.000	.750	.748	.413	1.750	.313	.187	.630	.9	.610	35000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0204A	●	4	2.000	2.000	.750	.748	.413	1.750	.313	.187	.630	.9	.610	35000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR2504CA	●	4	2.500	2.000	1.000	.984	.539	2.190	.375	.219	.787	1.4	.610	30000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0303CA	●	3	3.000	2.000	1.000	.945	.539	2.190	.375	.219	.787	1.9	.610	27000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0305CA	●	5	3.000	2.000	1.000	.945	.539	2.190	.375	.219	.787	1.8	.610	27000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0303DA	●	3	3.000	2.500	1.250	1.260	.669	2.880	.500	.281	1.024	2.9	.610	27000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0305DA	●	5	3.000	2.500	1.250	1.260	.669	2.880	.500	.281	1.024	2.9	.610	27000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0404EA	●	4	4.000	2.500	1.500	1.181	.787	3.810	.625	.375	1.181	5.5	.610	23000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0406EA	●	6	4.000	2.500	1.500	1.181	.787	3.810	.625	.375	1.181	5.5	.610	23000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0505EA	●	5	5.000	2.500	1.500	1.575	—	3.810	.625	.375	2.205	6.7	.610	20000	2	TS3SB	TKY08D	MK1KS	
		AXD4000UR0507EA	●	7	5.000	2.500	1.500	1.575	—	3.810	.625	.375	2.205	6.7	.610	20000	2	TS3SB	TKY08D	MK1KS	XDGX1750□□ PD□R-□□
B Holders	.157 — .197	AXD4000UR1502B	□	2	1.500	2.000	.500	.630	.276	1.440	.250	.156	.433	.6	.583	41000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR1503B	●	3	1.500	2.000	.500	.630	.276	1.440	.250	.156	.433	.6	.583	41000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0202B	□	2	2.000	2.000	.750	.748	.413	1.750	.313	.187	.630	.9	.583	35000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0203B	□	3	2.000	2.000	.750	.748	.413	1.750	.313	.187	.630	.9	.583	35000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0204B	●	4	2.000	2.000	.750	.748	.413	1.750	.313	.187	.630	.9	.583	35000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR2504CB	□	4	2.500	2.000	1.000	.984	.539	2.190	.375	.219	.787	1.4	.583	30000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0303CB	●	3	3.000	2.000	1.000	.945	.539	2.190	.375	.219	.787	1.9	.583	27000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0305CB	●	5	3.000	2.000	1.000	.945	.539	2.190	.375	.219	.787	1.8	.583	27000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0303DB	□	3	3.000	2.500	1.250	1.260	.669	2.880	.500	.281	1.024	2.9	.583	27000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0305DB	●	5	3.000	2.500	1.250	1.260	.669	2.880	.500	.281	1.024	2.9	.583	27000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0404EB	□	4	4.000	2.500	1.500	1.181	.787	3.810	.625	.375	1.181	5.5	.583	23000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0406EB	□	6	4.000	2.500	1.500	1.181	.787	3.810	.625	.375	1.181	5.5	.583	23000	1	TS3SB	TKY08D	MK1KS	
		AXD4000UR0505EB	□	5	5.000	2.500	1.500	1.575	—	3.810	.625	.375	2.205	6.7	.583	20000	2	TS3SB	TKY08D	MK1KS	
		AXD4000UR0507EB	□	7	5.000	2.500	1.500	1.575	—	3.810	.625	.375	2.205	6.7	.583	20000	2	TS3SB	TKY08D	MK1KS	

* Clamp Torque (lbf-in) : TS3SB=13

Note 1) The maximum spindle speeds are set to ensure tool and insert stability.
Before operating this tool read the operation guidance on page L174.

Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

Note 3) Note for insert with a corner radius of .063" and above, as corner radius increases the LF dimension decreases.

Note 4) The cutter body includes a set bolt for an arbor.

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001



Metric Standard

Fig. 1

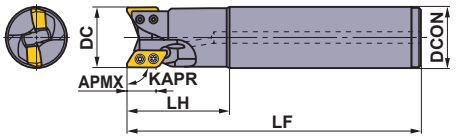
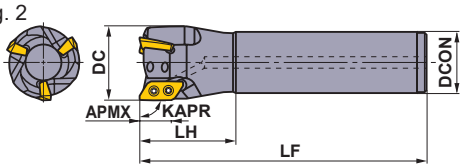


Fig. 2



■ SHANK TYPE

Right hand tool holder only.

Type	RE	Order Number	Stock	Number of Teeth	Dimensions (mm)				APMX (mm)	Max. Spindle Speed (min^{-1})	Type (Fig.)	* Clamp Screw	Wrench	Anti-seize Lubricant	Insert
			R		DC	LF	LH	DCON							
A Holders	0.4 – 3.2	**AXD4000R201SA20SA**	★	1	20	110	35	20	15.5	15000	1	TS3SBS	TKY08D	MK1KS	XDGX1750○○ PD○R-○○
		AXD4000R252SA25SA	★	2	25	125	50	25	15.5	49000	1	TS3SB	TKY08D	MK1KS	
		AXD4000R252SA25LA	★	2	25	170	80	25	15.5	49000	1	TS3SB	TKY08D	MK1KS	
		AXD4000R282SA25SA	★	2	28	125	50	25	15.5	48500	2	TS3SB	TKY08D	MK1KS	
		AXD4000R282SA25ELA	★	2	28	220	50	25	15.5	48500	2	TS3SB	TKY08D	MK1KS	
		AXD4000R322SA32SA	★	2	32	150	50	32	15.5	48000	1	TS3SB	TKY08D	MK1KS	
		AXD4000R322SA32LA	★	2	32	200	80	32	15.5	48000	1	TS3SB	TKY08D	MK1KS	
		AXD4000R352SA32SA	★	2	35	150	50	32	15.5	45000	2	TS3SB	TKY08D	MK1KS	
		AXD4000R352SA32ELA	★	2	35	250	50	32	15.5	45000	2	TS3SB	TKY08D	MK1KS	
		AXD4000R403SA32SA	★	3	40	150	50	32	15.5	41000	2	TS3SB	TKY08D	MK1KS	
		AXD4000R403SA42SA	★	3	40	170	80	42	15.5	41000	1	TS3SB	TKY08D	MK1KS	
		AXD4000R403SA32ELA	★	3	40	250	50	32	15.5	41000	2	TS3SB	TKY08D	MK1KS	
B Holders	4.0 – 5.0	**AXD4000R201SA20SB**	★	1	20	110	35	20	14.8	15000	1	TS3SBS	TKY08D	MK1KS	
		AXD4000R252SA25SB	★	2	25	125	50	25	14.8	49000	1	TS3SB	TKY08D	MK1KS	
		AXD4000R252SA25LB	★	2	25	170	80	25	14.8	49000	1	TS3SB	TKY08D	MK1KS	
		AXD4000R282SA25SB	★	2	28	125	50	25	14.8	48500	2	TS3SB	TKY08D	MK1KS	
		AXD4000R282SA25ELB	★	2	28	220	50	25	14.8	48500	2	TS3SB	TKY08D	MK1KS	
		AXD4000R322SA32SB	★	2	32	150	50	32	14.8	48000	1	TS3SB	TKY08D	MK1KS	
		AXD4000R322SA32LB	★	2	32	200	80	32	14.8	48000	1	TS3SB	TKY08D	MK1KS	
		AXD4000R352SA32SB	★	2	35	150	50	32	14.8	45000	2	TS3SB	TKY08D	MK1KS	
		AXD4000R352SA32ELB	★	2	35	250	50	32	14.8	45000	2	TS3SB	TKY08D	MK1KS	
		AXD4000R403SA32SB	★	3	40	150	50	32	14.8	41000	2	TS3SB	TKY08D	MK1KS	
		AXD4000R403SA42SB	★	3	40	170	80	42	14.8	41000	1	TS3SB	TKY08D	MK1KS	
		AXD4000R403SA32ELB	★	3	40	250	50	32	14.8	41000	2	TS3SB	TKY08D	MK1KS	

* Clamp Torque (lbf-in) : TS3SBS=13, TS3SB=13

Note 1) The maximum spindle speeds are set to ensure tool and insert stability.
Before operating the tool read the operation guidance on page L174.

Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

Note 3) Note for insert with a corner radius of .063" and above, as corner radius increases the LF and LH dimension decreases.



Fig. 1

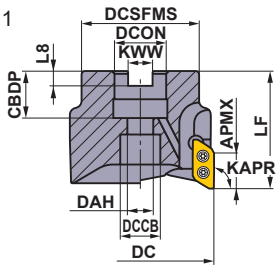
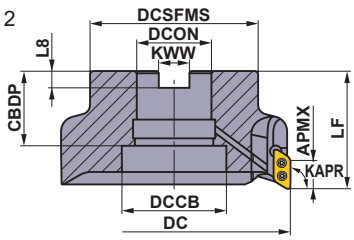


Fig. 2

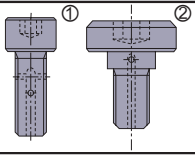


Metric Standard

For inch arbors

Right hand tool holder only.

Cutter Diameter DC	Set Bolt	Geometry
ϕ80	HSC12035H	①
ϕ100	HSC16040H	
ϕ125	MBA20040H	②



■ ARBOR TYPE

KAPR :90°
GAMP :+14°−15°
GAMF :+21°−+26°

Type	RE	Order Number	Stock R	Number of Teeth	Dimensions (mm) [inch] DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	DCCB	WT (kg)	APMX (mm)	Max. Spindle Speed (min^{-1})	Type (Fig.)	* Insert Screw	Wrench	Anti-seize Lubricant	Insert
A Holders	0.4 I 3.2	**AXD4000R08005CA**	★	5	80	50	25.4 [1.0"]	26	13	60	9.5	6	20	1.0	15.5	27000	1	TS3SB	TKY08D	MK1KS	XDGX1750□□ PD□R-□□
		AXD4000R10006DA	★	6	100	63	31.75 [1.25"]	32	17	70	12.7	8	26	2.0	15.5	23000	1	TS3SB	TKY08D	MK1KS	
		AXD4000R12507EA	★	7	125	63	38.1 [1.5"]	40	—	90	15.9	10	56	2.8	15.5	20000	2	TS3SB	TKY08D	MK1KS	
B Holders	4.0 I 5.0	**AXD4000R08005CB**	★	5	80	50	25.4 [1.0"]	26	13	60	9.5	6	20	1.0	14.8	27000	1	TS3SB	TKY08D	MK1KS	
		AXD4000R10006DB	★	6	100	63	31.75 [1.25"]	32	17	70	12.7	8	26	2.0	14.8	23000	1	TS3SB	TKY08D	MK1KS	
		AXD4000R12507EB	★	7	125	63	38.1 [1.5"]	40	—	90	15.9	10	56	2.8	14.8	20000	2	TS3SB	TKY08D	MK1KS	

∗ Clamp Torque (lbf-in) : TS3SB=13

Note 1) The maximum spindle speeds are set to ensure tool and insert stability.
Before operating this tool read the operation guidance on page L174.

Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

Note 3) Note for inserts with a corner radius of .063" and above, as corner radius increases the LF dimension decreases.

Note 4) Set bolt not included.

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001



Fig. 1

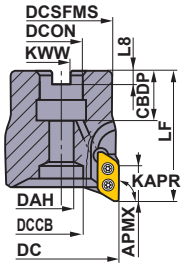


Fig. 2

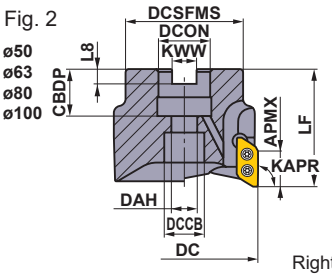
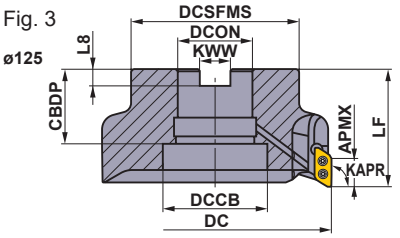
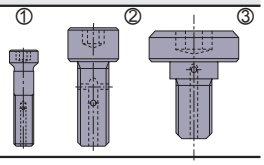


Fig. 3



Right hand tool holder only.

Cutter Diameter DC	Set Bolt	Geometry
ϕ40	HFF08043H	①
ϕ50, ϕ63	HSC10030H	②
ϕ80	HSC12035H	②
ϕ100	HSC16040H	②
ϕ125	MBA20040H	③



Metric Standard

For metric arbors

KAPR :90°
GAMP :+14°—15°
GAMF :+21°—+26°

■ ARBOR TYPE

Type	RE	Order Number	Stock R	Number of Teeth	DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	DCCB	WT (kg)	APMX (mm)	Max. Spindle Speed (min^{-1})	Type (Fig.)	Clamp Screw*	Wrench	Anti-seize Lubricant	Insert
A Holders	0.4 – 3.2	**AXD4000-040A02RA**	★	2	40	50	16	18	8.5	34	8.4	5.6	12	0.3	15.5	41000	1	TS3SB	TKY08D	MK1KS	XDGX1750□□ PD□R-□□
		AXD4000-040A03RA	★	3	40	50	16	18	8.5	34	8.4	5.6	12	0.3	15.5	41000	1	TS3SB	TKY08D	MK1KS	
		AXD4000-050A02RA	★	2	50	50	22	20	11	45	10.4	6.3	17	0.4	15.5	35000	2	TS3SB	TKY08D	MK1KS	
		AXD4000-050A04RA	★	4	50	50	22	20	11	45	10.4	6.3	17	0.4	15.5	35000	2	TS3SB	TKY08D	MK1KS	
		AXD4000-063A05RA	★	5	63	50	22	20	11	50	10.4	6.3	17	0.6	15.5	30000	2	TS3SB	TKY08D	MK1KS	
		AXD4000-080A05RA	★	5	80	50	27	23	13	60	12.4	7	20	1.0	15.5	27000	2	TS3SB	TKY08D	MK1KS	
		AXD4000-100A06RA	★	6	100	63	32	26	17	78	14.4	8	26	2.0	15.5	23000	2	TS3SB	TKY08D	MK1KS	
		AXD4000-125B07RA	★	7	125	63	40	40	—	90	16.4	9	56	2.8	15.5	20000	3	TS3SB	TKY08D	MK1KS	
B Holders	4.0 – 5.0	**AXD4000-040A02RB**	★	2	40	50	16	18	8.5	34	8.4	5.6	12	0.3	14.8	41000	1	TS3SB	TKY08D	MK1KS	
		AXD4000-040A03RB	★	3	40	50	16	18	8.5	34	8.4	5.6	12	0.3	14.8	41000	1	TS3SB	TKY08D	MK1KS	
		AXD4000-050A02RB	★	2	50	50	22	20	11	45	10.4	6.3	17	0.4	14.8	35000	2	TS3SB	TKY08D	MK1KS	
		AXD4000-050A04RB	★	4	50	50	22	20	11	45	10.4	6.3	17	0.4	14.8	35000	2	TS3SB	TKY08D	MK1KS	
		AXD4000-063A05RB	★	5	63	50	22	20	11	50	10.4	6.3	17	0.6	14.8	30000	2	TS3SB	TKY08D	MK1KS	
		AXD4000-080A05RB	★	5	80	50	27	23	13	60	12.4	7	20	1.0	14.8	27000	2	TS3SB	TKY08D	MK1KS	
		AXD4000-100A06RB	★	6	100	63	32	26	17	78	14.4	8	26	2.0	14.8	23000	2	TS3SB	TKY08D	MK1KS	
		AXD4000-125B07RB	★	7	125	63	40	40	—	90	16.4	9	56	2.8	14.8	20000	3	TS3SB	TKY08D	MK1KS	

* Clamp Torque (lbf-in) : TS3SB=13

Note 1) The maximum spindle speeds are set to ensure tool and insert stability.
Before operating the tool read the operation guidance on page L174.

Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

Note 3) Note for insert with a corner radius of .063" and above, as corner radius increases the LF dimension decreases.

Note 4) Set bolt not included.

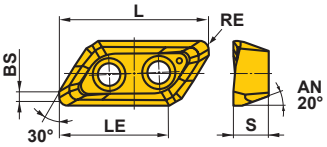
● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

INSERTS

Work Material		
	P	Steel
	N	Aluminum Alloy
	S	Heat-resistant Alloy, Titanium Alloy

Cutting Conditions (Guide):
● :Stable Cutting ◐ :General Cutting ✱ :Unstable Cutting
Honing:
F :Sharp Edge **E** :Round

Shape	Order Number	Class	Honing	Stock: Coated LC15TF	Stock: Coated MP6120	Stock: Coated MP9120	Stock: Carbide TF15	L	LE	S	BS	RE	Geometry
Low Cutting Resistance **GL** Breaker	**XDGX175004PDFR-GL**	G	F	★			●	.906	.665	.197	.067	.016	
	XDGX175008PDFR-GL	G	F	★			●	.906	.669	.197	.052	.031	
	XDGX175012PDFR-GL	G	F	★			●	.906	.669	.197	.037	.047	
	XDGX175016PDFR-GL	G	F	★			●	.866	.646	.197	.056	.063	
	XDGX175020PDFR-GL	G	F	★			●	.866	.646	.197	.041	.079	
	XDGX175024PDFR-GL	G	F	★			●	.866	.646	.197	.026	.094	
	XDGX175030PDFR-GL	G	F	★			●	.831	.634	.197	.033	.118	
	XDGX175032PDFR-GL	G	F	★			●	.831	.634	.197	.026	.126	
	XDGX175040PDFR-GL	G	F	★			●	.787	.614	.197	.033	.157	
	XDGX175050PDFR-GL	G	F	★			●	.764	.602	.197	.016	.197	
Strong Cutting Edge Wear Resistant Type **GM** Breaker	**XDGX175004PDFR-GM**	G	F				●	.906	.669	.197	.066	.016	
	XDGX175008PDFR-GM	G	F				●	.906	.669	.197	.047	.031	
	XDGX175012PDFR-GM	G	F				●	.906	.669	.197	.035	.047	
	XDGX175016PDFR-GM	G	F				●	.866	.626	.197	.054	.063	
	XDGX175020PDFR-GM	G	F				●	.866	.626	.197	.033	.079	
	XDGX175024PDFR-GM	G	F				●	.866	.626	.197	.017	.094	
	XDGX175030PDFR-GM	G	F				●	.831	.630	.197	.023	.118	
	XDGX175032PDFR-GM	G	F				●	.831	.630	.197	.015	.126	
	XDGX175040PDFR-GM	G	F				●	.787	.583	.197	.020	.157	
	XDGX175050PDFR-GM	G	F				●	.764	.591	.197	.014	.197	
Strong Cutting Edge **GM** Breaker	**XDGX175004PDER-GM**	G	E		●	●		.906	.669	.197	.066	.016	
	XDGX175008PDER-GM	G	E		●	●		.906	.669	.197	.047	.031	
	XDGX175012PDER-GM	G	E		●	●		.906	.669	.197	.035	.047	
	XDGX175016PDER-GM	G	E		●	●		.866	.626	.197	.054	.063	
	XDGX175020PDER-GM	G	E		●	●		.866	.626	.197	.033	.079	
	XDGX175024PDER-GM	G	E		●	●		.866	.626	.197	.017	.094	
	XDGX175030PDER-GM	G	E		●	●		.831	.630	.197	.023	.118	
	XDGX175032PDER-GM	G	E		●	●		.831	.630	.197	.015	.126	
	XDGX175040PDER-GM	G	E		●	●		.787	.583	.197	.020	.157	
	XDGX175050PDER-GM	G	E		●	●		.764	.591	.197	.014	.197	



The insert nose R differs from radius form which is remains on work material after machining due to the effects of the axial rake angle at the time of setting.
GM breaker is recommended if stress the dimensional precision of the workpiece shape.

HOLDER AND INSERT CORNER RADIUS COMBINATION

Holder	**A** Holder	**B** Holder
	(Inch) AXD4000UR○○○○○○A AXD4000UR○○○○○○○○A (Metric) AXD4000–○○○○○○○A AXD4000R○○○○○○○○A	(Inch) AXD4000UR○○○○○B AXD4000UR○○○○○○○○B (Metric) AXD4000–○○○○○○○B AXD4000R○○○○○○○○B

Insert Corner Radius (**RE**)	.016"	.031"	.047"	.063"	.079"	.094"	.118"	.126"	.157"	.197"
	XDGX 175004PD○R-○○	XDGX 175008PD○R-○○	XDGX 175012PD○R-○○	XDGX 175016PD○R-○○	XDGX 175020PD○R-○○	XDGX 175024PD○R-○○	XDGX 175030PD○R-○○	XDGX 175032PD○R-○○	XDGX 175040PD○R-○○	XDGX 175050PD○R-○○

Note 1) Other combinations of holder and insert corner R are not acceptable.

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

RECOMMENDED CUTTING CONDITIONS

■Cutting Speed

(inch)

Work Material			Grade	Breaker	vc (SFM)
P	Mild Steel	≤180HB	MP6120	GM	655 (490—720)
	Carbon Steel Alloy Steel	180—280HB	MP6120	GM	655 (490—720)
N	Aluminum Alloy	Si<5%	TF15 LC15TF	GL	3280 (655—9840)
			TF15 MP9120	GM	3280 (655—9840)
		5%≤Si≤10% Si>10%	MP9120	GM	3280 (655—9840)
S	Titanium Alloy	—	MP9120	GM	130 (100—195)

■Feed per Tooth

(inch)

Work Material			Breaker	ae	ap	Feed per Tooth (IPT) Cutting Edge Diameter DC					
						—	1.000"	1.250"	1.500"	2.000"—3.000"	4.000",5.000"
						20 mm	25,28 mm	32,35 mm	40 mm	50—80 mm	100,125 mm
P	Mild Steel	≤180HB	GM	≤ .25 DC	≤ .197	≤ .002	≤ .006	≤ .006	≤ .007	≤ .007	≤ .007
					≤ .394	≤ .002	≤ .005	≤ .005	≤ .006	≤ .006	≤ .006
					≤ .571	≤ .002	≤ .004	≤ .004	≤ .005	≤ .005	—
				≤ .5 DC	≤ .197	≤ .002	≤ .005	≤ .006	≤ .006	≤ .007	≤ .007
					≤ .394	—	≤ .004	≤ .005	≤ .005	≤ .006	≤ .006
					≤ .571	—	≤ .003	≤ .004	≤ .004	≤ .005	—
				≤ .75 DC	≤ .197	≤ .002	≤ .005	≤ .005	≤ .006	≤ .006	≤ .006
					≤ .394	—	≤ .004	≤ .004	≤ .005	≤ .005	≤ .005
				DC (Slot)	≤ .197	≤ .002	≤ .004	≤ .005	≤ .005	≤ .006	≤ .006
	Carbon Steel Alloy Steel	180—280HB	GM	≤ .25 DC	≤ .197	≤ .002	≤ .006	≤ .006	≤ .007	≤ .007	≤ .007
					≤ .394	≤ .002	≤ .005	≤ .005	≤ .006	≤ .006	≤ .006
					≤ .571	≤ .002	≤ .004	≤ .004	≤ .005	≤ .005	—
				≤ .5 DC	≤ .197	≤ .002	≤ .005	≤ .006	≤ .006	≤ .007	≤ .007
					≤ .394	—	≤ .004	≤ .005	≤ .005	≤ .006	≤ .006
					≤ .571	—	≤ .003	≤ .004	≤ .004	≤ .005	—
				≤ .75 DC	≤ .197	≤ .002	≤ .005	≤ .005	≤ .006	≤ .006	≤ .006
					≤ .394	—	≤ .004	≤ .004	≤ .005	≤ .005	≤ .005
				DC (Slot)	≤ .197	≤ .002	≤ .004	≤ .005	≤ .005	≤ .006	≤ .006

Note 1) The above cutting conditions are determined based on high work and machine rigidity, where no vibration occurred. If vibrations occur make adjustments according to the machining conditions.

Note 2) Note, vibrations may occur in the following conditions.
- When using long tool overhang.
- When pocket machining corner radii.
- When the work has poor clamping rigidity or when the machine rigidity or work rigidity is low, vibrations can occur easily, if so, reduce cutting conditions such as width and depth of cut and feed per tooth.

(inch)

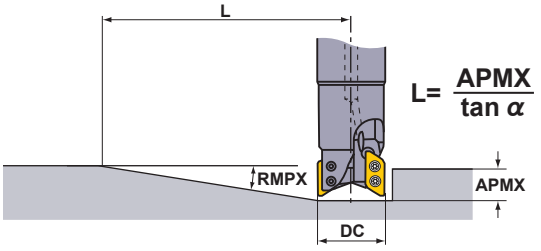
Work Material			Breaker	ae	ap	Feed per Tooth (IPT)					
						Cutting Edge Diameter **DC**					
							1.000"	1.250"	1.500"	2.000"—3.000"	4.000",5.000"
						20 mm	25,28 mm	32,35 mm	40 mm	50—80 mm	100,125 mm
N	Aluminum Alloy	Si<5%	GL	≤ .25 DC	≤ .197	≤ .002	≤ .010	≤ .010	≤ .010	≤ .010	≤ .010
					≤ .394	≤ .002	≤ .008	≤ .008	≤ .008	≤ .008	≤ .008
					≤ .571	≤ .002	≤ .006	≤ .006	≤ .006	≤ .006	≤ .006
				≤ .5 DC	≤ .197	≤ .002	≤ .010	≤ .010	≤ .010	≤ .010	≤ .010
					≤ .394	—	≤ .008	≤ .008	≤ .008	≤ .008	≤ .008
					≤ .571	—	≤ .006	≤ .006	≤ .006	≤ .006	≤ .006
				≤ .75 DC	≤ .197	≤ .002	≤ .010	≤ .010	≤ .010	≤ .010	≤ .010
					≤ .394	—	≤ .008	≤ .008	≤ .008	≤ .008	≤ .008
					≤ .571	—	≤ .006	≤ .006	≤ .006	≤ .006	≤ .006
				DC (Slot)	≤ .197	≤ .002	≤ .010	≤ .010	≤ .010	≤ .010	≤ .010
		Si<5%	GM	≤ .25 DC	≤ .197	≤ .002	≤ .014	≤ .014	≤ .016	≤ .016	≤ .016
					≤ .394	≤ .002	≤ .012	≤ .012	≤ .014	≤ .014	≤ .014
					≤ .571	≤ .002	≤ .010	≤ .010	≤ .012	≤ .012	≤ .012
				≤.5 DC	≤ .197	≤ .002	≤ .014	≤ .014	≤ .014	≤ .016	≤ .016
					≤ .394	—	≤ .012	≤ .012	≤ .012	≤ .014	≤ .014
					≤ .571	—	≤ .008	≤ .010	≤ .010	≤ .012	≤ .012
				≤ .75 DC	≤ .197	≤ .002	≤ .012	≤ .012	≤ .012	≤ .014	≤ .014
					≤ .394	—	≤ .010	≤ .010	≤ .010	≤ .012	≤ .012
					≤ .571	—	≤ .008	≤ .008	≤ .008	≤ .010	≤ .010
				DC (Slot)	≤ .197	≤ .002	≤ .010	≤ .010	≤ .012	≤ .014	≤ .014
		5%≤Si≤10% Si>10%	GM	≤ .25 DC	≤ .197	≤ .002	≤ .014	≤ .014	≤ .016	≤ .016	≤ .016
					≤ .394	≤ .002	≤ .012	≤ .012	≤ .014	≤ .014	≤ .014
					≤ .571	≤ .002	≤ .010	≤ .010	≤ .012	≤ .012	≤ .012
				≤ .5 DC	≤ .197	≤ .002	≤ .014	≤ .014	≤ .014	≤ .016	≤ .016
					≤ .394	—	≤ .012	≤ .012	≤ .012	≤ .014	≤ .014
					≤ .571	—	≤ .008	≤ .010	≤ .010	≤ .012	≤ .012
				≤ .75 DC	≤ .197	≤ .002	≤ .012	≤ .012	≤ .012	≤ .014	≤ .014
					≤ .394	—	≤ .010	≤ .010	≤ .010	≤ .012	≤ .012
					≤ .571	—	≤ .008	≤ .008	≤ .008	≤ .010	≤ .010
				DC (Slot)	≤ .197	≤ .002	≤ .010	≤ .010	≤ .012	≤ .014	≤ .014
S	Titanium Alloy	—	GM	≤ .25 DC	≤ .197	≤ .002	≤ .004	≤ .004	≤ .004	≤ .004	≤ .004
					≤ .394	≤ .002	≤ .004	≤ .004	≤ .004	≤ .004	≤ .004
					≤ .571	≤ .002	≤ .004	≤ .004	≤ .004	≤ .004	≤ .004
				≤ .5 DC	≤ .197	≤ .002	≤ .003	≤ .004	≤ .004	≤ .004	≤ .004
					≤ .394	—	≤ .003	≤ .004	≤ .004	≤ .004	≤ .004
					≤ .571	—	≤ .003	≤ .004	≤ .004	≤ .004	≤ .004
				≤ .75 DC	≤ .197	≤ .002	≤ .002	≤ .003	≤ .004	≤ .004	≤ .004
					≤ .394	—	≤ .002	≤ .003	≤ .004	≤ .004	≤ .004
					≤ .571	—	≤ .002	≤ .003	≤ .004	≤ .004	≤ .004
				DC (Slot)	≤ .197	≤ .002	≤ .002	≤ .002	≤ .002	≤ .002	≤ .002

Note 1) The above cutting conditions are determined based on high work and machine rigidity, where no vibration occurred.
If vibrations occur make adjustments according to the machining conditions.

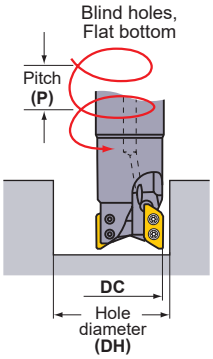
Note 2) Note, vibrations may occur in the following conditions.
- When using long tool overhang.
- When pocket machining corner radii.
- When the work has poor clamping rigidity or when the machine rigidity or work rigidity is low, vibrations can occur easily, if so, reduce cutting conditions such as width and depth of cut and feed per tooth.

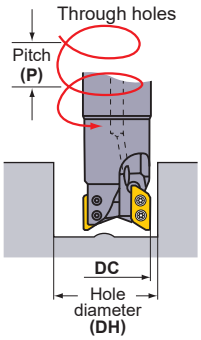
■ Ramping / Helical Milling

● Ramping



● Helical Milling





Holder Type	Cutting Edge Diameter **DC** (inch)	Insert Corner Radius **RE** (inch)	Ramping		Helical Milling (Blind Hole, Flat Bottom)				Helical Milling (Through Hole)	
			Maximum Ramping Angle **RMPX**	Minimum Distance **L** *1 (inch)	Maximum Hole Diameter **DH max.** (inch)	Maximum Pitch **P max.** (inch)	Minimum Hole Diameter **DH min.** (inch)	Maximum Pitch **P max.** (inch)	Minimum Hole Diameter **DH min.** (inch)	Maximum Pitch **P max.** (inch)
A	.787 [20 mm]	.016—.047	20.7°	1.65	1.524 *2	.551	1.421	.551	.866	.079
		.063—.094	19.9°	1.69	1.429 *3	.512	1.362	.512	.866	.079
		.118—.126	18.9°	1.81	1.319 *4	.472	1.311	.472	.866	.039
	1.000	.016—.047	22.6°	1.50	1.949 *2	.551	1.832	.551	1.267	.315
		.063—.094	22.1°	1.54	1.854 *3	.512	1.766	.512	1.267	.315
		.118—.126	20.7°	1.65	1.728 *4	.472	1.707	.472	1.267	.315
	1.102 [28 mm]	.016—.047	19.2°	1.77	2.154 *2	.551	2.047	.551	1.417	.315
		.063—.094	18.5°	1.85	2.059 *3	.512	1.984	.512	1.417	.315
		.118—.126	16.7°	2.05	1.949 *4	.472	1.925	.472	1.417	.276
	1.250	.016—.047	15.6°	2.20	2.449 *2	.551	2.331	.551	1.762	.433
		.063—.094	14.9°	2.32	2.354 *3	.512	2.264	.512	1.762	.394
		.118—.126	14.0°	2.48	2.244 *4	.472	2.203	.472	1.762	.394
	1.378 [35 mm]	.016—.047	13.4°	2.60	2.705 *2	.551	2.591	.551	1.969	.433
		.063—.094	12.7°	2.71	2.610 *3	.512	2.531	.512	1.969	.394
		.118—.126	11.8°	2.95	2.500 *4	.472	2.472	.472	1.969	.354
	1.500	.016—.047	13.0°	2.68	2.933 *2	.551	2.827	.551	2.262	.512
		.063—.094	12.3°	2.83	2.839 *3	.512	2.760	.512	2.262	.512
		.118—.126	11.6°	2.99	2.728 *4	.472	2.701	.472	2.262	.472
	2.000	.016—.047	8.7°	4.02	3.933 *2	.551	3.827	.551	3.258	.551
		.063—.094	8.2°	4.25	3.839 *3	.512	3.757	.512	3.257	.512
		.118—.126	7.6°	4.61	3.728 *4	.472	3.696	.472	3.257	.472
	2.500	.016—.047	6.6°	5.28	4.933 *2	.551	4.824	.551	4.259	.551
		.063—.094	6.1°	5.75	4.839 *3	.512	4.756	.512	4.259	.512
		.118—.126	5.7°	6.14	4.728 *4	.472	4.695	.472	4.258	.472
	3.000	.016—.047	5.3°	6.61	5.933 *2	.551	5.824	.551	5.260	.551
		.063—.094	4.9°	7.13	5.839 *3	.512	5.756	.512	5.260	.512
		.118—.126	4.5°	7.76	5.728 *4	.472	5.746	.472	5.259	.472
	4.000	.016—.047	3.8°	9.21	7.933 *2	.551	7.824	.551	7.261	.551
		.063—.094	3.5°	10.00	7.839 *3	.512	7.755	.512	7.261	.512
		.118—.126	3.2°	10.94	7.728 *4	.472	7.694	.472	7.260	.472
	5.000	.016—.047	2.9°	12.05	9.933 *2	.551	9.823	.551	9.261	.551
		.063—.094	2.7°	12.95	9.839 *3	.512	9.755	.512	9.261	.512
		.118—.126	2.5°	14.02	9.728 *4	.472	9.693	.472	9.260	.472

Note 1) Ramping, helical, and drilling are not recommended for machining of steel and titanium alloys.

Holder Type	Cutting Edge Diameter **DC** (inch)	Insert Corner Radius **RE** (inch)	Ramping		Helical Milling (Blind Hole, Flat Bottom)				Helical Milling (Through Hole)	
			Maximum Ramping Angle **RMPX**	Minimum Distance **L** ✶1 (inch)	Maximum Hole Diameter **DH max.** (inch)	Maximum Pitch **P max.** (inch)	Minimum Hole Diameter **DH min.** (inch)	Maximum Pitch **P max.** (inch)	Minimum Hole Diameter **DH min.** (inch)	Maximum Pitch **P max.** (inch)
B	.787	.157	17.5°	1.850	1.240	.394	1.252	.394	.866	.039
	[20 mm]	.197	16.6°	2.795	1.161	.236	1.224	.276	.866	.039
	1.000	.157	17.9°	1.81	1.665	.394	1.635	.394	1.269	.236
		.197	14.7°	2.24	1.587	.354	1.596	.354	1.269	.197
	1.102	.157	14.1°	2.323	1.870	.394	1.858	.394	1.417	.236
	[28 mm]	.197	13°	2.559	1.791	.354	1.827	.354	1.417	.197
	1.250	.157	12.9°	2.56	2.165	.394	2.130	.394	1.762	.354
		.197	12.2°	2.72	2.087	.354	2.090	.354	1.762	.315
	1.378	.157	10.8°	3.071	2.421	.394	2.402	.394	1.969	.315
	[35mm]	.197	10.2°	3.268	2.343	.354	2.370	.354	1.969	.315
	1.500	.157	10.7°	3.11	2.650	.394	2.622	.394	2.261	.394
		.197	10.1°	3.31	2.571	.354	2.583	.354	2.261	.354
	2.000	.157	6.9°	4.84	3.650	.394	3.621	.394	3.257	.394
		.197	6.5°	5.12	3.571	.354	3.580	.354	3.256	.354
	2.500	.157	5.1°	6.54	4.650	.394	4.600	.394	4.258	.394
		.197	4.8°	6.97	4.571	.354	4.578	.354	4.257	.354
	3.000	.157	4.1°	8.15	5.650	.394	5.619	.394	5.258	.394
		.197	3.8°	8.78	5.571	.354	5.578	.354	5.258	.354
	4.000	.157	2.9°	11.54	7.650	.394	7.618	.394	7.259	.394
		.197	2.7°	12.36	7.571	.354	7.577	.354	7.258	.354
	5.000	.157	2.2°	15.20	9.650	.394	9.618	.394	9.260	.394
		.197	2.1°	15.91	9.571	.354	9.577	.354	9.259	.354

The recommended ramping or helical milling feed is .002 IPT or less.

✶1 Using the maximum ramping angle, the distance to reach the maximum depth of cut is as follows:
L=(maximum depth of cut APMX / tan α). Maximum depth of cut A type is .610", B type is .583".

✶2 The maximum diameter when machining a blind hole with a flat face using a corner radius of .047".

✶3 The maximum diameter when machining a blind hole with a flat face using a corner radius of .094".

✶4 The maximum diameter when machining a blind hole with a flat face using a corner radius of .126".
For other corner radius, use to following formula. {(cutting edge diameter DC) - (corner radius RE) - β} ×2

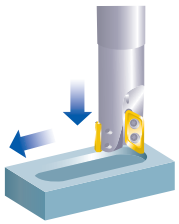
DC	β
.787"—1.378"	.010"
1.5"—5.0"	.018"

■ Max. Drilling Depth

Holder Type	Insert Corner Radius **RE** (inch)	Max.Drilling Depth (inch)			
		Cutting Edge Diameter **DC** **ϕ.787"**	Cutting Edge Diameter **DC** **ϕ1.000"**	Cutting Edge Diameter **DC** **ϕ1.250"**	Cutting Edge Diameter **DC** **ϕ1.500"—ϕ5.000"**
A	.016—.047	.209	.205	.205	.209
	.063—.094	.189	.181	.185	.189
	.118—.126	.169	.146	.165	.173
B	.157	.146	.106	.142	.150
	.197	.134	.091	.130	.138

The recommended drilling feed is .002 IPT or less.

AXD4000 can be effectively used for pocket machining without the need for a prepared hole.



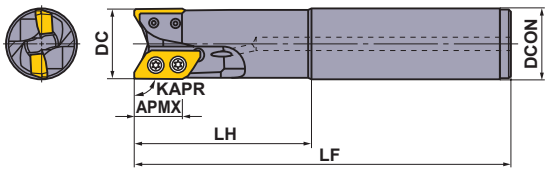
MULTI FUNCTIONAL MILLING
<CUTTING FOR ALUMINUM ALLOY>

90° KAPR

AXD7000

P Steel | M | K | N Non-ferrous Metal | S Heat Resistant Alloy | H





SHANK TYPE

Right hand tool holder only.

Type	RE	Order Number	Stock R	Number of Teeth	Dimensions (inch) DC	LF	LH	DCON	APMX (inch)	Max. Spindle Speed (min^{-1})	* Insert Screw	Wrench	Anti-seize Lubricant	Insert
A Holders	.031 – .126	AXD7000UR202SA20SA	●	2	1.250	6.000	2.000	1.250	.827	41000	TS4SB	TKY15D	MK1KS	XDGX2270○○ PDFR-GL
A Holders	.031 – .126	AXD7000UR242SA24SA	●	2	1.500	7.000	3.000	1.500	.827	36000	TS4SBL	TKY15D	MK1KS	XDGX2270○○ PDFR-GL
B Holders	.157 – .197	AXD7000UR202SA20SB	●	2	1.250	6.000	2.000	1.250	.803	41000	TS4SB	TKY15D	MK1KS	XDGX2270○○ PDFR-GL
B Holders	.157 – .197	AXD7000UR242SA24SB	●	2	1.500	7.000	3.000	1.500	.803	36000	TS4SBL	TKY15D	MK1KS	XDGX2270○○ PDFR-GL

* Clamp Torque (lbf-in) : TS4SB=31, TS4SBL=31

Note 1) The maximum spindle speeds are set to ensure tool and insert stability.
Before operating the tool read the operation guidance on page L174.

Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

Note 3) Note for insert with a corner radius of .118" and above, as corner radius increases the LF and LH dimension decreases.



KAPR :90°
GAMP :+11°
GAMF :+26°–+27°

Fig.1

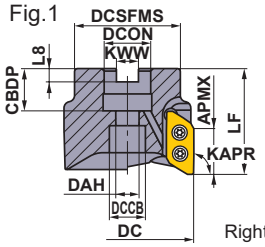
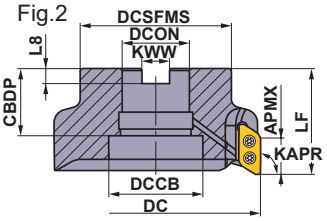
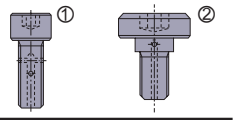


Fig.2



Right hand tool holder only.

DC	Coolant thru Set Bolt	Geometry
ϕ2"	HSCU37513H	①
ϕ3"	HSCU62516H	①
ϕ4"	HSCU75016H	②
ϕ5"	MBAU75016H	②



ARBOR TYPE

Type	RE	Order Number	Stock R	Number of Teeth	Dimensions (inch) DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	DCCB	WT (lbs)	APMX (inch)	Max. Spindle Speed (min^{-1})	Type (Fig.)	* Insert Screw	Wrench	Anti-seize Lubricant	Insert
A Holders	.031 – .126	AXD7000UR0203A	●	3	2.000	2.000	.750	.748	.415	1.875	.313	.187	.600	.9	.827	30000	1	TS4SBL	TKY15D	MK1KS	XDGX2270○○ PDFR-GL
A Holders	.031 – .126	AXD7000UR0303DA	●	3	3.000	2.500	1.250	1.260	.669	2.750	.500	.281	1.024	2.6	.827	23000	1	TS4SBL	TKY15D	MK1KS	XDGX2270○○ PDFR-GL
A Holders	.031 – .126	AXD7000UR0405EA	●	5	4.000	2.500	1.500	1.181	.787	3.810	.625	.375	1.181	5.4	.827	19000	1	TS4SBL	TKY15D	MK1KS	XDGX2270○○ PDFR-GL
A Holders	.031 – .126	AXD7000UR0506EA	●	6	5.000	2.500	1.500	1.575	2.205	3.810	.625	.375	1.181	6.6	.827	16000	2	TS4SBL	TKY15D	MK1KS	XDGX2270○○ PDFR-GL
B Holders	.157 – .197	AXD7000UR0203B	●	3	2.000	2.000	.750	.748	.415	1.875	.313	.187	.600	.9	.803	30000	1	TS4SBL	TKY15D	MK1KS	XDGX2270○○ PDFR-GL
B Holders	.157 – .197	AXD7000UR0303DB	●	3	3.000	2.500	1.250	1.260	.669	2.750	.500	.281	1.024	2.6	.803	23000	1	TS4SBL	TKY15D	MK1KS	XDGX2270○○ PDFR-GL
B Holders	.157 – .197	AXD7000UR0405EB	□	5	4.000	2.500	1.500	1.181	.787	3.810	.625	.375	1.181	5.4	.803	19000	1	TS4SBL	TKY15D	MK1KS	XDGX2270○○ PDFR-GL
B Holders	.157 – .197	AXD7000UR0506EB	□	6	5.000	2.500	1.500	1.575	2.205	3.810	.625	.375	1.181	6.6	.803	20000	2	TS4SBL	TKY15D	MK1KS	XDGX2270○○ PDFR-GL

* Clamp Torque (lbf-in) : TS4SBL=31

Note 1) The maximum spindle speeds are set to ensure tool and insert stability.
Before operating the tool read the operation guidance on page L174.

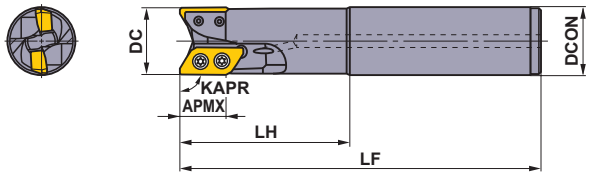
Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

Note 3) Note for insert with a corner radius of .118" and above, as corner radius increases the LF dimension decreases.

Note 4) The cutter body includes a set bolt for an arbor.

● : USA Stock ★ : Stocked in Japan □ : Made to Order





Metric Standard

■ SHANK TYPE

Right hand tool holder only.

Type	RE	Order Number	Stock R	Number of Teeth	Dimensions (mm) DC	LF	LH	DCON	APMX (mm)	Max. Spindle Speed (min^{-1})	* Insert Screw	Wrench	Anti-seize Lubricant	Insert
A Holders	0.8 I 3.2	**AXD7000R322SA32SA**	★	2	32	170	80	32	21	41000	TS4SB	TKY15D	MK1KS	XDGX2270□□ PDFR-GL
		AXD7000R402SA42SA	★	2	40	170	80	42	21	36000	TS4SBL	TKY15D	MK1KS	
B Holders	4.0 I 5.0	**AXD7000R322SA32SB**	★	2	32	170	80	32	20.4	41000	TS4SB	TKY15D	MK1KS	
		AXD7000R402SA42SB	★	2	40	170	80	42	20.4	36000	TS4SBL	TKY15D	MK1KS	

★ Clamp Torque (lbf-in) : TS4SB=31, TS4SBL=31

Note 1) The maximum spindle speeds are set to ensure tool and insert stability.
Before operating the tool read the operation guidance on page L174.

Note 2) When using the tool at high spindle speeds, ensure that the tool and chuck are correctly balanced.

Note 3) Note for inserts with a corner radius of .118" and above, as corner radius increases the OAL and LH dimensions decreases.



Fig.1

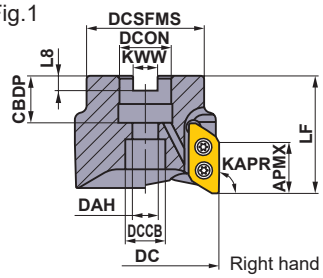
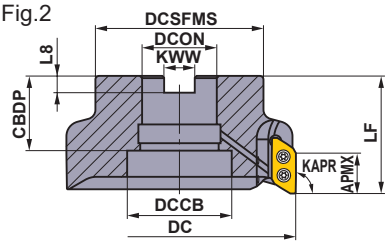
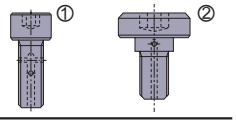


Fig.2



Right hand tool holder only.

DC	Set Bolt	Geometry
ϕ80	HSC12035H	①
ϕ100	HSC16040H	
ϕ125	MBA20040H	②



Metric Standard

For inch arbors

KAPR :90°
GAMP :+11°
GAMF :+26°−+29°

■ ARBOR TYPE

Type	RE	Order Number	Stock R	Number of Teeth	Dimensions (mm) [inch] DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	DCCB	WT (kg)	APMX (mm)	Max. Spindle Speed (min^{-1})	Type (Fig.)	* Insert Screw	Wrench	Anti-seize Lubricant	Insert
A Holders	0.8 I 3.2	**AXD7000R08004CA**	★	4	80	63	25.4 [1.0"]	26	13	63	9.5	6	20	1.2	21	23000	1	TS4SBL	TKY15D	MK1KS	XDGX2270□□ PDFR-GL
		AXD7000R10005DA	★	5	100	63	31.75 [1.25"]	32	17	70	12.7	8	26	1.8	21	19000	1	TS4SBL	TKY15D	MK1KS	
		AXD7000R12506EA	★	6	125	63	38.1 [1.5"]	40	–	90	15.9	10	56	2.7	21	16000	2	TS4SBL	TKY15D	MK1KS	
B Holders	4.0 I 5.0	**AXD7000R08004CB**	★	4	80	63	25.4 [1.0"]	26	13	63	9.5	6	20	1.2	20.4	23000	1	TS4SBL	TKY15D	MK1KS	
		AXD7000R10005DB	★	5	100	63	31.75 [1.25"]	32	17	70	12.7	8	26	1.8	20.4	19000	1	TS4SBL	TKY15D	MK1KS	
		AXD7000R12506EB	★	6	125	63	38.1 [1.5"]	40	–	90	15.9	10	56	2.7	20.4	16000	2	TS4SBL	TKY15D	MK1KS	

★ Clamp Torque (lbf-in) : TS4SBL=31

Note 1) The maximum spindle speeds are set to ensure tool and insert stability.
Before operating the tool read the operation guidance on page L174.

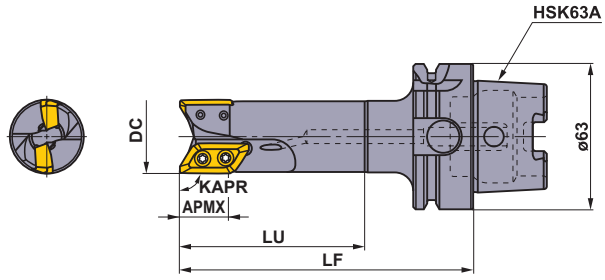
Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

Note 3) Note for inserts with a corner radius of .118" and above, as corner radius increases the LF dimension decreases.

Note 4) Set bolt not included.

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001





Metric Standard

■ HSK63A SHANK TYPE (A Holders)

Right hand tool holder only.

Type	RE	Order Number	Stock R	Number of Teeth	Dimensions (mm) DC	LF	LU	APMX (mm)	Max. Spindle Speed (min^{-1})	Insert Screw *	Wrench	Anti-seize Lubricant	Insert
A Holders	0.8 | 3.2	**AXD7000R03202A-H63A**	★	2	32	127	80	21	41000	TS4SB	TKY15D	MK1KS	XDGX2270□□ PDFR-GL
		AXD7000R04002A-H63A	★	2	40	132	85	21	36000	TS4SBL	TKY15D	MK1KS	
		AXD7000R05003A-H63A	★	3	50	137	90	21	30000	TS4SBL	TKY15D	MK1KS	

* Clamp Torque (lbf-in) : TS4SB=31, TS4SBL=31

Note 1) The maximum spindle speeds are set to ensure tool and insert stability.
Before operating the tool read the operation guidance on page L174.

Note 2) Note for inserts with a corner radius of .118" and above, as corner radius increases the LF and LU dimensions decreases.

Note 3) There is no data chip hole.



Fig.1

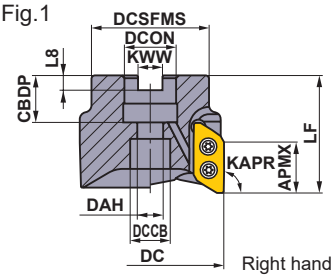
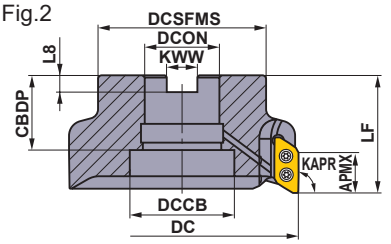
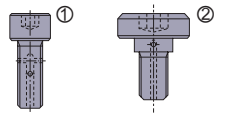


Fig.2



Right hand tool holder only.

DC	Set Bolt	Geometry
ϕ50, ϕ63	HSC10030H	①
ϕ80	HSC12035H	
ϕ100	HSC16040H	
ϕ125	MBA20040H	②



Metric Standard

For metric arbors

KAPR :90°
GAMP :+11°
GAMF :+26°—+29°

■ ARBOR TYPE

Type	RE	Order Number	Stock R	Number of Teeth	Dimensions (mm) DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	DCCB	WT (kg)	APMX (mm)	Max. Spindle Speed (min^{-1})	Type (Fig.)	Insert Screw *	Wrench	Anti-seize Lubricant	Insert
A Holders	0.8 | 3.2	**AXD7000-050A03RA**	★	3	50	50	22	20	11	45	10.4	6.3	17	0.4	21	30000	1	TS4SBL	TKY15D	MK1KS	XDGX2270□□ PDFR-GL
		AXD7000-063A03RA	★	3	63	50	22	20	11	50	10.4	6.3	17	0.5	21	25000	1	TS4SBL	TKY15D	MK1KS	
		AXD7000-080A04RA	★	4	80	63	27	23	13	63	12.4	7	20	1.2	21	23000	1	TS4SBL	TKY15D	MK1KS	
		AXD7000-100A05RA	★	5	100	63	32	26	17	70	14.4	8	26	1.8	21	19000	1	TS4SBL	TKY15D	MK1KS	
		AXD7000-125B06RA	★	6	125	63	40	40	—	90	16.4	9	56	2.7	21	16000	2	TS4SBL	TKY15D	MK1KS	
B Holders	4.0 | 5.0	**AXD7000-050A03RB**	★	3	50	50	22	20	11	45	10.4	6.3	17	0.4	20.4	30000	1	TS4SBL	TKY15D	MK1KS	
		AXD7000-063A03RB	★	3	63	50	22	20	11	50	10.4	6.3	17	0.5	20.4	25000	1	TS4SBL	TKY15D	MK1KS	
		AXD7000-080A04RB	★	4	80	63	27	23	13	63	12.4	7	20	1.2	20.4	23000	1	TS4SBL	TKY15D	MK1KS	
		AXD7000-100A05RB	★	5	100	63	32	26	17	70	14.4	8	26	1.8	20.4	19000	1	TS4SBL	TKY15D	MK1KS	
		AXD7000-125B06RB	★	6	125	63	40	40	—	90	16.4	9	56	2.7	20.4	16000	2	TS4SBL	TKY15D	MK1KS	

* Clamp Torque (lbf-in) : TS4SBL=31

Note 1) The maximum spindle speeds are set to ensure tool and insert stability.
Before operating the tool read the operation guidance on page L174.

Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

Note 3) Note for inserts with a corner radius of .118" and above, as corner radius increases the LF dimension decreases.

Note 4) Set bolt not included.

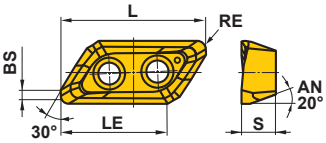
● : USA Stock ★ : Stocked in Japan □ : Made to Order
<10 inserts in one case>

INSERTS

Work Material			LC15TF	MP6120	MP9120	TF15
	P	Steel	✱	●	✱	◕
	N	Aluminum Alloy			✱	
	S	Titanium Alloy			●	

Cutting Conditions (Guide) :
● : Stable Cutting ◕ : General Cutting ✱ : Unstable Cutting

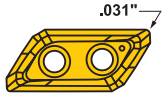
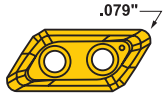
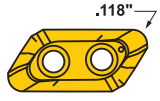
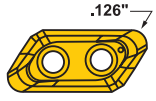
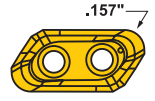
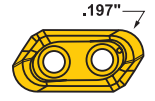
Honing :
F : Sharp Edge **E** : Round

Shape	Order Number	Class	Honing	Stock: Coated LC15TF	Stock: Coated MP6120	Stock: Coated MP9120	Stock: Carbide TF15	L	LE	S	BS	RE	Geometry
	**XDGX227008PDFR-GL**	G	F	★			●	1.181	.850	.276	.079	.031	
	XDGX227016PDFR-GL	G	F	★			●	1.181	.854	.276	.048	.063	
	XDGX227020PDFR-GL	G	F	★			●	1.181	.854	.276	.032	.079	
	XDGX227024PDFR-GL	G	F	□			●	1.181	.854	.276	.017	.094	
	XDGX227030PDFR-GL	G	F	★			●	1.134	.835	.276	.033	.118	
	XDGX227032PDFR-GL	G	F	★			●	1.134	.835	.276	.025	.126	
	XDGX227040PDFR-GL	G	F	★			●	1.083	.811	.276	.038	.157	
	XDGX227050PDFR-GL	G	F	★			●	1.063	.799	.276	.016	.197	
	XDGX227008PDER-GLA	G	E		●	●		1.181	.854	.276	.078	.031	
	XDGX227016PDER-GLA	G	E		●	●		1.181	.854	.276	.046	.063	
	XDGX227020PDER-GLA	G	E		●	●		1.181	.854	.276	.029	.079	
	XDGX227024PDER-GLA	G	E		●	●		1.181	.854	.276	.013	.094	
	XDGX227030PDER-GLA	G	E		●	●		1.134	.831	.276	.029	.118	
	XDGX227032PDER-GLA	G	E		●	●		1.134	.831	.276	.022	.126	
	XDGX227040PDER-GLA	G	E		●	●		1.083	.803	.276	.033	.157	
	XDGX227050PDER-GLA	G	E		●	●		1.063	.795	.276	.009	.197	

✱ GLA chipbreaker type insert features true radius design; GLA insert secured into AXD7000 series holders is designed to produce more accurate corner radius on the work material than conventional cutters.

■ COMBINATION OF HOLDER AND INSERT CORNER RADIUS

Holder	**A** Holder	**B** Holder
	(Inch) **AXD7000UR**○○○○○○○**A** **AXD7000UR**○○○○○**A** **AXD7000UR**○○○○**A** (Metric) **AXD7000R**○○○○○○○**A** **AXD7000R**○○○○○**A** **AXD7000R-**○○○○○○**A** **AXD7000R**○○○○○○**-H63A**	(Inch) **AXD7000UR**○○○○○○○**B** **AXD7000UR**○○○○○**B** **AXD7000UR**○○○○**B** (Metric) **AXD7000R**○○○○○○○**B** **AXD7000R**○○○○○**B** **AXD7000R-**○○○○○○**B**

Insert Corner Radius (RE)	.031"	.063"	.079"	.118"	.126"	.157"	.197"
							
	XDGX 227008PDFR-GL	**XDGX 227016PDFR-GL**	**XDGX 227020PDFR-GL**	**XDGX 227030PDFR-GL**	**XDGX 227032PDFR-GL**	**XDGX 227040PDFR-GL**	**XDGX 227050PDFR-GL**

Note 1) Other combinations of holder and insert corner R are not acceptable.

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

RECOMMENDED CUTTING CONDITIONS

■Cutting Speed

(inch)

Work Material			Grade	Breaker	vc (SFM)
P	Mild Steel	≤180HB	MP6120	GLA	655 (490—720)
	Carbon Steel Alloy Steel	180—280HB	MP6120	GLA	655 (490—720)
N	Aluminum Alloy	Si<5%	LC15TF	GL	3280 (655—9840)
			TF15	GL	3280 (655—9840)
		5%≤Si≤10% Si>10%	LC15TF	GL	3280 (655—9840)
S	Titanium Alloy	—	MP9120	GLA	130 (100—195)

■Feed per Tooth

(inch)

Work Material			Breaker	ae	ap	Feed per Tooth (IPT) Cutting Edge Diameter DC 1.250" 32 mm	1.500" 40 mm	2.000"—3.000" 50—80 mm	4.000",5.000" 100,125 mm
P	Mild Steel	≤180HB	GLA	≤ .25 DC	≤ .197	≤ .007	≤ .008	≤ .008	≤ .008
					≤ .394	≤ .006	≤ .007	≤ .007	≤ .007
					≤ .591	≤ .005	≤ .006	≤ .006	≤ .006
					≤ .987	≤ .004	≤ .005	≤ .005	—
				≤ .5 DC	≤ .197	≤ .007	≤ .008	≤ .008	≤ .008
					≤ .394	≤ .006	≤ .007	≤ .007	≤ .007
					≤ .591	≤ .005	≤ .006	≤ .006	≤ .006
					≤ .987	≤ .004	≤ .005	≤ .005	—
				≤ .75 DC	≤ .197	≤ .006	≤ .006	≤ .007	≤ .007
					≤ .394	≤ .005	≤ .005	≤ .006	≤ .006
					≤ .591	≤ .004	≤ .004	≤ .005	≤ .005
				DC (Slot)	≤ .197	≤ .005	≤ .006	≤ .007	≤ .007
					≤ .394	≤ .004	≤ .005	≤ .006	≤ .006
	Carbon Steel Alloy Steel	180—280HB	GLA	≤ .25 DC	≤ .197	≤ .007	≤ .008	≤ .008	≤ .008
					≤ .394	≤ .006	≤ .007	≤ .007	≤ .007
					≤ .591	≤ .005	≤ .006	≤ .006	≤ .006
					≤ .987	≤ .004	≤ .005	≤ .005	—
				≤ .5 DC	≤ .197	≤ .007	≤ .008	≤ .008	≤ .008
					≤ .394	≤ .006	≤ .007	≤ .007	≤ .007
					≤ .591	≤ .005	≤ .006	≤ .006	≤ .006
					≤ .987	≤ .004	≤ .005	≤ .005	—
				≤ .75 DC	≤ .197	≤ .006	≤ .006	≤ .007	≤ .007
					≤ .394	≤ .005	≤ .005	≤ .006	≤ .006
					≤ .591	≤ .004	≤ .004	≤ .005	≤ .005
				DC (Slot)	≤ .197	≤ .005	≤ .006	≤ .007	≤ .007
					≤ .394	≤ .004	≤ .005	≤ .006	≤ .006

Note 1) The above cutting conditions are determined based on high work material and machine rigidity, where no vibration occurred. If vibrations occur make adjustments according to the machining conditions.

Note 2) Note, vibrations may occur in the following conditions.

- When using long tool overhang.
- When pocket machining corner radii.
- When the work has poor clamping rigidity or when the machine rigidity or work rigidity is low, vibrations can occur easily, if so, reduce the cutting conditions.

■Feed per Tooth

(inch)

Work Material		Breaker	ae	ap	Feed per Tooth (IPT) Cutting Edge Diameter **DC** 1.250" 32 mm	1.500" 40 mm	2.000"—3.000" 50—80 mm	4.000",5.000" 100,125 mm
N	Aluminum Alloy	Si<5%	GL	≤ .25 DC	≤ .197	≤ .014	≤ .016	≤ .016	≤ .016
					≤ .394	≤ .012	≤ .014	≤ .014	≤ .014
					≤ .591	≤ .010	≤ .012	≤ .012	≤ .012
					≤ .987	≤ .008	≤ .010	≤ .010	≤ .010
				≤ .5 DC	≤ .197	≤ .014	≤ .014	≤ .016	≤ .016
					≤ .394	≤ .012	≤ .012	≤ .014	≤ .014
					≤ .591	≤ .010	≤ .010	≤ .012	≤ .012
					≤ .987	≤ .008	≤ .008	≤ .010	≤ .010
				≤ .75 DC	≤ .197	≤ .012	≤ .012	≤ .014	≤ .014
					≤ .394	≤ .010	≤ .010	≤ .012	≤ .012
					≤ .591	≤ .008	≤ .008	≤ .010	≤ .010
					≤ .987	≤ .006	≤ .006	≤ .008	≤ .008
				DC (Slot)	≤ .197	≤ .010	≤ .012	≤ .014	≤ .014
					≤ .394	≤ .008	≤ .010	≤ .012	≤ .012
					≤ .591	≤ .006	≤ .008	≤ .010	≤ .010
					≤ .987	≤ .004	≤ .006	≤ .008	≤ .008
		5%≤Si≤10% Si>10%	GL	≤ .25 DC	≤ .197	≤ .014	≤ .016	≤ .016	≤ .016
					≤ .394	≤ .012	≤ .014	≤ .014	≤ .014
					≤ .591	≤ .010	≤ .012	≤ .012	≤ .012
					≤ .987	≤ .008	≤ .010	≤ .010	≤ .010
				≤ .5 DC	≤ .197	≤ .014	≤ .014	≤ .016	≤ .016
					≤ .394	≤ .012	≤ .012	≤ .014	≤ .014
					≤ .591	≤ .010	≤ .010	≤ .012	≤ .012
					≤ .987	≤ .008	≤ .008	≤ .010	≤ .010
				≤ .75 DC	≤ .197	≤ .012	≤ .012	≤ .014	≤ .014
					≤ .394	≤ .010	≤ .010	≤ .012	≤ .012
					≤ .591	≤ .008	≤ .008	≤ .010	≤ .010
					≤ .987	≤ .006	≤ .006	≤ .008	≤ .008
				DC (Slot)	≤ .197	≤ .010	≤ .012	≤ .014	≤ .014
					≤ .394	≤ .008	≤ .010	≤ .012	≤ .012
					≤ .591	≤ .006	≤ .008	≤ .010	≤ .010
					≤ .987	≤ .004	≤ .006	≤ .008	≤ .008
S	Titanium Alloy	—	GLA	≤ .25 DC	≤ .197	≤ .004	≤ .005	≤ .005	—
					≤ .394	≤ .004	≤ .005	≤ .005	—
					≤ .591	≤ .004	≤ .005	≤ .005	—
					≤ .987	≤ .004	≤ .005	≤ .005	—
				≤ .5 DC	≤ .197	≤ .004	≤ .005	≤ .005	—
					≤ .394	≤ .004	≤ .005	≤ .005	—
					≤ .591	≤ .004	≤ .005	≤ .005	—
					≤ .987	—	≤ .004	≤ .004	—
				≤ .75 DC	≤ .197	≤ .004	≤ .005	≤ .005	—
					≤ .394	≤ .004	≤ .005	≤ .005	—
					≤ .591	≤ .004	≤ .005	≤ .005	—
					≤ .987	—	≤ .004	≤ .004	—
				DC (Slot)	≤ .197	≤ .003	≤ .003	≤ .003	—
					≤ .394	≤ .002	≤ .003	≤ .003	—

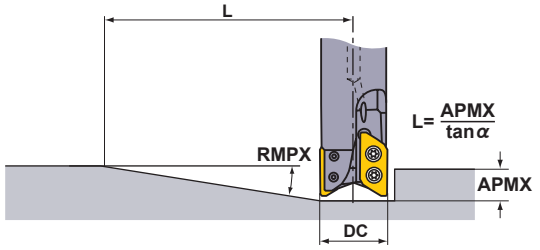
Note 1) The above cutting conditions are determined based on high work material and machine rigidity, where no vibration occurred. If vibrations occur make adjustments according to the machining conditions.

Note 2) Note, vibrations may occur in the following conditions.

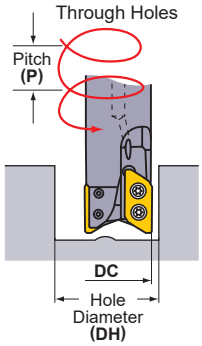
- When using long tool overhang.
- When pocket machining corner radii.
- When the work has poor clamping rigidity or when the machine rigidity or work rigidity is low, vibrations can occur easily, if so, reduce the cutting conditions.

■ Ramping / Helical Milling (Aluminum Alloy)

Ramping



Helical Milling



(inch)

Type	DC	RE	Ramping	
			RMPX	L *1
A Type	1.250	.031—.094	20°	2.272
		.118—.126	19.3°	2.362
	1.500	.031—.094	14.1°	3.292
		.118—.126	13.3°	3.498
	2.000	.031—.094	9.8°	4.788
		.118—.126	9.1°	5.163
	3.000	.031—.094	5.3°	8.915
		.118—.126	4.9°	9.647
	4.000	.031—.094	4.2°	11.262
		.118—.126	3.8°	12.451
	5.000	.031—.094	2.5°	18.941
		.118—.126	2.2°	21.527
B Type	1.250	.157—.197	18°	2.471
	1.500	.157—.197	11°	4.131
	2.000	.157—.197	8°	5.714
	3.000	.157—.197	4°	11.483
	4.000	.157—.197	3°	15.322
	5.000	.157—.197	2°	22.995

(inch)

Type	DC	RE	Helical Milling	
			DH min.	P max.
A Type	1.250	.031—.094	1.535	.315
		.118—.126	1.535	.315
	1.500	.031—.094	2.047	.394
		.118—.126	2.047	.394
	2.000	.031—.094	3.031	.551
		.118—.126	3.031	.472
	3.000	.031—.094	5.000	.551
		.118—.126	5.000	.512
	4.000	.031—.094	6.969	.669
		.118—.126	6.969	.591
	5.000	.031—.094	9.016	.512
		.118—.126	9.016	.472
B Type	1.250	.157	1.535	.276
		.197	1.535	.276
	1.500	.157	2.047	.315
		.197	2.047	.315
	2.000	.157	3.031	.433
		.197	3.031	.433
	3.000	.157	5.000	.433
		.197	5.000	.433
	4.000	.157	6.969	.472
		.197	6.969	.472
	5.000	.157	9.016	.433
		.197	9.016	.433

Note 1) The recommended ramping feed is .002 IPT or under.

*1 L (Max. Depth of Cut =.591" / tan α). Cutters' moving distance until depth of cut reaches APMX at a maximum ramping angle.
Maximum depth of cut A type is .827", B type is .803".

*2 The maximum diameter when machining a blind hole with a flat face using a corner radius of .031" for A type and .157" for B type.
Other than that, find with the below formula.
{(cutting edge diameter DC)—(corner radius)—0.3)}×2

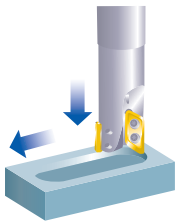
*3 The minimum diameter when machining a blind hole with a flat face using a corner radius of .031" for A type and .157" for B type.
Other than that, find with the below formula.
{(cutting edge diameter DC)—(corner radius)—(Width of wiper edge BS)—0.1)}×2

■ Max. Drilling Depth (Aluminum Alloy)

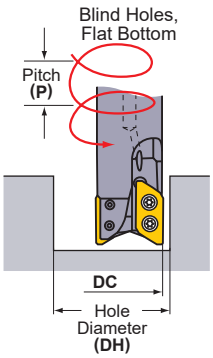
(inch)

Type	RE	Max. Drilling Depth
A Type	.031—.094	.197
	.118, .126	.177
B Type	.157	.157
	.197	.138

AXD7000 can be effectively used for pocket machining without the need for a prepared hole.



Helical Milling



(inch)

Type	DC	RE	BS	Helical Milling (Blind Hole, Flat Bottom)			
				DH max. ∗2	P max.	DH min. ∗3	P max.
A Type	1.250"	.031	.079	2.417	.787	2.276	.787
		.063	.047	2.354	.748	2.276	.748
		.079	.031	2.323	.709	2.276	.748
		.094	.016	2.291	.709	2.276	.748
		.118	.031	2.244	.669	2.193	.669
		.125	.024	2.228	.669	2.193	.669
	1.500"	.031	.079	2.902	.787	2.776	.787
		.063	.047	2.839	.748	2.776	.748
		.079	.031	2.807	.709	2.776	.748
		.094	.016	2.776	.709	2.776	.748
		.118	.031	2.728	.669	2.693	.669
		.125	.024	2.713	.669	2.693	.669
	2.000"	.031	.079	3.902	.787	3.768	.787
		.063	.047	3.839	.748	3.768	.748
		.079	.031	3.807	.709	3.768	.748
		.094	.016	3.776	.709	3.768	.748
		.118	.031	3.728	.669	3.768	.669
		.125	.024	3.713	.669	3.687	.669
	3.000"	.031	.079	5.902	.787	5.768	.787
		.063	.047	5.839	.748	5.768	.748
		.079	.031	5.807	.709	5.768	.748
		.094	.016	5.776	.709	5.768	.748
		.118	.031	5.728	.669	5.686	.669
		.125	.024	5.713	.669	5.686	.669
	4.000"	.031	.079	7.902	.787	7.768	.787
		.063	.047	7.839	.748	7.768	.748
		.079	.031	7.807	.709	7.768	.748
		.094	.016	7.776	.709	7.768	.748
		.118	.031	7.728	.669	7.686	.669
		.125	.024	7.713	.669	7.686	.669
	5.000"	.031	.079	9.902	.669	9.767	.630
		.063	.047	9.839	.630	9.767	.630
		.079	.031	9.807	.630	9.767	.630
		.094	.016	9.776	.630	9.767	.630
		.118	.031	9.728	.551	9.685	.551
		.125	.024	9.713	.551	9.685	.551
B Type	1.250"	.157	.035	2.165	.630	2.106	.630
		.197	.016	2.087	.591	2.070	.591
	1.500"	.157	.035	2.650	.630	2.605	.630
		.197	.016	2.571	.591	2.569	.591
	2.000"	.157	.035	3.650	.630	3.599	.630
		.197	.016	3.571	.591	3.563	.591
	3.000"	.157	.035	5.650	.551	5.597	.551
		.197	.016	5.571	.551	5.561	.551
	4.000"	.157	.035	7.650	.591	7.597	.591
		.197	.016	7.571	.591	7.561	.591
	5.000"	.157	.035	9.650	.472	9.597	.472
		.197	.016	9.571	.472	9.560	.472

∗1 L (Max. Depth of Cut =.591" / tan α). Cutters' moving distance until depth of cut reaches APMX at a maximum ramping angle. Maximum depth of cut A type is .827", B type is .803".

∗2 The maximum diameter when machining a blind hole with a flat face using a corner radius of .031" for A type and .157" for B type. Other than that, find with the below formula.
{(cutting edge diameter DC)−(corner radius)−0.3)}×2

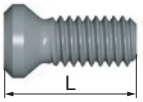
∗3 The minimum diameter when machining a blind hole with a flat face using a corner radius of .031" for A type and .157" for B type. Other than that, find with the below formula.
{(cutting edge diameter DC)−(corner radius)−(Width of wiper edge BS)−0.1)}×2

Note 1) The recommended ramping feed is .002 IPT or under.

OPERATIONAL GUIDANCE

Only use the inserts and parts provided by Mitsubishi Materials with this tool. Use of the correct insert clamp screws is especially important to ensure overall tool safety. Do not use damaged or worn clamp screws.

Type	AXD4000		AXD7000	
Cutting Edge Diameter **DC**(inch)	ø.787"	ø1.000"–ø5.000"	ø1.250"	ø1.500"–ø5.000"
Clamp Screw Number	TS3SBS	TS3SB	TS4SB	TS4SBL
Overall Length **L**(inch)	.256	.315	.353	.413
Clamp Torque (lbf-in)	13	13	31	31



When tightening the clamp screws, follow the order in Figure 1.
The maximum allowable spindle speeds are shown in Table 1.
Ensure that the cutter operates under the maximum allowable spindle speed.
The maximum allowable spindle speeds for safety purposes are determined in accordance with ISO15641 (Milling Cutters for high speed machining–Safety requirements).

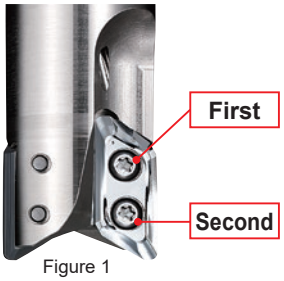


Figure 1

(Table 1) Maximum allowable spindle speed

AXD4000

Cutting Edge Diameter **DC**(inch)	ø.787"	ø1.000"	ø1.250"	ø1.500"	ø2.000"	ø2.500"	ø3.000"	ø4.000"	ø5.000"
Max. Allowable Spindle Speed (min^{-1})	15000	49000	48000	41000	35000	30000	27000	23000	20000

AXD7000

Cutting Edge Diameter **DC**(inch)	ø1.250"	ø1.500"	ø2.000"	ø2.500"	ø3.000"	ø4.000"	ø5.000"
Max. Allowable Spindle Speed (min^{-1})	41000	36000	30000	25000	23000	19000	16000

Even when operating under the maximum allowable spindle speed, if the spindle speed is equal to or higher than the values shown in table 2, it is recommended that the balance quality (with the arbor or milling chuck) conforms to G6.3 or better based on ISO1940. It is also recommended to replace the clamp screws with new ones when changing inserts. Furthermore, ensure to use machines that are provided with safety measures in case of cutter breakage.
∗ The balance quality of the holder (without inserts and clamp screws) is G6.3 or better at 10000 min^{-1}.

(Table 2) Maximum spindle speed when balancing with the arbor or milling chuck has not been achieved

AXD4000

Cutting Edge Diameter **DC**(inch)	ø.787"	ø1.000"	ø1.250"	ø1.500"	ø2.000"	ø2.500"	ø3.000"	ø4.000"	ø5.000"
Max. Spindle Speed (min^{-1})	15000	12000	9500	7600	6000	4800	3800	3000	2400

AXD7000

Cutting Edge Diameter **DC**(inch)	ø1.250"	ø1.500"	ø2.000"	ø2.500"	ø3.000"	ø4.000"	ø5.000"
Max. Spindle Speed (min^{-1})	9500	7600	6000	4800	3800	3000	2400

When setting the spindle speed, take into consideration the maximum allowable spindle speed of the arbor or milling chuck.
Use the specified set bolt when using the arbor type with through coolant.
The inserts have sharp cutting edges and handling them with bare hands may cause injuries. Always wear safety gloves when handling the indexable inserts.

Memo

MULTI FUNCTIONAL MILLING

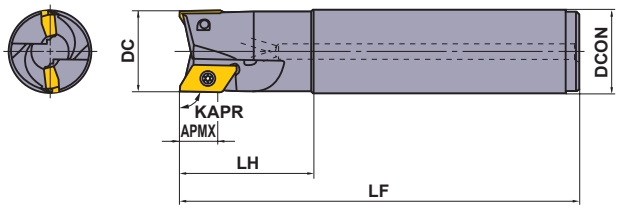
<FOR ALUMINUM ALLOY AND DIFFICULT-TO-CUT MATERIAL CUTTING>

90° KAPR

BXD4000

P Steel | M Stainless Steel | K | N Non-ferrous Metal | S Heat Resistant Alloy | H





STRAIGHT SHANK TYPE

Right hand tool holder only.

Type	RE	Order Number	Stock R	Number of Teeth	Dimensions (inch) DC	LF	DCON	LH	APMX (inch)	RMPX *2	Max. Spindle Speed (min-1) Balance Unknown	G40 *1 Balanced	Insert Screw *1	Wrench
A Holders	.016 | .125	BXD4000R162SA12S	●	2	1.000	6.000	.750	2.000	.591	20°	12000	38000	TS4SL	TKY15W
		BXD4000R162SA16S	●	2	1.000	6.000	1.000	2.000	.591	20°	12000	38000	TS4SL	TKY15W
		BXD4000R202SA20S	●	2	1.250	6.000	1.250	2.000	.591	13°	9500	33000	TS4SL	TKY15W
		BXD4000R243SA20S	●	3	1.500	6.000	1.250	2.000	.591	10°	7600	29000	TS4SL	TKY15W
B Holders	.157 | .197	BXD4000R162SA12SB	●	2	1.000	6.000	.750	2.000	.591	20°	12000	38000	TS4SL	TKY15W
		BXD4000R162SA16SB	●	2	1.000	6.000	1.000	2.000	.591	20°	12000	38000	TS4SL	TKY15W
		BXD4000R202SA20SB	●	2	1.250	6.000	1.250	2.000	.591	13°	9500	33000	TS4SL	TKY15W
		BXD4000R243SA20SB	●	3	1.500	6.000	1.250	2.000	.591	10°	7600	29000	TS4SL	TKY15W

*1 Clamp Torque (lbf-in) : TS4SL=35 *2 RMPX : Max. Ramping Angle

Note 1) You need to balance the tool and holder together so that it confirms to G40 or higher standards.

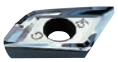
INSERTS WITH BREAKER

Work Material		
P	Steel	● ◕
M	Stainless Steel	◕
K	Cast Iron	✣
N	Non-Ferrous Metal	✣ ✣
S	Heat-resistant Alloy, Titanium Alloy	◕

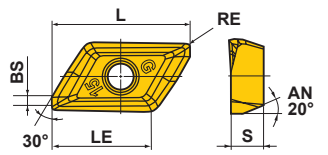
Cutting Conditions (Guide) :
● : Stable Cutting ◕ : General Cutting ✣ : Unstable Cutting

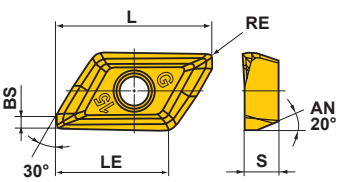
Honing :
E : Round **F** : Sharp Edge

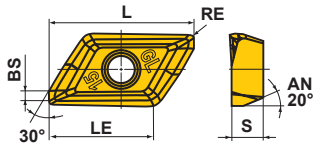
Shape	Order Number	Class	Honing	Coated VP15TF	Coated LC15TF	Carbide TF15	L	LE	S	BS	RE	Geometry
G breaker	XDGT1550PDFR-G04	G	F		★	●	.866	.610	.197	.059	.016	
	XDGT1550PDFR-G08	G	F		★	●	.866	.610	.197	.043	.031	
	XDGT1550PDFR-G12	G	F		★	★	.866	.610	.197	.028	.047	
	XDGT1550PDFR-G16	G	F		★	●	.866	.614	.197	.016	.063	
	XDGT1550PDFR-G20	G	F		★	●	.854	.614	.197	.008	.079	
	XDGT1550PDFR-G30	G	F		★	●	.787	.583	.197	.024	.118	
	XDGT1550PDFR-G32	G	F		★	●	.787	.583	.197	.016	.126	
	XDGT1550PDFR-G40	G	F		★	●	.748	.567	.197	.020	.157	
	XDGT1550PDFR-G50	G	F		★	●	.709	.551	.197	.016	.197	
	XDGT1550PDER-G04	G	E	●			.866	.610	.197	.059	.016	
	XDGT1550PDER-G08	G	E	●			.866	.610	.197	.043	.031	
	XDGT1550PDER-G12	G	E	★			.866	.610	.197	.028	.047	
	XDGT1550PDER-G16	G	E	●			.866	.614	.197	.016	.063	
	XDGT1550PDER-G20	G	E	●			.854	.614	.197	.008	.079	
	XDGT1550PDER-G30	G	E	●			.787	.583	.197	.024	.118	
	XDGT1550PDER-G32	G	E	●			.787	.583	.197	.016	.126	
	XDGT1550PDER-G40	G	E	●			.748	.567	.197	.020	.157	
	XDGT1550PDER-G50	G	E	●			.709	.551	.197	.016	.197	
Lower Cutting Resistance Type	XDGT1550PDFR-GL04	G	F			●	.866	.610	.197	.059	.016	
	XDGT1550PDFR-GL08	G	F			●	.866	.610	.197	.043	.031	





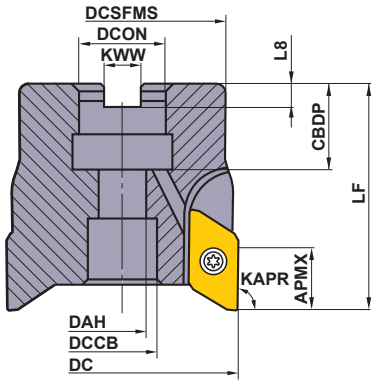






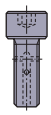
● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>





KAPR :0°
GAMP :+15°
GAMF :+13°—+16°

DC	Coolant thru Set Bolt
1.5	HSCU25014H
2	HSCU37513H
2.5	HSCU37513H
3	HSCU50014H
4	HSCU75016H



Right hand tool holder only.

■ ARBOR TYPE

Type	RE	Order Number	Stock	Number of Teeth	Dimensions (inch)							APMX	*2 RMPX	Max. Spindle Speed (min^{-1})		*1	
			R		DC	LF	DCON	CBDP	DAH	KWW	L8	(inch)		Balance Unknown	G40 *1 Balanced	Insert Screw	Wrench
A Holders	.016 — .125	**BXD4000R1503**	●	3	1.500	1.969	.500	.630	.276	.250	.156	.591	10°	7600	29000	TS4SL	TKY15W
		BXD4000R0203	●	3	2.000	1.969	.750	.748	.415	.313	.187	.591	7°	6000	24000	TS4SL	TKY15W
		BXD4000R0204	●	4	2.000	1.969	.750	.748	.415	.313	.187	.591	7°	6000	24000	TS4SL	TKY15W
		BXD4000R2504	●	4	2.500	1.969	.750	.748	.415	.313	.187	.591	5°	4800	21000	TS4SL	TKY15W
		BXD4000R0305	●	5	3.000	1.969	1.000	1.024	.539	.375	.219	.591	3°	3800	19000	TS4SL	TKY15W
		BXD4000R0406	●	6	4.000	2.480	1.500	1.181	.787	.625	.375	.591	3°	3000	16000	TS4SL	TKY15W
B Holders	.157 — .197	**BXD4000R1503B**	●	3	1.500	1.969	.500	.630	.276	.250	.156	.591	10°	7600	29000	TS4SL	TKY15W
		BXD4000R0203B	●	3	2.000	1.969	.750	.748	.415	.313	.187	.591	7°	6000	24000	TS4SL	TKY15W
		BXD4000R0204B	●	4	2.000	1.969	.750	.748	.415	.313	.187	.591	7°	6000	24000	TS4SL	TKY15W
		BXD4000R2504B	●	4	2.500	1.969	.750	.748	.415	.313	.187	.591	5°	4800	21000	TS4SL	TKY15W
		BXD4000R0305B	●	5	3.000	1.969	1.000	1.024	.539	.375	.219	.591	3°	3800	19000	TS4SL	TKY15W
		BXD4000R0406B	●	6	4.000	2.480	1.500	1.181	.787	.625	.375	.591	3°	3000	16000	TS4SL	TKY15W

*1 Clamp Torque (lbf-in) : TS4SL=35 *2 RMPX : Max. Ramping Angle
Note 1) You need to balance the tool and holder together so that it confirms to G40 or higher standards.
Note 2) The cutter body includes a set bolt for an arbor.

■ COMBINATION OF HOLDER AND INSERT CORNER RADIUS

Holder	~A Holder							~B Holder	
	BXD4000R○○○○○○○A							BXD4000R○○○○○○○B	
Insert Corner Radius (RE)	.016"	.031"	.047"	.063"	.079"	.118"	.126"	.157"	.197"
	XDGT.....-G04	XDGT.....-G08	XDGT.....-G12	XDGT.....-G16	XDGT.....-G20	XDGT.....-G30	XDGT.....-G32	XDGT.....-G40	XDGT.....-G50

Note 1) Other combinations of holder and insert corner R are not acceptable.

RECOMMENDED CUTTING CONDITIONS

	Work Material	Hardness	Grade	Cutting Speed (SFM)	Feed per Tooth (IPT)
P	Mild Steel	≤180HB	**VP15TF**	590 (490—655)	.006 (.004—.008)
P	Carbon Steel Alloy Steel	≤280HB	**VP15TF**	490 (390—655)	.006 (.004—.008)
P		280—350HB	**VP15TF**	460 (390—525)	.006 (.004—.008)
M	Stainless Steel	≤270HB	**VP15TF**	460 (390—525)	.008 (.004—.012)
N	Aluminum Alloy	—	**TF15**	3280 (655—9840)	.012 (.004—.020)
S	Titanium Alloy	—	**VP15TF**	130 (100—195)	.004 (.004—.012)
S	Heat Resistant Alloy	—	**VP15TF**	100 (65—130)	.006 (.004—.008)

- The figure above are the guidelines for conditions of general cutting by a standard type tool.
- The conditions vary depending on machine strength, the length of overhang, and work clamping conditions.
- Please adjust table feed when using long shank type tool.

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001



Fig.1
ø40

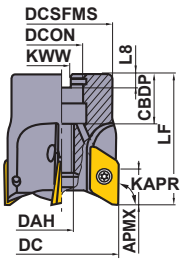


Fig.2
ø50
ø63
ø80
ø100

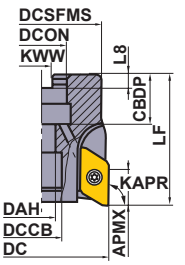
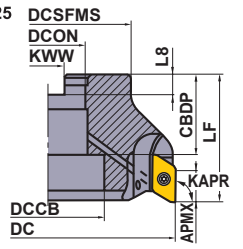
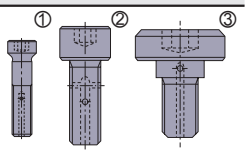


Fig.3
ø125



Right hand tool holder only.

DC	Set Bolt	Geometry
ϕ40	HFF08043H	①
ϕ50, ϕ63	HSC10030H	②
ϕ80	HSC12035H	②
ϕ100	HSC16040H	②
ϕ125	MBA20040H	③



Metric Standard

For metric arbors

KAPR :0°
GAMP :+14°—+15°
GAMF :+13°—+16°

■ ARBOR TYPE

Type	RE	Order Number	Stock	Number of Teeth	Dimensions (mm)									WT	APMX	*2 RMPX	Max. Spindle Speed	Type (Fig.)	*1 Insert Screw	Wrench	Insert
			R		DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	DCCB	(kg)	(mm)		(min-1)				
A Holders	0.4 I 3.2	BXD4000-040A03RA	★	3	40	50	16	18	8.5	32	8.4	5.6	—	0.3	15	9°	29000	1	TS4SL	TKY15W	XDGT1550 PD○R-G○○
		BXD4000-050A04RA	★	4	50	50	22	20	11	41	10.4	6.3	17	0.4	15	6°	24000	2	TS4SL	TKY15W	
		BXD4000-063A05RA	★	5	63	50	22	20	11	50	10.4	6.3	17	0.7	15	5°	21000	2	TS4SL	TKY15W	
		BXD4000-080A05RA	★	5	80	50	27	23	13	60	12.4	7	20	1.1	15	3°	19000	2	TS4SL	TKY15W	XDGT1550 PD○R-GL○○
		BXD4000-100A06RA	★	6	100	63	32	26	17	70	14.4	8	26	2.0	15	3°	16000	2	TS4SL	TKY15W	
		BXD4000-125B07RA	★	7	125	63	40	40	—	80	16.4	9	56	2.8	15	2°	14000	3	TS4SL	TKY15W	
B Holders	4.0 I 5.0	BXD4000-040A03RB	★	3	40	50	16	18	8.5	32	8.4	5.6	—	0.3	15	9°	29000	1	TS4SL	TKY15W	XDGT1550 PD○R-G○○
		BXD4000-050A04RB	★	4	50	50	22	20	11	41	10.4	6.3	17	0.4	15	6°	24000	2	TS4SL	TKY15W	
		BXD4000-063A05RB	★	5	63	50	22	20	11	50	10.4	6.3	17	0.7	15	5°	21000	2	TS4SL	TKY15W	
		BXD4000-080A05RB	★	5	80	50	27	23	13	60	12.4	7	20	1.1	15	3°	19000	2	TS4SL	TKY15W	
		BXD4000-100A06RB	★	6	100	63	32	26	17	70	14.4	8	26	2.0	15	3°	16000	2	TS4SL	TKY15W	
		BXD4000-125B07RB	★	7	125	63	40	40	—	80	16.4	9	56	2.8	15	2°	14000	3	TS4SL	TKY15W	

*1 Clamp Torque (lbf-in) : TS4SL=35
*2 RMPX : Max. Ramping Angle

Metric Standard

For inch arbors

■ ARBOR TYPE

Type	RE	Order Number	Stock	Number of Teeth	Dimensions (mm) [inch]								WT	APMX	*2 RMPX	Max. Spindle Speed	Type (Fig.)	*1 Insert Screw	Wrench	Insert
			R		DC	LF	CBDP	L8	DAH	KWW	DCON	DCCB	DCSFMS	(kg)	(mm)		(min-1)				
A Holders	0.4 I 3.2	BXD4000R08005CA	★	5	80	50	26	6	13	9.5	25.4 [1.0"]	20	60	1.1	15	3°	19000	2	TS4SL	TKY15W	XDGT1550 PD○R-G○○
		BXD4000R10006DA	★	6	100	63	32	8	17	12.7	31.75 [1.25"]	26	70	2.0	15	3°	16000	2	TS4SL	TKY15W	
		BXD4000R12507EA	★	7	125	63	40	10	—	15.9	38.1 [1.5"]	56	80	2.8	15	2°	14000	3	TS4SL	TKY15W	XDGT1550 PD○R-GL○○
B Holders	4.0 I 5.0	BXD4000R08005CB	★	5	80	50	26	6	13	9.5	25.4 [1.0"]	20	60	1.1	15	3°	19000	2	TS4SL	TKY15W	XDGT1550 PD○R-G○○
		BXD4000R10006DB	★	6	100	63	32	8	17	12.7	31.75 [1.25"]	26	70	2.0	15	3°	16000	2	TS4SL	TKY15W	
		BXD4000R12507EB	★	7	125	50	40	10	—	15.9	38.1 [1.5"]	56	80	2.8	15	2°	14000	3	TS4SL	TKY15W	

*1 Clamp Torque (lbf-in) : TS4SL=35
*2 RMPX : Max. Ramping Angle
Note 1) The maximum spindle speeds stated above are based on ISO15641.
Note 2) When using the tool at high spindle speeds, please pay special attention to the balancing. The whole tool assembly should be balanced according to G6.3 based on ISO1940 quality grades.
Note 3) Set bolt not included.



Fig.1 Straight Shank

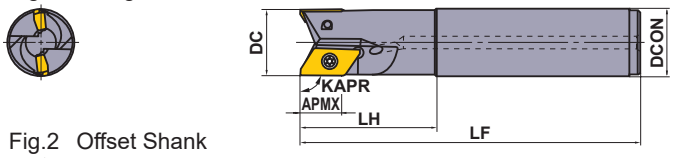
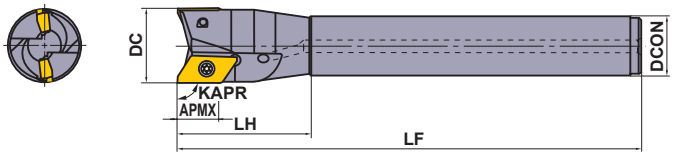


Fig.2 Offset Shank



Right hand tool holder only.

Metric Standard

■ SHANK TYPE

Type	RE	Shank Type	Order Number	Stock R	Number of Teeth	Dimensions (mm) DC	APMX	LF	LH	DCON	✶2 RMPX	Max. Spindle Speed (min^{-1})	Type (Fig.)	✶1 Insert Screw	Wrench	Insert
A Holders	0.4 — 3.2	Standard	BXD4000R201SA20SA	★	1	20	15	110	35	20	28°	15000	1	TS4SL	TKY15W	XDGT1550 PD□R-G□□
			BXD4000R252SA25SA	★	2	25	15	125	50	25	20°	38000	1	TS4SL	TKY15W	
			BXD4000R282SA25SA	★	2	28	15	125	50	25	17°	35000	2	TS4SL	TKY15W	
			BXD4000R322SA32SA	★	2	32	15	150	50	32	13°	33000	1	TS4SL	TKY15W	
			BXD4000R352SA32SA	★	2	35	15	150	50	32	11°	31000	2	TS4SL	TKY15W	
			BXD4000R403SA32SA	★	3	40	15	170	80	32	9°	29000	2	TS4SL	TKY15W	
			BXD4000R403SA42SA	★	3	40	15	170	80	42	9°	29000	1	TS4SL	TKY15W	XDGT1550 PD□R-GL□□
		Long	BXD4000R252SA25LA	★	2	25	15	170	80	25	20°	38000	1	TS4SL	TKY15W	
			BXD4000R322SA32LA	★	2	32	15	200	80	32	13°	33000	1	TS4SL	TKY15W	
		Extra Long	BXD4000R282SA25ELA	★	2	28	15	220	50	25	17°	35000	2	TS4SL	TKY15W	
			BXD4000R352SA32ELA	★	2	35	15	250	50	32	11°	31000	2	TS4SL	TKY15W	
			BXD4000R403SA32ELA	★	3	40	15	250	65	32	9°	29000	2	TS4SL	TKY15W	
B Holders	4.0 — 5.0	Standard	BXD4000R201SA20SB	★	1	20	15	110	35	20	28°	15000	1	TS4SL	TKY15W	XDGT1550 PD□R-G□□
			BXD4000R252SA25SB	★	2	25	15	125	50	25	20°	38000	1	TS4SL	TKY15W	
			BXD4000R282SA25SB	★	2	28	15	125	50	25	17°	35000	2	TS4SL	TKY15W	
			BXD4000R322SA32SB	★	2	32	15	150	50	32	13°	33000	1	TS4SL	TKY15W	
			BXD4000R352SA32SB	★	2	35	15	150	50	32	11°	31000	2	TS4SL	TKY15W	
			BXD4000R403SA32SB	★	3	40	15	170	80	32	9°	29000	2	TS4SL	TKY15W	
			BXD4000R403SA42SB	★	3	40	15	170	80	42	9°	29000	1	TS4SL	TKY15W	
		Long	BXD4000R252SA25LB	★	2	25	15	170	80	25	20°	38000	1	TS4SL	TKY15W	
			BXD4000R322SA32LB	★	2	32	15	200	80	32	13°	33000	1	TS4SL	TKY15W	
		Extra Long	BXD4000R282SA25ELB	★	2	28	15	220	50	25	17°	35000	2	TS4SL	TKY15W	
			BXD4000R352SA32ELB	★	2	35	15	250	50	32	11°	31000	2	TS4SL	TKY15W	
			BXD4000R403SA32ELB	★	3	40	15	250	65	32	9°	29000	2	TS4SL	TKY15W	

✶1 Clamp Torque (lbf-in) : TS4SL=35 ✶2 RMPX : Max. Ramping Angle

Note 1) You need to balance the tool and holder together so that it confirms to G40 or higher standards.

OPERATIONAL GUIDANCE

Only use the inserts and parts provided by Mitsubishi Materials with this tool. Use of the correct insert clamp screws is especially important to ensure overall tool safety. Do not use damaged or worn clamp screws.

- When tightening the clamp screws, follow the order in Figure 1.
- The maximum allowable spindle speeds are shown in Table 1. Ensure that the cutter operates under the maximum allowable spindle speed.
  The maximum allowable spindle speeds for safety purposes are determined in accordance with ISO15641 (Milling Cutters for high speed machining–Safety requirements).

(Table 1) Maximum allowable spindle speed

Cutting Edge Diameter **DC**(inch)	ø.750"	ø.950"	ø1.100"	ø1.250"	ø1.350"	ø1.500"	ø2.000"	ø2.500"	ø3.000"	ø4.000"	ø5.000"
Max. Allowable Spindle Speed (min^{-1})	15000※	38000	35000	33000	31000	29000	24000	21000	19000	16000	14000

※ø20 mm with one tooth balancing is necessary to adjust sensitively.

- Even when operating under the maximum allowable spindle speed, if the spindle speed is equal to or higher than the values shown in table 2, it is recommended that the balance quality (with the arbor or milling chuck) conforms to G40 or better based on ISO1940. It is also recommended to replace the clamp screws with new ones when changing inserts. Furthermore, ensure to use machines that are provided with safety measures in case of cutter breakage.

✶ The balance quality of the holder (without inserts and clamp screws) is G40 or better at 10000 min^{-1}.

(Table 2) Maximum spindle speed when balancing with the arbor or milling chuck has not been achieved

Cutting Edge Diameter **DC**(inch)	ø.750"	ø.950"	ø1.100"	ø1.250"	ø1.350"	ø1.500"	ø2.000"	ø2.500"	ø3.000"	ø4.000"	ø5.000"
Max. Spindle Speed (min^{-1})	15000	12000	10800	9500	8700	7600	6000	4800	3800	3000	2400

- When setting the spindle speed, take into consideration the maximum allowable spindle speed of the arbor or milling chuck.
- Use the specified set bolt when using the arbor type with through coolant.
- The inserts have sharp cutting edges and handling them with bare hands may cause injuries. Always wear safety gloves when handling the indexable inserts.

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

DEEP SHOULDER MILLING

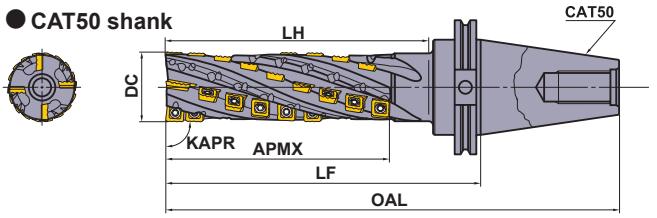
90° KAPR

SPX

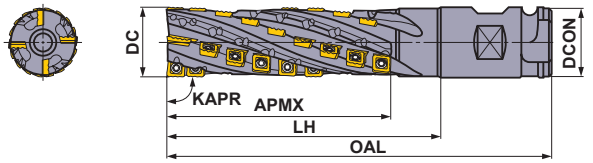
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Steel	Stainless Steel	Cast Iron		Heat Resistant Alloy	



● CAT50 shank



● Straight shank (Combination type)

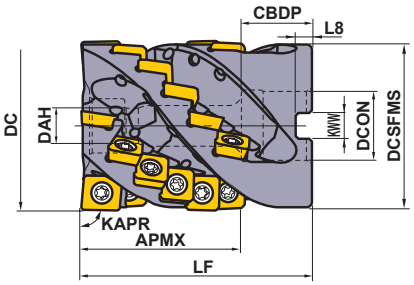


■ SHANK TYPE

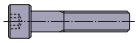
Right hand tool holder only.

Type	Order Number	Stock	Number of Flute	Number of Teeth	Dimensions (inch)						Number of Insert		
											Bottom Cutting Edge A	Bottom Cutting Edge B	Peripheral Cutting Edge
				Total	DC	OAL	DCON	LH	LF	APMX	JPMX 190412-○○	MPMX 120412-○○	SPMX 120408-○○
CAT50 Shank	**SPX4R3224CAT50NS**	●	4	24	2.000	11.000	–	–	7.000	4.300	2	2	20
	SPX4R3234CAT50NM	●	4	34	2.000	13.000	–	–	9.000	6.200	2	2	30
Straight Shank (Combination)	**SPX4R05016WNES**	●	4	16	1.969	7.091	2.000	3.937	–	2.835	2	2	12
	SPX4R05024WNS	●	4	24	1.969	8.661	2.000	5.512	–	4.331	2	2	20
	SPX4R05034WNM	●	4	34	1.969	10.630	2.000	7.480	–	6.181	2	2	30





Right hand tool holder only.

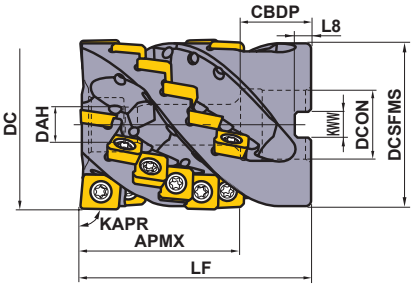
DC	Set Bolt	Geometry
ϕ2.500"	HSCUF50028	
ϕ3.000"	HSCUF62528	

■SHELL TYPE

Order Number	Stock	Number of Teeth		Dimensions (inch)									Number of Insert		
													Bottom Cutting Edge A	Bottom Cutting Edge B	Peripheral Cutting Edge
	R	Flutes	Total	DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	APMX	JPMX 140412-○○	MPMX 120412-○○	SPMX 120408-○○
SPX4UR2524CA22A	●	4	24	2.500	3.500	1.000	1.339	.539	2.375	.375	.219	2.280	2	2	20
SPX4UR0324DA22A	●	4	24	3.000	3.500	1.250	1.654	.669	2.874	.500	.281	2.280	2	2	20

Note 1) In case of internal coolant supply, please use a face mill arbor with through coolant channels; Regular center-thru or side-thru arbors can't be used.
Note 2) The cutter body includes a non-coolant through set bolt for an arbor.

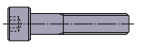




Metric Standard

For inch arbors

Right hand tool holder only.

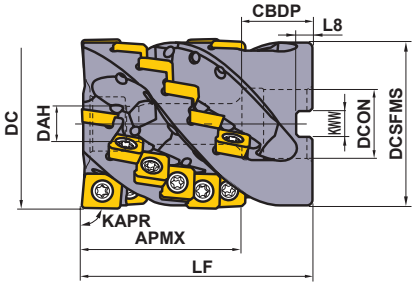
DC	Set Bolt	Geometry
ϕ63 mm	HSC12070	
ϕ80 mm	HSC16065	

■SHELL TYPE

Order Number	Stock	Number of Teeth		Dimensions (mm) [inch]									Number of Insert		
													Bottom Cutting Edge A	Bottom Cutting Edge B	Peripheral Cutting Edge
	R	Flutes	Total	DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	APMX	JPMX 140412-○○	MPMX 120412-○○	SPMX 120408-○○
SPX4R06324CA058A	★	4	24	63	85	25.4 [1.000″]	26	13	60	9.5	6	58	2	2	20
SPX4R08024DA058A	★	4	24	80	85	31.75 [1.250″]	38	17	76.8	12.7	8	58	2	2	20

Note 1) In case of internal coolant supply, please use a face mill arbor with through coolant channels; Regular center-thru or side-thru arbors can't be used.
Note 2) Set bolt not included.



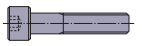


Metric Standard

For metric arbors

The bore diameter (DCON) is equivalent to a metric size.

Right hand tool holder only.

DC	Set Bolt	Geometry
ϕ63 mm	HSC12070	
ϕ80 mm	HSC16065	

■SHELL TYPE

Order Number	Stock	Number of Teeth		Dimensions (mm)									Number of Insert		
													Bottom Cutting Edge A	Bottom Cutting Edge B	Peripheral Cutting Edge
	R	Flutes	Total	DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	APMX	JPMX 140412-○○	MPMX 120412-○○	SPMX 120408-○○
SPX4-063A24A058RA	★	4	24	63	85	27	28	13	60	12.4	7	58	2	2	20
SPX4-080A24A058RA	★	4	24	80	85	32	40	17	76.8	14.4	8	58	2	2	20

Note 1) In case of internal coolant supply, please use a face mill arbor with through coolant channels; Regular center-thru or side-thru arbors can't be used.
Note 2) Set bolt not included.

SPARE PARTS

Holder	Insert Screw *	Wrench	Insert		
			Bottom Cutting Edge A	Bottom Cutting Edge B	Peripheral Cutting Edge
SPX	TS55	TKY25D	JPMX190412-WH	MPMX120412-WH	SPMX120408-WH
			JPMX190412-JM	MPMX120412-JM	SPMX120408-JM

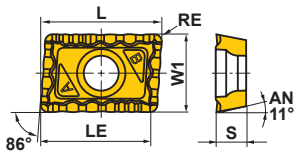
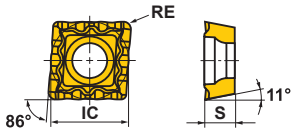
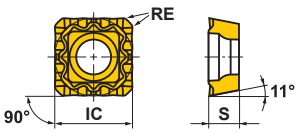
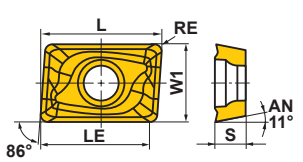
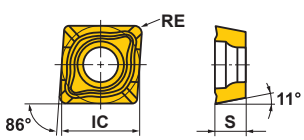
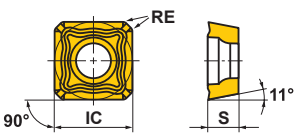
* Clamp Torque (lbf-in) : TS55=66

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

INSERTS

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
S	Heat-resistant Alloy, Titanium Alloy	

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✤ : Unstable Cutting

Type		Shape	Order Number	Class	Coated VP15TF	Coated VP20RT	L	LE	W1	IC	S	RE	Geometry
Wavy Cutting Edge Type	Bottom Cutting Edge A		**JPMX190412-WH**	M	●	●	.750	.693	.500	—	.187	.047	
			*** JPMX140412-WH**	M	●	●	.563	.508	.500	—	.187	.047	
	Bottom Cutting Edge B		**MPMX120412-WH**	M	●	●	—	—	—	.500	.187	.047	
	Peripheral Cutting Edge		**SPMX120408-WH**	M	●	●	—	—	—	.500	.187	.031	
Straight Cutting Edge Type	Bottom Cutting Edge A		**JPMX190412-JM**	M	●	●	.750	.693	.500	—	.187	.047	
			*** JPMX140412-JM**	M	●	●	.563	.508	.500	—	.187	.047	
	Bottom Cutting Edge B		**MPMX120412-JM**	M	●	●	—	—	—	.500	.187	.047	
	Peripheral Cutting Edge		**SPMX120408-JM**	M	●	●	—	—	—	.500	.187	.031	

* Only for use with a shell type holder.



RECOMMENDED CUTTING CONDITIONS (Shank Type)

■Cutting Conditions for Shoulder Milling (Number of effective flutes is 2.)

	Work Material	Hardness	Insert Grade/Breaker	Cutting Speed **vc** (SFM)	Width of Cut **ae** (inch)	Depth of Cut **ap** (inch)	Feed per Tooth **fz** (IPT)
P	Mild Steel	≤180HB	**VP15TF WH**	395 (330—460)	<.197	<4DC	.006—.010
			VP15TF JM	395 (330—460)	<.394	<2DC	.006—.010
	Carbon Steel Alloy Steel	180—350HB	**VP15TF WH**	260 (230—395)	<.197	<4DC	.006—.010
			VP15TF JM	260 (230—395)	<.394	<2DC	.006—.010
	Alloy Tool Steel	≤300HB	**VP15TF WH**	260 (200—330)	<.197	<4DC	.004—.008
			VP15TF JM	260 (200—330)	<.394	<2DC	.004—.008
M	Stainless Steel	≤200HB	**VP20RT WH**	260 (230—395)	<.197	<4DC	.004—.008
			VP20RT JM	260 (230—395)	<.394	<2DC	.004—.008
K	Cast Iron	Tensile Strength ≤350MPa	**VP15TF WH**	330 (260—395)	<.197	<4DC	.006—.016
			VP15TF JM	330 (260—395)	<.197	<4DC	.004—.010
	Ductile Cast Iron	Tensile Strength ≤800MPa	**VP15TF WH**	260 (200—330)	<.197	<4DC	.006—.014
			VP15TF JM	260 (200—330)	<.197	<4DC	.004—.008
S	Titanium Alloy	≤350HB	**VP20RT WH**	130 (115—165)	<.197	<4DC	.003—.005
			VP20RT JM	130 (115—165)	<.394	<2DC	.003—.005

Note 1) The above cutting conditons are determined based on high rigidity machine and work material, where no vibration occurred. Please adjust processing conditions if the vibration is generated.

Note 2) For tools with a cutting edge length of 7.87″ or more, please reduce the cutting speed and table feed by 10-20% and the width of cut by 50%.

Note 3) If the cutting angle between the tool and work material exceeds 90º when machining corners ,Reduce the cutting speed and table feed by 10-20% and ae by 50%. Also if possible, set a radius cutting path for corners.

■Cutting Conditions for Slot Milling

	Work Material	Hardness	Insert Grade/Breaker	Cutting Speed **vc** (SFM)	Width of Cut **ae** (inch)	Depth of Cut **ap** (inch)	Feed per Tooth **fz** (IPT)
P	Mild Steel	≤180HB	**VP15TF WH**	200 (165—395)	DC	<.394	.004—.010
			VP15TF JM	200 (165—395)	DC	<.394	.004—.006
	Carbon Steel Alloy Steel	180—350HB	**VP15TF WH**	200 (165—330)	DC	<.394	.004—.010
			VP15TF JM	200 (165—330)	DC	<.394	.004—.006
	Alloy Tool Steel	≤300HB	**VP15TF WH**	165 (130—260)	DC	<.394	.004—.010
			VP15TF JM	165 (130—260)	DC	<.394	.004—.006
M	Stainless Steel	≤200HB	**VP20RT WH**	200 (165—395)	DC	<.394	.004—.010
			VP20RT JM	200 (165—395)	DC	<.394	.004—.006
K	Cast Iron	Tensile Strength ≤350MPa	**VP15TF WH**	165 (130—260)	DC	<1.969	.006—.010
			VP15TF JM	165 (130—260)	DC	<1.575	.004—.008
	Ductile Cast Iron	Tensile Strength ≤800MPa	**VP15TF WH**	130 (115—260)	DC	<1.575	.006—.010
			VP15TF JM	130 (115—260)	DC	<1.181	.004—.008
S	Titanium Alloy	≤350HB	**VP20RT WH**	115 (100—165)	DC	<.394	.003—.005
			VP20RT JM	115 (100—165)	DC	<.394	.003—.005

Note 1) The above cutting conditons are determined based on high rigidity machine and work material, where no vibration occurred. Please adjust processing conditions if the vibration is generated.



RECOMMENDED CUTTING CONDITIONS (Shell Type)

■Cutting Conditions for Shoulder Milling (Number of effective flutes is 4.)

	Work Material	Hardness	Insert Grade/Breaker	Cutting Speed **vc** (SFM)	Width of Cut **ae** (inch)	Depth of Cut **ap** (inch)	Feed per Tooth **fz** (IPT)
P	Mild Steel	≤180HB	**VP15TF JM**	395 (330—460)	<.394	<0.5DC	.006—.012
				395 (330—460)	<.394	>0.5DC	.006—.010
	Carbon Steel Alloy Steel	180—350HB	**VP15TF JM**	395 (260—425)	<.394	<0.5DC	.006—.012
				330 (260—395)	<.394	>0.5DC	.006—.010
	Alloy Tool Steel	≤300HB	**VP15TF JM**	330 (200—360)	<.394	<0.5DC	.004—.010
				260 (200—330)	<.394	>0.5DC	.004—.006
M	Stainless Steel	≤200HB	**VP20RT JM**	460 (330—490)	<.394	<0.5DC	.004—.010
				395 (330—460)	<.394	>0.5DC	.004—.008
K	Cast Iron	Tensile Strength ≤350MPa	**VP15TF WH**	395 (260—425)	<.394	<0.5DC	.010—.016
				330 (260—395)	<.394	>0.5DC	.010—.016
			VP15TF JM	395 (260—425)	<.394	<0.5DC	.006—.012
				330 (260—395)	<.394	>0.5DC	.006—.010
	Ductile Cast Iron	Tensile Strength ≤800MPa	**VP15TF WH**	330 (200—360)	<.394	<0.5DC	.008—.014
				260 (200—360)	<.394	>0.5DC	.008—.014
			VP15TF JM	330 (200—395)	<.394	<0.5DC	.006—.012
				260 (200—395)	<.394	>0.5DC	.006—.012
S	Titanium Alloy	≤350HB	**VP20RT JM**	150 (115—165)	<.394	<0.5DC	.003—.004
				150 (115—165)	<.394	>0.5DC	.003—.004

Note 1) The above cutting conditons are determined based on high rigidity machine and work material, where no vibration occurred.
Please adjust processing conditions if the vibration is generated.

■Cutting Conditions for Slot Milling

	Work Material	Hardness	Insert Grade/Breaker	Cutting Speed **vc** (SFM)	Width of Cut **ae** (inch)	Depth of Cut **ap** (inch)	Feed per Tooth **fz** (IPT)
P	Mild Steel	≤180HB	**VP15TF JM**	395 (330—460)	DC	<0.25DC	.006—.010
	Carbon Steel Alloy Steel	180—350HB	**VP15TF JM**	330 (260—395)	DC	<0.25DC	.006—.010
	Alloy Tool Steel	≤300HB	**VP15TF JM**	260 (200—330)	DC	<.394	.004—.008
M	Stainless Steel	≤200HB	**VP20RT JM**	330 (260—460)	DC	<.394	.004—.006
K	Cast Iron	Tensile Strength ≤350MPa	**VP15TF WH**	260 (200—330)	DC	<0.25DC	.004—.010
				200 (165—330)	DC	<0.6DC	.004—.008
			VP15TF JM	260 (200—330)	DC	<0.25DC	.004—.008
				200 (165—330)	DC	<0.6DC	.004—.006
	Ductile Cast Iron	Tensile Strength ≤800MPa	**VP15TF WH**	260 (200—330)	DC	<0.25DC	.004—.010
				200 (165—330)	DC	<0.5DC	.004—.008
			VP15TF JM	260 (200—330)	DC	<0.25DC	.004—.008
				200 (165—330)	DC	<0.5DC	.004—.006
S	Titanium Alloy	≤350HB	**VP20RT JM**	130 (115—165)	DC	<0.25DC	.002—.004

Note 1) The above cutting conditons are determined based on high rigidity machine and work material, where no vibration occurred.
Please adjust processing conditions if the vibration is generated.

DEEP SHOULDER MILLING
<CUTTING FOR TITANIUM ALLOY>

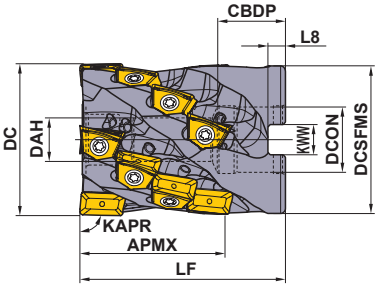
90° KAPR

VFX5

P | M | K | N | **S** | H

Heat Resistant Alloy





Right hand tool holder only.

■SHELL TYPE

Order Number	Stock	Number of Flutes	Total Inserts	Dimensions (inch)									WT (lbs)
	R			DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	APMX	
VFX5UR0203CA10	●	3	6	2.000	2.000	1.000	.950	.520	1.929	.375	.219	1.000	.20
VFX5UR0203CA15	●	3	9	2.000	2.500	1.000	1.000	.520	1.929	.375	.219	1.500	.26
VFX5UR0204AA10	●	4	8	2.000	2.000	.750	.750	.395	1.929	.313	.187	1.000	.24
VFX5UR0204AA15	●	4	12	2.000	2.500	.750	.750	.395	1.929	.313	.187	1.500	.30
VFX5UR0204CA15	●	4	12	2.000	2.500	1.000	1.000	.520	1.929	.375	.219	1.500	.27
VFX5UR0204AA20	●	4	16	2.000	2.750	.750	.750	.395	1.929	.313	.187	2.000	.32
VFX5UR0204CA20	●	4	16	2.000	3.000	1.000	1.000	.520	1.929	.375	.219	2.000	.33
VFX5UR2505CA10	●	5	10	2.500	2.500	1.000	1.250	.520	2.421	.375	.219	1.000	.49
VFX5UR2505CA24	●	5	25	2.500	3.500	1.000	1.250	.520	2.421	.375	.219	2.400	.68
VFX5UR0306DA29	●	6	36	3.000	4.250	1.250	1.375	.645	2.894	.500	.281	2.900	1.21

SPARE PARTS

Order Number	★2				★3				Number of Insert	
	Clamp Screw	Number	Seal Washer	Wrench	Coolant Nozzle	Number	Anti-seize Lubricant	Set Bolt	End cutting edge XNMU1607 ○○R-○○	Peripheral ★1 cutting edge XNMU1607 08R-○○
VFX5UR0203CA10	TS352	6	WU500-S1	TKY10D	HSD04004H08	9	MK1KS	HSCUF50014	3	3
VFX5UR0203CA15	TS352	9	WU500-S1	TKY10D	HSD04004H08	12	MK1KS	HSCUF50018	3	6
VFX5UR0204AA10	TS352	8	WU375-S1	TKY10D	HSD04004H08	12	MK1KS	HSCUF37513	4	4
VFX5UR0204AA15	TS352	12	WU375-S1	TKY10D	HSD04004H08	16	MK1KS	HSCUF37520	4	8
VFX5UR0204CA15	TS352	12	WU500-S1	TKY10D	HSD04004H08	16	MK1KS	HSCUF50018	4	8
VFX5UR0204AA20	TS352	16	WU375-S1	TKY10D	HSD04004H08	20	MK1KS	HSCUF37520	4	12
VFX5UR0204CA20	TS352	16	WU500-S1	TKY10D	HSD04004H08	20	MK1KS	HSCUF50023	4	12
VFX5UR2505CA10	TS352	10	WU500-S1	TKY10D	HSD04004H08	15	MK1KS	HSCUF50018	5	5
VFX5UR2505CA24	TS352	25	WU500-S1	TKY10D	HSD04004H08	30	MK1KS	HSCUF50028	5	20
VFX5UR0306DA29	TS352	36	WU625-S1	TKY10D	HSD04004H08	42	MK1KS	HSCUF62535	6	30

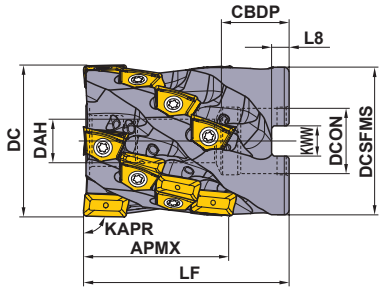
★1 Only corner radius RE.031 can be used.
★2 Clamp Torque (lbf-in) : TS352=22
★3 The .031" nozzels are installed in the standard. Select and use alternate nozzles from below list depending on coolant pressure.
★4 **In case of internal coolant supply, please use a face mill arbor with through coolant channels; Regular center-thru or side-thru arbors can't be used.**
★5 **The cutter body includes a non-coolant through set bolt for an arbor.**

	≤140 PSI (≤5.3 gal/min)	←Standard→ (140 PSI-720 PSI)	≥720 PSI (≥7.9 gal/min)	≥1000 PSI (≥13.2 gal/min)
Nozzle Dia.	ø.024"	ø.031"	ø.047"	ø.063"
Order Number	**HSD04004H06**	**HSD04004H08**	**HSD04004H12**	**HSD04004H16**

- Clamp Torque (lbf-in) : HSD0400H○○=13
- The part number for a plug screw without a through nozzle is HSS04004.
- Insert with a corner radius of .125" and above, as corner radius increases the LF dimension increases.
  Corner radius .125": LF+.028" Corner radius .157": LF+.059"

● : USA Stock ★ : Stocked in Japan





Right hand tool holder only.

Metric Standard

For metric arbors

■SHELL TYPE

Order Number	Stock	Number of Flutes	Total Inserts	Dimensions (mm)									WT (kg)
	R			DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	APMX	
VFX5-040A03A026R	★	3	6	40	50	16	21	8.5	38.2	8.4	5.6	26	0.3
VFX5-040A03A038R	★	3	9	40	60	16	21	8.5	38.2	8.4	5.6	38	0.4
VFX5-050X03A026R	★	3	6	50	50	27	23	12.5	48.2	12.4	7.0	26	0.4
VFX5-050X03A038R	★	3	9	50	60	27	23	12.5	48.2	12.4	7.0	38	0.5
VFX5-050A04A026R	★	4	8	50	50	22	21	10.5	48.2	10.4	6.3	26	0.5
VFX5-050A04A038R	★	4	12	50	60	22	21	10.5	48.2	10.4	6.3	38	0.6
VFX5-050X04A038R	★	4	12	50	60	27	23	12.5	48.2	12.4	7.0	38	0.5
VFX5-050A04A050R	★	4	16	50	70	22	21	10.5	48.2	10.4	6.3	50	0.7
VFX5-063A05A026R	★	5	10	63	60	27	28	12.5	61	12.4	7.0	26	1.0
VFX5-063A05A063R	★	5	25	63	85	27	28	12.5	61	12.4	7.0	63	1.4
VFX5-080A06A075R	★	6	36	80	100	32	28	16.5	77.3	14.4	8.0	75	2.8

SPARE PARTS

Order Number	✶2				✶3				Number of Insert	
	Clamp Screw	Number	Seal Washer	Wrench	Coolant Nozzle	Number	Anti-seize Lubricant	Set Bolt	End cutting edge XNMU1607○○R-○○	Peripheral ✶1 cutting edge XNMU1607 08R-○○
VFX5-040A03A026R	TS352	6	W8-S1	TKY10D	HSD04004H08	9	MK1KS	HSC08040	3	3
VFX5-040A03A038R	TS352	9	W8-S1	TKY10D	HSD04004H08	12	MK1KS	HSC08050	3	6
VFX5-050X03A026R	TS352	6	W12-S1	TKY10D	HSD04004H08	9	MK1KS	HSC12035	3	3
VFX5-050X03A038R	TS352	9	W12-S1	TKY10D	HSD04004H08	12	MK1KS	HSC12045	3	6
VFX5-050A04A026R	TS352	8	W10-S1	TKY10D	HSD04004H08	12	MK1KS	HSC10035	4	4
VFX5-050A04A038R	TS352	12	W10-S1	TKY10D	HSD04004H08	16	MK1KS	HSC10045	4	8
VFX5-050X04A038R	TS352	12	W12-S1	TKY10D	HSD04004H08	16	MK1KS	HSC12045	4	8
VFX5-050A04A050R	TS352	16	W10-S1	TKY10D	HSD04004H08	20	MK1KS	HSC10055	4	12
VFX5-063A05A026R	TS352	10	W12-S1	TKY10D	HSD04004H08	15	MK1KS	HSC12045	5	5
VFX5-063A05A063R	TS352	25	W12-S1	TKY10D	HSD04004H08	30	MK1KS	HSC12070	5	20
VFX5-080A06A075R	TS352	36	W16-S1	TKY10D	HSD04004H08	42	MK1KS	HSC16080	6	30

✶1 Only corner radius RE0.8 can be used for the peripheral cutting edges except the end cutting edge.
✶2 Clamp Torque (N • m) : TS352=2.5
✶3 Coolant nozzles are available with varying diameters for adjusting coolant pressure. Select nozzles as required by the specification.
✶4 **In case of internal coolant supply, please use a face mill arbor with through coolant channels; Regular center-thru or side-thru arbors can't be used.**
✶5 Set bolt not included.

	≤1 Mpa (≤20 l/min.)	←Standard→	≥5 Mpa (≥30 l/min.)	≥7 Mpa (≥50 l/min.)
Nozzle Dia.	ø0.6 mm	ø0.8 mm	ø1.2 mm	ø1.6 mm
Order Number	**HSD04004H06**	**HSD04004H08**	**HSD04004H12**	**HSD04004H16**

- Clamp Torque (N • m) : HSD0400H○○=1.5
- The part number for a plug screw without a through nozzle is HSS04004.
- Insert with a corner radius of 3.2 mm and above, as corner radius increases the LF dimension increases.
  Corner radius 3.2 mm: LF+0.7 mm Corner radius 4.0 mm: LF+1.5 mm

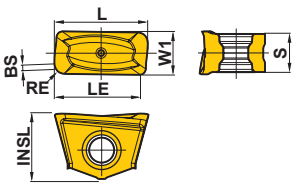
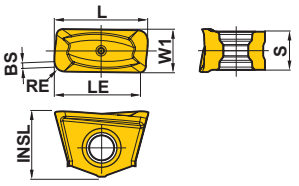
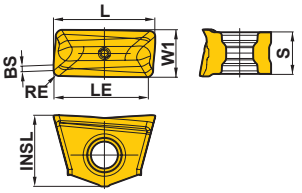
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

INSERTS

(inch)

Work Material	S	Heat-resistant Alloy, Titanium Alloy	✣			

Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Shape	Order Number	Stock Coated MP9130	L	LE	W1	INSL	S	BS	RE	Geometry
General Purpose 	**XNMU160708R-MS**	●	.630	.528	.276	.437	.256	.039	.031	
	XNMU160712R-MS	●	.630	.543	.276	.437	.256	.039	.047	
	XNMU160716R-MS	●	.630	.543	.276	.437	.256	.039	.063	
	XNMU160724R-MS	●	.630	.543	.276	.437	.256	.039	.094	
	*1 **XNMU160732R-MS**	●	.681	.567	.276	.437	.256	—	.126	
	*1 **XNMU160740R-MS**	●	.744	.598	.276	.437	.256	—	.157	
Cutting Edge Enhancement Type 	**XNMU160708R-HS**	●	.630	.528	.276	.437	.256	.039	.031	
Chip Processing Type 	**XNMU160708R-LS**	●	.630	.528	.276	.437	.256	.039	.031	

Note 1) Note for insert with a corner radius of .126" and above, as corner radius increases the LF dimension increases.
Corner radius .126": LF+.028" Corner radius .157": LF+.059"

● : USA Stock
<10 inserts in one case>

RECOMMENDED CUTTING CONDITIONS

VFX5

(inch)

	Work Material	DC (inch)	Number of Flutes	Chip Breaker	vc (SFM)	n (min^{-1})	apmax	ae	fz (IPT)	vf (IPM)	Chip Removal Rate Q ($inch^3$/min)	Estimated Cutting Power PC (HP)	Expected Torque (lbf-ft)	Tool Life Ratio (%)
S	Titanium Alloy (Ti6Al4V)	ϕ2.0	3	LS	130	248	1.496	2.000	.004	2.932	9	8.6	182	40
			4	MS	165	315	1.969	1.200	.004	4.963	12	10.7	178	60
			4	MS	195	372	1.969	.800	.004	5.865	9	8.0	113	80
			4	HS	195	372	1.969	.400	.005	7.038	6	5.2	74	100
		ϕ2.5	5	LS	130	199	2.362	2.500	.004	3.910	23	22.3	590	40
			5	MS	165	252	2.362	1.500	.004	4.963	18	15.9	332	60
			5	MS	195	298	2.362	1.000	.004	5.865	14	12.0	212	80
			5	HS	195	298	2.362	.500	.005	7.038	8	7.8	137	100
		ϕ3.0	6	LS	130	166	2.953	3.000	.004	3.910	35	33.2	1055	40
			6	MS	165	210	2.953	1.800	.004	4.963	26	23.8	594	60
			6	MS	195	248	2.953	1.200	.004	5.865	21	17.9	379	80
			6	HS	195	248	2.953	.600	.005	7.038	12	11.6	246	100
	Titanium Alloy (Ti-5553)	ϕ2.0	3	LS	80	153	2.953	2.000	.003	1.444	9	8.5	292	30
			4	MS	80	153	2.953	1.200	.003	1.925	7	6.5	224	50
			4	MS	100	191	2.953	.800	.004	3.008	7	6.5	178	70
			4	HS	100	191	2.953	.400	.004	3.008	4	3.6	98	80
		ϕ2.5	5	LS	80	122	2.953	2.500	.003	1.925	14	14.1	608	30
			5	MS	80	122	2.953	1.500	.003	1.925	9	8.1	350	50
			5	MS	100	153	2.953	1.000	.004	3.008	9	8.1	278	70
			5	HS	100	153	2.953	.500	.004	3.008	4	4.5	154	80
		ϕ3.0	6	LS	80	102	3.543	3.000	.003	1.925	20	20.1	1035	30
			6	MS	80	102	3.543	1.800	.003	1.925	12	11.5	595	50
			6	MS	100	127	3.543	1.200	.004	3.008	13	11.5	474	70
			6	HS	100	127	3.543	.600	.004	3.008	6	6.3	262	80

VFX5 (Metric Standard)

(inch)

	Work Material	DC (inch)	Number of Flutes	Chip Breaker	vc (SFM)	n (min^{-1})	apmax	ae	fz (IPT)	vf (IPM)	Chip Removal Rate Q ($inch^3$/min)	Estimated Cutting Power PC (HP)	Expected Torque (lbf-ft)	Tool Life Ratio (%)
S	Titanium Alloy (Ti6Al4V)	ϕ40	3	LS	130	315	1.496	1.575	.004	3.724	9	8.6	143	40
			3	MS	165	400	1.496	.945	.004	4.727	7	6.1	80	60
			3	MS	195	473	1.496	.630	.004	5.586	5	4.6	51	80
			3	HS	195	473	1.496	.315	.005	6.704	3	3.0	33	100
		ϕ50	3	LS	130	252	1.496	1.969	.004	2.979	9	8.6	179	40
			4	MS	165	320	1.969	1.181	.004	5.042	12	10.7	175	60
			4	MS	195	378	1.969	.787	.004	5.959	9	8.0	112	80
			4	HS	195	378	1.969	.394	.005	7.151	6	5.2	72	100
		ϕ63	5	LS	130	200	2.362	2.480	.004	3.941	23	22.3	585	40
			5	MS	165	254	2.362	1.488	.004	5.002	18	15.9	329	60
			5	MS	195	300	2.362	.992	.004	5.911	14	12.0	210	80
			5	HS	195	300	2.362	.496	.005	7.094	8	7.8	136	100
		ϕ80	6	LS	130	158	2.953	3.150	.004	3.724	35	33.2	1107	40
			6	MS	165	200	2.953	1.890	.004	4.727	26	23.8	624	60
			6	MS	195	236	2.953	1.260	.004	5.586	21	17.9	398	80
			6	HS	195	236	2.953	.630	.005	6.704	12	11.6	258	100
	Titanium Alloy (Ti-5553)	ϕ40	3	LS	80	194	2.362	1.575	.003	1.833	7	6.8	185	30
			3	MS	80	194	2.362	.945	.003	1.833	4	3.9	106	50
			3	MS	100	243	2.362	.630	.004	2.865	4	3.9	85	70
			3	HS	100	243	2.362	.315	.004	2.865	2	2.2	47	80
		ϕ50	3	LS	80	155	2.953	1.969	.003	1.467	9	8.5	287	30
			4	MS	80	155	2.953	1.181	.003	1.956	7	6.5	220	50
			4	MS	100	194	2.953	.787	.004	3.056	7	6.5	175	70
			4	HS	100	194	2.953	.394	.004	3.056	4	3.6	97	80
		ϕ63	5	LS	80	123	2.953	2.480	.003	1.940	14	14.1	603	30
			5	MS	80	123	2.953	1.488	.003	1.940	9	8.1	347	50
			5	MS	100	154	2.953	.992	.004	3.032	9	8.1	276	70
			5	HS	100	154	2.953	.496	.004	3.032	4	4.5	153	80
		ϕ80	6	LS	80	97	3.543	3.150	.003	1.833	20	20.1	1086	30
			6	MS	80	97	3.543	1.890	.003	1.833	12	11.5	625	50
			6	MS	100	121	3.543	1.260	.004	2.865	13	11.5	498	70
			6	HS	100	121	3.543	.630	.004	2.865	6	6.3	275	80

Note 1) Please note that machining performance varies depending to the conditions such as machine rigidity, work clamping rigidity, coolant supply system, pressure and flow volume etc.
Note 2) Internal coolant is recommended. Please use an FMH type arbor for through coolant. Using external coolant in combination with through coolant is even more effective.
Note 3) The tool life ratio shows the standard when ae = tool diameter × 20% is assumed to be 100 when shoulder cutting.
Note 4) The maximum depth of cut (apmax) varies according to the machine rigidity and power.

DEEP SHOULDER MILLING
<CUTTING FOR TITANIUM ALLOY>

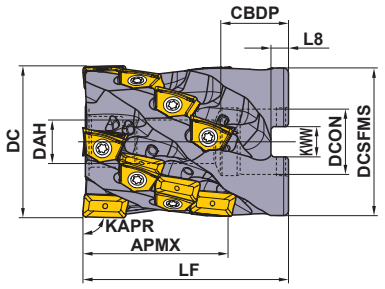
90° KAPR

VFX6

P | M | K | N | **S** | H

Heat Resistant Alloy





Right hand tool holder only.

■SHELL TYPE

Order Number	Stock	Number of Flutes	Total	Dimensions (inch)									WT (lbs)
	R			DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	APMX	
VFX6UR2504CA12	●	4	8	2.500	2.500	1.000	1.250	.520	2.421	.375	.219	1.200	.21
VFX6UR2504CA23	●	4	16	2.500	3.500	1.000	1.250	.520	2.421	.375	.219	2.300	.29
VFX6UR0305DA12	●	5	10	3.000	2.500	1.250	1.375	.645	2.894	.500	.281	1.200	.30
VFX6UR0305DA29	●	5	25	3.000	4.250	1.250	1.375	.645	2.894	.500	.281	2.900	.52
VFX6UR0406EA12	●	6	12	4.000	3.000	1.500	1.500	.770	3.866	.625	.375	1.200	.69
VFX6UR0406EA35	●	6	36	4.000	5.000	1.500	1.500	.770	3.866	.625	.375	3.500	1.16

SPARE PARTS

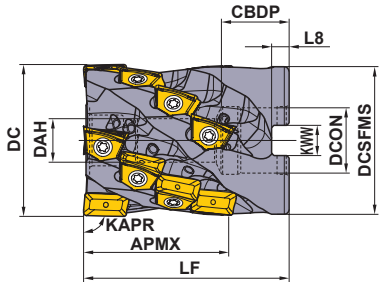
Order Number	★2				★3				Number of Insert	
	Clamp Screw	Number	Seal Washer	Wrench	Coolant Nozzle	Number	Anti-seize Lubricant	Set Bolt	End cutting edge XNMU1909 ○○R-○○	Peripheral ★1 cutting edge XNMU1909 12R-○○
VFX6UR2504CA12	TS450	8	WU500-S1	TKY20T	HSD04004H08	12	MK1KS	HSCUF50018	4	4
VFX6UR2504CA23	TS450	16	WU500-S1	TKY20T	HSD04004H08	20	MK1KS	HSCUF50028	4	12
VFX6UR0305DA12	TS450	10	WU625-S1	TKY20T	HSD04004H08	15	MK1KS	HSCUF62518	5	5
VFX6UR0305DA29	TS450	25	WU625-S1	TKY20T	HSD04004H08	30	MK1KS	HSCUF62535	5	20
VFX6UR0406EA12	TS450	12	WU750-S1	TKY20T	HSD04004H08	18	MK1KS	HSCUF75018	6	6
VFX6UR0406EA35	TS450	36	WU750-S1	TKY20T	HSD04004H08	42	MK1KS	HSCUF75040	6	30

★1 Only corner radius RE.047" can be used.
★2 Clamp Torque (lbf-in) : TS450=44
★3 The .031" nozzels are installed in the standard. Select and use alternate nozzles from below list depending on coolant pressure.
★4 **In case of internal coolant supply, please use a face mill arbor with through coolant channels; Regular center-thru or side-thru arbors can't be used.**
★5 The cutter body includes a non-coolant through set bolt for an arbor.

	≤140 PSI (≤5.3 gal/min)	←Standard→ (140 PSI-720 PSI)	≥720 PSI (≥7.9 gal/min)	≥1000 PSI (≥13.2 gal/min)
Nozzle Dia.	ø.024"	ø.031"	ø.047"	ø.063"
Order Number	**HSD04004H06**	**HSD04004H08**	**HSD04004H12**	**HSD04004H16**

- Clamp Torque (lbf-in) : HSD0400H○○=13
- The part number for a plug screw without a through nozzle is HSS04004.
- Insert with a corner radius of .125" and above, as corner radius increases the LF dimension increases.
  Corner radius .125": LF+.028" Corner radius .157": LF+.059" Corner radius .197": LF+.059"





Metric Standard

For metric arbors

Right hand tool holder only.

■SHELL TYPE

Order Number	Stock	Number of Flutes	Total	Dimensions (mm)									WT (kg)
	R			DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	APMX	
VFX6-063A04A031R	★	4	8	63	60	27	28	12.5	61	12.4	7	31	0.9
VFX6-063A04A060R	★	4	16	63	85	27	28	12.5	61	12.4	7	60	1.3
VFX6-080A05A031R	★	5	10	80	60	32	28	16.5	77.3	14.4	8	31	1.5
VFX6-080A05A075R	★	5	25	80	100	32	28	16.5	77.3	14.4	8	75	2.6
VFX6-100A06A031R	★	6	12	100	65	40	30	20.5	96.6	16.4	9	31	2.7
VFX6-100A06A090R	★	6	36	100	115	40	30	20.5	96.6	16.4	9	90	4.8

SPARE PARTS

Order Number	✶2				✶3				Number of Insert	
	Clamp Screw	Number	Seal Washer	Wrench	Coolant Nozzle	Number	Anti-seize Lubricant	Set Bolt	End cutting edge XNMU1909 ○○R-○○	Peripheral ✶1 cutting edge XNMU1909 12R-○○
VFX6-063A04A031R	TS450	8	W12-S1	TKY20T	HSD04004H08	12	MK1KS	HSC12045	4	4
VFX6-063A04A060R	TS450	16	W12-S1	TKY20T	HSD04004H08	20	MK1KS	HSC12070	4	12
VFX6-080A05A031R	TS450	10	W16-S1	TKY20T	HSD04004H08	15	MK1KS	HSC16040	5	5
VFX6-080A05A075R	TS450	25	W16-S1	TKY20T	HSD04004H08	30	MK1KS	HSC16080	5	20
VFX6-100A06A031R	TS450	12	W20-S1	TKY20T	HSD04004H08	18	MK1KS	HSC20040	6	6
VFX6-100A06A090R	TS450	36	W20-S1	TKY20T	HSD04004H08	42	MK1KS	HSC20090	6	30

✶1 Only corner radius RE1.2 can be used for the peripheral cutting edges except the end cutting edge.
✶2 Clamp Torque (N • m) : TS450=5.0
✶3 Coolant nozzles are available with varying diameters for adjusting coolant pressure. Select nozzles as required by the specification.
✶4 **In case of internal coolant supply, please use a face mill arbor with through coolant channels; Regular center-thru or side-thru arbors can't be used.**
✶5 Set bolt not included.

	≤1 Mpa (≤20 l/min.)	←Standard→	≥5 Mpa (≥30 l/min.)	≥7 Mpa (≥50 l/min.)
Nozzle Dia.	ø0.6 mm	ø0.8 mm	ø1.2 mm	ø1.6 mm
Order Number	**HSD04004H06**	**HSD04004H08**	**HSD04004H12**	**HSD04004H16**

- Clamp Torque (N • m) : HSD0400H○○=1.5
- The part number for a plug screw without a through nozzle is HSS04004.
- Insert with a corner radius of 3.2 mm and above, as corner radius increases the LF dimension increases.
  Corner radius 3.2 mm: LF+0.7 mm Corner radius 4.0 mm: LF+1.5 mm Corner radius 5.0 mm: LF+1.5 mm

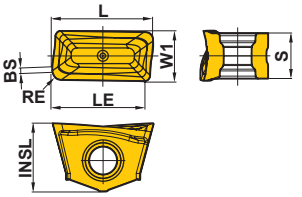
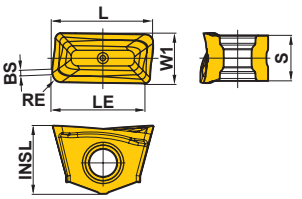
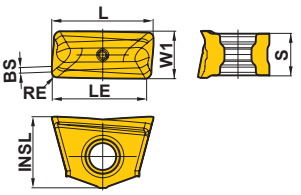
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

INSERTS

(inch)

Work Material	S	Heat-resistant Alloy, Titanium Alloy

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✣ : Unstable Cutting

Shape	Order Number	Stock	L	LE	W1	INSL	S	BS	RE	Geometry
		Coated								
		MP9130								
General Purpose 	**XNMU190912R-MS**	●	.752	.650	.374	.500	.335	.039	.047	
	XNMU190916R-MS	●	.752	.650	.374	.500	.335	.039	.063	
	XNMU190924R-MS	●	.752	.654	.374	.500	.335	.039	.094	
	*1 **XNMU190932R-MS**	●	.795	.673	.374	.500	.335	—	.126	
	*1 **XNMU190940R-MS**	●	.858	.701	.374	.500	.335	—	.157	
	*1 **XNMU190950R-MS**	●	.858	.701	.374	.500	.335	—	.197	
Cutting Edge Enhancement Type 	**XNMU190912R-HS**	●	.752	.650	.374	.500	.335	.039	.047	
Chip Processing Type 	**XNMU190912R-LS**	●	.752	.650	.374	.500	.335	.039	.047	

Note 1) Note for insert with a corner radius of .126" and above, as corner radius increases the LF dimension increases.
Corner radius .126": LF+.028" Corner radius .157": LF+.059" Corner radius .197": LF+.059"

● : USA Stock
<10 inserts in one case>

RECOMMENDED CUTTING CONDITIONS

VFX6

(inch)

	Work Material	DC (inch)	Number of Flutes	Chip Breaker	vc (SFM)	n (min^{-1})	apmax	ae	fz (IPT)	vf (IPM)	Chip Removal Rate Q ($inch^3$/min)	Estimated Cutting Power PC (HP)	Expected Torque (lbf-ft)	Tool Life Ratio (%)
S	Titanium Alloy (Ti6Al4V)	ϕ2.5	4	LS	130	199	2.362	2.500	.004	3.128	18	17.8	472	40
			4	MS	165	252	2.362	1.500	.004	3.970	14	12.7	266	60
			4	MS	195	298	2.362	1.000	.004	4.692	11	9.6	170	80
			4	HS	195	298	2.362	.500	.005	5.630	7	6.2	110	100
		ϕ3.0	5	LS	130	166	2.953	3.000	.004	3.258	29	27.7	879	40
			5	MS	165	210	2.953	1.800	.004	4.136	22	19.8	495	60
			5	MS	195	248	2.953	1.200	.004	4.887	17	14.9	316	80
			5	HS	195	248	2.953	.600	.005	5.865	10	9.7	205	100
		ϕ4.0	6	LS	130	124	3.543	4.000	.004	2.932	42	39.3	1663	40
			6	MS	165	158	3.543	2.400	.004	3.722	32	28.1	937	60
			6	MS	195	186	3.543	1.600	.004	4.399	25	21.2	599	80
			6	HS	195	186	3.543	.800	.005	5.278	15	13.8	388	100
	Titanium Alloy (Ti-5553)	ϕ2.5	4	LS	80	122	2.362	2.500	.003	1.540	9	9.1	392	30
			4	MS	80	122	2.362	1.500	.003	1.540	5	5.2	225	50
			4	MS	100	153	2.362	1.000	.004	2.406	6	5.2	179	70
			4	HS	100	153	2.362	.500	.004	2.406	3	2.9	99	80
		ϕ3.0	5	LS	80	102	2.953	3.000	.003	1.604	14	14.1	730	30
			5	MS	80	102	2.953	1.800	.003	1.604	9	8.1	419	50
			5	MS	100	127	2.953	1.200	.004	2.506	9	8.1	334	70
			5	HS	100	127	2.953	.600	.004	2.506	4	4.5	185	80
		ϕ4.0	6	LS	80	76	3.543	4.000	.003	1.444	20	20.1	1380	30
			6	MS	80	76	3.543	2.400	.003	1.444	12	11.5	794	50
			6	MS	100	95	3.543	1.600	.004	2.256	13	11.5	632	70
			6	HS	100	95	3.543	.800	.004	2.256	6	6.3	349	80

VFX6 (Metric Standard)

(inch)

	Work Material	DC (mm)	Number of Flutes	Chip Breaker	vc (SFM)	n (min^{-1})	apmax	ae	fz (IPT)	vf (IPM)	Chip Removal Rate Q ($inch^3$/min)	Estimated Cutting Power PC (HP)	Expected Torque (lbf-ft)	Tool Life Ratio (%)
S	Titanium Alloy (Ti6Al4V)	ϕ63	4	LS	130	200	2.362	2.480	.004	3.153	18	17.8	468	40
			4	MS	165	254	2.362	1.488	.004	4.002	14	12.7	263	60
			4	MS	195	300	2.362	.992	.004	4.729	11	9.6	168	80
			4	HS	195	300	2.362	.496	.005	5.675	7	6.2	109	100
		ϕ80	5	LS	130	158	2.953	3.150	.004	3.104	29	27.7	923	40
			5	MS	165	200	2.953	1.890	.004	3.939	22	19.8	520	60
			5	MS	195	236	2.953	1.260	.004	4.655	17	14.9	332	80
			5	HS	195	236	2.953	.630	.005	5.586	10	9.7	215	100
		ϕ100	6	LS	130	126	3.543	3.937	.004	2.979	42	39.3	1637	40
			6	MS	165	160	3.543	2.362	.004	3.782	32	28.1	923	60
			6	MS	195	189	3.543	1.575	.004	4.469	25	21.2	590	80
			6	HS	195	189	3.543	.787	.005	5.363	15	13.8	382	100
	Titanium Alloy (Ti-5553)	ϕ63	4	LS	80	123	2.362	2.480	.003	1.552	9	9.1	389	30
			4	MS	80	123	2.362	1.488	.003	1.552	5	5.2	223	50
			4	MS	100	154	2.362	.992	.004	2.425	6	5.2	178	70
			4	HS	100	154	2.362	.496	.004	2.425	3	2.9	98	80
		ϕ80	5	LS	80	97	2.953	3.150	.003	1.528	14	14.1	766	30
			5	MS	80	97	2.953	1.890	.003	1.528	9	8.1	440	50
			5	MS	100	121	2.953	1.260	.004	2.387	9	8.1	350	70
			5	HS	100	121	2.953	.630	.004	2.387	4	4.5	194	80
		ϕ100	6	LS	80	78	3.543	3.937	.003	1.467	20	20.1	1358	30
			6	MS	80	78	3.543	2.362	.003	1.467	12	11.5	781	50
			6	MS	100	97	3.543	1.575	.004	2.292	13	11.5	622	70
			6	HS	100	97	3.543	.787	.004	2.292	6	6.3	344	80

Note 1) Please note that machining performance varies depending to the conditions such as machine rigidity, work clamping rigidity, coolant supply system, pressure and flow volume etc.
Note 2) Internal coolant is recommended. Please use an FMH type arbor for through coolant. Using external coolant in combination with through coolant is even more effective.
Note 3) The tool life ratio shows the standard when ae = tool diameter × 20% is assumed to be 100 when shoulder cutting.
Note 4) The maximum depth of cut (apmax) varies according to the machine rigidity and power.

DEEP SHOULDER MILLING

90° KAPR

LER

P Steel | M Stainless Steel | K Cast Iron | N | S | H



Fig.1

■ DESIGN FEATURES OF LER TYPE END MILL

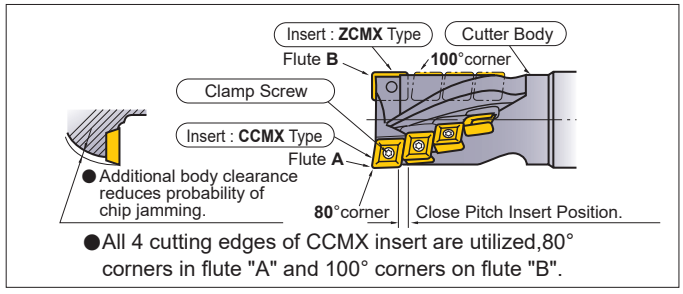
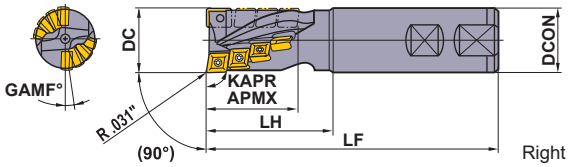
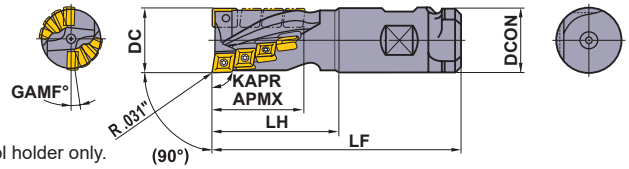


Fig.2 **Combination Shank**



Right hand tool holder only.



Order Number	Stock	Number of Flute	Number of Teeth	Dimensions (inch)						Type (Fig.)	*	① ②	Insert	
	R			DC	LF	DCON	LH	APMX	GAMF°		Insert Screw	Wrench	Insert	Teeth
LER1606W20	●	2	6	1.000	4.281	1.250	2.000	1.063	8°	1	CS300890T CS300890T	①TKY08F ②TKY08D	CCMX083508EN○ ZCMX083508ER○	5 1
LER2008W20	●	2	8	1.250	4.781	1.250	2.500	1.700	8° 35′	1	CS350990T CS350990T	①TKY10F ②TKY10D	CCMX09T308EN○ ZCMX09T308ER○	7 1
LER2012W20	●	2	12	1.250	5.531	1.250	3.250	2.480	8° 35′	1	CS350990T CS350990T	①TKY10F ②TKY10D	CCMX09T308EN○ ZCMX09T308ER○	11 1
LER2415W24	●	3	15	1.500	5.687	1.500	3.000	2.100	5° 27′	1	CS350990T CS350990T	①TKY10F ②TKY10D	CCMX09T308EN○ ZCMX09T308ER○	14 1
LER3218W32	●	3	18	2.000	6.750	2.000	3.500	2.500	5° 52′	2	CS350990T CS350990T	①TKY10F ②TKY10D	CCMX09T308EN○ ZCMX09T308ER○	17 1

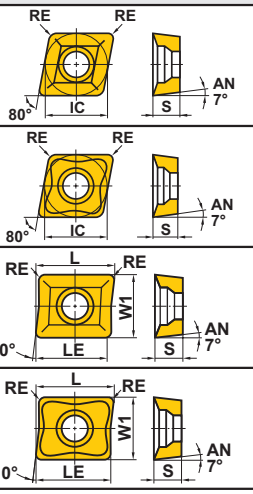
* Clamp Torque (lbf-in) : CS300890T=8.9, CS350990T=22

INSERTS

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✠ : Unstable Cutting

Shape		Order Number	Class	Coated F7030	Coated VP15TF	Coated UP20M	Carbide UTi20T	Dimensions (inch) L	LE	W1	IC	S	RE	Geometry
Peripheral and Bottom Inserts		**CCMX083508ENA**	M	★		●	★	—	—	—	.313	.138	.031	
		CCMX09T308ENA	M	●	●	●	★	—	—	—	.375	.156	.031	
	Strong Cutting Edge Type	* **CCMX09T308ENB**	M	★			★	—	—	—	.375	.156	.031	
Bottom Insert (One Pocket Only)		**ZCMX083508ERA**	M	★			★	.409	.335	.313	—	.137	.031	
		ZCMX09T308ERA	M	●	●	●	★	.472	.433	.375	—	.156	.031	
	Strong Cutting Edge Type	* **ZCMX09T308ERB**	M	★		●	★	.472	.433	.375	—	.156	.031	



* These inserts are for slotting only when chipping occurs with standard inserts. Feed must be reduced 25%.

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

RECOMMENDED CUTTING CONDITIONS

Slot Milling

Work Material		Cutting Condition Vs.Tool Diameter					Insert grade
		Spindle Speed / Feed	ϕ1"	ϕ1.25"	ϕ1.5"	ϕ2"	
P	Mild Steel (<160HB)	min^{-1}	2250	1800	1500	1100	VP15TF F7030
		inch/min	7—12	6—10	7—12	6—10	
	Carbon Steel (20HRC)	min^{-1}	2250	1800	1500	1100	
		inch/min	8—14	7—12	8—14	7—12	
	Alloy Steel (30HRC)	min^{-1}	1750	1800	1200	900	
		inch/min	6—10	5—8	6—10	5—8	
M	Stainless Steel (304)	min^{-1}	1900	1500	1250	950	VP15TF
		inch/min	3—5	2.5—4	3—5	2.5—4	
K	Gray Cast Iron (≤450MPA)	min^{-1}	1800	1250	950	650	UTi20T
		inch/min	7—9	7—9	8—10	8—10	

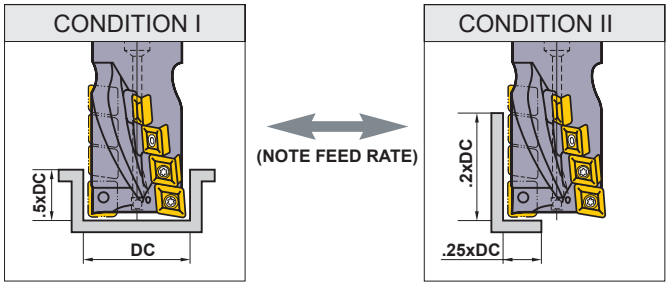
Shoulder Milling

Work Material		Cutting Condition Vs.Tool Diameter					Insert grade
		Spindle Speed / Feed	ϕ1"	ϕ1.25"	ϕ1.5"	ϕ2"	
P	Mild Steel (<160HB)	min^{-1}	2250	1800	1500	1100	VP15TF F7030
		inch/min	11—18	9—15	11—18	9—15	
	Carbon Steel (20HRC)	min^{-1}	2250	1800	1500	1100	
		inch/min	12—21	11—18	12—21	11—18	
	Alloy Steel (30HRC)	min^{-1}	1750	1400	1200	900	
		inch/min	9—15	8—12	9—15	8—12	
M	Stainless Steel (304)	min^{-1}	1900	1500	1250	950	VP15TF
		inch/min	7—12	6—10	7—12	6—10	
K	Gray Cast Iron (≤450MPA)	min^{-1}	1800	1250	950	650	UTi20T
		inch/min	8—10	8—10	9.5—11	9.5—11	

Note 1) These feed rates are for ENA and ERA inserts.
Reduce feed 25% for ENB and ERB inserts.
ENB or ERB inserts not recommended in gummy materials like stainless steel or mild steel.

Slot Milling

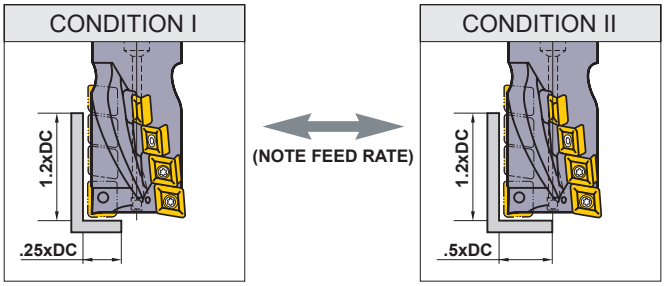
Forced air is required at cutting edge



- Use higher recommended feed rate under CONDITION I.
- Use lower recommended feed rate under CONDITION II.

Shoulder Milling

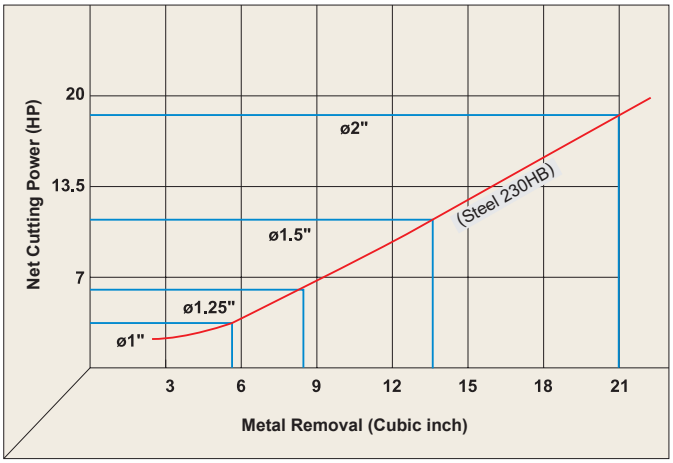
Generally down (climb) cut is recommended



- Use higher recommended feed rate under CONDITION I.
- Use lower recommended feed rate under CONDITION II.

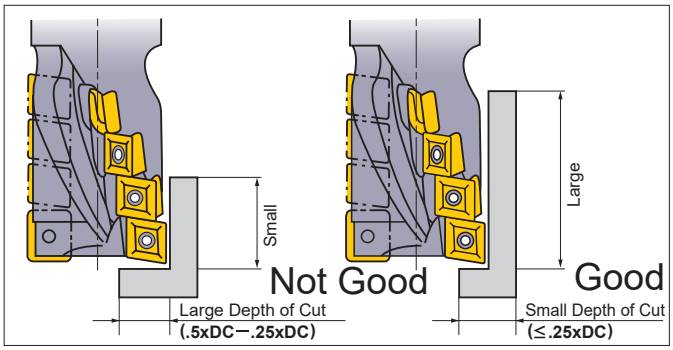
Net Cutting Power

- Please use the chart below for reference, please select the conditions that suits the machines power.
- Chip Discharge Q ($inch^3$/min)=Table Feed×Depth of Cut×Cutting Width÷1000



For Use of Long Cutting Length Type

- Since the overhang from the milling chuck is long, a large width of cut will cause chattering and tool breakage.
- Keep the width of cut small and the depth of cut in axial direction large. (See the following illustration.)
- For slot milling, keep the table feed at not more than half the value listed in the above table. (Use the standard cutting length type as much as possible.)



MULTI FUNCTIONAL MILLING

90° KAPR

AQX

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron	Non-ferrous Metal	Heat Resistant Alloy	Hardened Steel



Fig.1

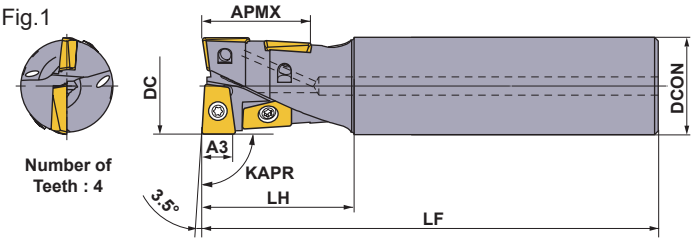


Fig.2

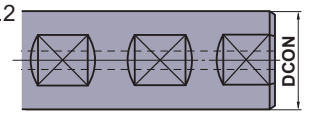
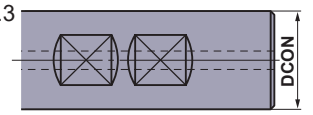


Fig.3



■ STANDARD EDGE TYPE

With Coolant Hole

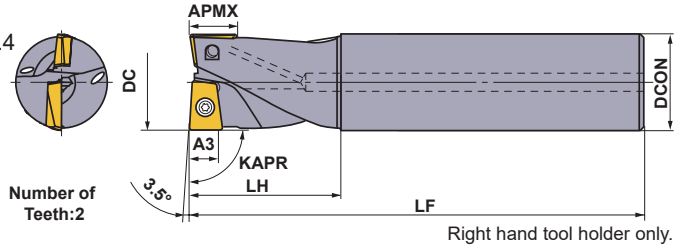
Right hand tool holder only.

Type	Order Number	Stock	Dimensions (inch)						Type (Fig.)	*3 Insert Screw	①/② Wrench	Insert
		R	DC	LF	DCON	LH	A3 *1	APMX *2				
Standard	AQXUR124WA12S	●	.750	4.125	.750	1.375	.219	.750	3	TS25	①TKY08F	QOG/MT0934R-○○
	AQXUR164WA16S	●	1.000	4.875	1.000	1.625	.281	1.000	2	TS32	②TKY08D	QOG/MT1443R-○○
	AQXUR204WA20S	●	1.250	5.250	1.250	2.000	.375	1.250	2	TS407	②TKY15D	QOG/MT1651R-○○
	AQXUR244WA20S	●	1.500	5.625	1.250	2.375	.438	1.500	2	TS5	②TKY25D	QOG/MT1959R-○○
Long	AQXUR124SA12L	●	.750	7.250	.750	2.375	.219	.750	1	TS25	①TKY08F	QOG/MT0934R-○○
	AQXUR134SA12L	●	.797	7.250	.750	1.375	.219	.750	1	TS25	①TKY08F	QOG/MT0934R-○○
	AQXUR164SA16L	●	1.000	8.500	1.000	3.000	.281	1.000	1	TS32	②TKY08D	QOG/MT1443R-○○
	AQXUR174SA16L	●	1.047	8.500	1.000	1.625	.281	1.000	1	TS32	②TKY08D	QOG/MT1443R-○○
	AQXUR204SA20L	●	1.250	9.000	1.250	3.500	.375	1.250	1	TS407	②TKY15D	QOG/MT1651R-○○
	AQXUR214SA20L	●	1.297	9.000	1.250	2.000	.375	1.250	1	TS407	②TKY15D	QOG/MT1651R-○○
	AQXUR244SA20L	●	1.500	9.500	1.250	2.375	.438	1.500	1	TS5	②TKY25D	QOG/MT1959R-○○

*3 Clamp Torque (lbf-in) : TS25=8.9, TS32=8.9, TS407=31, TS5=66



Fig.4



■ SHORT EDGE TYPE

With Coolant Hole

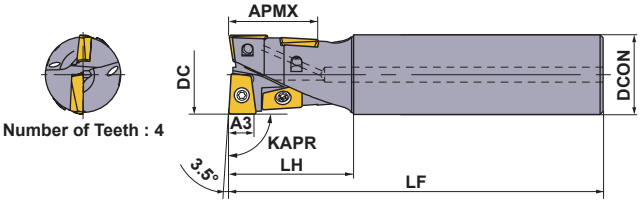
Right hand tool holder only.

Type	Order Number	Stock	Dimensions (inch)						Type (Fig.)	*3 Insert Screw	①/② Wrench	Insert
		R	DC	LF	DCON	LH	A3 *1	APMX *2				
Standard	AQXUR102WA10S	●	.625	3.688	.625	1.125	.188	.281	3	TS2A	①TKY06F	QOG/MT0830R-○○
	AQXUR122WA12S	●	.750	4.125	.750	1.375	.219	.344	3	TS25	①TKY08F	QOG/MT0934R-○○
	AQXUR162WA16S	●	1.000	4.875	1.000	1.625	.281	.469	2	TS32	②TKY08D	QOG/MT1443R-○○
	AQXUR202WA20S	●	1.250	5.250	1.250	2.000	.375	.563	2	TS407	②TKY15D	QOG/MT1651R-○○
	AQXUR242WA20S	●	1.500	5.625	1.250	2.375	.438	.688	2	TS55	②TKY25D	QOG/MT1959R-○○
Long	AQXUR102SA10L	●	.625	6.875	.625	2.000	.188	.281	4	TS2A	①TKY06F	QOG/MT0830R-○○
	AQXUR112SA10L	●	.672	6.875	.625	1.125	.188	.281	4	TS2A	①TKY06F	QOG/MT0830R-○○
	AQXUR122SA12L	●	.750	7.250	.750	2.375	.219	.344	4	TS25	①TKY08F	QOG/MT0934R-○○
	AQXUR132SA12L	●	.797	7.250	.750	1.375	.219	.344	4	TS25	①TKY08F	QOG/MT0934R-○○
	AQXUR162SA16L	●	1.000	8.500	1.000	3.000	.281	.469	4	TS32	②TKY08D	QOG/MT1443R-○○
	AQXUR172SA16L	●	1.047	8.500	1.000	1.625	.281	.469	4	TS32	②TKY08D	QOG/MT1443R-○○
	AQXUR202SA20L	●	1.250	9.000	1.250	3.500	.375	.563	4	TS407	②TKY15D	QOG/MT1651R-○○
	AQXUR212SA20L	●	1.297	9.000	1.250	2.000	.375	.563	4	TS407	②TKY15D	QOG/MT1651R-○○
	AQXUR242SA20L	●	1.500	9.500	1.250	2.375	.438	.688	4	TS55	②TKY25D	QOG/MT1959R-○○

*1 Dimension A3 represents the depth of cut when the cutting edge consists of 2 inserts.
*2 APMX: Maximum depth of cut.
*3 Clamp Torque (lbf-in) : TS2A=4.5, TS25=8.9, TS33=13, TS407=31, TS5=66
Note 1) When exceeding A3 depth of cut, reduce feed rates by 50%(Do not exceed APMX depth of cut). Reference page L202.

● : USA Stock ★ : Stocked in Japan





Metric Standard

STANDARD EDGE TYPE

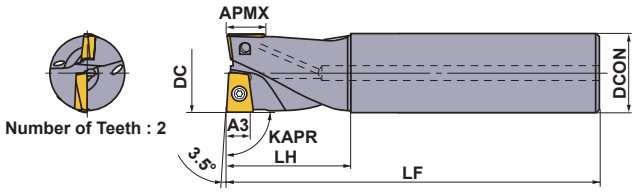
Right hand tool holder only.

Type	Order Number	Stock	Coolant Thru *4	Dimensions (mm)						*3 Insert Screw	①②③ Wrench	Insert
		R		DC	LF	DCON	LH	A3 *1	APMX *2			
Standard	AQXR164SA16S	★	Y	16	120	16	30	4.5	17.6	TS2A	①TKY06F	QOG/MT0830R-G1/M2
	AQXR164SN16S	★	N	16	120	16	30	4.5	17.6	TS2A	①TKY06F	
	AQXR174SA16S	★	Y	17	120	16	30	4.5	17.6	TS2A	①TKY06F	
	AQXR174SN16S	★	N	17	120	16	30	4.5	17.6	TS2A	①TKY06F	
	AQXR204SA20S	★	Y	20	130	20	35	6	22	TS25	①TKY08F	QOG/MT1035R-G1/M2
	AQXR204SN20S	★	N	20	130	20	35	6	22	TS25	①TKY08F	
	AQXR214SA20S	★	Y	21	130	20	35	6	22	TS25	①TKY08F	
	AQXR214SN20S	★	N	21	130	20	35	6	22	TS25	①TKY08F	
	AQXR254SA25S	★	Y	25	140	25	40	7.5	27.5	TS33	②TKY08D	QOG/MT1342R-G1/M2
	AQXR254SN25S	★	N	25	140	25	40	7.5	27.5	TS33	②TKY08D	
	AQXR264SA25S	★	Y	26	140	25	40	7.5	27.5	TS33	②TKY08D	
	AQXR264SN25S	★	N	26	140	25	40	7.5	27.5	TS33	②TKY08D	
	AQXR324SA32S	★	Y	32	150	32	50	9.5	35.2	TS407	②TKY15D	QOG/MT1651R-G1/M2
	AQXR324SN32S	★	N	32	150	32	50	9.5	35.2	TS407	②TKY15D	
	AQXR334SA32S	★	Y	33	150	32	50	9.5	35.2	TS407	②TKY15D	
	AQXR334SN32S	★	N	33	150	32	50	9.5	35.2	TS407	②TKY15D	
	AQXR354SA32S	★	Y	35	150	32	50	11	40	TS407	②TKY15D	QOG/MT1856R-G1/M2
	AQXR354SN32S	★	N	35	150	32	50	11	40	TS407	②TKY15D	
	AQXR404SA32S	★	Y	40	160	32	60	12	44	TS55	②TKY25D	QOG/MT2062R-G1/M2
	AQXR404SN32S	★	N	40	160	32	60	12	44	TS55	②TKY25D	
	AQXR504SA42S	★	Y	50	170	42	70	15	55	TS6S	③TKY30T	QOG/MT2576R-G1/M2
	AQXR504SN42S	★	N	50	170	42	70	15	55	TS6S	③TKY30T	
Long	AQXR164SA16L	★	Y	16	175	16	50	4.5	17.6	TS2A	①TKY06F	QOG/MT0830R-G1/M2
	AQXR164SN16L	★	N	16	175	16	50	4.5	17.6	TS2A	①TKY06F	
	AQXR174SA16L	★	Y	17	175	16	30	4.5	17.6	TS2A	①TKY06F	
	AQXR174SN16L	★	N	17	175	16	30	4.5	17.6	TS2A	①TKY06F	
	AQXR204SA20L	★	Y	20	185	20	60	6	22	TS25	①TKY08F	QOG/MT1035R-G1/M2
	AQXR204SN20L	★	N	20	185	20	60	6	22	TS25	①TKY08F	
	AQXR214SA20L	★	Y	21	185	20	35	6	22	TS25	①TKY08F	
	AQXR214SN20L	★	N	21	185	20	35	6	22	TS25	①TKY08F	
	AQXR254SA25L	★	Y	25	220	25	75	7.5	27.5	TS33	②TKY08D	QOG/MT1342R-G1/M2
	AQXR254SN25L	★	N	25	220	25	75	7.5	27.5	TS33	②TKY08D	
	AQXR264SA25L	★	Y	26	220	25	40	7.5	27.5	TS33	②TKY08D	
	AQXR264SN25L	★	N	26	220	25	40	7.5	27.5	TS33	②TKY08D	
	AQXR324SA32L	★	Y	32	230	32	90	9.5	35.2	TS407	②TKY15D	QOG/MT1651R-G1/M2
	AQXR324SN32L	★	N	32	230	32	90	9.5	35.2	TS407	②TKY15D	
	AQXR334SA32L	★	Y	33	230	32	50	9.5	35.2	TS407	②TKY15D	
	AQXR334SN32L	★	N	33	230	32	50	9.5	35.2	TS407	②TKY15D	
	AQXR354SA32L	★	Y	35	230	32	50	11	40	TS407	②TKY15D	QOG/MT1856R-G1/M2
	AQXR354SN32L	★	N	35	230	32	50	11	40	TS407	②TKY15D	
	AQXR404SA32L	★	Y	40	240	32	60	12	44	TS55	②TKY25D	QOG/MT2062R-G1/M2
	AQXR404SN32L	★	N	40	240	32	60	12	44	TS55	②TKY25D	
	AQXR504SA42L	★	Y	50	250	42	70	15	55	TS6S	③TKY30T	QOG/MT2576R-G1/M2
	AQXR504SN42L	★	N	50	250	42	70	15	55	TS6S	③TKY30T	

*1 Dimension A3 represents the depth of cut when the cutting edge consists of 2 inserts.
*2 APMX: Maximum depth of cut.
*3 Clamp Torque (lbf-in) : TS2A=4.5, TS25=8.9, TS33=13, TS407=31, TS55=66, TS6S=76
*4 Y=Yes, N=No

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001





Metric Standard

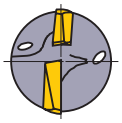
■ SHORT EDGE TYPE

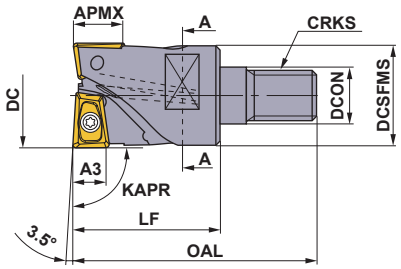
Right hand tool holder only.

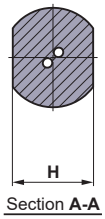
Type	Order Number	Stock R	Coolant Thru *4	Dimensions (mm) DC	LF	DCON	LH	A3 *1	APMX *2	*3 Insert Screw	Wrench	Insert
Standard	**AQXR162SA16S**	★	Y	16	120	16	30	4.5	7.4	TS2A	①TKY06F	QO○T0830R-○○
	AQXR162SN16S	★	N	16	120	16	30	4.5	7.4	TS2A	①TKY06F	
	AQXR172SA16S	★	Y	17	120	16	30	4.5	7.4	TS2A	①TKY06F	
	AQXR172SN16S	★	N	17	120	16	30	4.5	7.4	TS2A	①TKY06F	
	AQXR202SA20S	★	Y	20	130	20	35	6	9.2	TS25	①TKY08F	QO○T1035R-○○
	AQXR202SN20S	★	N	20	130	20	35	6	9.2	TS25	①TKY08F	
	AQXR212SA20S	★	Y	21	130	20	35	6	9.2	TS25	①TKY08F	
	AQXR212SN20S	★	N	21	130	20	35	6	9.2	TS25	①TKY08F	
	AQXR252SA25S	★	Y	25	140	25	40	7.5	11.5	TS33	②TKY08D	QO○T1342R-○○
	AQXR252SN25S	★	N	25	140	25	40	7.5	11.5	TS33	②TKY08D	
	AQXR262SA25S	★	Y	26	140	25	40	7.5	11.5	TS33	②TKY08D	
	AQXR262SN25S	★	N	26	140	25	40	7.5	11.5	TS33	②TKY08D	
	AQXR322SA32S	★	Y	32	150	32	50	9.5	14.5	TS407	②TKY15D	QO○T1651R-○○
	AQXR322SN32S	★	N	32	150	32	50	9.5	14.5	TS407	②TKY15D	
	AQXR332SA32S	★	Y	33	150	32	50	9.5	14.5	TS407	②TKY15D	
	AQXR332SN32S	★	N	33	150	32	50	9.5	14.5	TS407	②TKY15D	
	AQXR352SA32S	★	Y	35	150	32	50	11	16	TS407	②TKY15D	QO○T1856R-○○
	AQXR352SN32S	★	N	35	150	32	50	11	16	TS407	②TKY15D	
	AQXR402SA32S	★	Y	40	160	32	60	12	18	TS55	②TKY25D	QO○T2062R-○○
	AQXR402SN32S	★	N	40	160	32	60	12	18	TS55	②TKY25D	
	AQXR502SA42S	★	Y	50	170	42	70	15	23	TS6S	③TKY30T	QO○T2576R-○○
	AQXR502SN42S	★	N	50	170	42	70	15	23	TS6S	③TKY30T	
Long	**AQXR162SA16L**	★	Y	16	175	16	50	4.5	7.4	TS2A	①TKY06F	QO○T0830R-○○
	AQXR162SN16L	★	N	16	175	16	50	4.5	7.4	TS2A	①TKY06F	
	AQXR172SA16L	★	Y	17	175	16	30	4.5	7.4	TS2A	①TKY06F	
	AQXR172SN16L	★	N	17	175	16	30	4.5	7.4	TS2A	①TKY06F	
	AQXR202SA20L	★	Y	20	185	20	60	6	9.2	TS25	①TKY08F	QO○T1035R-○○
	AQXR202SN20L	★	N	20	185	20	60	6	9.2	TS25	①TKY08F	
	AQXR212SA20L	★	Y	21	185	20	35	6	9.2	TS25	①TKY08F	
	AQXR212SN20L	★	N	21	185	20	35	6	9.2	TS25	①TKY08F	
	AQXR252SA25L	★	Y	25	220	25	75	7.5	11.5	TS33	②TKY08D	QO○T1342R-○○
	AQXR252SN25L	★	N	25	220	25	75	7.5	11.5	TS33	②TKY08D	
	AQXR262SA25L	★	Y	26	220	25	40	7.5	11.5	TS33	②TKY08D	
	AQXR262SN25L	★	N	26	220	25	40	7.5	11.5	TS33	②TKY08D	
	AQXR322SA32L	★	Y	32	230	32	90	9.5	14.5	TS407	②TKY15D	QO○T1651R-○○
	AQXR322SN32L	★	N	32	230	32	90	9.5	14.5	TS407	②TKY15D	
	AQXR332SA32L	★	Y	33	230	32	50	9.5	14.5	TS407	②TKY15D	
	AQXR332SN32L	★	N	33	230	32	50	9.5	14.5	TS407	②TKY15D	
	AQXR352SA32L	★	Y	35	230	32	50	11	16	TS407	②TKY15D	QO○T1856R-○○
	AQXR352SN32L	★	N	35	230	32	50	11	16	TS407	②TKY15D	
	AQXR402SA32L	★	Y	40	240	32	60	12	18	TS55	②TKY25D	QO○T2062R-○○
	AQXR402SN32L	★	N	40	240	32	60	12	18	TS55	②TKY25D	
	AQXR502SA42L	★	Y	50	250	42	70	15	23	TS6S	③TKY30T	QO○T2576R-○○
	AQXR502SN42L	★	N	50	250	42	70	15	23	TS6S	③TKY30T	

*1 Dimension A3 represents the depth of cut when the cutting edge consists of 2 inserts.
*2 APMX: Maximum depth of cut.
*3 Clamp Torque (lbf-in) : TS2A=4.5, TS25=8.9, TS33=13, TS407=31, TS55=66, TS6S=76
*4 Y=Yes, N=No









Metric Standard

■ SCREW-IN TYPE

Right hand tool holder only.

Order Number	Stock	*5	Dimensions (mm)									*3	① ②	
	R	Coolant Thru	DC	DCON	DCSFMS	OAL	LF	H	CRKS *4	A3 *1	APMX *2	Insert Screw	Wrench	Insert
AQXR162M08A30	★	Y	16	8.5	14.7	48	30	10	M8	4.5	7.4	TS2A	①TKY06F	QO○T0830R-○○
AQXR172M08A30	★	Y	17	8.5	14.5	48	30	10	M8	4.5	7.4	TS2A	①TKY06F	
AQXR202M10A30	★	Y	20	10.5	18.6	49	30	14	M10	6	9.2	TS25	①TKY08F	QO○T1035R-○○
AQXR212M10A30	★	Y	21	10.5	18.5	49	30	14	M10	6	9.2	TS25	①TKY08F	
AQXR252M12A35	★	Y	25	12.5	23.5	57	35	19	M12	7.5	11.5	TS33	②TKY08D	QO○T1342R-○○
AQXR262M12A35	★	Y	26	12.5	23.5	57	35	19	M12	7.5	11.5	TS33	②TKY08D	
AQXR322M16A40	★	Y	32	17	28.5	63	40	24	M16	9.5	14.5	TS407	②TKY15D	QO○T1651R-○○
AQXR332M16A40	★	Y	33	17	28.5	63	40	24	M16	9.5	14.5	TS407	②TKY15D	
AQXR352M16A40	★	Y	35	17	28.5	63	40	24	M16	11	16	TS407	②TKY15D	QO○T1856R-○○
AQXR402M16A45	★	Y	40	17	28.5	68	45	24	M16	12	18	TS55	②TKY25D	QO○T2062R-○○

*1 Dimension A3 represents the depth of cut when the cutting edge consists of 2 inserts.
*2 APMX: Maximum depth of cut.
*3 Clamp Torque (lbf-in) : TS2A=4.5, TS25=8.9, TS33=13, TS407=31, TS55=66
*4 Clamp Torque of the Head (lbf-ft) : M8=17.1, M10=33.8, M12=59.2, M16=66.7
*5 Y=Yes

SCREW-IN HOLDERS ➤ L294
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

INSERTS

Work Material			MP6120	MP6130	MP7130	MP7140	MP9120	VP15TF	VP30RT	HTi10
	P	Steel	●	◐				◐	✠	
	M	Stainless Steel			○	◔		◔	✠	
	K	Cast Iron						✠		
	N	Non-Ferrous Metal								◐
	S	Heat-resistant Alloy, Titanium Alloy					●	◐		
	H	Hardened Material						◔		

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting
✠ : Unstable Cutting

Honing :
E : Round **F** : Sharp Edge

Shape	Order Number	End Mill Dia.	Class	Honing	Coated MP6120	MP6130	MP7130	MP7140	MP9120	VP15TF	VP30RT	Carbide HTi10	LE1	LE2	LE3	S	RE	Geometry
M breaker	**QOMT0830R-M2**	ϕ.625, .672	M	E	●	●	●	●	●	●	●		.287	.173	.287	.120	.031	
	QOMT0934R-M2	ϕ.750, .797	M	E	●	●	●	●	●	●	●		.358	.220	.350	.134	.031	
	QOMT1443R-M2	ϕ1.000, 1.047	M	E	●	●	●	●	●	●	●		.484	.307	.465	.169	.031	
	QOMT1651R-M2	ϕ1.250, 1.297	M	E	●	●	●	●	●	●	●		.606	.390	.575	.200	.031	
	QOMT1959R-M2	ϕ1.500	M	E	●	●	●	●	●	●	●		.728	.472	.681	.232	.031	
G breaker	**QOGT0830R-G1**	ϕ.625, .672	G	E*	●				●	★		●	.287	.173	.287	.120	.016	
	QOGT0934R-G1	ϕ.750, .797	G	E*	●				●			●	.358	.220	.350	.134	.016	
	QOGT1443R-G1	ϕ1.000, 1.047	G	E*	●				●			●	.484	.307	.465	.169	.016	
	QOGT1651R-G1	ϕ1.250, 1.297	G	E*	●				●	★		●	.606	.390	.575	.200	.016	
	QOGT1959R-G1	ϕ1.500	G	E*	●				●			●	.728	.472	.681	.232	.016	

* Grade HTi10 has "F" honing.

INSERTS

For Metric Standard

Work Material			MP6120	MP6130	MP7130	MP7140	MP9120	VP15TF	VP30RT	HTi10
	P	Steel	●	◐				◐	✠	
	M	Stainless Steel			○	◔		◔	✠	
	K	Cast Iron						✠		
	N	Non-Ferrous Metal								◐
	S	Heat-resistant Alloy, Titanium Alloy					●	◐		
	H	Hardened Materials						◔		

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✠ : Unstable Cutting

Honing :
E : Round **F** : Sharp Edge

Shape	Order Number	End Mill Dia.	Class	Honing	Coated MP6120	MP6130	MP7130	MP7140	MP9120	VP15TF	VP30RT	Carbide HTi10	LE1	LE2	LE3	S	RE	Geometry
M breaker	**QOMT0830R-M2**	ϕ16,17	M	E	●	●	●	●	●	●	●		7.3	4.4	7.3	3	0.8	
	QOMT1035R-M2	ϕ20,21	M	E	★	★	★	★	★	★	★		9.5	5.9	9.3	3.5	0.8	
	QOMT1342R-M2	ϕ25,26	M	E	★	★	★	★	★	★	★		12	7.6	11.6	4.2	0.8	
	QOMT1651R-M2	ϕ32,33	M	E	●	●	●	●	●	●	●		15.4	9.9	14.6	5.1	0.8	
	QOMT1856R-M2	ϕ35	M	E	★	★	★	★	★	★	★		16.9	10.9	16	5.6	0.8	
	QOMT2062R-M2	ϕ40	M	E	★	★	★	★	★	★	★		19.4	12.6	18.1	6.2	0.8	
	QOMT2576R-M2	ϕ50	M	E	★	★	★	★	★	★	★		24.8	16.1	23.1	7.6	0.8	
G breaker	**QOGT0830R-G1**	ϕ16,17	G	E*	●				●	★		●	7.7	4.9	7.3	3	0.4	
	QOGT1035R-G1	ϕ20,21	G	E*	★				★	★		★	9.9	6.4	9.3	3.5	0.4	
	QOGT1342R-G1	ϕ25,26	G	E*	★				★	★		★	12.4	8.1	11.6	4.2	0.4	
	QOGT1651R-G1	ϕ32,33	G	E*	●				●	★		●	15.8	10.4	14.6	5.1	0.4	
	QOGT1856R-G1	ϕ35	G	E*	★				★	★		★	17.3	11.4	16	5.6	0.4	
	QOGT2062R-G1	ϕ40	G	E*	★				★	★		★	19.8	13.1	18.1	6.2	0.4	
	QOGT2576R-G1	ϕ50	G	E*	★				★	★		★	25.2	16.6	23.1	7.6	0.4	

* Grade HTi10 has "F" honing.

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

RECOMMENDED CUTTING CONDITIONS

Cutting Speed

(inch)

	Work Material	No.	Hardness	Breaker	Cutting Speed for Different Grades **vc** (SFM)		
P					**MP6120**	**VP15TF**	**MP6130**
	Mild Steel	1	≤180HB	**M2**	655 (560—785)	590 (490—720)	525 (425—655)
	Carbon Steel Alloy Steel	2	180—350HB	**M2**	590 (460—720)	525 (395—655)	460 (330—590)
M					**MP7130**	**MP7140**	**VP30RT (VP15TF)**
	Austenitic Stainless Steel	1	≤200HB	**M2**	560 (395—655)	525 (330—590)	490 (395—590)
	Austenitic Stainless Steel	2	>200HB	**M2**			
	Ferritic and Martensitic Stainless Steel	3	≤200HB	**M2**			
	Ferritic and Martensitic Stainless Steel	4	>200HB	**M2**			
K					**VP15TF**		
	Gray Cast Iron	1	≤350MPa	**M2**	590 (490—720)	—	—
	Ductile Cast Iron	2	≤450MPa	**M2**	590 (490—720)	—	—
N					**HTi10**		
	Aluminum Alloy	1	Si<5%	**G1**	1640 (655—2625)	—	—
	Aluminum Alloy	2	5%≤Si≤10%	**G1**	330 (165—985)	—	—
	Aluminum Alloy	3	Si>5%	**G1**	330 (165—985)	—	—
S					**MP9120**		
	Titanium Alloy	1	—	**M2**	165 (100—230)	—	—
H					**VP15TF**		
	Hardened Steel	1	40—55HRC	**M2**	260 (165—395)	—	—

* Wet cutting is recommended for Titanium alloy.

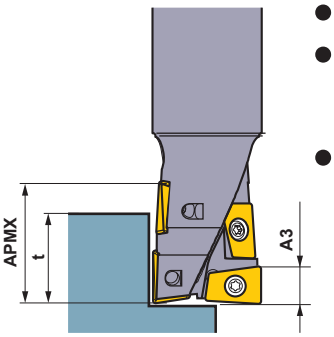
■ Cutting Conditions for Shoulder Milling

(inch)

	Work Material	No.	Hardness	ϕ.625", .672" ϕ16 mm , 17 mm			ϕ.750", .797" ϕ20 mm , 21 mm			ϕ1.000", 1.047" ϕ25 mm , 26 mm		
				ap	ae	fr (IPR)	ap	ae	fr (IPR)	ap	ae	fr (IPR)
P	Mild Steel	1	≤180HB	≤.177	≤.315	.010	≤.236	≤ .394	.012	≤.295	≤ .492	.014
				.177—.472	≤.197	.006	.236—.551	≤ .276	.010	.295— .669	≤ .315	.011
				.472—.669	≤.118	.004	.551—.866	≤ .157	.007	.669—1.063	≤ .197	.008
	Carbon Steel Alloy Steel	2	180—350HB	≤.177	≤.315	.008	≤.236	≤ .394	.010	≤.295	≤ .492	.012
				.177—.472	≤.157	.006	.236—.551	≤ .236	.008	.295— .669	≤ .276	.010
				.472—.669	≤.079	.003	.551—.866	≤ .118	.006	.669—1.063	≤ .157	.007
M	Stainless Steel	1,2,3,4	≤270HB	≤.177	≤.315	.008	≤.236	≤ .394	.010	≤.295	≤ .492	.012
				.177—.472	≤.157	.006	.236—.551	≤ .236	.008	.295— .669	≤ .276	.010
				.472—.669	≤.079	.003	.551—.866	≤ .118	.006	.669—1.063	≤ .157	.007
K	Cast Iron	1,2	≤350MPa	≤.177	≤.315	.010	≤.236	≤ .394	.012	≤.295	≤ .492	.014
				.177—.472	≤.197	.006	.236—.551	≤ .276	.010	.295— .669	≤ .315	.011
				.472—.669	≤.118	.004	.551—.866	≤ .157	.007	.669—1.063	≤ .197	.008
N	Aluminum Alloy	1,2,3	—	≤.177	≤.433	.012	≤.236	≤ .551	.014	≤.295	≤ .492	.016
				.177—.472	≤.315	.008	.236—.551	≤ .394	.012	.295— .669	≤ .276	.013
				.472—.669	≤.197	.006	.551—.866	≤ .236	.009	.669—1.063	≤ .157	.010
S	Titanium Alloy	1	—	≤.177	≤.315	.006	≤.236	≤ .394	.007	≤.295	≤ .689	.008
				.177—.472	≤.157	.004	.236—.551	≤ .236	.006	.295— .669	≤ .492	.007
				.472—.669	≤.079	.002	.551—.866	≤ .118	.004	.669—1.063	≤ .295	.005
H	Hardened Steel	1	40—55HRC	≤.177	≤.197	.006	≤.236	≤ .236	.008	≤.295	≤ .276	.009
				.177—.472	≤.118	.004	.236—.551	≤ .157	.006	.295— .669	≤ .157	.007
				.472—.669	≤.039	.002	.551—.866	≤ .079	.005	.669—1.063	≤ .079	.006

	Work Material	No.	Hardness	ϕ1.250", 1.297" ϕ32 mm , 33mm			ϕ1.500" ϕ40 mm		
				ap	ae	fr (IPR)	ap	ae	fr (IPR)
P	Mild Steel	1	≤180HB	≤ .374	≤.630	.016	≤ .472	≤.787	.020
				.374— .866	≤.433	.013	.472—1.102	≤.512	.016
				.866—1.378	≤.236	.010	1.102—1.732	≤.276	.012
	Carbon Steel Alloy Steel	2	180—350HB	≤ .374	≤.630	.014	≤ .472	≤.787	.016
				.374— .866	≤.394	.011	.472—1.102	≤.472	.013
				.866—1.378	≤.197	.008	1.102—1.732	≤.236	.010
M	Stainless Steel	1,2,3,4	≤270HB	≤ .374	≤.630	.014	≤ .472	≤.787	.016
				.374— .866	≤.394	.011	.472—1.102	≤.472	.013
				.866—1.378	≤.197	.008	1.102—1.732	≤.236	.010
K	Cast Iron	1,2	≤350MPa	≤ .374	≤.630	.016	≤ .472	≤.787	.020
				.374— .866	≤.433	.013	.472—1.102	≤.512	.016
				.866—1.378	≤.236	.010	1.102—1.732	≤.276	.012
N	Aluminum Alloy	1,2,3	—	≤ .374	≤.630	.018	≤ .472	≤.787	.022
				.374— .866	≤.394	.015	.472—1.102	≤.472	.018
				.866—1.378	≤.197	.012	1.102—1.732	≤.236	.014
S	Titanium Alloy	1	—	≤ .374	≤.906	.010	≤ .472	≤1.102	.011
				.374— .866	≤.630	.008	.472—1.102	≤.787	.009
				.866—1.378	≤.394	.006	1.102—1.732	≤.472	.007
H	Hardened Steel	1	40—55HRC	≤ .374	≤.315	.010	≤ .472	≤.394	.012
				.374— .866	≤.197	.008	.472—1.102	≤.236	.009
				.866—1.378	≤.079	.006	1.102—1.732	≤.079	.007

Note 1) Please pay special attention on the depth of cut when using the short edge type.
Note 2) When using the G1-breaker wiht coated grades VP15TF, MP6120 or MP9120, reduce the feed rate by 20%.
Note 3) For more information on "No.", please refer to page L201 for cutting speed.

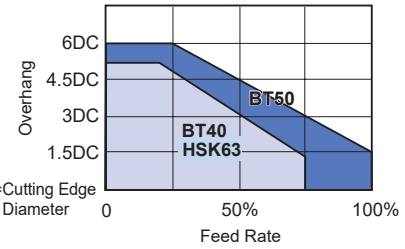


*Figures for A3 and APMX are shown in the table of holder standard.

- A3 is the depth of cut for the full dual blade portion at the end of the cutting edge.
- Beyond the range of A3 where overlapping occurs, there is an area where the cutting edge becomes single bladed, not forming full dual blade configuration.
  As such, please pay special attention to the relationship between depth of cut and feed.
- In general, the edge at the border of cut tends to suffer from damages. At large depth of cut operations, applying the following depth of cut (**t**), at which the edge is full dual bladed at the border of cut, is recommended to prevent damage to the cutting edge.

(inch)

Tool Diameter	Recommended Depth of Cut **t**
ϕ.625, .672	.472—.551
ϕ.750, .797	.551—.669
ϕ1.000, 1.047	.669—.866
ϕ1.250, 1.297	.866—1.102
ϕ1.500	1.102—1.378



- Chatter vibration and other problems tend to occur at operations where overhang length is large and/or machine rigidity is low, resulting in unstable machining.
- Please reduce feed accordingly, using the above chart as a guideline.

■ Cutting Conditions for Slotting

(inch)

	Work Material	No.	Hardness	ϕ.625", .672" ϕ16 mm , 17 mm		ϕ.750", .797" ϕ20 mm , 21 mm		ϕ1.000", 1.047" ϕ25 mm , 26 mm	
				ap	fr (IPR)	ap	fr (IPR)	ap	fr (IPR)
P	Mild Steel	1	≤180HB	≤.177	.006	≤.236	.007	≤ .295	.008
				.177—.472	.004	.236—.551	.006	.295— .669	.006
				.472—.669	.003	.551—.866	.004	.669—1.063	.005
	Carbon Steel Alloy Steel	2	180—350HB	≤.177	.006	≤.236	.006	≤ .295	.007
				.177—.472	.004	.236—.551	.005	.295— .669	.006
				.472—.669	.002	.551—.866	.004	.669—1.063	.004
M	Stainless Steel	1,2,3,4	≤270HB	≤.177	.006	≤.236	.006	≤ .295	.007
				.177—.472	.004	.236—.551	.005	.295— .669	.006
				.472—.669	.002	.551—.866	.004	.669—1.063	.004
K	Cast Iron	1,2	≤350MPa	≤.177	.006	≤.236	.007	≤ .295	.008
				.177—.472	.004	.236—.551	.006	.295— .669	.006
				.472—.669	.003	.551—.866	.004	.669—1.063	.005
N	Aluminum Alloy	1,2,3	—	≤.177	.007	≤.236	.008	≤ .295	.009
				.177—.472	.005	.236—.551	.006	.295— .669	.007
				.472—.669	.004	.551—.866	.005	.669—1.063	.006
S	Titanium Alloy	1	—	≤.177	.004	≤.236	.005	≤ .295	.006
				.177—.472	.002	.236—.551	.003	.295— .669	.004
				.472—.669	.001	.551—.866	.002	.669—1.063	.003
H	Hardened Steel	1	40—55HRC	≤.177	.004	≤.236	.005	≤ .295	.006
				.177—.472	.003	.236—.551	.004	.295— .669	.005

	Work Material	No.	Hardness	ϕ1.250", 1.297" ϕ32 mm , 33 mm		ϕ1.500" ϕ40 mm	
				ap	fr (IPR)	ap	fr (IPR)
P	Mild Steel	1	≤180HB	≤ .374	.010	≤ .472	.012
				.374— .866	.008	.472—1.102	.010
				.866—1.378	.006	1.102—1.732	.007
	Carbon Steel Alloy Steel	2	180—350HB	≤ .374	.008	≤ .472	.010
				.374— .866	.006	.472—1.102	.008
				.866—1.378	.005	1.102—1.732	.006
M	Stainless Steel	1,2,3,4	≤270HB	≤ .374	.008	≤ .472	.010
				.374— .866	.006	.472—1.102	.008
				.866—1.378	.005	1.102—1.732	.006
K	Cast Iron	1,2	≤350MPa	≤ .374	.010	≤ .472	.012
				.374— .866	.008	.472—1.102	.010
				.866—1.378	.006	1.102—1.732	.007
N	Aluminum Alloy	1,2,3	—	≤ .374	.011	≤ .472	.013
				.374— .866	.009	.472—1.102	.011
				.866—1.378	.006	1.102—1.732	.008
S	Titanium Alloy	1	—	≤ .374	.007	≤ .472	.009
				.374— .866	.005	.472—1.102	.008
				.866—1.378	.004	1.102—1.732	.006
H	Hardened Steel	1	40—55HRC	≤ .374	.006	≤ .472	.007
				.374— .866	.005	.472—1.102	.006

Note 1) Please pay special attention on the depth of cut when using the short edge type.
Note 2) When using the G1-breaker wiht coated grades VP15TF, MP6120 or MP9120, reduce the feed rate by 20%.
Note 3) For more information on "No.", please refer to page L201 for cutting speed.

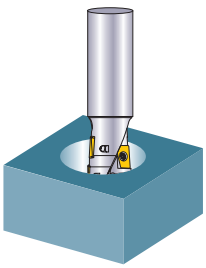
For Helical Milling

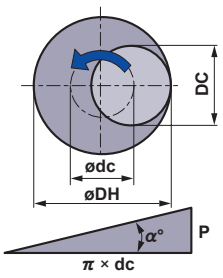
(inch)

	Work Material	No.	Hardness	ϕ.625", .672" ϕ16 mm , 17 mm				ϕ.750", .797" ϕ20 mm , 21 mm				ϕ1.000", 1.047" ϕ25 mm , 26 mm			
				DH	APMX	fr (IPR)	P (inch/pass)	DH	APMX	fr (IPR)	P (inch/pass)	DH	APMX	fr (IPR)	P (inch/pass)
P	Mild Steel	1	≤180HB	.787	.315	.006	.017	.945	.394	.007	.017	1.181	.492	.008	.022
				.984	.472	.006	.039	1.181	.591	.006	.043	1.496	.748	.007	.056
				1.142	.630	.005	.056	1.417	.787	.006	.069	1.772	.984	.006	.087
	Carbon Steel Alloy Steel	2	180—350HB	.787	.315	.006	.013	.945	.394	.006	.013	1.181	.492	.007	.016
				.984	.472	.005	.029	1.181	.591	.006	.032	1.496	.748	.006	.042
				1.142	.630	.004	.042	1.417	.787	.005	.052	1.772	.984	.006	.065
M	Stainless Steel	1,2,3,4	≤270HB	.787	.118	.006	.009	.945	.157	.006	.009	1.181	.197	.007	.011
				.984	.197	.005	.019	1.181	.276	.006	.022	1.496	.354	.006	.028
				1.142	.315	.004	.028	1.417	.394	.005	.035	1.772	.492	.006	.043
K	Cast Iron	1,2	≤350MPa	.787	.394	.006	.022	.945	.551	.007	.022	1.181	.709	.008	.027
				.984	.512	.006	.048	1.181	.669	.006	.054	1.496	.827	.007	.070
				1.142	.630	.005	.070	1.417	.787	.006	.086	1.772	.984	.006	.108
N	Aluminum Alloy	1,2,3	—	.787	.394	.007	.017	.945	.551	.008	.017	1.181	.709	.009	.022
				.984	.512	.006	.039	1.181	.669	.007	.043	1.496	.827	.008	.056
				1.142	.630	.006	.056	1.417	.787	.006	.069	1.772	.984	.007	.087
S	Titanium Alloy	1	—	.787	.118	.004	.009	.945	.157	.004	.009	1.181	.197	.005	.011
				.984	.197	.003	.019	1.181	.276	.004	.022	1.496	.354	.004	.028
				1.142	.315	.003	.028	1.417	.394	.003	.035	1.772	.492	.004	.043
H	Hardened Steel	1	40—55HRC	.787	.118	.004	.009	.945	.157	.005	.009	1.181	.197	.006	.011
				.984	.197	.003	.019	1.181	.276	.004	.022	1.496	.354	.005	.028
				1.142	.315	.002	.028	1.417	.394	.003	.035	1.772	.492	.004	.043

	Work Material	No.	Hardness	ϕ1.250", 1.297" ϕ32 mm , 33 mm				ϕ1.500" ϕ40 mm			
				DH	APMX	fr (IPR)	P (inch/pass)	DH	APMX	fr (IPR)	P (inch/pass)
P	Mild Steel	1	≤180HB	1.496	.630	.010	.026	1.890	.787	.012	.035
				1.890	.945	.009	.069	2.362	1.181	.010	.086
				2.283	1.260	.008	.112	2.835	1.575	.009	.138
	Carbon Steel Alloy Steel	2	180—350HB	1.496	.630	.008	.019	1.890	.787	.010	.026
				1.890	.945	.007	.052	2.362	1.181	.009	.065
				2.283	1.260	.006	.084	2.835	1.575	.008	.104
M	Stainless Steel	1,2,3,4	≤270HB	1.496	.236	.008	.013	1.890	.315	.010	.017
				1.890	.433	.007	.035	2.362	.551	.009	.043
				2.283	.630	.006	.056	2.835	.787	.008	.069
K	Cast Iron	1,2	≤350MPa	1.496	.866	.010	.032	1.890	1.102	.012	.043
				1.890	1.063	.009	.086	2.362	1.339	.010	.108
				2.283	1.260	.008	.141	2.835	1.575	.009	.173
N	Aluminum Alloy	1,2,3	—	1.496	.866	.011	.026	1.890	1.102	.013	.035
				1.890	1.063	.009	.069	2.362	1.339	.011	.086
				2.283	1.260	.009	.112	2.835	1.575	.009	.138
S	Titanium Alloy	1	—	1.496	.236	.006	.013	1.890	.315	.007	.017
				1.890	.433	.005	.035	2.362	.551	.006	.043
				2.283	.630	.004	.056	2.835	.787	.006	.069
H	Hardened Steel	1	40—55HRC	1.496	.236	.006	.013	1.890	.315	.007	.017
				1.890	.433	.006	.035	2.362	.551	.006	.043
				2.283	.630	.005	.056	2.835	.787	.006	.069

Note 1) Helical grooving is strongly recommended for machining of tempered steel.
Note 2) When using the G1-breaker wiht coated grades VP15TF, MP6120 or MP9120, reduce the feed rate by 20%.
Note 3) For more information on "No.", please refer to page L201 for cutting speed.





● How to calculate the theoretical center of the cutter path.

$$Ø\,dc = Ø\,DH - DC$$

Ø dc: Theoretical center of the tool; Ø DH: Desired hole diameter; DC: Cutting edge diameter

● Depth of cut for a pass.

$$P = \pi \times dc \times \tan\alpha°$$

* $\alpha° \leq 3°$

● Min. machined hole diameter at helical milling : 1.2DC
Max. machined hole diameter at helical milling : 1.8DC

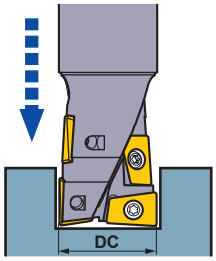
● For chip discharge, please always apply air blow.
(When aluminum cutting, please use coolant.)

● When helical milling, it is recommended to reduce the feed rate by 40%.

● When using the G1-breaker wiht coated grades VP15TF, MP6120 or MP9120, reduce the feed rate by 20%.

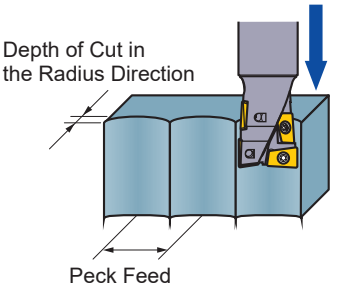
■ For Drilling and Plunging

● Drilling



- The recommended drilling depth is less than .5DC.
- Use step feed when drilling (.010－.020 inch) to ensure that the chips are effectively broken.
- Use internal or external cooling to ensure that the chips disposal is sufficiently achieved.
- The chips generated can discharge in any direction, so ensure that adequate safety precautions are taken.

● Plunging



- The feed for plunging is the same as the feed for drilling.
- No step feed necessary.
- Please refer to the following table for the depth of cut at plunging operations.

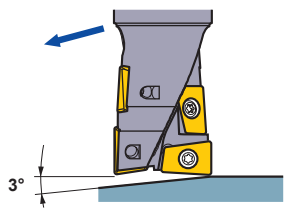
Depth of Cut in the Radius Direction	≤ .4DC
Peck Feed	≤ .5DC

(inch)

	Work Material	No.	Hardness	ϕ.625", .672" ϕ16 mm , 17 mm		ϕ.750", .797" ϕ20 mm , 21 mm		ϕ1.000", 1.047" ϕ25 mm , 26 mm		ϕ1.250", 1.297" ϕ32 mm, 33 mm, 35 mm		ϕ1.500" ϕ40 mm	
				fr (IPR)	Step	fr (IPR)	Step	fr (IPR)	Step	fr (IPR)	Step	fr (IPR)	Step
P	Mild Steel	1	≤180HB	.001	.008	.002	.012	.002	.012	.002	.012	.002	.012
	Carbon Steel Alloy Steel	2	180－350HB	.001	.008	.002	.012	.002	.012	.002	.012	.002	.012
M	Stainless Steel	1,2,3,4	≤270HB	.001	.006	.002	.010	.002	.010	.002	.010	.002	.010
K	Gray Cast Iron	1	≤350MPa	.002	.016	.002	.020	.002	.020	.003	.020	.003	.020
N	Aluminum Alloy	1,2,3	–	.002	.008	.002	.012	.002	.012	.003	.012	.003	.012
H	Hardened Steel	1	40－55HRC	.001	.006	.001	.010	.001	.010	.002	.010	.002	.010

Note 1) Helical grooving is strongly recommended for machining of tempered steel.
Note 2) When using the G1-breaker wiht coated grades VP15TF, MP6120 or MP9120, reduce the feed rate by 20%.
Note 3) For more information on "No.", please refer to page L201 for cutting speed.

■ For Ramping



- When machining steel the recommended ramping angle is 3°. If a ramping angle larger than 3° is used, then the chips may not be broken effectively resulting in chips wrapping around the tool.
- When ramping, it is recommended to reduce the feed rate by 40%.

MULTI FUNCTIONAL MILLING

AJX

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron		Heat Resistant Alloy	Hardened Steel



Fig.1 **"FA" Flat Shank**

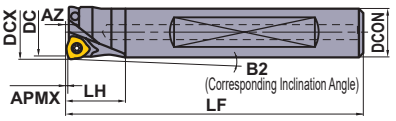


Fig.2

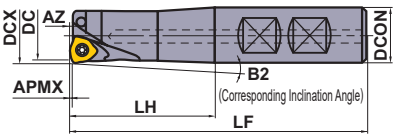


Fig.3

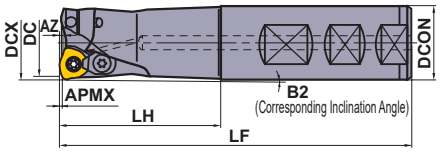
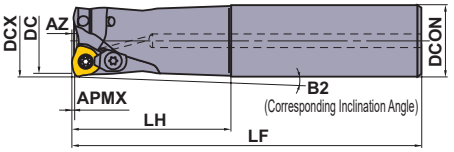


Fig.4



■ SHANK TYPE

Right hand tool holder only.

With Coolant Hole

(inch)

DCX	Order Number	Stock R	Number of Teeth	LF	DC	LH	DCON	B2	APMX	RMPX	Fig.	Insert Type
.625	**AJXU06R102FA10S**	●	2	3.750	.346	1.250	.625	2.12°	.039	3°	1	JOM□06T2
.625	**AJXU06R102SA10M**	●	2	5.750	.346	1.500	.625	1.75°	.039	3°	4	JOM□06T2
.625	**AJXU06R102SA10L**	●	2	5.750	.346	2.750	.625	0.93°	.039	3°	4	JOM□06T2
.688	**AJXU06R112FA10S**	●	2	3.750	.409	.750	.625	—	.039	2.5°	1	JOM□06T2
.688	**AJXU06R112SA10L**	●	2	5.750	.409	.750	.625	—	.039	2.5°	4	JOM□06T2
.750	**AJXU08R122WA12S**	●	2	4.750	.417	2.000	.750	1.31°	.059	3.5°	2	JOM□0803
.750	**AJXU06R123SA12M**	●	3	7.000	.472	2.375	.750	1.11°	.039	1.7°	4	JOM□06T2
.750	**AJXU08R122SA12L**	●	2	7.000	.417	4.000	.750	0.64°	.059	3.5°	4	JOM□0803
.875	**AJXU08R142FA12S**	●	2	4.750	.535	1.250	.750	—	.059	3°	1	JOM□0803
.875	**AJXU08R142SA12L**	●	2	7.000	.535	1.250	.750	—	.059	3°	4	JOM□0803
1.000	**AJXU09R162WA16S**	●	2	5.625	.602	2.375	1.000	1.1°	.079	4°	3	JDM□09T3
1.000	**AJXU08R163SA16M**	●	3	8.000	.661	2.750	1.000	0.94°	.059	2°	4	JOM□0803
1.000	**AJXU09R162SA16L**	●	2	8.000	.602	4.750	1.000	0.54°	.079	4°	4	JDM□09T3
1.125	**AJXU09R182FA16S**	●	2	5.625	.728	1.625	1.000	—	.079	3°	1	JDM□09T3
1.125	**AJXU09R182SA16L**	●	2	8.000	.728	1.625	1.000	—	.079	3°	4	JDM□09T3
1.250	**AJXU12R202WA20S**	●	2	6.000	.789	2.750	1.250	0.94°	.079	4°	3	JDM□1204
1.250	**AJXU09R203SA20M**	●	3	8.000	.854	3.125	1.250	0.82°	.079	3.3°	4	JDM□09T3
1.250	**AJXU12R202SA20L**	●	2	8.000	.789	4.750	1.250	0.54°	.079	4°	4	JDM□1204
1.500	**AJXU12R243WA20S**	●	3	6.000	1.038	2.000	1.250	—	.079	3°	3	JDM□1204
1.500	**AJXU09R244SA20M**	●	4	10.000	1.114	2.375	1.250	—	.079	2.4°	4	JDM□09T3
1.500	**AJXU12R243SA20L**	●	3	10.000	1.038	2.000	1.250	—	.079	3°	4	JDM□1204
1.500	**AJXU12R243SA24L**	●	3	10.000	1.038	2.750	1.500	0.94°	.079	3°	4	JDM□1204
2.000	**AJXU14R323WA24S**	●	3	6.000	1.534	2.000	1.500	—	.079	4.2°	3	JDM□1405

Note 1) Refer to page L222, for the max. depth of cut (**APMX**) and max. drilling depth (**AZ**).



Fig.1

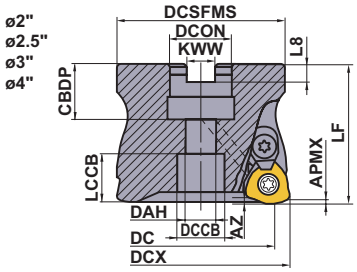
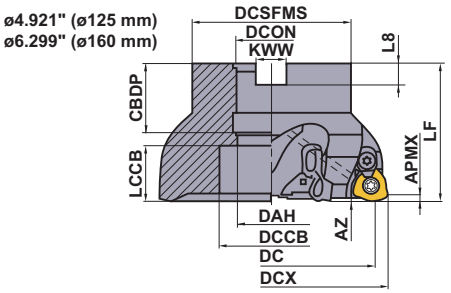


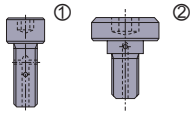
Fig.2



Right hand tool holder only.

(inch)

DCX	Set Bolt	Geometry
2.000"	HSCU37513H	①
2.500", 3.000"	HSCU50014H	①
4.000"	HSCU75016H	①
4.921"	MBAU75016H	②
6.299"	MBAU100016H	②



■ARBOR TYPE

With Coolant Hole
DCX = Inch, DCON = Inch

AJX09	AJX12	AJX14
GAMP :+8°	GAMP :+8°	GAMP :+8°
GAMF :-6°	GAMF :-5°– -4°	GAMF :-3°

(inch)

DCX	Order Number	Stock R	Number of Teeth	DC	LF	DCON	WT (lbs)	APMX	RMPX	Fig.	Insert Type
2.000	**AJXU12R0203**	●	3	1.539	2.000	.750	.888	.059	2°	1	JDM□1204
2.000	**AJXU12R0204**	●	4	1.539	2.000	.750	.866	.059	2°	1	JDM□1204
2.000	**AJXU09R0205**	●	5	1.606	2.000	.750	.925	.039	1.1°	1	JDM□09T3
2.500	**AJXU14R2503C**	●	3	2.032	2.000	1.000	1.393	.079	2.8°	1	JDM□1405
2.500	**AJXU14R2504C**	●	4	2.032	2.000	1.000	1.338	.079	2.8°	1	JDM□1405
2.500	**AJXU12R2505C**	●	5	2.039	2.000	1.000	1.427	.059	1.5°	1	JDM□1204
3.000	**AJXU14R0304C**	●	4	2.532	2.000	1.000	2.133	.079	1.8°	1	JDM□1405
3.000	**AJXU14R0305C**	●	5	2.532	2.000	1.000	2.078	.079	1.8°	1	JDM□1405
3.000	**AJXU12R0306C**	●	6	2.543	2.000	1.000	2.274	.059	1.2°	1	JDM□1204
4.000	**AJXU14R0405E**	●	5	3.531	2.500	1.500	4.806	.079	1.2°	1	JDM□1405
4.000	**AJXU14R0406E**	●	6	3.531	2.500	1.500	4.981	.079	1.2°	1	JDM□1405
4.000	**AJXU12R0407E**	●	7	3.539	2.500	1.500	5.283	.059	0.8°	1	JDM□1204
4.921	**AJX14RA12505E**	●	5	4.457	2.480	1.500	7.275	.079	0.8°	2	JDM□1405
4.921	**AJX14RA12507E**	●	7	4.457	2.480	1.500	7.275	.079	0.8°	2	JDM□1405
6.299	**AJX14RA16006F**	●	6	5.835	2.480	2.000	11.023	.079	0.5°	2	JDM□1405
6.299	**AJX14RA16008F**	●	8	5.835	2.480	2.000	11.023	.079	0.5°	2	JDM□1405

Note 1) Refer to page L222, for the max. depth of cut (**APMX**) and max. drilling depth (**AZ**).

Fig.1

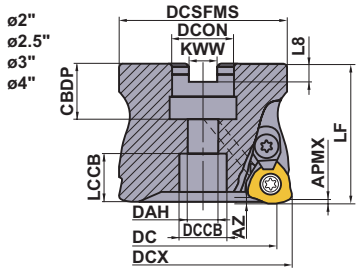
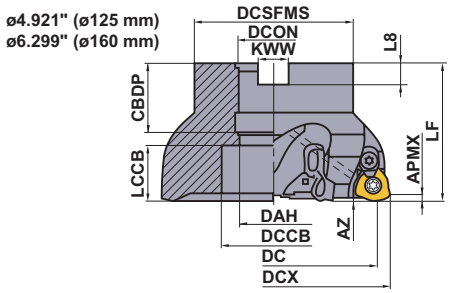


Fig.2



Right hand tool holder only.

Mounting Dimensions

DCX = Inch, DCON = Inch

(inch)

DCX	Order Number	DCON	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
2.000	**AJXU12R0203**	.750	.748	.415	.600	.633	1.875	.313	.187	1
2.000	**AJXU12R0204**	.750	.748	.415	.600	.633	1.875	.313	.187	1
2.000	**AJXU09R0205**	.750	.748	.415	.600	.634	1.875	.313	.187	1
2.500	**AJXU14R2503C**	1.000	1.024	.539	.787	.628	2.375	.375	.219	1
2.500	**AJXU14R2504C**	1.000	1.024	.539	.787	.628	2.375	.375	.219	1
2.500	**AJXU12R2505C**	1.000	1.024	.539	.787	.633	2.375	.375	.219	1
3.000	**AJXU14R0304C**	1.000	1.024	.539	.787	.628	2.750	.375	.219	1
3.000	**AJXU14R0305C**	1.000	1.024	.539	.787	.628	2.750	.375	.219	1
3.000	**AJXU12R0306C**	1.000	1.024	.539	.787	.630	2.750	.375	.219	1
4.000	**AJXU14R0405E**	1.500	1.181	.787	1.181	.931	3.750	.625	.375	1
4.000	**AJXU14R0406E**	1.500	1.181	.787	1.181	.931	3.750	.625	.375	1
4.000	**AJXU12R0407E**	1.500	1.181	.787	1.181	.936	3.750	.625	.375	1
4.921	**AJX14RA12505E**	1.500	1.575	-	2.205	.872	3.937	.625	.375	2
4.921	**AJX14RA12507E**	1.500	1.575	-	2.205	.872	3.937	.625	.375	2
6.299	**AJX14RA16006F**	2.000	1.693	-	2.835	.754	3.937	.750	.437	2
6.299	**AJX14RA16008F**	2.000	1.693	-	2.835	.754	3.937	.750	.437	2

SPARE PARTS

(inch)

Tool Holder Type	 *		 *		 T D
	Clamp Screw	Clamp Bridge	Clamp Bridge Screw	Spring	Wrench
AJXU06R	TS25	–	–	–	TKY08F
AJXU08R	TS33	–	–	–	TKY08D
AJXU09R	TS351	AMS3	AJS3010T10	ASS2	TKY10D
AJXU12R	TS43	AMS4	AJS4012T15	ASS2	TKY15T
AJXU14R	TS54	AMS5	AJS5014T25	ASS3	TKY25T
AJX14R	TS54	AMS5	AJS5014T25	ASS3	TKY25T

* Clamp Torque (lbf-in) : TS25=13, TS33=8.9, TS351=22, TS43=31, TS54=66, AJS3010T10=22, AJS4012T15=31, AJS5014T25=66





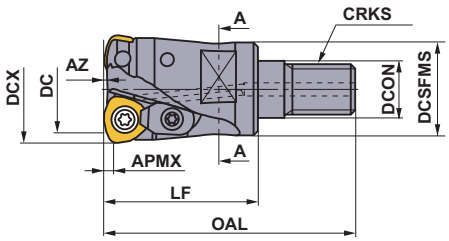


Fig.1

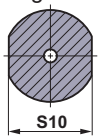


Fig.2



Fig.3



A-A Section

■SCREW-IN TYPE

With Coolant Hole

Right hand tool holder only.

(inch)

DCX	Order Number	Stock R	Number of Teeth	DC	LF	OAL	DCON	DCSFMS	S10	CRKS	WT (lbs)	APMX	RMPX	Fig.	Shank Arbor Type	Insert Type
.625	**AJXU06R102AM0830**	●	2	.346	1.181	1.890	.335	.512	.394	M8	.2	.039	3°	1	SCU10M08	JOM□06T2
.750	**AJXU08R122AM1030**	●	2	.417	1.181	1.929	.413	.709	.551	M10	.2	.059	3.5°	2	SCU12M10	JOM□0803
.750	**AJXU06R123AM1030**	●	3	.472	1.181	1.929	.413	.709	.551	M10	.2	.039	1.7°	3	SCU12M10	JOM□06T2
.875	**AJXU08R142AM1030**	●	2	.535	1.181	1.929	.413	.709	.551	M10	.2	.059	3°	2	SCU12M10	JOM□0803
.875	**AJXU06R143AM1030**	●	3	.595	1.181	1.929	.413	.709	.551	M10	.2	.039	0.7°	3	SCU12M10	JOM□06T2
1.000	**AJXU09R162AM1235**	●	2	.602	1.378	2.244	.492	.827	.748	M12	.4	.079	4°	2	SCU16M12	JDM□09T3
1.000	**AJXU08R163AM1235**	●	3	.661	1.378	2.244	.492	.827	.748	M12	.2	.059	2°	1	SCU16M12	JOM□0803
1.125	**AJXU09R182AM1235**	●	2	.728	1.378	2.244	.492	.827	.748	M12	.4	.079	3°	2	SCU16M12	JDM□09T3
1.125	**AJXU08R183AM1235**	●	3	.784	1.378	2.244	.492	.827	.748	M12	.2	.059	0.5°	1	SCU16M12	JOM□0803
1.250	**AJXU09R203AM1645**	●	3	.854	1.772	2.677	.669	1.142	.945	M16	.4	.079	2.5°	1	SCU20M16	JDM□09T3
1.375	**AJXU09R223AM1645**	●	3	.976	1.772	2.677	.669	1.142	.945	M16	.4	.079	2°	1	SCU20M16	JDM□09T3

Note 1) Refer to page L222, for the max. depth of cut (**APMX**) and max. drilling depth (**AZ**).
Note 2) For screw-in type shank arbors, refer to page L294.

SPARE PARTS

(inch)

Tool Holder Type	Clamp Screw *	Clamp Bridge	Clamp Bridge Screw *	Spring	Wrench F / D
AJXU06R	TS25	—	—	—	TKY08F
AJXU08R	TS33	—	—	—	TKY08D
AJXU09R	TS351	AMS3	AJS3010T10	ASS2	TKY10D

* Clamp Torque (lbf-in) : TS25=13, TS33=8.9, TS351=22, AJS3010T10=22

Dimensions and Symbols (ISO 13399 Compliance)

DCX = Cutting Diameter Max.
DC = Cutting Diameter
LF = Functional Length
OAL = Overall Length
DCON = Connection Diameter
DCSFMS = Contact Surface Diameter Machine Side
CRKS = Connection Retention Knob Thread Size
APMX = Depth of Cut Max.
RMPX = Ramping Angle Max.

SCREW-IN HOLDERS ➤ L294
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001



Fig.1

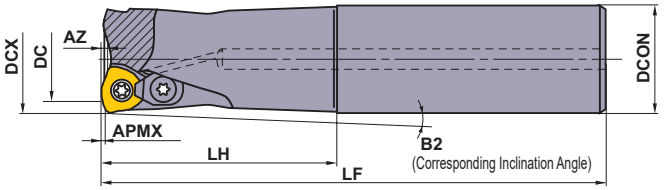
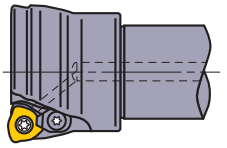


Fig.2



Right hand tool holder only.

Metric Standard

SHANK TYPE

With Coolant Hole

(mm)

DCX	Order Number	Stock R	Number of Teeth	LF	DC	LH	DCON	B2	APMX	RMPX	Fig.	Insert Type
16	**AJX06R162SA16SS**	★	2	70	8.9	20	16	3.5°	0.6	3°	1	JOM□06T2
16	**AJX06R162SA16S**	★	2	110	8.9	30	16	2.25°	0.6	3°	1	JOM□06T2
16	**AJX06R162SA16L**	★	2	150	8.9	70	16	0.93°	0.6	3°	1	JOM□06T2
16	**AJX06R162SA16EL**	★	2	200	8.9	100	16	0.64°	0.6	3°	1	JOM□06T2
17	**AJX06R172SA16SS**	★	2	70	9.9	20	16	—	0.6	2.5°	1	JOM□06T2
17	**AJX06R172SA16S**	★	2	110	9.9	20	16	—	0.6	2.5°	1	JOM□06T2
17	**AJX06R172SA16L**	★	2	150	9.9	20	16	—	0.6	2.5°	1	JOM□06T2
17	**AJX06R172SA16EL**	★	2	200	9.9	20	16	—	0.6	2.5°	1	JOM□06T2
20	**AJX08R202SA20S**	★	2	130	11.4	50	20	1.34°	0.9	3.5°	1	JOM□0803
20	**AJX06R203SA20S**	★	3	130	12.9	50	20	1.31°	0.6	1.5°	1	JOM□06T2
20	**AJX08R202SA20L**	★	2	180	11.4	100	20	0.65°	0.9	3.5°	1	JOM□0803
20	**AJX06R203SA20L**	★	3	180	12.9	100	20	0.64°	0.6	1.5°	1	JOM□06T2
20	**AJX08R202SA20EL**	★	2	250	11.4	130	20	0.5°	0.9	3.5°	1	JOM□0803
22	**AJX08R222SA20S**	★	2	130	13.4	30	20	—	0.9	3°	1	JOM□0803
22	**AJX06R223SA20S**	★	3	130	14.9	30	20	—	0.6	1°	1	JOM□06T2
22	**AJX08R222SA20L**	★	2	180	13.4	30	20	—	0.9	3°	1	JOM□0803
22	**AJX06R223SA20L**	★	3	180	14.9	30	20	—	0.6	1°	1	JOM□06T2
22	**AJX08R222SA20EL**	★	2	250	13.4	30	20	—	0.9	3°	1	JOM□0803
25	**AJX09R252SA25S**	★	2	140	14.9	60	25	1.1°	1.2	4°	1	JDM□09T3
25	**AJX08R253SA25S**	★	3	140	16.4	60	25	1.1°	0.9	2°	1	JOM□0803
25	**AJX09R252SA25L**	★	2	200	14.9	120	25	0.54°	1.2	4°	1	JDM□09T3
25	**AJX08R253SA25L**	★	3	200	16.4	120	25	0.54°	0.9	2°	1	JOM□0803
25	**AJX09R252SA25EL**	★	2	300	14.9	180	25	0.36°	1.2	4°	1	JDM□09T3
28	**AJX09R282SA25S**	★	2	140	17.9	40	25	—	1.2	3°	1	JDM□09T3
28	**AJX08R283SA25S**	★	3	140	19.4	40	25	—	0.9	1.7°	1	JOM□0803
28	**AJX09R282SA25L**	★	2	200	17.9	40	25	—	1.2	3°	1	JDM□09T3
28	**AJX08R283SA25L**	★	3	200	19.4	40	25	—	0.9	1.7°	1	JOM□0803
28	**AJX09R282SA25EL**	★	2	300	17.9	40	25	—	1.2	3°	1	JDM□09T3
30	**AJX12R302SA32S**	★	2	150	18.3	70	32	1.82°	1.2	4.5°	1	JDM□1204
30	**AJX09R303SA32S**	★	3	150	20.0	70	32	1.79°	1.2	2.7°	1	JDM□09T3
30	**AJX12R302SA32L**	★	2	200	18.3	120	32	1.04°	1.2	4.5°	1	JDM□1204
30	**AJX09R303SA32L**	★	3	200	20.0	120	32	1.03°	1.2	2.7°	1	JDM□09T3
30	**AJX12R302SA32EL**	★	2	300	18.3	180	32	0.69°	1.2	4.5°	1	JDM□1204
32	**AJX12R322SA32S**	★	2	150	20.3	70	32	0.96°	1.2	4°	1	JDM□1204
32	**AJX09R323SA32S**	★	3	150	21.9	70	32	0.94°	1.2	2.5°	1	JDM□09T3
32	**AJX12R322SA32L**	★	2	200	20.3	120	32	0.55°	1.2	4°	1	JDM□1204
32	**AJX09R323SA32L**	★	3	200	21.9	120	32	0.54°	1.2	2.5°	1	JDM□09T3
32	**AJX12R322SA32EL**	★	2	300	20.3	180	32	0.36°	1.2	4°	1	JDM□1204

Note 1) Refer to page L222, for the max. depth of cut (**APMX**) and max. drilling depth (**AZ**).

Dimensions and Symbols (ISO 13399 Compliance)

DCX = Cutting Diameter Max.
DC = Cutting Diameter
LF = Functional Length
LH = Head Length
DCON = Connection Diameter
APMX = Depth of Cut Max.
RMPX = Ramping Angle Max.

 ★ : Stocked in Japan

Metric Standard

■ SHANK TYPE

With Coolant Hole

(mm)

DCX	Order Number	Stock R	Number of Teeth	LF	DC	LH	DCON	B2	APMX	RMPX	Fig.	Insert Type
35	**AJX12R352SA32S**	★	2	150	23.3	50	32	–	1.2	3.5°	1	JDM□1204
35	**AJX09R353SA32S**	★	3	150	24.9	50	32	–	1.2	2°	1	JDM□09T3
35	**AJX12R352SA32L**	★	2	200	23.3	50	32	–	1.2	3.5°	1	JDM□1204
35	**AJX09R353SA32L**	★	3	200	24.9	50	32	–	1.2	2°	1	JDM□09T3
35	**AJX12R352SA32EL**	★	2	300	23.3	50	32	–	1.2	3.5°	1	JDM□1204
40	**AJX12R403SA32S**	★	3	150	28.3	50	32	–	1.2	3°	1	JDM□1204
40	**AJX09R404SA32S**	★	4	150	29.9	50	32	–	1.2	1.5°	1	JDM□09T3
40	**AJX12R403SA32L**	★	3	250	28.3	50	32	–	1.2	3°	1	JDM□1204
40	**AJX09R404SA32L**	★	4	250	29.9	50	32	–	1.2	1.5°	1	JDM□09T3
40	**AJX12R402SA32EL**	★	2	350	28.3	50	32	–	1.2	3°	1	JDM□1204
40	**AJX12R403SA42S**	★	3	150	28.3	70	42	1.79°	1.2	3°	1	JDM□1204
40	**AJX09R404SA42S**	★	4	150	29.9	70	42	1.8°	1.2	1.5°	1	JDM□09T3
40	**AJX12R403SA42L**	★	3	250	28.3	70	42	1.79°	1.2	3°	1	JDM□1204
40	**AJX09R404SA42L**	★	4	250	29.9	70	42	1.8°	1.2	1.5°	1	JDM□09T3
40	**AJX12R402SA42EL**	★	2	350	28.3	70	42	1.79°	1.2	3°	1	JDM□1204
50	**AJX14R503SA42S**	★	3	150	38.2	50	42	–	1.2	4.2°	1	JDM□1405
50	**AJX14R503SA42L**	★	3	250	38.1	50	42	–	1.2	4.2°	1	JDM□1405
63	**AJX14R634SA42S**	★	4	150	51.1	50	42	–	1.2	2.8°	2	JDM□1405
63	**AJX14R634SA42L**	★	4	250	51.1	50	42	–	1.2	2.8°	2	JDM□1405

Note 1) Refer to page L222, for the max. depth of cut (**APMX**) and max. drilling depth (**AZ**).

SPARE PARTS

(mm)

Tool Holder Type	 *		 *		F  D
	Clamp Screw	Clamp Bridge	Clamp Bridge Screw	Spring	Wrench
AJX06R162	TS25	–	–	–	TKY08F
AJX06R172	TS25	–	–	–	TKY08F
AJX06R203	TS25	–	–	–	TKY08F
AJX06R223	TS25	–	–	–	TKY08F
AJX08R202	TS33	–	–	–	TKY08D
AJX08R222	TS33	–	–	–	TKY08D
AJX08R253	TS33	–	–	–	TKY08D
AJX08R283	TS33	–	–	–	TKY08D
AJX09R252	TS351	AMS3	AJS3010T10	ASS2	TKY10D
AJX09R282	TS351	AMS3	AJS3010T10	ASS2	TKY10D
AJX09R303	TS351	AMS3	AJS3010T10	ASS2	TKY10D
AJX09R323	TS351	AMS3	AJS3010T10	ASS2	TKY10D
AJX09R353	TS351	AMS3	AJS3010T10	ASS2	TKY10D
AJX09R404	TS351	AMS3	AJS3010T10	ASS2	TKY10D
AJX12R302	TS407	AMS4	AJS4012T15	ASS2	TKY15D
AJX12R322	TS43	AMS4	AJS4012T15	ASS2	TKY15D
AJX12R352	TS43	AMS4	AJS4012T15	ASS2	TKY15D
AJX12R402	TS43	AMS4	AJS4012T15	ASS2	TKY15D
AJX12R403	TS43	AMS4	AJS4012T15	ASS2	TKY15D
AJX14R503	TS54	AMS5	AJS5014T25	ASS3	TKY25D
AJX14R634	TS54	AMS5	AJS5014T25	ASS3	TKY25D

* Clamp Torque (lbf-in) : TS25=13, TS33=8.9, TS351=22, TS407=31, TS43=31, TS54=66, AJS3010T10=22, AJS4012T15=31, AJS5014T25=66

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001



Fig.1

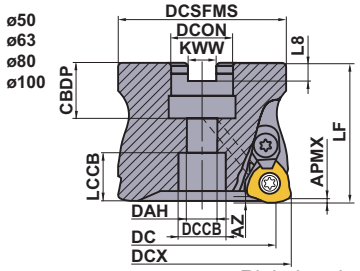
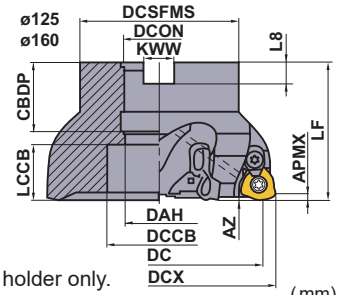
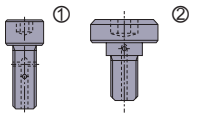


Fig.2



Right hand tool holder only.

(mm)

DCX		Set Bolt	Geometry	
DCON (inch)	DCON (mm)			
ϕ50, ϕ63	ϕ50, ϕ63	HSC10030H	①	
	ϕ80	HSC12035H		
ϕ80, ϕ100	ϕ100	HSC16040H		
ϕ125	ϕ125, ϕ160	MBA20040H	②	
ϕ160		MBA24045H		

Metric Standard

■ARBOR TYPE

With Coolant Hole

AJX09	AJX12	AJX14
GAMP :+8°	GAMP :+8°	GAMP :+8°
GAMF :-6°	GAMF :-5°—-4°	GAMF :-5°—-3°

DCX=mm, DCON=Inch

(mm)

DCX	Order Number	Stock R	Number of Teeth	DC	LF	DCON	WT (kg)	APMX	RMPX	Fig.	Insert Type
50	**AJX12R05003B**	★	3	38.3	50	22.225	0.4	1.2	2°	1	JDM○1204
50	**AJX12R05004B**	★	4	38.3	50	22.225	0.4	1.2	2°	1	JDM○1204
50	**AJX09R05005B**	★	5	40.0	50	22.225	0.5	1.2	1.1°	1	JDM○09T3
63	**AJX14R06303B**	★	3	51.1	50	22.225	0.7	1.2	2.8°	1	JDM○1405
63	**AJX14R06304B**	★	4	51.1	50	22.225	0.7	1.2	2.8°	1	JDM○1405
63	**AJX12R06305B**	★	5	51.3	50	22.225	0.9	1.2	1.5°	1	JDM○1204
80	**AJX14R08004D**	★	4	68.1	63	31.75	1.3	1.2	1.8°	1	JDM○1405
80	**AJX14R08005D**	★	5	68.1	63	31.75	1.3	1.2	1.8°	1	JDM○1405
80	**AJX12R08006D**	★	6	68.3	63	31.75	1.7	1.2	1.1°	1	JDM○1204
100	**AJX14R10005D**	★	5	88.1	63	31.75	2.4	1.2	1.2°	1	JDM○1405
100	**AJX14R10006D**	★	6	88.1	63	31.75	2.4	1.2	1.2°	1	JDM○1405
100	**AJX12R10007D**	★	7	88.3	63	31.75	2.9	1.2	0.8°	1	JDM○1204
125	**AJX14R12505E**	★	5	113.2	63	38.1	3.3	1.2	0.8°	2	JDM○1405
125	**AJX14R12507E**	★	7	113.2	63	38.1	3.3	1.2	0.8°	2	JDM○1405
160	**AJX14R16006F**	★	6	148.2	63	50.8	5.0	1.2	0.5°	2	JDM○1405
160	**AJX14R16008F**	★	8	148.2	63	50.8	5.0	1.2	0.5°	2	JDM○1405

DCX=mm, DCON=mm

(mm)

DCX	Order Number	Stock R	Number of Teeth	DC	LF	DCON	WT (kg)	APMX	RMPX	Fig.	Insert Type
50	**AJX12-050A03R**	★	3	38.3	50	22	0.4	1.2	2°	1	JDM○1204
50	**AJX12-050A04R**	★	4	38.3	50	22	0.4	1.2	2°	1	JDM○1204
50	**AJX09-050A05R**	★	5	40.0	50	22	0.5	1.2	1.1°	1	JDM○09T3
63	**AJX14-063A03R**	★	3	51.1	50	22	0.7	1.2	2.8°	1	JDM○1405
63	**AJX14-063A04R**	★	4	51.1	50	22	0.7	1.2	2.8°	1	JDM○1405
63	**AJX12-063A05R**	★	5	51.3	50	22	0.9	1.2	1.5°	1	JDM○1204
80	**AJX14-080A04R**	★	4	68.1	50	27	1.2	1.2	1.8°	1	JDM○1405
80	**AJX14-080A05R**	★	5	68.1	50	27	1.2	1.2	1.8°	1	JDM○1405
80	**AJX12-080A06R**	★	6	68.3	50	27	1.2	1.2	1.1°	1	JDM○1204
100	**AJX14-100A05R**	★	5	88.1	63	32	2.4	1.2	1.2°	1	JDM○1405
100	**AJX14-100A06R**	★	6	88.1	63	32	2.4	1.2	1.2°	1	JDM○1405
100	**AJX12-100A07R**	★	7	88.3	63	32	2.6	1.2	0.8°	1	JDM○1204
125	**AJX14-125B05R**	★	5	113.2	63	40	3.3	1.2	0.8°	2	JDM○1405
125	**AJX14-125B07R**	★	7	113.2	63	40	3.3	1.2	0.8°	2	JDM○1405
160	**AJX14-160B06R**	★	6	148.2	63	40	5.0	1.2	0.5°	2	JDM○1405
160	**AJX14-160B08R**	★	8	148.2	63	40	5.0	1.2	0.5°	2	JDM○1405

Note 1) Refer to page L222, for the max. depth of cut (**APMX**) and max. drilling depth (**AZ**).

Mounting Dimensions

DCX = mm, DCON = Inch

(mm)

DCX	Order Number	DCON	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
50	**AJX12R05003B**	22.225	19	11	17	18.28	47	8.4	5	1
50	**AJX12R05004B**	22.225	19	11	17	18.28	47	8.4	5	1
50	**AJX09R05005B**	22.225	19	11	17	18.31	47	8.4	5	1
63	**AJX14R06303B**	22.225	19	11	17	18.16	60	8.4	5	1
63	**AJX14R06304B**	22.225	19	11	17	18.16	60	8.4	5	1
63	**AJX12R06305B**	22.225	19	11	17	18.28	60	8.4	5	1
80	**AJX14R08004D**	31.75	32	17	26	20.16	76	12.7	8	1
80	**AJX14R08005D**	31.75	32	17	26	20.16	76	12.7	8	1
80	**AJX12R08006D**	31.75	32	17	26	20.28	76	12.7	8	1
100	**AJX14R10005D**	31.75	32	17	26	20.16	96	12.7	8	1
100	**AJX14R10006D**	31.75	32	17	26	20.16	96	12.7	8	1
100	**AJX12R10007D**	31.75	32	17	26	20.28	96	12.7	8	1
125	**AJX14R12505E**	38.1	40	–	56	22.14	100	15.9	10	2
125	**AJX14R12507E**	38.1	40	–	56	22.14	100	15.9	10	2
160	**AJX14R16006F**	50.8	43	–	72	19.14	100	19.1	11	2
160	**AJX14R16008F**	50.8	43	–	72	19.14	100	19.1	11	2

DCX = mm, DCON = mm

(mm)

DCX	Order Number	DCON	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
50	**AJX12-050A03R**	22	20	11	17	17.28	47	10.4	6.3	1
50	**AJX12-050A04R**	22	20	11	17	17.28	47	10.4	6.3	1
50	**AJX09-050A05R**	22	20	11	17	17.31	47	10.4	6.3	1
63	**AJX14-063A03R**	22	20	11	17	17.16	60	10.4	6.3	1
63	**AJX14-063A04R**	22	20	11	17	17.16	60	10.4	6.3	1
63	**AJX12-063A05R**	22	20	11	17	17.28	60	10.4	6.3	1
80	**AJX14-080A04R**	27	23	13	19	16.16	76	12.4	7.0	1
80	**AJX14-080A05R**	27	23	13	19	16.16	76	12.4	7.0	1
80	**AJX12-080A06R**	27	23	13	19	16.28	76	12.4	7.0	1
100	**AJX14-100A05R**	32	26	17	26	26.16	96	14.4	8.0	1
100	**AJX14-100A06R**	32	26	17	26	26.16	96	14.4	8.0	1
100	**AJX12-100A07R**	32	26	17	26	26.28	96	14.4	8.0	1
125	**AJX14-125B05R**	40	40	–	56	22.14	100	16.4	9.0	2
125	**AJX14-125B07R**	40	40	–	56	22.14	100	16.4	9.0	2
160	**AJX14-160B06R**	40	40	–	56	22.14	100	16.4	9.0	2
160	**AJX14-160B08R**	40	40	–	56	22.14	100	16.4	9.0	2





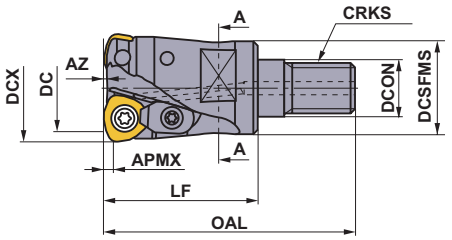


Fig.1

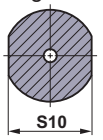


Fig.2

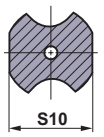
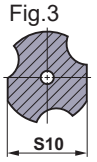


Fig.3



A-A Section

Metric Standard

Right hand tool holder only.

■SCREW-IN TYPE

With Coolant Hole

(mm)

DCX	Order Number	Stock R	Number of Teeth	DC	LF	OAL	DCON	DCSFMS	S10	CRKS	WT (kg)	APMX	RMPX	Fig.	Shank Arbor Type	Insert Type
16	**AJX06R162AM0830**	★	2	8.9	30	48	8.5	13	10	M8	0.1	0.6	3°	1	SC16M08	JOM□06T2
17	**AJX06R172AM0830**	★	2	9.9	30	48	8.5	13	10	M8	0.1	0.6	2.5°	1	SC16M08	JOM□06T2
20	**AJX08R202AM1030**	★	2	11.4	30	49	10.5	18	14	M10	0.1	0.9	3.5°	2	SC20M10	JOM□0803
20	**AJX06R203AM1030**	★	3	12.9	30	49	10.5	18	14	M10	0.1	0.6	1.5°	3	SC20M10	JOM□06T2
22	**AJX08R222AM1030**	★	2	13.4	30	49	10.5	18	14	M10	0.1	0.9	3°	2	SC20M10	JOM□0803
22	**AJX06R223AM1030**	★	3	14.9	30	49	10.5	18	14	M10	0.1	0.6	1°	3	SC20M10	JOM□06T2
25	**AJX09R252AM1235**	★	2	14.9	35	57	12.5	21	19	M12	0.2	1.2	4°	2	SC25M12	JDM□09T3
25	**AJX08R253AM1235**	★	3	16.4	35	57	12.5	21	19	M12	0.1	0.9	2°	1	SC25M12	JOM□0803
28	**AJX09R282AM1235**	★	2	17.9	35	57	12.5	21	19	M12	0.2	1.2	3°	2	SC25M12	JDM□09T3
28	**AJX08R283AM1235**	★	3	19.4	35	57	12.5	21	19	M12	0.1	0.9	1.7°	1	SC25M12	JOM□0803
30	**AJX12R302AM1645**	★	2	18.3	45	68	17.0	29	24	M16	0.3	1.2	4.5°	2	SC32M16	JDM□1204
30	**AJX09R303AM1645**	★	3	20.0	45	68	17.0	29	24	M16	0.2	1.2	2.7°	1	SC32M16	JDM□09T3
32	**AJX12R322AM1645**	★	2	20.3	45	68	17.0	29	24	M16	0.3	1.2	4°	2	SC32M16	JDM□1204
32	**AJX09R323AM1645**	★	3	21.9	45	68	17.0	29	24	M16	0.2	1.2	2.5°	1	SC32M16	JDM□09T3
35	**AJX12R352AM1645**	★	2	23.3	45	68	17.0	29	24	M16	0.3	1.2	3.5°	2	SC32M16	JDM□1204
35	**AJX09R353AM1645**	★	3	24.9	45	68	17.0	29	24	M16	0.2	1.2	2°	1	SC32M16	JDM□09T3
40	**AJX12R403AM1645**	★	3	28.3	45	68	17.0	29	24	M16	0.3	1.2	3°	2	SC32M16	JDM□1204
40	**AJX09R404AM1645**	★	4	29.9	45	68	17.0	29	24	M16	0.2	1.2	1.5°	1	SC32M16	JDM□09T3

Note 1) Refer to page L222, for the max. depth of cut (**APMX**) and max. drilling depth (**AZ**).
Note 2) For screw-in type shank arbors, refer to page L294.

SPARE PARTS

(inch)

Tool Holder Type	 *		 *		F  D
	Clamp Screw	Clamp Bridge	Clamp Bridge Screw	Spring	Wrench
AJX06R	TS25	–	–	–	TKY08F
AJX08R	TS33	–	–	–	TKY08D
AJX09R	TS351	AMS3	AJS3010T10	ASS2	TKY10D
AJX12	TS43	AMS4	AJS4012T15	ASS2	TKY15T
AJX14	TS54	AMS5	AJS5014T25	ASS3	TKY25T

* Clamp Torque (lbf-in) : TS25=8.9, TS33=13, TS351=22, TS43=31, TS54=66, AJS3010T10=22, AJS4012T15=31, AJS5014T25=66

Dimensions and Symbols (ISO 13399 Compliance)

DCX = Cutting Diameter Max.
DC = Cutting Diameter
LF = Functional Length
OAL = Overall Length
DCON = Connection Diameter
DCSFMS = Contact Surface Diameter Machine Side
CRKS = Connection Retention Knob Thread Size
APMX = Depth of Cut Max.
RMPX = Ramping Angle Max.

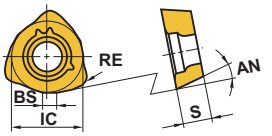
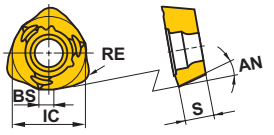
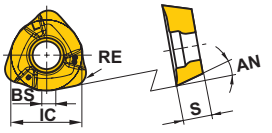
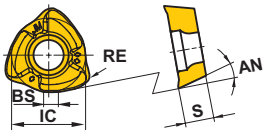
SCREW-IN HOLDERS ➤ L294
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

■INSERTS

(inch)

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
S	Heat Rresistant Alloy, Titanium Alloy	
H	Hardened Steel	

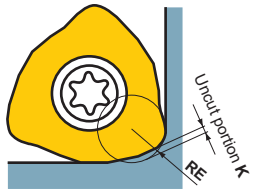
Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✣ : Unstable Cutting

Shape	Order Number	Class	Coated						NEW			AN	IC	S	BS	RE	Geometry
			FH7020	MP6120	MP6130	MP7130	MP7140	MP9120	MP9130	MP9140	VP15TF	VP30RT						
General Use Type	JOMW06T215ZZSR-FT	M	●	●	●	●	●	●	●		●	●	13°	.250	.109	.047	.059	
	JOMW080320ZZSR-FT	M	●	●	●	●	●	●	●		●	●	13°	.315	.125	.055	.079	
	JDMW09T320ZDSR-FT	M	●	●	●	●	●	●	●		●	●	15°	.375	.156	.071	.079	
	JDMW120420ZDSR-FT	M	●	●	●	●	●	●	●		●	●	15°	.472	.187	.098	.079	
	JDMW140520ZDSR-FT	M	●	●	●	●	●	●	●		●	●	15°	.551	.219	.110	.079	
Strong Cutting Edge Type	JDMT120420ZDSR-ST	M	●	●	●	●	●				●	●	15°	.472	.187	.098	.079	
	JDMT140520ZDSR-ST	M	●	●	●	●	●				●	●	15°	.551	.219	.110	.079	
Sharp Cutting Edge Type (For Difficult-to-cut Materials)	JOMT06T216ZZER-JL	M				●	●	●	●	●			13°	.250	.109	.047	.063	
	JOMT080322ZZER-JL	M				●	●	●	●	●			13°	.315	.125	.055	.087	
	JDMT09T323ZDER-JL	M				●	●	●	●	●			15°	.375	.156	.071	.091	
	JDMT120423ZDER-JL	M				●	●	●	●	●			15°	.472	.187	.098	.091	
	JDMT140523ZDER-JL	M				●	●	●	●	●			15°	.551	.219	.110	.091	
Sharp Cutting Edge Type (For General Use)	JOMT06T215ZZSR-JM	M	●	●	●	●	●	●	●		●	●	13°	.250	.109	.047	.059	
	JOMT080320ZZSR-JM	M	●	●	●	●	●	●	●		●	●	13°	.315	.125	.055	.079	
	JDMT09T320ZDSR-JM	M	●	●	●	●	●	●	●		●	●	15°	.375	.156	.071	.079	
	JDMT120420ZDSR-JM	M	●	●	●	●	●	●	●		●	●	15°	.472	.187	.098	.079	
	JDMT140520ZDSR-JM	M	●	●	●	●	●	●	●		●	●	15°	.551	.219	.110	.079	

Note 1) When using ST breaker, please check the height setting as it differs from other chip breakers.

● = NEW

■NOTE FOR PROGRAMMING



When using the AJX, please program the approximate radius as indicated.
The approximate uncut portions for the program are as in the right table.

(inch)

Insert Size	Breaker	Approx. RE	Uncut Portion K
JOM○06T2○○ZZ○R-○○	FT / JM	.079	.013
	JL	.098	.013
JOM○0803○○ZZ○R-○○	FT / JM	.098	.018
	JL	.079	.016
JOM○09T3○○ZD○R-○○	FT / JM	.118	.019
	JL	.118	.018
JOM○1204○○ZD○R-○○	FT / JM / ST	.118	.025
	JL	.118	.021
JOM○1405○○ZD○R-○○	FT / JM / ST	.118	.025
	JL	.118	.022

Note) The uncut portion may change slightly depending on cutting conditions.

● : USA Stock
<10 inserts in one case>

RECOMMENDED CUTTING CONDITIONS

■ Cutting Speed

	Work Material	Hardness	Cutting speed **vc** (SFM)			
P			**FH7020**	**MP6120**	**MP6130**	**VP30RT**
	Mild Steel	≤180HB	850 (700—1000)	750 (580—910)	685 (515—845)	620 (450—880)
	Carbon Steel	180—280HB	550 (400—700)	480 (320—630)	415 (255—565)	350 (190—500)
	Alloy Steel	280—350HB	450 (300—600)	350 (190—500)	285 (125—435)	220 (60—370)
	Alloy Tool Steel	≤350HB	450 (300—600)	350 (190—500)	285 (125—435)	220 (60—370)
	Pre-hardened Steel	35—45HRC	—	330 (230—425)	265 (165—360)	200 (100—295)
M			**MP7130**	**MP7140**		
	Stainless Steel	≤270HB	450 (300—600)	385 (235—535)	—	—
K			**FH7020**	**VP15TF**		
	Gray Cast Iron	Tensile Strength ≤350MPa	850 (700—1000)	—	—	—
	Ductile Cast Iron	Tensile Strength ≤800MPa	—	550 (400—700)	—	—
S			**MP9120**	**MP9130**	**MP9140**	
	Heat Resistant Alloy	≤350HB	100 (65—130)	80 (65—115)	65 (50—100)	—
	Titanium Alloy	—	165 (130—195)	150 (100—180)	130 (100—165)	—
H			**VP15TF**			
	Hardened Steel	40—55HRC	230 (165—295)	—	—	—

RECOMMENDED CUTTING CONDITIONS

■ Depth of Cut / Feed per Tooth

	Work Material	Hardness	ϕ.625", ϕ.688" (ϕ16 mm, ϕ17 mm) (Shank type)			ϕ.750", ϕ.875" (ϕ20 mm, ϕ22 mm) (Shank type)			ϕ.750" (ϕ20 mm) (Shank type)		
			AJXU06 Type			AJXU08 Type			AJXU06 Type		
			2 (Number of Teeth)			2 (Number of Teeth)			3 (Number of Teeth)		
			Over-hang	Axial Depth of Cut	Feed per Tooth (IPT)	Over-hang	Axial Depth of Cut	Feed per Tooth (IPT)	Over-hang	Axial Depth of Cut	Feed per Tooth (IPT)
P	Mild Steel	≤180HB	5.5	.031	.031	6.3	.039	.039	6.3	.035	.035
			7.0	.024	.024	8.3	.031	.031	8.3	.028	.028
			8.2	.016	.016	9.4	.024	.024	9.4	.020	.020
	Carbon Steel	180—280HB	5.5	.031	.031	6.3	.039	.039	6.3	.035	.035
			7.0	.024	.024	8.3	.031	.031	8.3	.028	.028
			8.2	.016	.016	9.4	.024	.024	9.4	.020	.020
	Alloy Steel	280—350HB	5.5	.028	.031	6.3	.031	.039	6.3	.028	.035
			7.0	.020	.024	8.3	.024	.031	8.3	.020	.028
			8.2	.012	.016	9.4	.016	.024	9.4	.016	.020
	Alloy Tool Steel	≤350HB	5.5	.028	.031	6.3	.031	.039	6.3	.028	.035
			7.0	.020	.024	8.3	.024	.031	8.3	.020	.028
			8.2	.012	.016	9.4	.016	.024	9.4	.016	.020
	Pre-hardened Steel	≤35HRC	5.5	.028	.028	6.3	.031	.031	6.3	.028	.028
			7.0	.020	.020	8.3	.024	.024	8.3	.020	.020
			8.2	.012	.012	9.4	.016	.016	9.4	.016	.012
M	Stainless Steel	≤270HB	5.5	.031	.028	6.3	.039	.031	6.3	.035	.028
			7.0	.024	.020	8.3	.031	.024	8.3	.028	.020
			8.2	.016	.012	9.4	.024	.016	9.4	.020	.012
K	Gray Cast Iron	Tensile Strength ≤350MPa	5.5	.031	.039	6.3	.039	.047	6.3	.035	.039
			7.0	.024	.031	8.3	.031	.039	8.3	.028	.031
			8.2	.016	.024	9.4	.024	.031	9.4	.020	.024
	Ductile Cast Iron	Tensile Strength ≤450MPa	5.5	.028	.031	6.3	.031	.039	6.3	.028	.035
			7.0	.020	.024	8.3	.024	.031	8.3	.020	.028
			8.2	.012	.016	9.4	.016	.024	9.4	.016	.020
S	Heat Resistant Alloy	≤350HB	5.5	.024	.024	6.3	.031	.024	5.5	.024	.024
			7.0	.016	.016	8.2	.024	.016	7.0	.016	.016
	Titanium Alloy	—	8.2	.012	.012	9.4	.016	.012	8.2	.012	.012
H	Hardened Steel	43—55HRC	5.5	.020	.020	6.3	.020	.024	6.3	.020	.020
			7.0	.016	.012	8.3	.016	.016	8.3	.016	.016
			8.2	.012	.008	9.4	.012	.008	9.4	.012	.008

* Depth of cut of JL breaker is up to .024 inch. (06 size)
* Depth of cut of JL breaker is up to .035 inch. (08 size)

(inch)

	ϕ1.000", ϕ1.125" (ϕ25 mm, ϕ28 mm) (Shank type)			**ϕ1.000" (ϕ25 mm)** (Shank type)			**ϕ1.250" (ϕ32 mm)** (Shank type)			**ϕ1.250" (ϕ32 mm)** (Shank type)			**ϕ1.500" (ϕ40 mm)** (ϕ1.250"shank)			**ϕ1.500" (ϕ40 mm)** (ϕ1.250"shank)		
	AJXU09 Type			AJXU08 Type			AJXU12 Type			AJXU09 Type			AJXU12 Type			AJXU09 Type		
	2 (Number of Teeth)			3 (Number of Teeth)			2 (Number of Teeth)			3 (Number of Teeth)			3 (Number of Teeth)			4 (Number of Teeth)		
	Over-hang	Axial Depth of Cut	Feed per Tooth (IPT)	Over-hang	Axial Depth of Cut	Feed per Tooth (IPT)	Over-hang	Axial Depth of Cut	Feed per Tooth (IPT)	Over-hang	Axial Depth of Cut	Feed per Tooth (IPT)	Over-hang	Axial Depth of Cut	Feed per Tooth (IPT)	Over-hang	Axial Depth of Cut	Feed per Tooth (IPT)
	6.7	.039	.047	6.7	.035	.039	7.0	.047	.055	7.0	.043	.047	7.0	.047	.055	7.0	.043	.047
	9.0	.031	.039	9.0	.028	.031	9.0	.039	.047	9.0	.035	.039	9.5	.039	.047	9.5	.035	.039
	11.5	.024	.031	11.5	.020	.024	11.0	.031	.039	11.5	.028	.031	12.0	.031	.039	12.0	.028	.031
	6.7	.039	.047	6.7	.035	.039	7.0	.047	.055	7.0	.043	.047	7.0	.047	.055	7.0	.043	.047
	9.0	.031	.039	9.0	.028	.031	9.0	.039	.047	9.0	.035	.039	9.5	.039	.047	9.5	.035	.039
	11.5	.024	.031	11.5	.020	.024	11.0	.031	.039	11.5	.028	.031	12.0	.031	.039	12.0	.028	.031
	6.7	.031	.047	6.7	.028	.039	7.0	.039	.055	7.0	.035	.047	7.0	.039	.055	7.0	.035	.047
	9.0	.024	.039	9.0	.020	.031	9.0	.031	.047	9.0	.028	.039	9.5	.031	.047	9.5	.028	.039
	11.5	.016	.031	11.5	.016	.024	11.0	.024	.039	11.5	.020	.031	12.0	.024	.039	12.0	.020	.031
	6.7	.031	.047	6.7	.028	.039	7.0	.039	.055	7.0	.035	.047	7.0	.039	.055	7.0	.035	.047
	9.0	.024	.039	9.0	.020	.031	9.0	.031	.047	9.0	.028	.039	9.5	.031	.047	9.5	.028	.039
	11.5	.016	.031	11.5	.016	.024	11.0	.024	.039	11.5	.020	.031	12.0	.024	.039	12.0	.020	.031
	6.7	.031	.039	6.7	.028	.035	7.0	.039	.047	7.0	.035	.039	7.0	.039	.047	7.0	.035	.039
	9.0	.024	.031	9.0	.020	.028	9.0	.031	.039	9.0	.028	.031	9.5	.031	.039	9.5	.028	.031
	11.5	.016	.024	11.5	.016	.020	11.0	.024	.031	11.5	.020	.024	12.0	.024	.031	12.0	.020	.024
	6.7	.039	.039	6.7	.035	.035	7.0	.047	.047	7.0	.043	.039	7.0	.047	.047	7.0	.043	.039
	9.0	.031	.031	9.0	.028	.028	9.0	.039	.039	9.0	.035	.031	9.5	.039	.039	9.5	.035	.031
	11.5	.024	.024	11.5	.020	.020	11.0	.031	.031	11.5	.028	.024	12.0	.031	.031	12.0	.028	.024
	6.7	.039	.055	6.7	.035	.047	7.0	.047	.063	7.0	.043	.055	7.0	.047	.063	7.0	.043	.055
	9.0	.031	.047	9.0	.028	.039	9.0	.039	.055	9.0	.035	.047	9.5	.039	.055	9.5	.035	.047
	11.5	.024	.039	11.5	.020	.031	11.0	.031	.047	11.5	.028	.035	12.0	.031	.047	12.0	.028	.035
	6.7	.031	.047	6.7	.028	.039	7.0	.039	.055	7.0	.035	.047	7.0	.039	.055	7.0	.035	.047
	9.0	.024	.039	9.0	.020	.031	9.0	.031	.047	9.0	.028	.039	9.5	.031	.047	9.5	.028	.039
	11.5	.016	.031	11.5	.016	.024	11.0	.024	.039	11.5	.020	.031	12.0	.024	.039	12.0	.020	.031
	6.7	.047	.024	6.3	.031	.024	7.0	.047	.024	7.0	.047	.024	7.0	.047	.024	7.0	.047	.024
	9.0	.039	.016	8.2	.024	.016	9.0	.039	.016	9.0	.039	.016	9.5	.039	.016	9.5	.039	.016
	11.5	.031	.012	9.4	.016	.012	11.0	.031	.012	11.5	.031	.012	12.0	.031	.012	12.0	.031	.012
	6.7	.020	.031	6.7	.020	.028	7.0	.024	.039	7.0	.020	.035	7.0	.024	.039	7.0	.020	.035
	9.0	.016	.024	9.0	.016	.020	9.0	.020	.031	9.0	.016	.028	9.5	.020	.031	9.5	.016	.028
	11.5	.012	.016	11.5	.012	.012	11.0	.016	.024	11.5	.012	.020	12.0	.016	.024	12.0	.012	.020

* Depth of cut of JL breaker is up to .047 inch. (09, 12 sizes)

RECOMMENDED CUTTING CONDITIONS

■ Depth of Cut / Feed per Tooth

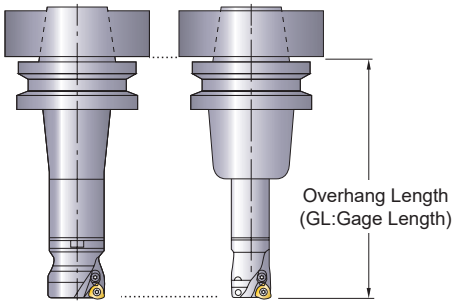
	Work Material	Hardness	ϕ1.500" (ϕ40 mm) (ϕ1.500"shank) AJXU12 Type 3 (Number of Teeth)			ϕ2.000" (ϕ50 mm) (Shank type) AJXU14 Type 3 (Number of Teeth)			ϕ2.000", ϕ2.500" (ϕ50 mm, ϕ63 mm) (Arbor type) AJXU12 Type (ϕ2.000") AJXU14 Type (ϕ2.500") 3 or 4 (Number of Teeth)		
			Over-hang	Axial Depth of Cut	Feed per Tooth (IPT)	Over-hang	Axial Depth of Cut	Feed per Tooth (IPT)	Over-hang	Axial Depth of Cut	Feed per Tooth (IPT)
P	Mild Steel	≤180HB	7.0	.047	.059	7.0	.055	.059	6.0	.059	.059
			9.5	.039	.051	9.5	.047	.051	10.0	.051	.051
			12.0	.031	.043	—	—	—	14.0	.043	.043
	Carbon Steel	180—280HB	7.0	.047	.059	7.0	.055	.059	6.0	.059	.059
			9.5	.039	.051	9.5	.047	.051	10.0	.051	.051
			12.0	.031	.043	—	—	—	14.0	.043	.043
	Alloy Steel	280—350HB	7.0	.039	.059	7.0	.047	.059	6.0	.051	.059
			9.5	.031	.051	9.5	.039	.051	10.0	.043	.051
			12.0	.024	.043	—	—	—	14.0	.035	.043
	Alloy Tool Steel	≤350HB	7.0	.039	.059	7.0	.047	.059	6.0	.051	.059
			9.5	.031	.051	9.5	.039	.051	10.0	.043	.051
			12.0	.024	.043	—	—	—	14.0	.035	.043
	Pre-hardened Steel	≤35HRC	7.0	.039	.051	7.0	.047	.051	6.0	.051	.051
			9.5	.031	.043	9.5	.039	.043	10.0	.043	.043
			12.0	.024	.035	—	—	—	14.0	.035	.035
M	Stainless Steel	≤270HB	7.0	.047	.051	7.0	.055	.051	6.0	.059	.051
			9.5	.039	.043	9.5	.047	.043	10.0	.051	.043
			12.0	.031	.035	—	—	—	14.0	.043	.035
K	Gray Cast Iron	Tensile Strength ≤350MPa	7.0	.047	.067	7.0	.055	.067	6.0	.059	.067
			9.5	.039	.059	9.5	.047	.059	10.0	.051	.059
			12.0	.031	.051	—	—	—	14.0	.043	.051
	Ductile Cast Iron	Tensile Strength ≤450MPa	7.0	.039	.059	7.0	.047	.059	6.0	.051	.059
			9.5	.031	.051	9.5	.039	.051	10.0	.043	.051
			12.0	.024	.043	—	—	—	14.0	.035	.043
S	Heat Resistant Alloy	≤350HB	7.0	.047	.024	7.0	.047	.024	6.0	.047	.024
			9.5	.039	.016	9.5	.039	.016	10.0	.039	.016
	Titanium Alloy	—	12.0	.031	.012	—	—	—	14.0	.031	.012
H	Hardened Steel	43—55HRC	7.0	.024	.043	7.0	.031	.043	6.0	.035	.043
			9.5	.020	.035	9.5	.024	.035	10.0	.028	.035
			12.0	.016	.028	—	—	—	—	—	—

(inch)

	ϕ2.000", ϕ2.500" (ϕ50 mm, ϕ63 mm) (Arbor type)			**ϕ3.000", ϕ4.000", ϕ4.921", ϕ6.299" (ϕ80 mm, ϕ100 mm, ϕ125 mm, ϕ160 mm)** (Arbor type)			**ϕ3.000", ϕ4.000" (ϕ80 mm, ϕ100 mm)** (Arbor type)		
	AJXU09 Type (ϕ2.000") AJXU12 Type (ϕ2.500")			AJXU14 Type AJX14 Type			AJXU12 Type		
	5 (Number of Teeth)			4 or 5 or 6 or 7 or 8 (Number of Teeth)			6 or 7 (Number of Teeth)		
	Over-hang	Axial Depth of Cut	Feed per Tooth (IPT)	Over-hang	Axial Depth of Cut	Feed per Tooth (IPT)	Over-hang	Axial Depth of Cut	Feed per Tooth (IPT)
	6.0	.053	.051	7.0	.059	.059	7.0	.053	.051
	10.0	.046	.043	12.0	.051	.051	12.0	.046	.043
	14.0	.039	.035	18.0	.039	.039	18.0	.035	.031
	6.0	.053	.051	7.0	.059	.059	7.0	.053	.051
	10.0	.046	.043	12.0	.051	.051	12.0	.046	.043
	14.0	.039	.035	18.0	.039	.039	18.0	.035	.031
	6.0	.046	.051	7.0	.051	.059	7.0	.046	.051
	10.0	.039	.043	12.0	.043	.051	12.0	.039	.043
	14.0	.032	.035	18.0	.031	.039	18.0	.028	.031
	6.0	.046	.051	7.0	.051	.059	7.0	.046	.051
	10.0	.039	.043	12.0	.043	.051	12.0	.039	.043
	14.0	.032	.035	18.0	.031	.039	18.0	.028	.031
	6.0	.046	.043	7.0	.051	.051	7.0	.046	.043
	10.0	.039	.035	12.0	.043	.043	12.0	.039	.035
	14.0	.032	.028	18.0	.031	.031	18.0	.028	.024
	6.0	.053	.043	7.0	.059	.051	7.0	.053	.043
	10.0	.046	.035	12.0	.051	.043	12.0	.046	.035
	14.0	.039	.028	18.0	.039	.031	18.0	.035	.024
	6.0	.053	.059	7.0	.059	.067	7.0	.053	.059
	10.0	.046	.051	12.0	.051	.059	12.0	.046	.051
	14.0	.039	.039	18.0	.039	.047	18.0	.035	.035
	6.0	.046	.051	7.0	.051	.059	7.0	.046	.051
	10.0	.039	.043	12.0	.043	.051	12.0	.039	.043
	14.0	.032	.035	18.0	.031	.039	18.0	.028	.031
	6.0	.047	.024	7.0	.047	.024	7.0	.047	.024
	10.0	.039	.016	12.0	.039	.016	12.0	.039	.016
	14.0	.031	.012	18.0	.031	.012	18.0	.031	.012
	6.0	.032	.039	7.0	.035	.043	7.0	.032	.039
	10.0	.025	.031	12.0	.028	.035	12.0	.025	.031
	—	—	—	—	—	—	—	—	—

* Depth of cut of JL breaker is up to .047 inch.

①Overhang Length



②Main Spindle Speed
$n(min^{-1})=(Recommended\ Cutting\ Speed \times 12)\div(DCX \times 3.14)$

③Table Feed Rate
vf(IPM)=n x feed per tooth fz x number of teeth

④Recommended width of cut (ae) is more than 60% of cutting edge diameter.

⑤The cutting condition on the left are guide when using a CAT50 size holder. In case of CAT40 and HSK63 machines, a cutter diameter of under 1.5 inch is recommended. In this case, reduce the depth of cut and table feed rate.

⑥Use of ST chip breaker with a tougher cutting edge is recommended for interrupted cutting.

⑦A cutter body with a coarse pitch is recommended for use in unstable conditions such as a long tool overhang.

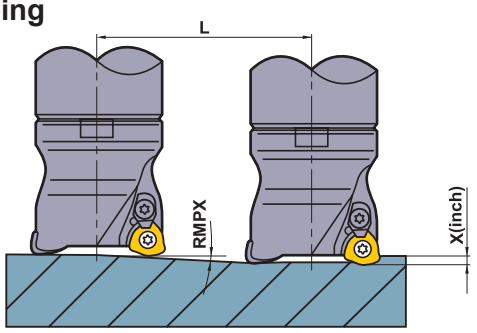
⑧Use “sharp” JM chip breaker to lower cutting forces or when there is a long tool overhang.

⑨Large chips are generated when machining with the AJX. To avoid chip jamming-related problems, machine using an air blow to disperse the chips effectively.

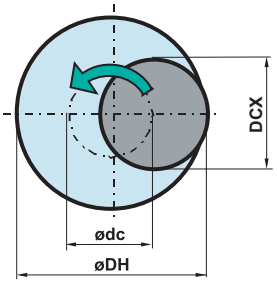
⑩The maximum depth of cut JL chip breaker is different in the insert size. 06 size is up to .024 inch, 08 size is up to .035 inch, and 09, 12, 14 size is up to .047 inch.

MAXIMUM CAPACITIES BY MODE

■ Ramping



■ Helical Milling and Drilling



●How to calculate the theoretical center of the tool path.

$$\text{ødc} = \text{øDH} - \text{DCX}$$

ødc: Theoretical Center of the Tool
øDH: Desired Hole Diameter
DCX: Cutting Diameter Max.

●Please set the depth of cut per cycle under max. depth of cut (APMX).

●Please machine in a down (Climb) cutting direction.

●When ramping and helical milling, it is recommended to reduce the feed rate by 40%.
●When drilling, please set the feed in the axial direction .008 IPR or less.
●The long chips generated can discharge in any direction, so ensure that adequate safety precautions are taken.

(inch)

	Tool Holder Type	DCX	DC	Max. Depth of Cut APMX		Ramping machining					Helical Milling		AZ
				FT/JM/ ST	JL	RMPX	L Required Distance for X Inch Depth				Min. Hole Diameter	Max. Hole Diameter	
							Z=.039	Z=.047	Z=.059	Z=.079			
Shank Type	**AJXU06R102**	.625	.340	.039	.024	3°	.744	—	—	—	.90	1.13	.012
	AJXU06R112	.688	.400	.039	.024	2.5°	.893	—	—	—	1.02	1.26	.012
	AJXU06R123	.750	.472	.039	.024	1.7°	1.314	—	—	—	1.15	1.38	.012
	AJXU06R143	.875	.595	.039	.024	0.7°	3.192	—	—	—	1.40	1.63	.012
	AJXU08R122	.750	.410	.059	.035	3.5°	.638	.768	.965	—	.99	1.34	.020
	AJXU08R142	.875	.530	.059	.035	3°	.744	.897	1.126	—	1.24	1.59	.020
	AJXU08R163	1.000	.661	.059	.035	2°	1.117	1.346	1.690	—	1.49	1.84	.020
	AJXU08R183	1.125	.784	.059	.035	0.5°	4.469	5.386	6.761	—	1.74	2.09	.020
	AJXU09R162	1.000	.590	.079	.047	4°	.558	.672	.844	1.130	1.33	1.84	.039
	AJXU09R182	1.125	.720	.079	.047	3°	.744	.897	1.126	1.507	1.58	2.09	.039
	AJXU09R203	1.250	.854	.079	.047	3.3°	.676	.815	1.023	1.370	1.83	2.34	.039
	AJXU09R223	1.375	.976	.079	.047	2°	1.117	1.346	1.690	2.262	2.08	2.59	.039
	AJXU09R244	1.500	1.114	.079	.047	2.4°	.931	1.121	1.408	1.885	2.33	2.84	.039
	AJXU12R202	1.250	.790	.079	.047	4°	.558	.672	.844	1.130	1.59	2.34	.059
	AJXU12R243	1.500	1.040	.079	.047	3°	.744	.897	1.126	1.507	2.09	2.84	.059
	AJXU14R323	2.000	1.530	.079	.047	4.2°	.531	.640	.803	1.076	2.90	3.84	.079

DCX = Cutting Diameter Max.
APMX = Depth of Cut Max.
DC = Cutting Diameter
RMPX = Ramping Angle Max.
DH = Desired Hole Diameter
AZ = Max. Drilling Depth

(inch)

	Tool Holder Type	DCX	DC	Max. Depth of Cut APMX		Ramping machining					Helical Milling		AZ
						RMPX	L Required Distance for X Inch Depth				Min. Hole Diameter	Max. Hole Diameter	
				FT/JM/ ST	JL		Z=.039	Z=.047	Z=.059	Z=.079			
Arbor Type	**AJXU09R02**	2.000	1.606	.079	.047	1.1°	2.031	2.448	3.073	4.114	3.33	3.84	.039
	AJXU12R02	2.000	1.540	.079	.047	2°	1.117	1.346	1.690	2.262	3.09	3.84	.059
	AJXU12R2505	2.500	2.039	.079	.047	1.5°	1.489	1.795	2.253	3.017	4.09	4.84	.059
	AJXU12R0306	3.000	2.543	.079	.047	1.2°	1.862	2.244	2.817	3.771	5.09	5.84	.059
	AJXU12R0407	4.000	3.539	.079	.047	0.8°	2.793	3.366	4.225	5.658	7.09	7.84	.059
	AJXU14R25	2.500	2.030	.079	.047	2.8°	.797	.961	1.206	1.615	3.90	4.84	.079
	AJXU14R03	3.000	2.530	.079	.047	1.8°	1.241	1.496	1.877	2.514	4.90	5.84	.079
	AJXU14R04	4.000	3.530	.079	.047	1.2°	1.862	2.244	2.817	3.771	6.90	7.84	.079
	AJX14RA125	4.920	4.530	.079	.047	0.8°	2.793	3.366	4.225	5.658	8.74	9.68	.079
	AJX14RA160	6.300	5.830	.079	.047	0.5°	4.469	5.386	6.761	9.053	11.50	12.44	.079

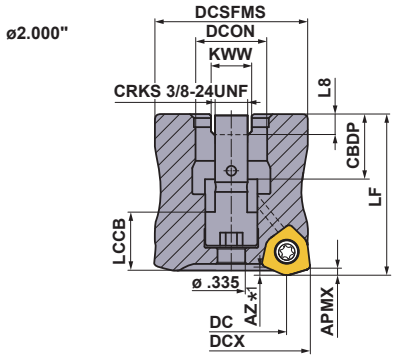
DCX = Cutting Diameter Max.
APMX = Depth of Cut Max.
DC = Cutting Diameter
RMPX = Ramping Angle Max.
DH = Desired Hole Diameter
AZ = Max. Drilling Depth

MULTI-FUNCTIONAL MILLING

WJX NEW

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron		Heat Resistant Alloy	Hardened Steel





■ARBOR TYPE

With Coolant Hole

DCX = inch, DCON = inch

GAMP : –7°
GAMF : –10°

Right hand tool holder only.
The set bolt is built in.
Allen wrench (1/4 inch Hex Key size) is used to tighten the set bolt.

(inch)

DCX	Order Number	Stock R	Number of Teeth	DC	LF	DCON	WT (lbs)	APMX	RMPX	RPMX (min^{-1})
2.000	**WJX14UR2.0003AA**	●	3	1.388	2.000	.750	.882	.079	4.3°	5000
2.000	**WJX14UR2.0004AA**	●	4	1.388	2.000	.750	.882	.079	4.3°	5000

∗1 Refer to page L235, for the maximum drilling depth (**AZ**).
Note 1) The maximum spindle speeds **RPMX** are set to ensure tool and insert stability.
Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.
Note 3) The milling cutter has a built-in set bolt. The set bolt cannot be replaced. Therefore, absolutely do not disassemble the milling cutter.

MOUNTING DIMENSIONS

(inch)

DCX	Order Number	DCON	CBDP	LCCB	DCSFMS	KWW	L8
2.000	**WJX14UR2.0003AA**	.750	.858	.689	1.750	.313	.187
2.000	**WJX14UR2.0004AA**	.750	.858	.689	1.750	.313	.187

SPARE PARTS

(inch)

Tool Holder Type	 *		
	Clamp Screw	Wrench (Insert)	Anti-seize Lubricant
WJX14	TS5R	TKY20T	MK1KS

∗ Clamp Torque (lbf-in) : TS5R = 44



Fig.1
ø2.500
ø3.000
ø4.000

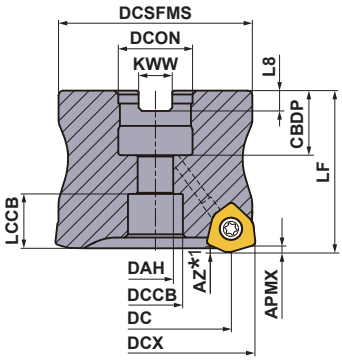
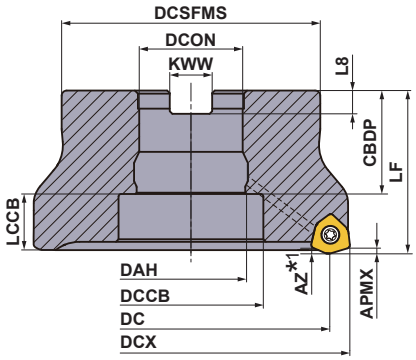
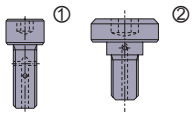


Fig.2
ø5.000
ø6.000



Right hand tool holder only.

(inch)

DCX	DCON	Set Bolt	Geometry	
ϕ2.500", ϕ3.000"	ϕ1.000"	HSCU50014H	①	
ϕ3.000"	ϕ1.250"	HSCU62516H		
ϕ4.000"	ϕ1.500"	HSCU75016H		
ϕ5.000"	ϕ1.500"	MBAU75016H	②	
ϕ6.000"	ϕ2.000"	MBAU100016H		

■ARBOR TYPE

With Coolant Hole
DCX = inch, DCON = inch

GAMP : –6°
GAMF : –10°

(inch)

DCX	Order Number	Stock R	Number of Teeth	DC	LF	DCON	WT (lbs)	APMX	RMPX	RPMX (min^{-1})	Fig.
2.500	**WJX14UR2.5004CA**	●	4	1.887	2.000	1.000	1.5	.079	3°	18100	1
2.500	**WJX14UR2.5005CA**	●	5	1.887	2.000	1.000	1.5	.079	3°	18100	1
3.000	**WJX14UR3.0005CA**	●	5	2.387	2.000	1.000	2.3	.079	2.2°	16100	1
3.000	**WJX14UR3.0006CA**	●	6	2.387	2.000	1.000	2.3	.079	2.2°	16100	1
3.000	**WJX14UR3.0005DA**	●	5	2.387	2.500	1.250	2.7	.079	2.2°	16100	1
3.000	**WJX14UR3.0006DA**	●	6	2.387	2.500	1.250	2.7	.079	2.2°	16100	1
4.000	**WJX14UR4.0006EA**	●	6	3.386	2.500	1.500	5.4	.079	1.5°	13300	1
4.000	**WJX14UR4.0007EA**	●	7	3.386	2.500	1.500	5.5	.079	1.5°	13300	1
5.000	**WJX14UR5.0007EA**	●	7	4.386	2.500	1.500	7.0	.079	1.1°	11500	2
5.000	**WJX14UR5.0009EA**	●	9	4.386	2.500	1.500	7.0	.079	1.1°	11500	2
6.000	**WJX14UR6.0009FA**	●	9	5.386	2.500	2.000	10.3	.079	0.9°	9900	2

∗1 Refer to page L235, for the maximum drilling depth (**AZ**).
Note 1) The maximum spindle speeds **RPMX** are set to ensure tool and insert stability.
Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

SPARE PARTS

(inch)

Tool Holder Type	 *		
	Clamp Screw	Wrench (Insert)	Anti-seize Lubricant
WJX14	TS5R	TKY20T	MK1KS

* Clamp Torque (lbf-in) : TS5R = 44

Fig.1
ø2.500
ø3.000
ø4.000

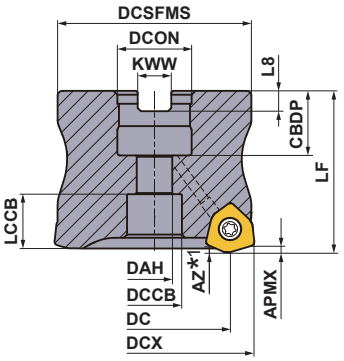
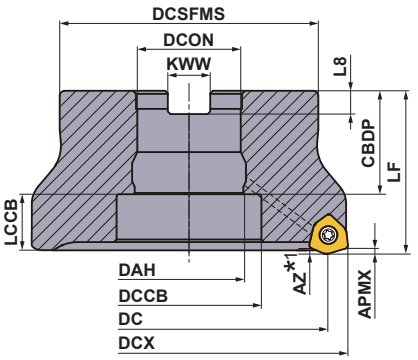


Fig.2
ø5.000
ø6.000



Right hand tool holder only.

MOUNTING DIMENSIONS

(inch)

DCX	Order Number	DCON	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
2.500	**WJX14UR2.5004CA**	1.000	.945	.539	.787	.689	2.375	.375	.219	1
2.500	**WJX14UR2.5005CA**	1.000	.945	.539	.787	.689	2.375	.375	.219	1
3.000	**WJX14UR3.0005CA**	1.000	.945	.539	.787	.689	2.750	.375	.219	1
3.000	**WJX14UR3.0006CA**	1.000	.945	.539	.787	.689	2.750	.375	.219	1
3.000	**WJX14UR3.0005DA**	1.250	1.260	.669	1.024	.874	2.875	.500	.281	1
3.000	**WJX14UR3.0006DA**	1.250	1.260	.669	1.024	.874	2.875	.500	.281	1
4.000	**WJX14UR4.0006EA**	1.500	1.181	.787	1.181	.953	3.813	.625	.375	1
4.000	**WJX14UR4.0007EA**	1.500	1.181	.787	1.181	.953	3.813	.625	.375	1
5.000	**WJX14UR5.0007EA**	1.500	1.654	1.575	2.205	.795	3.813	.625	.375	2
5.000	**WJX14UR5.0009EA**	1.500	1.654	1.575	2.205	.795	3.813	.625	.375	2
6.000	**WJX14UR6.0009FA**	2.000	1.693	2.087	3.228	.756	4.875	.750	.437	2

*1 Refer to page L235, for the maximum drilling depth (**AZ**).

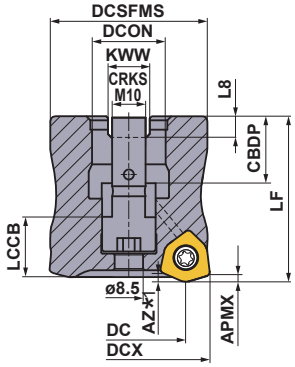
■ Cutter Diameter and Flat Surface Milling

The maximum cutting diameter (DCX) shown in the WJX items table is not the same as the possible dimensions for plane cutting.
The possible dimensions for plane cutting are given as the cutting axle DC value. Please note that this is smaller than the DCX value.





ø50
ø52



Metric Standard

■ARBOR TYPE

GAMP : –7°
GAMF : –10°

With Coolant Hole

DCX = mm, DCON = inch, DCON = mm

Right hand tool holder only.
The set bolt is built in.
Allen wrench (7mm Hex Key size) is used to tighten the set bolt.

(mm)

DCX	Order Number	Stock R	Number of Teeth	DC	LF	DCON	WT (kg)	APMX	RMPX	RPMX (min^{-1})
50	**WJX14-050A03AR**	★	3	34.5	50	22	0.4	2	4.4°	5000
50	**WJX14-050A04AR**	★	4	34.5	50	22	0.4	2	4.4°	5000
50	**WJX14R05003BA**	★	3	34.5	50	22.225	0.4	2	4.4°	5000
50	**WJX14R05004BA**	★	4	34.5	50	22.225	0.4	2	4.4°	5000
52	**WJX14-052A04AR**	★	4	36.5	50	22	0.4	2	4.1°	5000

∗1 Refer to page L235, for the maximum drilling depth (**AZ**).
Note 1) The maximum spindle speeds **RPMX** are set to ensure tool and insert stability.
Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.
Note 3) The milling cutter has a built-in set bolt. The set bolt cannot be replaced. Therefore, absolutely do not disassemble the milling cutter.

MOUNTING DIMENSIONS

(mm)

DCX	Order Number	DCON	CBDP	LCCB	DCSFMS	KWW	L8
50	**WJX14-050A03AR**	22	20	18.3	47	10.4	6.3
50	**WJX14-050A04AR**	22	20	18.3	47	10.4	6.3
50	**WJX14R05003BA**	22.225	20	18.3	47	8.4	5.0
50	**WJX14R05004BA**	22.225	20	18.3	47	8.4	5.0
52	**WJX14-052A04AR**	22	20	18.3	47	10.4	6.3

SPARE PARTS

(mm)

Tool Holder Type	 *		
	Clamp Screw	Wrench (Insert)	Anti-seize Lubricant
WJX14	TS5R	TKY20T	MK1KS

∗ Clamp Torque (lbf-in) : TS5R = 44

★ : **Stocked in Japan**



Fig.1
ø63
ø66
ø80
ø100

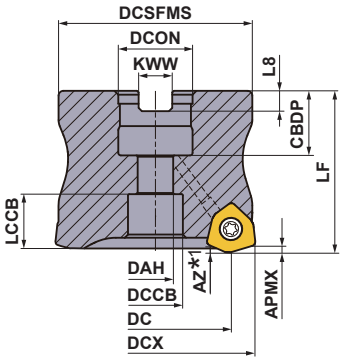
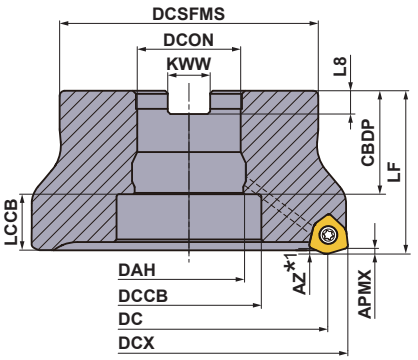
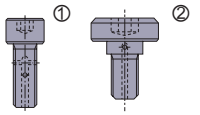


Fig.2
ø125
ø160



Right hand tool holder only.

(mm)

DCX		Set Bolt	Geometry	
DCON inch size	DCON mm size			
ϕ63	ϕ63(22)	HSC10030H	①	
	ϕ63(27), ϕ66, ϕ80	HSC12035H		
ϕ80, ϕ100	ϕ100	HSC16040H		
ϕ125	ϕ125, ϕ160	MBA20040H	②	
ϕ160		MBA24045H		

Metric Standard

■ARBOR TYPE

With Coolant Hole

GAMP : –6°
GAMF : –10°

DCX = mm, DCON = inch, DCON = mm

(mm)

DCX	Order Number	Stock R	Number of Teeth	DC	LF	DCON	WT (kg)	APMX	RMPX	RPMX (min^{-1})	Fig.
63	**WJX14-063A04AR**	★	4	47.5	50	22	0.7	2	3°	18200	1
63	**WJX14-063A05AR**	★	5	47.5	50	22	0.7	2	3°	18200	1
63	**WJX14R06304BA**	★	4	47.5	50	22.225	0.7	2	3°	18200	1
63	**WJX14R06305BA**	★	5	47.5	50	22.225	0.7	2	3°	18200	1
63	**WJX14-063X05AR**	★	5	47.5	50	27	0.6	2	3°	18200	1
66	**WJX14-066X05AR**	★	5	50.4	50	27	0.7	2	2.8°	17700	1
80	**WJX14-080A05AR**	★	5	64.4	50	27	1.2	2	2.1°	15600	1
80	**WJX14-080A06AR**	★	6	64.4	50	27	1.2	2	2.1°	15600	1
80	**WJX14R08005DA**	★	5	64.4	63	31.75	1.4	2	2.1°	15600	1
80	**WJX14R08006DA**	★	6	64.4	63	31.75	1.4	2	2.1°	15600	1
100	**WJX14R10006DA**	★	6	84.4	63	31.75	2.5	2	1.5°	13500	1
100	**WJX14R10007DA**	★	7	84.4	63	31.75	2.5	2	1.5°	13500	1
100	**WJX14-100A06AR**	★	6	84.4	63	32	2.5	2	1.5°	13500	1
100	**WJX14-100A07AR**	★	7	84.4	63	32	2.5	2	1.5°	13500	1
125	**WJX14R12507EA**	★	7	109.4	63	38.1	3.2	2	1.2°	11600	2
125	**WJX14R12509EA**	★	9	109.4	63	38.1	3.1	2	1.2°	11600	2
125	**WJX14-125B07AR**	★	7	109.4	63	40	3.2	2	1.2°	11600	2
125	**WJX14-125B09AR**	★	9	109.4	63	40	3.1	2	1.2°	11600	2
160	**WJX14-160B09AR**	★	9	144.4	63	40	4.9	2	0.8°	9900	2
160	**WJX14R16009FA**	★	9	144.4	63	50.8	4.5	2	0.8°	9900	2

★1 Refer to page L235, for the maximum drilling depth (**AZ**).
Note 1) The maximum spindle speeds **RPMX** are set to ensure tool and insert stability.
Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

SPARE PARTS

(mm)

Tool Holder Type	 *		
	Clamp Screw	Wrench (Insert)	Anti-seize Lubricant
WJX14	TS5R	TKY20T	MK1KS

* Clamp Torque (lbf-in) : TS5R = 44

MOUNTING DIMENSIONS

(mm)

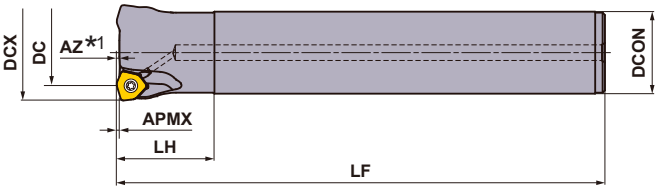
DCX	Order Number	DCON	CBDP	DAH	DCCB	LCCB	DCSFMS	KWW	L8	Fig.
63	**WJX14-063A04AR**	22	20	11	17	16.7	60	10.4	6.3	1
63	**WJX14-063A05AR**	22	20	11	17	16.7	60	10.4	6.3	1
63	**WJX14R06304BA**	22.225	19	11	17	17.7	60	8.4	5.0	1
63	**WJX14R06305BA**	22.225	19	11	17	17.7	60	8.4	5.0	1
63	**WJX14-063X05AR**	27	23	13	20	15.7	60	12.4	7.0	1
66	**WJX14-066X05AR**	27	23	13	20	15.7	60	12.4	7.0	1
80	**WJX14-080A05AR**	27	23	13	20	15.7	76	12.4	7.0	1
80	**WJX14-080A06AR**	27	23	13	20	15.7	76	12.4	7.0	1
80	**WJX14R08005DA**	31.75	32	17	26	19.7	76	12.7	8.0	1
80	**WJX14R08006DA**	31.75	32	17	26	19.7	76	12.7	8.0	1
100	**WJX14R10006DA**	31.75	32	17	26	19.7	96	12.7	8.0	1
100	**WJX14R10007DA**	31.75	32	17	26	19.7	96	12.7	8.0	1
100	**WJX14-100A06AR**	32	26	17	26	25.7	96	14.4	8.0	1
100	**WJX14-100A07AR**	32	26	17	26	25.7	96	14.4	8.0	1
125	**WJX14R12507EA**	38.1	40	40	56	21.7	100	15.9	10.0	2
125	**WJX14R12509EA**	38.1	40	40	56	21.7	100	15.9	10.0	2
125	**WJX14-125B07AR**	40	40	42	56	21.7	100	16.4	9.0	2
125	**WJX14-125B09AR**	40	40	42	56	21.7	100	16.4	9.0	2
160	**WJX14-160B09AR**	40	40	42	56	21.7	100	16.4	9.0	2
160	**WJX14R16009FA**	50.8	43	53	72	18.7	100	19.1	11.0	2

■ Cutter Diameter and Flat Surface Milling

The maximum cutting diameter (DCX) shown in the WJX items table is not the same as the possible dimensions for plane cutting.
The possible dimensions for plane cutting are given as the cutting axle DC value. Please note that this is smaller than the DCX value.







Right hand tool holder only.

■SHANK TYPE

With Coolant Hole

(mm)

DCX	Order Number	Stock R	Number of Teeth	DC	LF	LH	DCON	APMX	RMPX	RPMX (min^{-1})
50	**WJX14R5003SA42S**	★	3	34.5	150	50	42	2	4.4°	21200
50	**WJX14R5003SA42L**	★	3	34.5	250	50	42	2	4.4°	21200

*1 Refer to page L235, for the maximum drilling depth (**AZ**).
Note 1) The maximum spindle speeds **RPMX** are set to ensure tool and insert stability.
Note 2) When using the tool at high spindle speeds, ensure that the tool and arbor are correctly balanced.

SPARE PARTS

Tool Holder Type	 *		
	Clamp Screw	Wrench (Insert)	Anti-seize Lubricant
WJX14	TS5R	TKY20D	MK1KS

* Clamp Torque (lbf-in) : TS5R = 44

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

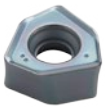
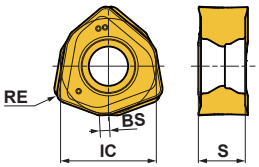
■ INSERTS

(inch)

Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
S	Heat Resistant Alloy, Titanium Alloy	
H	Hardened Steel	

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✠ : Unstable Cutting

Edge Preparation (Honing) :
E : Round

Shape	Order Number	Class	Edge Preparation	Coated									IC	S	BS	RE	Geometry
				MC7020	MP6120	MP6130	MP7130	MP7140	MP9120	MP9130	VP15TF	VP30RT					
	**JOMU140715ZZER-L**	M	E	●	●	●	●	●	●	●	●	●	.551	.259	.051	.059	 Right hand insert only.
	JOMU140715ZZER-M	M	E	●	●	●	●	●	●	●	●	●	.551	.261	.051	.059	
	JOMU140715ZZER-R	M	E	●	●	●					●	●	.551	.266	.051	.059	

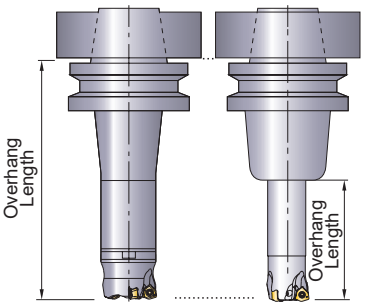
RECOMMENDED CUTTING CONDITIONS

Correction Value According to Overhang Length

Multiply the recommended cutting conditions on pages L232—L234 by the corrections factor x overhang length.

(inch)

Type	Cutting Dia. Max. **DCX**	Overhang Length	Correction Value According		
			Cutting Speed **vc** (SFM)	Depth of Cut **ap**	Feed **fz** (IPT)
Shank Type	1.969	< 2.5×DCON	100%	100%	100%
		3.0×DCON	90%	100%	90%
		4.0×DCON	80%	80%	90%
Arbor Type	2.000—3.150	< 2.5×DCX	100%	100%	100%
		3.0×DCX	85%	100%	90%
		4.0×DCX	80%	80%	80%
		5.0×DCX	75%	75%	60%
		6.0×DCX	70%	70%	40%
	≥3.937	8.0	100%	100%	100%
		12.0	85%	100%	90%
		16.0	80%	80%	80%



DCON=Connection Dia.

CUTTING SPEED (Dry Cutting)

(inch)

Work Material		Properties	Cutting Speed **vc** (SFM)				
P			MP6130	MP6120	MC7020	VP15TF	VP30RT
	Mild Steel	Hardness ≤180HB	460 (295—590)	490 (330—655)	720 (560—885)	490 (330—655)	395 (260—525)
	Carbon Steel Alloy Steel	Hardness 180—280HB	395 (230—590)	460 (260—655)	655 (490—820)	460 (260—655)	330 (195—490)
	Carbon Steel Alloy Steel	Hardness 280—350HB	395 (230—590)	460 (260—655)	655 (490—820)	460 (260—655)	330 (195—490)
	Alloy Tool Steel	Hardness ≤350HB (Annealing)	395 (230—590)	460 (260—655)	655 (490—820)	460 (260—655)	330 (195—490)
	Pre-hardened Steel	Hardness 35—45HRC	295 (165—425)	360 (230—490)	—	360 (230—490)	260 (130—395)
M			MP7130	MP7140	MC7020	VP30RT	
	Austenitic Stainless Steel	Hardness ≤200HB	525 (425—655)	490 (395—590)	720 (560—885)	490 (395—590)	
	Austenitic Stainless Steel	Hardness >200HB	460 (330—655)	425 (260—590)	620 (460—785)	425 (260—590)	
	Ferritic and Martensitic Stainless Steel	Hardness ≤200HB	490 (330—655)	425 (260—590)	720 (560—885)	425 (260—590)	
	Duplex Stainless Steel	Hardness ≤280HB	425 (260—590)	360 (195—525)	590 (425—755)	360 (195—525)	
	Precipitation Hardening Stainless Steel	Hardness <450HB	360 (195—525)	295 (165—425)	560 (395—720)	295 (165—425)	
K			VP15TF				
	Gray Cast Iron	Tensile Strength ≤350MPa	525 (395—655)				
	Ductile Cast Iron	Tensile Strength ≤450MPa	490 (330—655)				
	Ductile Cast Iron	Tensile Strength ≤800MPa	395 (260—525)				
S			MP9130	MP9120	VP15TF		
	Titanium Alloy	—	130 (100—195)	165 (100—210)	165 (100—210)		
	Heat Resistant Alloy	—	100 (65—130)	130 (65—165)	130 (65—165)		
H			VP15TF				
	Hardened Steel	Hardness 40—55HRC	230 (130—330)				

Note 1) To discharge chips effectively, use an air blow when machining. When the air blow is less effective at discharging chips, we recommend wet cutting.
Note 2) When wet cutting, tool life may become shorter than dry cutting. When carrying out wet cutting for the applications recommended with dry cutting, reduce the cutting speed by 25%.
Note 3) When large vibration occurs, reduce the cutting conditions.
Note 4) For interrupted cutting, reduce the cutting speed and feed rate by 20%.

Depth of Cut / Feed per Tooth

(inch)

	Work Material	Properties	Depth of Cut **ap**	Breaker	Cutting Dia. Max. DCX=2.000", 50 mm, 52 mm Feed **fz** (IPT)	Cutting Dia. Max. DCX≥2.500", 63 mm Feed **fz** (IPT)	Cutting Mode
P	Mild Steel	Hardness ≤180HB	≤.040	M,R *	.059 (.024—.098)	.067 (.024—.110)	Dry
				L	.047 (.016—.079)	.047 (.016—.079)	Dry
			≤.060	M,R *	.051 (.024—.079)	.059 (.024—.098)	Dry
				L	.039 (.016—.071)	.039 (.016—.071)	Dry
			≤.080	M,R *	.047 (.024—.079)	.051 (.024—.098)	Dry
				L	.031 (.016—.067)	.031 (.016—.067)	Dry
			≤.100	M,R	.031 (.012—.059)	.039 (.012—.063)	Dry
			≤.120	M,R	.016 (.008—.039)	.020 (.008—.047)	Dry
	Carbon Steel Alloy Steel	Hardness 180-280HB	≤.040	M,R *	.059 (.020—.079)	.067 (.020—.098)	Dry
				L	.039 (.012—.067)	.039 (.012—.067)	Dry
			≤.060	M,R *	.047 (.020—.067)	.051 (.020—.098)	Dry
				L	.031 (.012—.059)	.031 (.012—.059)	Dry
			≤.080	M,R *	.039 (.020—.059)	.047 (.020—.079)	Dry
				L	.028 (.012—.047)	.028 (.012—.047)	Dry
			≤.100	M,R	.028 (.012—.047)	.035 (.012—.059)	Dry
			≤.120	M,R	.012 (.008—.031)	.016 (.008—.039)	Dry
	Carbon Steel Alloy Steel Alloy Tool Steel	Hardness 280-350HB ≤350HB (Annealing)	≤.040	M,R *	.059 (.020—.079)	.067 (.020—.098)	Dry
				L	.039 (.012—.067)	.039 (.012—.067)	Dry
			≤.060	M,R *	.047 (.020—.067)	.051 (.020—.087)	Dry
				L	.031 (.012—.059)	.031 (.012—.059)	Dry
			≤.080	M,R *	.039 (.020—.059)	.047 (.020—.079)	Dry
				L	.028 (.012—.047)	.028 (.012—.047)	Dry
			≤.100	M,R	.028 (.012—.047)	.035 (.012—.059)	Dry
			≤.120	M,R	.012 (.008—.031)	.016 (.008—.039)	Dry
	Pre-hardened Steel	Hardness 35-45HRC	≤.040	M,R *	.051 (.016—.067)	.059 (.016—.079)	Dry
				L	.028 (.012—.047)	.028 (.012—.047)	Dry
			≤.060	M,R *	.039 (.016—.059)	.047 (.016—.059)	Dry
				L	.024 (.012—.039)	.024 (.012—.039)	Dry
			≤.080	M,R *	.031 (.016—.047)	.039 (.016—.051)	Dry
				L	.020 (.012—.031)	.020 (.012—.031)	Dry
M	Austenitic Stainless Steel	—	≤.040	L *	.031 (.012—.047)	.031 (.012—.047)	Dry
				M	.039 (.020—.047)	.039 (.020—.047)	Dry
			≤.060	L *	.031 (.012—.039)	.031 (.012—.039)	Dry
				M	.039 (.020—.039)	.039 (.020—.039)	Dry
	Ferritic and Martensitic Stainless Steel	Hardness ≤200HB	≤.040	L *	.031 (.012—.047)	.031 (.012—.047)	Dry
				M	.039 (.020—.047)	.039 (.020—.047)	Dry
			≤.060	L *	.031 (.012—.039)	.031 (.012—.039)	Dry
				M	.039 (.020—.039)	.039 (.020—.039)	Dry
	Duplex Stainless Steel	Hardness ≤280HB	≤.040	L *	.024 (.012—.039)	.024 (.012—.039)	Dry
				M	.031 (.016—.039)	.031 (.016—.039)	Dry
			≤.060	L *	.024 (.012—.031)	.024 (.012—.031)	Dry
				M	.031 (.016—.031)	.031 (.016—.031)	Dry
	Precipitation Hardening Stainless Steel	Hardness <450HB	≤.040	L *	.024 (.012—.039)	.024 (.012—.039)	Dry
				M	.031 (.016—.039)	.031 (.016—.039)	Dry
			≤.060	L *	.024 (.012—.031)	.024 (.012—.031)	Dry
				M	.031 (.016—.031)	.031 (.016—.031)	Dry

* The 1st recommend chip breaker for each depth of cut (**ap**).

Note 1) To discharge chips effectively, use an air blow when machining. When the air blow is less effective at discharging chips, we recommend wet cutting.

Note 2) When large vibration occurs, reduce the cutting conditions.

Note 3) For interrupted cutting, reduce the cutting speed and feed rate by 20%.

Note 4) If ap is set at .079" or more, avoid machining on the walls or ramping.

(inch)

	Work Material	Properties	Depth of Cut **ap**	Breaker	Cutting Dia. Max. DCX=2.000", 50 mm, 52 mm Feed **fz** (IPT)	Cutting Dia. Max. DCX≥2.500", 63 mm Feed **fz** (IPT)	Cutting Mode
K	Gray Cast Iron	Tensile Strength ≤350MPa	≤.040	M,R *	.067(.024—.098)	.071(.024—.110)	Dry
				L	.051(.016—.079)	.051(.016—.079)	Dry
			≤.060	M,R *	.059(.024—.079)	.067(.024—.098)	Dry
				L	.047(.016—.071)	.047(.016—.071)	Dry
			≤.080	M,R *	.051(.024—.079)	.059(.024—.098)	Dry
				L	.039(.016—.059)	.039(.016—.059)	Dry
			≤.100	M,R	.031(.012—.059)	.039(.012—.063)	Dry
			≤.120	M,R	.016(.008—.039)	.020(.008—.047)	Dry
	Ductile Cast Iron	Tensile Strength ≤450MPa	≤.040	M,R *	.059(.020—.079)	.067(.020—.098)	Dry
				L	.047(.012—.079)	.047(.012—.079)	Dry
			≤.060	M,R *	.051(.020—.071)	.059(.020—.079)	Dry
				L	.039(.012—.067)	.039(.012—.067)	Dry
			≤.080	M,R *	.047(.020—.071)	.051(.020—.079)	Dry
				L	.031(.012—.059)	.031(.012—.059)	Dry
			≤.100	M,R	.028(.012—.047)	.035(.012—.059)	Dry
			≤.120	M,R	.012(.008—.031)	.016(.008—.039)	Dry
	Ductile Cast Iron	Tensile Strength ≤800MPa	≤.040	M,R *	.051(.016—.071)	.059(.016—.079)	Dry
				L	.039(.012—.067)	.039(.012—.067)	Dry
			≤.060	M,R *	.047(.016—.059)	.051(.016—.071)	Dry
				L	.031(.012—.059)	.031(.012—.059)	Dry
			≤.080	M,R *	.039(.016—.059)	.047(.016—.071)	Dry
				L	.028(.012—.047)	.028(.012—.047)	Dry
S	Titanium Alloy	—	≤.040	L	.012(.008—.024)	.012(.008—.024)	Wet
			≤.060	L	.012(.008—.020)	.012(.008—.020)	Wet
			≤.080	L	.012(.008—.016)	.012(.008—.016)	Wet
	Heat Resistant Alloy	—	≤.040	L,M,R	.039(.012—.051)	.039(.012—.051)	Wet
			≤.060	L,M,R	.031(.012—.047)	.031(.012—.047)	Wet
			≤.080	L,M,R	.028(.012—.047)	.028(.012—.047)	Wet
H	Hardened Steel	Hardness 40-55HRC	≤.040	R,M	.031(.012—.047)	.031(.012—.047)	Dry
			≤.060	R,M	.024(.012—.039)	.024(.012—.039)	Dry
			≤.080	R,M	.020(.012—.031)	.020(.012—.031)	Dry

* The 1st recommend chip breaker for each depth of cut (**ap**).

Note 1) To discharge chips effectively, use an air blow when machining. When the air blow is less effective at discharging chips, we recommend wet cutting.

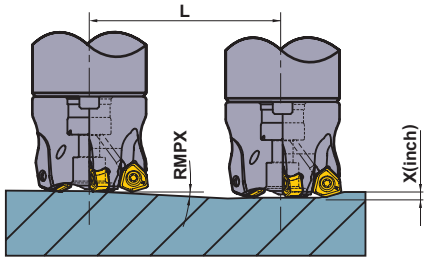
Note 2) When large vibration occurs, reduce the cutting conditions.

Note 3) For interrupted cutting, reduce the cutting speed and feed rate by 20%.

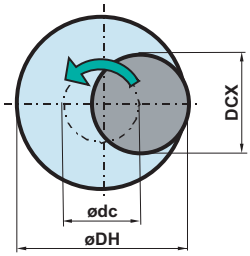
Note 4) If ap is set at .079" or more, avoid machining on the walls or ramping.

MAXIMUM CAPACITIES BY MODE

■ Ramping



■ Helical Milling



● How to derive a locus of the center of the tool.

ødc = øDH - DCX

Locus of the Center of the Tool | Desired Hole Diameter | Cutting Diameter Maximum

(inch)

Tool Holder Type	DCX	DC	APMX	Ramping			Helical Milling (Blind Hole, Flat Bottom)		Helical Milling (Through Hole)	AZ
				RMPX	L (inch) Required Distance for X inch Depth		DH		DH	
					x=.039	x=.079	Min.	Max.	Min.	
WJX14UR2.000	2.000	1.338	.079	4.3	.524	1.048	3.285	3.901	2.919	.082
WJX14UR2.500	2.500	1.887	.079	3°	.752	1.503	4.283	4.901	3.912	.082
WJX14UR3.000	3.000	2.387	.079	2.2°	1.025	2.050	5.283	5.901	4.909	.082
WJX14UR4.000	4.000	3.386	.079	1.5°	1.504	3.007	7.282	7.901	6.906	.082
WJX14UR5.000	5.000	4.386	.079	1.1°	2.051	4.101	9.281	9.901	8.904	.082
WJX14UR6.000	6.000	5.386	.079	0.9°	2.507	5.013	11.281	11.901	10.903	.082
WJX14R50	1.969	1.358	.079	4.4°	.512	1.024	3.228	3.819	2.874	.082
WJX14-050	1.969	1.358	.079	4.4	.512	1.024	3.228	3.819	2.874	.082
WJX14R050	1.969	1.358	.079	4.4	.512	1.024	3.228	3.819	2.874	.082
WJX14-052	2.047	1.437	.079	4.1	.551	1.102	3.386	3.976	3.031	.082
WJX14-063	2.480	1.870	.079	3°	.752	1.504	4.252	4.843	3.898	.082
WJX14R063	2.480	1.870	.079	3°	.752	1.504	4.252	4.843	3.898	.082
WJX14-066	2.598	1.984	.079	2.8°	.807	1.610	4.488	5.079	4.134	.082
WJX14-080	3.150	2.535	.079	2.1°	1.075	2.150	5.591	6.181	5.236	.082
WJX14R080	3.150	2.535	.079	2.1°	1.075	2.150	5.591	6.181	5.236	.082
WJX14-100	3.937	3.323	.079	1.5°	1.504	3.008	7.165	7.756	6.811	.082
WJX14R100	3.937	3.323	.079	1.5°	1.504	3.008	7.165	7.756	6.811	.082
WJX14-125	4.921	4.307	.079	1.2°	1.882	3.760	9.134	9.724	8.780	.082
WJX14R125	4.921	4.307	.079	1.2°	1.882	3.760	9.134	9.724	8.780	.082
WJX14-160	6.299	5.685	.079	0.8°	2.823	5.642	11.890	12.480	11.535	.082
WJX14R160	6.299	5.685	.079	0.8°	2.823	5.642	11.890	12.480	11.535	.082

DCX = Cutting Dia. Max. **DC** = Cutting Dia. **DH** = Desired Hole Dia.
APMX = Depth of Cut Max. **RMPX** = Ramping Angle Max. **AZ** = Plunge Depth Max.

Note 1) When ramping and helical milling, it is recommended to reduce the feed per tooth.
Note 2) When ramping, helical milling and drilling, long continuous chips may be scattered so please be careful.

<Helical Milling>
To obtain a flat bottom surface when helical milling, it requires to remove “the uncut part” in the center of the work material at a final pass.
When helical milling, make sure that the depth of cut per helical pass doesn’t exceed the maximum depth of cut (APMX).
<Drilling>
When drilling, set the axial feed per revolution at .008 IPR or less.

MULTI FUNCTIONAL MILLING

ARP

P	M	K	N	S	H
	Stainless Steel			Heat Resistant Alloy	



Fig.1

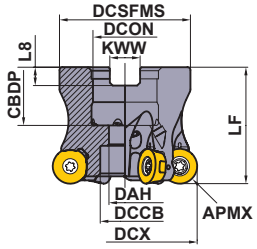
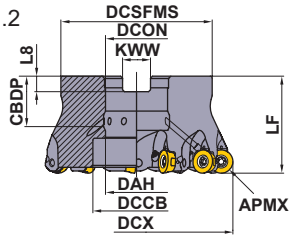
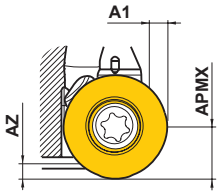


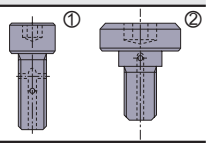
Fig.2



Right hand tool holder only.



Cutter Diameter DCX	Set Bolt	Geometry
1.500"	HSCU25011H	①
2.000"	HSCU37513H	
2.500",3.000"	HSCU50014H	②
4.000"	MBAU75016H	

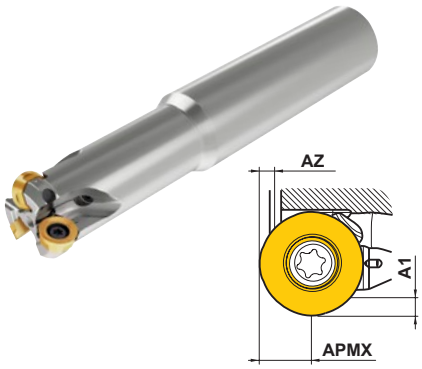


■ ARBOR TYPE

GAMP:+4°
GAMF:-6°

Type	RE	Order Number	Stock	✱1 Coolant Thru	Number of Teeth	Dimensions (inch) DCX	DCSFMS	LF	DCON	CBDP	DAH	DCCB	KWW	L8	WT (lbs)	Max. Depth of Cut (inch) APMX	A1	AZ	RMPX	Fig.
Fine Pitch	.197" 5mm	ARP5UPR1504SA	●	Y	4	1.500	1.250	1.500	.500	.630	.433	.276	.250	.156	.331	.197	.079	.047	2.8°	1
		ARP5UPR0206AA	●	Y	6	2.000	1.750	1.750	.750	.748	.630	.413	.313	.187	.750	.197	.079	.073	2.9°	1
		ARP5UPR2507CA	●	Y	7	2.500	2.190	2.000	1.000	.945	.787	.539	.375	.219	1.411	.197	.098	.098	2.9°	1
Extra Fine Pitch		ARP5UPR1505SA	●	Y	5	1.500	1.250	1.500	.500	.630	.433	.276	.250	.156	.331	.197	.079	.047	2.8°	1
		ARP5UPR0207AA	●	Y	7	2.000	1.750	1.750	.750	.748	.630	.413	.313	.187	.750	.197	.079	.073	2.9°	1
		ARP5UPR2508CA	●	Y	8	2.500	2.190	2.000	1.000	.945	.787	.539	.375	.219	1.411	.197	.098	.098	2.9°	1
Fine Pitch	.236" 6mm	ARP6UPR1504SA	●	Y	4	1.500	1.250	1.500	.500	.630	.386	.276	.250	.156	.309	.236	.079	.041	2.7°	1
		ARP6UPR0205AA	●	Y	5	2.000	1.750	1.750	.750	.748	.630	.413	.313	.187	.705	.236	.079	.067	2.8°	1
		ARP6UPR2506CA	●	Y	6	2.500	2.190	2.000	1.000	.945	.787	.539	.375	.219	1.367	.236	.098	.098	3.1°	1
		ARP6UPR0308CA	●	Y	8	3.000	2.190	2.000	1.000	.945	.787	.539	.375	.219	1.808	.236	.098	.098	2.4°	1
		ARP6UPR0409EA	●	Y	9	4.000	3.500	2.500	1.500	1.417	1.500	2.205	.625	.375	4.475	.236	.098	.098	1.7°	2
Extra Fine Pitch		ARP6UPR0206AA	●	Y	6	2.000	1.750	1.750	.750	.748	.630	.413	.313	.187	.705	.236	.079	.067	2.8°	1
		ARP6UPR2507CA	●	Y	7	2.500	2.190	2.000	1.000	.945	.787	.539	.375	.219	1.367	.236	.098	.098	3.1°	1
		ARP6UPR0309CA	●	Y	9	3.000	2.190	2.000	1.000	.945	.787	.539	.375	.219	1.786	.236	.098	.098	2.4°	1
		ARP6UPR0411EA	●	Y	11	4.000	3.500	2.500	1.500	1.417	1.500	2.205	.625	.375	4.453	.236	.098	.098	1.7°	2

✱1 Y=Yes
RMPX = Max. Ramping Angle
Note 1) Set bolt included from 1.5" to 4".



GAMP:+4°
GAMF:-6°

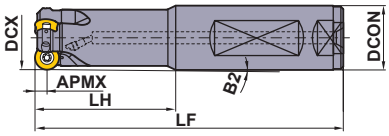
Fig.1


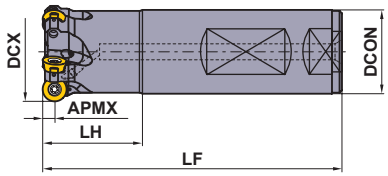
Fig.2


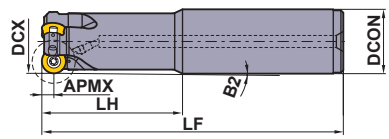
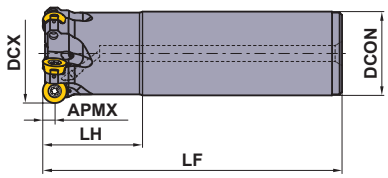
Fig.3


Fig.4


■ SHANK TYPE

(inch)

Type	RE	Order Number	Stock	∗1 Coolant Thru	Number of Teeth	Dimensions (inch)					WT (lbs)	Max.Depth of Cut (inch)			RMPX	Fig.
						DCX	DCON	LF	LH	B2		APMX	A1	AZ		
Standard	.197" 5mm	**ARP5UPR1603FA16M**	●	Y	3	1.000	1.000	5.500	2.250	1.17°	.948	.197	.039	.018	1.9°	1
		ARP5UPR2004FA20M	●	Y	4	1.250	1.250	6.000	2.750	0.76°	1.676	.197	.039	.026	1.9°	1
Long		**ARP5UPR1602SA16L**	●	Y	2	1.000	1.000	7.000	3.000	0.57°	1.257	.197	.039	.018	1.9°	3
		ARP5UPR2003SA20L	●	Y	3	1.250	1.250	8.000	4.750	1.01°	2.227	.197	.039	.026	1.9°	3
Standard	.236" 6mm	**ARP6UPR2003FA20M**	●	Y	3	1.250	1.250	6.000	2.750	0.95°	1.653	.236	.039	.024	2.0°	1
		ARP6UPR2404FA20M	●	Y	4	1.500	1.250	6.000	2.000	—	1.830	.236	.098	.041	2.7°	2
		ARP6UPR3205FA24M	●	Y	5	2.000	1.500	6.000	2.000	—	2.734	.236	.098	.067	2.8°	2
Long		**ARP6UPR2002SA20L**	●	Y	2	1.250	1.250	8.000	4.750	0.51°	2.205	.236	.039	.024	2.0°	3
		ARP6UPR2403SA20L	●	Y	3	1.500	1.250	10.000	2.000	—	3.219	.236	.098	.041	2.7°	4
		ARP6UPR3204SA24L	●	Y	4	2.000	1.500	10.000	2.000	—	4.696	.236	.098	.067	2.8°	4

∗1 Y=Yes, N=No
RMPX = Max. Ramping Angle

SPARE PARTS

Tool Holder Type	 ∗			
	Insert Screw	Wrench	Anti-seize Lubricant	Insert
ARP5	TPS351B	TIP10D	MK1KS	RP○T1040M0○○-○
ARP6	TPS4	TIP15D	MK1KS	RP○T1248M0○○-○

∗ Clamp Torque (lbf-in) : TPS351B = 22, TPS4 = 31

	≤140 PSI (≤5.3 gal/min)	←Standard→ (140 PSI-720 PSI)	≥720 PSI (≥7.9 gal/min)	≥1000 PSI (≥13.2 gal/min)
Nozzle Dia.	ø.024"	ø.031"	ø.047"	ø.063"
Order Number	**HSD04004H06**	**HSD04004H08**	**HSD04004H12**	**HSD04004H16**

Select and use alternate nozzles from below list depending on coolant pressure.
Clamp Torque (lbf-in) : HSD0400H○○= 13
The part number for a plug screw without a through nozzle is HSS04004.

Fig.1

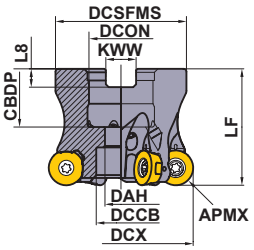
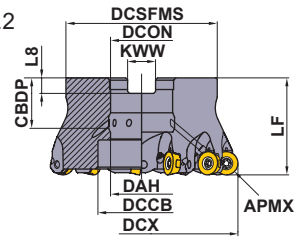


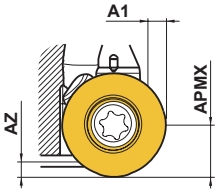
Fig.2



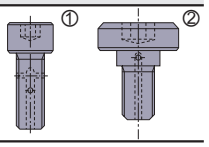


Metric Standard

For inch arbors



Cutter Diameter DC	Set Bolt	Geometry
ϕ80	HSC08025H	①
–	–	
ϕ100	MBA16033H	②
–	–	



■ ARBOR TYPE

GAMP:+4°
GAMF:-6°

Type	RE	Order Number	Stock	✶1 Coolant Hole	Number of Teeth	Dimensions (mm) [inch]									WT (kg)	Max. Depth of Cut (mm)			RMPX	Fig.
						DCX	DCSFMS	LF	DCON	CBDP	DAH	DCCB	KWW	L8		APMX	A1	AZ		
Fine Pitch	6	**ARP6PR08008CA**	★	Y	8	80	56	50	25.4 [1.0"]	26	20	13	9.5	6	0.89	6.0	2.5	2.5	2.3°	1
		ARP6PR10009DA	★	Y	9	100	70	50	31.75[1.25"]	32	31.75	45	12.7	8	1.38	6.0	2.5	2.5	1.7°	2
Extra Fine Pitch	6	**ARP6PR08009CA**	★	Y	9	80	56	50	25.4 [1.0"]	26	20	13	9.5	6	0.89	6.0	2.5	2.5	2.3°	1
		ARP6PR10011DA	★	Y	11	100	70	50	31.75[1.25"]	32	31.75	45	12.7	8	1.36	6.0	2.5	2.5	1.7°	2

✶1 Y=Yes, N=No
RMPX = Max. Ramping Angle
Note 1) Set bolt not included.

SPARE PARTS

Tool Holder Type	 *			
	Insert Screw	Wrench	Anti-seize Lubricant	Insert
ARP5	TPS351B	TIP10D	MK1KS	RP○T1040M0○○-○
ARP6	TPS4	TIP15D	MK1KS	RP○T1248M0○○-○

✶ Clamp Torque (lbf-in) : TPS351B = 22, TPS4 = 31

	≤140 PSI (≤5.3 gal/min)	←Standard→ (140 PSI-720 PSI)	≥720 PSI (≥7.9 gal/min)	≥1000 PSI (≥13.2 gal/min)
Nozzle Dia.	ø.024"	ø.031"	ø.047"	ø.063"
Order Number	**HSD04004H06**	**HSD04004H08**	**HSD04004H12**	**HSD04004H16**

Select and use alternate nozzles from below list depending on coolant pressure.
Clamp Torque (lbf-in) : HSD0400H○○= 13
The part number for a plug screw without a through nozzle is HSS04004.



Fig.1

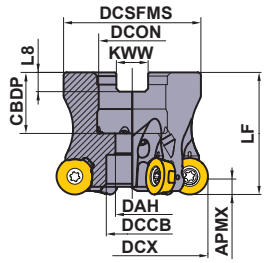
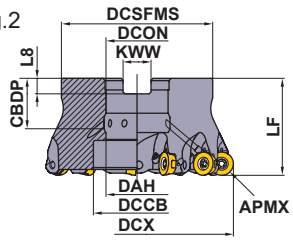
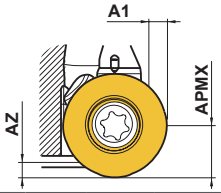


Fig.2



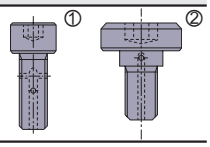
Metric Standard

For metric arbors



Right hand tool holder only.

Cutter Diameter DC	Set Bolt	Geometry
ϕ40	HSC08025H	①
ϕ50, ϕ63	HSC10030H	
ϕ80	HSC12035H	
ϕ100	MBA16033H	②



■ ARBOR TYPE

GAMP:+4°
GAMF:-6°

Type	RE	Order Number	Stock	✶1 Coolant Hole	Number of Teeth	Dimensions (mm) DCX	DCSFMS	LF	DCON	CBDP	DAH	DCCB	KWW	L8	WT (kg)	Max. Depth of Cut (mm) APMX	A1	AZ	RMPX	Fig.
Fine Pitch	5	**ARP5P-040A05AR**	★	Y	5	40	34	40	16	18	9	14	8.4	5.6	0.15	5.0	2.0	1.30	2.8°	1
		ARP5P-050A06AR	★	Y	6	50	45	40	22	20	11	17	10.4	6.3	0.27	5.0	2.0	1.85	2.9°	1
		ARP5P-063A07AR	★	Y	7	63	50	40	22	20	11	17	10.4	6.3	0.46	5.0	2.5	2.50	3.0°	1
Extra Fine Pitch	5	**ARP5P-050A07AR**	★	Y	7	50	45	40	22	20	11	17	10.4	6.3	0.27	5.0	2.0	1.85	2.9°	1
		ARP5P-063A08AR	★	Y	8	63	50	40	22	20	11	17	10.4	6.3	0.46	5.0	2.5	2.50	3.0°	1
Fine Pitch	6	**ARP6P-040A04AR**	★	Y	4	40	34	40	16	18	9	13.4	8.4	5.6	0.15	6.0	2.0	1.15	2.7°	1
		ARP6P-050A05AR	★	Y	5	50	45	40	22	20	11	17	10.4	6.3	0.26	6.0	2.0	1.70	2.9°	1
		ARP6P-063A06AR	★	Y	6	63	50	40	22	20	11	17	10.4	6.3	0.44	6.0	2.5	2.50	3.1°	1
		ARP6P-080A08AR	★	Y	8	80	56	50	27	23	13	20	12.4	7	0.88	6.0	2.5	2.50	2.3°	1
		ARP6P-100B09AR	★	Y	9	100	78	50	32	26	45	32	14.4	8	1.47	6.0	2.5	2.50	1.7°	2
Extra Fine Pitch	6	**ARP6P-050A06AR**	★	Y	6	50	45	40	22	20	11	17	10.4	6.3	0.25	6.0	2.0	1.70	2.9°	1
		ARP6P-063A07AR	★	Y	7	63	50	40	22	20	11	17	10.4	6.3	0.44	6.0	2.5	2.50	3.1°	1
		ARP6P-080A09AR	★	Y	9	80	56	50	27	23	13	20	12.4	7	0.88	6.0	2.5	2.50	2.3°	1
		ARP6P-100B11AR	★	Y	11	100	78	50	32	26	45	32	14.4	8	1.45	6.0	2.5	2.50	1.7°	2

✶1 Y=Yes, N=No
RMPX = Max. Ramping Angle
Note 1) Set bolt not included.

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001





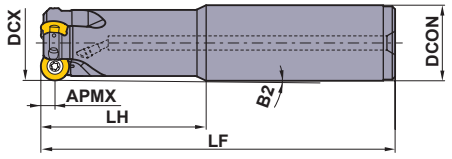
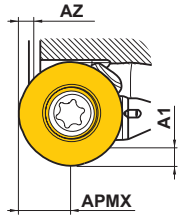


Fig.1





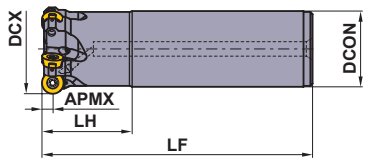


Fig.2

Metric Standard

■ SHANK TYPE

GAMP:+4°
GAMF:-6°—-7°

(mm)

Type	RE	Order Number	Stock	✱1 Coolant Hole	Number of Teeth	Dimensions (mm)					WT (kg)	Max. Depth of Cut (mm)			RMPX	Fig.
						DCX	DCON	LF	LH	B2		APMX	A1	AZ		
Standard	5	**ARP5PR2503SA25M**	★	Y	3	25	25	140	60	1.10°	0.42	5.0	1.0	0.40	1.8°	1
		ARP5PR3204SA32M	★	Y	4	32	32	150	70	0.92°	0.77	5.0	1.0	0.65	1.9°	1
Long	5	**ARP5PR2502SA25L**	★	Y	2	25	25	180	80	0.80°	0.56	5.0	1.0	0.40	1.8°	1
		ARP5PR3203SA32L	★	Y	3	32	32	200	120	0.51°	1.01	5.0	1.0	0.65	1.9°	1
Standard	6	**ARP6PR3203SA32M**	★	Y	3	32	32	150	70	0.94°	0.76	6.0	1.0	0.60	2.0°	1
		ARP6PR4004SA32M	★	Y	4	40	32	150	50	–	0.85	6.0	2.5	1.15	2.7°	2
		ARP6PR5005SA42M	★	Y	5	50	42	150	50	–	1.47	6.0	2.5	1.70	2.9°	2
Long	6	**ARP6PR3202SA32L**	★	Y	2	32	32	200	120	0.52°	1.00	6.0	1.0	0.60	2.0°	1
		ARP6PR4003SA32L	★	Y	3	40	32	250	50	–	1.48	6.0	2.5	1.15	2.7°	2
		ARP6PR5004SA42L	★	Y	4	50	42	250	50	–	2.53	6.0	2.5	1.70	2.9°	2

✱1 Y=Yes, N=No
RMPX = Max. Ramping Angle

SPARE PARTS

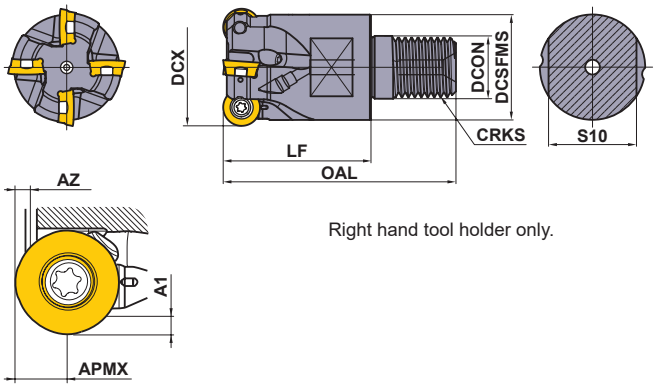
Tool Holder Type	 * Insert Screw	 Wrench	 Anti-seize Lubricant	 Insert
ARP5	TPS351B	TIP10D	MK1KS	RP○T1040M0○○-○
ARP6	TPS4	TIP15D	MK1KS	RP○T1248M0○○-○

✱ Clamp Torque (lbf-in) : TPS351B = 22, TPS4 = 31

	≤140 PSI (≤5.3 gal/min)	←Standard→ (140 PSI-720 PSI)	≥720 PSI (≥7.9 gal/min)	≥1000 PSI (≥13.2 gal/min)
Nozzle Dia.	ø.024"	ø.031"	ø.047"	ø.063"
Order Number	**HSD04004H06**	**HSD04004H08**	**HSD04004H12**	**HSD04004H16**

Select and use alternate nozzles from below list depending on coolant pressure.
Clamp Torque (lbf-in) : HSD0400H○○=13
The part number for a plug screw without a through nozzle is HSS04004.





Right hand tool holder only.

■ SCREW-IN TYPE

With Air / coolant through.

GAMP:+4°
GAMF:-6°—-7°

DCX	Order Number	Stock	Number of Teeth	Dimensions (inch)							WT (lbs)	APMX	A1	AZ
				RE (APMX)	LF	OAL	DCON	DCSFMS	S10	CRKS*1				
1.000	**ARP5UPR1603AM1235**	●	3	.197	1.378	2.244	.492	.925	.748	M12	.198	.197	—	.016
1.250	**ARP5UPR2004AM1640**	●	4	.197	1.575	2.480	.669	1.122	.945	M16	.397	.197	.039	.026
1.250	**ARP6UPR2003AM1640**	●	3	.236	1.575	2.480	.669	1.122	.945	M16	.375	.236	.039	.024
1.500	**ARP6UPR2404AM1640**	●	4	.236	1.575	2.480	.669	1.122	.945	M16	.441	.236	.098	.045

*1 Clamp Torque of the Head (lbf-ft) : M12=59.2, M16=66.7

SPARE PARTS

DCX	Order Number	* Insert Screw	Wrench	Anti-seize Lubricant	Insert
1.000	**ARP5UPR1603AM1235**	TPS351B	TIP10D	MK1KS	RP◌T1040
1.250	**ARP5UPR2004AM1640**	TPS351B	TIP10D	MK1KS	RP◌T1040
1.250	**ARP6UPR2003AM1640**	TPS4	TIP15D	MK1KS	RP◌T1248
1.500	**ARP6UPR2404AM1640**	TPS4	TIP15D	MK1KS	RP◌T1248

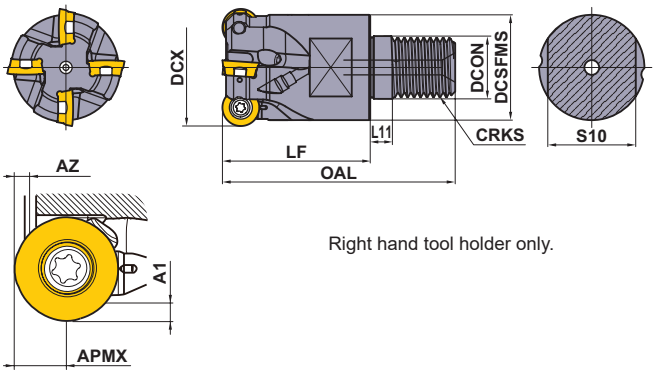
* Clamp Torque (lbf-in) : TPS351B = 22, TPS4 = 31

	≤140 PSI (≤5.3 gal/min)	←Standard→ (140 PSI-720 PSI)	≥720 PSI (≥7.9 gal/min)	≥1000 PSI (≥13.2 gal/min)
Nozzle Dia.	ø.024"	ø.031"	ø.047"	ø.063"
Order Number	**HSD04004H06**	**HSD04004H08**	**HSD04004H12**	**HSD04004H16**

Select and use alternate nozzles from below list depending on coolant pressure.
Clamp Torque (lbf-in) : HSD0400H◌◌=13
The part number for a plug screw without a through nozzle is HSS04004.

SCREW-IN HOLDERS ➤ L294
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001





Right hand tool holder only.

Metric Standard

■ SCREW-IN TYPE

GAMP:+4°
GAMF:-6°—-7°

(mm)

Type	RE	Order Number	Stock	✶1 Coolant Hole	Number of Teeth	Dimensions (mm)								WT (kg)	Max. Depth of Cut (mm)			RMPX
						DCX	DCON	DCSFMS	OAL	LF	L11	S10	CRKS		APMX	A1	AZ	
Standard	5	**ARP5PR2502AM1235**	★	Y	2	25	12.5	23.5	57	35	6	19	M12	0.10	5.0	–	0.40	1.8°
		ARP5PR3203AM1640	★	Y	3	32	17.0	28.5	63	40	6	24	M16	0.16	5.0	1.0	0.65	1.9°
Fine Pitch	5	**ARP5PR2503AM1235**	★	Y	3	25	12.5	23.5	57	35	6	19	M12	0.09	5.0	–	0.40	1.8°
		ARP5PR3204AM1640	★	Y	4	32	17.0	28.5	63	40	6	24	M16	0.15	5.0	1.0	0.65	1.9°
Standard	6	**ARP6PR3202AM1640**	★	Y	2	32	17.0	28.5	63	40	6	24	M16	0.18	6.0	1.0	0.60	2.0°
		ARP6PR4003AM1640	★	Y	3	40	17.0	28.5	63	40	6	24	M16	0.20	6.0	2.5	1.15	2.7°
Fine Pitch	6	**ARP6PR3203AM1640**	★	Y	3	32	17.0	28.5	63	40	6	24	M16	0.17	6.0	1.0	0.60	2.0°
		ARP6PR4004AM1640	★	Y	4	40	17.0	28.5	63	40	6	24	M16	0.20	6.0	2.5	1.15	2.7°

✶1 Y=Yes, N=No
RMPX = Max. Ramping Angle

SPARE PARTS

DCX	Order Number	✶ Insert Screw	Wrench	Anti-seize Lubricant	Insert
25	**ARP5PR2502AM1235**	TPS351B	TIP10D	MK1KS	RP◌T1040
25	**ARP5PR2503AM1235**	TPS351B	TIP10D	MK1KS	RP◌T1040
32	**ARP5PR3203AM1640**	TPS351B	TIP10D	MK1KS	RP◌T1040
32	**ARP5PR3204AM1640**	TPS351B	TIP10D	MK1KS	RP◌T1040
32	**ARP6PR3202AM1640**	TPS4	TIP15D	MK1KS	RP◌T1248
32	**ARP6PR3203AM1640**	TPS4	TIP15D	MK1KS	RP◌T1248
40	**ARP6PR4003AM1640**	TPS4	TIP15D	MK1KS	RP◌T1248
40	**ARP6PR4004AM1640**	TPS4	TIP15D	MK1KS	RP◌T1248

✶ Clamp Torque (lbf-in) : TPS351B = 22, TPS4 = 31

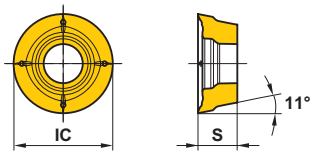
INSERTS

(mm)

Work Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron
	N	Non-ferrous Metal
	S	Heat-resistant Alloy, Titanium Alloy
	H	Hardened Steel

Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Honing :
E : Round

Shape		Order Number	Class	Honing	Coated MC7020	Coated MP7130	Coated MP9130	Cermet		Carbide		Dimensions IC	Dimensions S	Geometry
	Ground	**RPHT1040M0E4-L**	H	E	●	●	●					10	3.97	
		RPHT1040M0E4-M	H	E	●	●	●					10	3.97	
		RPHT1040M0E4-R	H	E	●	●	●					10	3.97	
		RPHT1248M0E4-L	H	E	●	●	●					12	4.76	
		RPHT1248M0E4-M	H	E	●	●	●					12	4.76	
		RPHT1248M0E4-R	H	E	●	●	●					12	4.76	
	Sintered	**RPMT1040M0E4-L**	M	E	●	●	●					10	3.97	
		RPMT1040M0E4-M	M	E	●	●	●					10	3.97	
		RPMT1040M0E4-R	M	E	●	●	●					10	3.97	
		RPMT1248M0E4-L	M	E	●	●	●					12	4.76	
		RPMT1248M0E4-M	M	E	●	●	●					12	4.76	
		RPMT1248M0E4-R	M	E	●	●	●					12	4.76	

SCREW-IN HOLDERS ➤ L294
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

RECOMMENDED CUTTING CONDITIONS

Dry Cutting

(inch)

	Work Material	Hardness	Grade	vc (SFM)	fz (IPT)
M	Austenitic Stainless Steel	≤200HB	**MC7020**	720 (560–885)	.008 (.004–.014)
			MP7130	655 (490–820)	.008 (.004–.014)
	Austenitic Stainless Steel	>200HB	**MC7020**	620 (460–785)	.008 (.004–.014)
			MP7130	560 (395–720)	.008 (.004–.014)
	Duplex Stainless Steel	≤280HB	**MC7020**	590 (425–755)	.008 (.004–.014)
			MP7130	525 (360–690)	.008 (.004–.014)
	Ferritic and Martensitic Stainless Steel	≤200MPa	**MC7020**	785 (620–950)	.008 (.004–.014)
			MP7130	655 (490–820)	.008 (.004–.014)
	Ferritic and Martensitic Stainless Steel	>200HB	**MC7020**	785 (620–950)	.008 (.004–.014)
			MP7130	655 (490–820)	.008 (.004–.014)
	Precipitation Hardening Stainless Steel	<450HB	**MC7020**	560 (395–720)	.008 (.004–.014)
			MP7130	490 (330–655)	.008 (.004–.014)

Wet Cutting

(inch)

	Work Material	Hardness	Grade	vc (SFM)	fz (IPT)
M	Austenitic Stainless Steel	≤200HB	**MC7020**	490 (330–655)	.008 (.004–.014)
			MP7130	425 (260–590)	.008 (.004–.014)
	Austenitic Stainless Steel	>200HB	**MC7020**	395 (230–560)	.008 (.004–.014)
			MP7130	330 (260–490)	.008 (.004–.014)
	Duplex Stainless Steel	≤280HB	**MC7020**	395 (230–560)	.008 (.004–.014)
			MP7130	330 (260–490)	.008 (.004–.014)
	Ferritic and Martensitic Stainless Steel	≤200MPa	**MC7020**	560 (395–720)	.008 (.004–.014)
			MP7130	425 (260–590)	.008 (.004–.014)
	Ferritic and Martensitic Stainless Steel	>200HB	**MC7020**	560 (395–720)	.008 (.004–.014)
			MP7130	425 (260–590)	.008 (.004–.014)
	Precipitation Hardening Stainless Steel	<450HB	**MC7020**	360 (195–525)	.008 (.004–.014)
			MP7130	295 (165–460)	.008 (.004–.014)
S	Titanium Alloy	–	**MP9130**	150 (100–180)	.004 (.002–.006)
	Heat Resistant Alloy	–	**MP9130**	115 (50–150)	.004 (.002–.006)

Note 1) Actual cutting conditions are estimated to avoid chatter vibration with high rigidity of a machine or work material.
Make appropriate adjustments when chatter and/or insert chipping occurs during cutting.
Use with lowered conditions when there is a big overhang and/or when pocket-cutting.

Note 2) Feed rate for recommended cutting conditions table above based when axial depth of cut is ap=.098" with ARP5, and when depth of cut is ap=.118" with ARP6.
Due to the chip thinning effect when the axial depth of cut fluctuates, feed rate compensation table below shows (correction values "F") to help calculate correct feed.
Example: Feed recommended for ARP5, 304 Stainless steel, MP7130, ap=.039" is .008IPTx1.5(correction values "F")=.012IPT.

Note 3) For slotting, use 70% of the recommended feed rate listed above. For ramping, helical cutting, and plunging, use 50% of the recommended feed rate listed above.

Note 4) Internal coolant is recommended in titanium alloy and heat resistant alloy machining.

Feed rate compensation table, (correction values "F") based on axial depth of cut "ap" fluctuation.

Holder	ap = .020"	ap = .039"	ap = .059"	ap = .079"	ap = .098"	ap = .118"	ap = .138"	ap = .157"	ap = .197"	ap = .236"
ARP5	2.3	1.5	1.2	1.1	1.0	.9	.8	.8	.8	–
ARP6	2.5	1.7	1.3	1.1	1.0	1.0	.9	.9	.8	.8

* Tool body durability may weaken, when the amount of axial cutting exceeds ARP5=.197" and ARP6=.236".

MAXIMUM CAPACITIES BY EACH CUTTER

(inch)

APMX	DCX	Order Number	Install	Type	Recommendation		Ramping	Helical Cutting		Plunging Depth	Plunging
					ap	ae	RMPX(deg)	DH min.	DH max.	AZ max.	A1
.197" 5 mm	.984" 25 mm	**ARP5PR2502AM1235**	Screw-in	Standard	≤ .098	≤1.00DCX	1.8°	1.575	1.890	.016	–
		ARP5PR2503AM1235	Screw-in	Fine Pitch	≤ .059	≤1.00DCX	1.8°	1.575	1.890	.016	–
		ARP5PR2503SA25M	Shank	Standard	≤ .059	≤1.00DCX	1.8°	1.575	1.890	.016	.039
		ARP5PR2502SA25L	Shank	Long	≤ .059	≤1.00DCX	1.8°	1.575	1.890	.016	.039
	1.000"	**ARP5UPR1603AM1235**	Screw-in	Fine Pitch	≤ .059	≤1.00DCX	1.9°	1.606	1.921	.018	.039
		ARP5UPR1603FA16M	Shank	Standard	≤ .059	≤1.00DCX	1.9°	1.606	1.921	.018	.039
		ARP5UPR1602SA16L	Shank	Long	≤ .098	≤1.00DCX	1.9°	1.606	1.921	.018	.039
	1.250"	**ARP5UPR2004AM1640**	Screw-in	Fine Pitch	≤ .098	≤1.00DCX	1.9°	2.106	2.421	.026	.039
		ARP5UPR2004FA20M	Shank	Standard	≤ .098	≤1.00DCX	1.9°	2.106	2.421	.026	.039
		ARP5UPR2003SA20L	Shank	Long	≤ .098	≤1.00DCX	1.9°	2.106	2.421	.026	.039
	1.260" 32 mm"	**ARP5PR3203AM1640**	Screw-in	Standard	≤ .098	≤1.00DCX	1.9°	2.126	2.441	.026	.039
		ARP5PR3204AM1640	Screw-in	Fine Pitch	≤ .098	≤1.00DCX	1.9°	2.126	2.441	.026	.039
		ARP5PR3204SA32M	Shank	Standard	≤ .098	≤1.00DCX	1.9°	2.126	2.441	.026	.039
		ARP5PR3203SA32L	Shank	Long	≤ .098	≤1.00DCX	1.9°	2.126	2.441	.026	.039
	1.500"	**ARP5UPR1504SA**	Arbor	Fine Pitch	≤ .098	≤1.00DCX	2.8°	2.606	2.921	.047	.079
		ARP5UPR1505SA	Arbor	Ex.-Fine	≤ .098	≤1.00DCX	2.8°	2.606	2.921	.047	.079
	1.575" 40 mm	**ARP5P-040A05AR**	Arbor	Fine Pitch	≤ .098	≤1.00DCX	2.8°	2.756	3.071	.051	.079
	1.969" 50 mm"	**ARP5P-050A06AR**	Arbor	Fine Pitch	≤ .098	≤1.00DCX	2.9°	3.543	3.858	.073	.079
		ARP5P-050A07AR	Arbor	Ex.-Fine	≤ .059	≤1.00DCX	2.9°	3.543	3.858	.073	.079
	2.000"	**ARP5UPR0206AA**	Arbor	Fine Pitch	≤ .098	≤ .95DCX	2.9°	3.606	3.921	.007	.079
		ARP5UPR0207AA	Arbor	Ex.-Fine	≤ .059	≤ .95DCX	2.9°	3.606	3.921	.007	.079
	2.48" 63 mm"	**ARP5P-063A07AR**	Arbor	Fine Pitch	≤ .098	≤ .75DCX	3.0°	4.567	4.882	.098	.098
		ARP5P-063A08AR	Arbor	Ex.-Fine	≤ .059	≤ .75DCX	3.0°	4.567	4.882	.098	.098
	2.500"	**ARP5UPR2507CA**	Arbor	Fine Pitch	≤ .098	≤ .75DCX	2.9°	4.606	4.921	.098	.098
		ARP5UPR2508CA	Arbor	Ex.-Fine	≤ .059	≤ .75DCX	2.9°	4.606	4.921	.098	.098

Note 1) When drilling, be careful of long scattered cutting chips.
Note 2) When cutting helical holes, do not exceed the largest APMX cutting depth per one rotation.
Note 3) When helical cutting, consider table above for the following: dc=desired hole diameter, DCX=tool diameter and respective DH=helical cutting diameter min/max range.
Note 4) For preventing trouble with recutting chips, especially when grooving, ramping, helical cutting, and drilling, use an air blast to push chips away.
Note 5) Flute space is small for extra fine pitch, and small diameter cutters.
Use with caution the ae and ap feed due to the possibility of cutting blockage.
Note 6) When cutting large ae with large diameter cutter, chip packing from long cutting chips is possible.
Regulate ap and feed.

(inch)

APMX	DCX	Order Number	Install	Type	Recommendation		Ramping	Helical Cutting		Plunging Depth	Plunging
					ap	ae	RMPX(deg)	DH min.	DH max.	AZ max.	A1
.236" 6 mm	1.250"	**ARP6UPR2003AM1640**	Screw-in	Fine Pitch	≤ .138	≤1.00DCX	2.0°	2.028	2.421	.024	.039
		ARP6UPR2003FA20M	Shank	Standard	≤ .138	≤1.00DCX	2.0°	2.028	2.421	.024	.039
		ARP6UPR2002SA20L	Shank	Long	≤ .138	≤1.00DCX	2.0°	2.028	2.421	.024	.039
	1.260" 32 mm	**ARP6PR3202AM1640**	Screw-in	Standard	≤ .138	≤1.00DCX	2.0°	2.047	2.441	.024	.039
		ARP6PR3203AM1640	Screw-in	Fine Pitch	≤ .138	≤1.00DCX	2.0°	2.047	2.441	.024	.039
		ARP6PR3203SA32M	Shank	Standard	≤ .138	≤1.00DCX	2.0°	2.047	2.441	.024	.039
		ARP6PR3202SA32L	Shank	Long	≤ .138	≤1.00DCX	2.0°	2.047	2.441	.024	.039
	1.575" 40 mm	**ARP6PR4003AM1640**	Screw-in	Standard	≤ .138	≤1.00DCX	2.7°	2.677	3.071	.045	.098
		ARP6PR4004AM1640	Screw-in	Fine Pitch	≤ .138	≤1.00DCX	2.7°	2.677	3.071	.045	.098
		ARP6PR4004SA32M	Shank	Standard	≤ .138	≤1.00DCX	2.7°	2.677	3.071	.045	.098
		ARP6PR4003SA32L	Shank	Long	≤ .138	≤1.00DCX	2.7°	2.677	3.071	.045	.098
		ARP6P-040A04AR	Arbor	Fine Pitch	≤ .138	≤1.00DCX	2.7°	2.677	3.071	.045	.079
	1.500"	**ARP6UPR2404AM1640**	Screw-in	Fine Pitch	≤ .138	≤1.00DCX	2.7°	2.528	2.921	.041	.079
		ARP6UPR2404FA20M	Shank	Standard	≤ .138	≤1.00DCX	2.7°	2.528	2.921	.041	.079
		ARP6UPR2403SA20L	Shank	Long	≤ .138	≤1.00DCX	2.7°	2.528	2.921	.041	.079
		ARP6UPR1504SA	Arbor	Fine Pitch	≤ .138	≤1.00DCX	2.7°	2.528	2.921	.041	.079
	1.969" 50 mm	**ARP6PR5005SA42M**	Shank	Standard	≤ .138	≤1.00DCX	2.9°	3.465	3.858	.067	.098
		ARP6PR5004SA42L	Shank	Long	≤ .138	≤1.00DCX	2.9°	3.465	3.858	.067	.098
		ARP6P-050A05AR	Arbor	Fine Pitch	≤ .138	≤1.00DCX	2.9°	3.465	3.858	.067	.079
		ARP6P-050A06AR	Arbor	Ex.-Fine	≤ .098	≤1.00DCX	2.9°	3.465	3.858	.067	.079
	2.000"	**ARP6UPR3205FA24M**	Shank	Standard	≤ .138	≤1.00DCX	2.8°	3.528	3.921	.067	.098
		ARP6UPR3204SA24L	Shank	Long	≤ .138	≤1.00DCX	2.8°	3.528	3.921	.067	.098
		ARP6UPR0205AA	Arbor	Fine Pitch	≤ .138	≤ .95DCX	2.8°	3.528	3.921	.067	.079
		ARP6UPR0206AA	Arbor	Ex.-Fine	≤ .098	≤ .95DCX	2.8°	3.528	3.921	.067	.079
	2.48" 63 mm	**ARP6P-063A06AR**	Arbor	Fine Pitch	≤ .138	≤ .75DCX	3.1°	4.488	4.882	.098	.098
		ARP6P-063A07AR	Arbor	Ex.-Fine	≤ .098	≤ .75DCX	3.1°	4.488	4.882	.098	.098
	2.500"	**ARP6UPR2506CA**	Arbor	Fine Pitch	≤ .138	≤ .75DCX	3.1°	4.528	4.921	.098	.098
		ARP6UPR2507CA	Arbor	Ex.-Fine	≤ .098	≤ .75DCX	3.1°	4.528	4.921	.098	.098
	3.000"	**ARP6UPR0308CA**	Arbor	Fine Pitch	≤ .138	≤ .65DCX	2.4°	5.528	5.921	.098	.098
		ARP6UPR0309CA	Arbor	Ex.-Fine	≤ .098	≤ .65DCX	2.4°	5.528	5.921	.098	.098
	3.150" 80 mm	**ARP6PR08008CA**	Arbor	Fine Pitch	≤ .138	≤ .60DCX	2.3°	5.827	6.220	.098	.098
		ARP6PR08009CA	Arbor	Ex.-Fine	≤ .098	≤ .60DCX	2.3°	5.827	6.220	.098	.098
		ARP6P-080A08AR	Arbor	Fine Pitch	≤ .138	≤ .60DCX	2.3°	5.827	6.220	.098	.098
		ARP6P-080A09AR	Arbor	Ex.-Fine	≤ .098	≤ .60DCX	2.3°	5.827	6.220	.098	.098
	3.937" 100 mm	**ARP6PR10009DA**	Arbor	Fine Pitch	≤ .138	≤ .50DCX	1.7°	7.402	7.795	.098	.098
		ARP6PR10011DA	Arbor	Ex.-Fine	≤ .098	≤ .50DCX	1.7°	7.402	7.795	.098	.098
		ARP6P-100B09AR	Arbor	Fine Pitch	≤ .138	≤ .50DCX	1.7°	7.402	7.795	.098	.098
		ARP6P-100B11AR	Arbor	Ex.-Fine	≤ .098	≤ .50DCX	1.7°	7.402	7.795	.098	.098
	4.000"	**ARP6UPR0409EA**	Arbor	Fine Pitch	≤ .138	≤ .45DCX	1.7°	7.528	7.921	.098	.098
		ARP6UPR0411EA	Arbor	Ex.-Fine	≤ .098	≤ .45DCX	1.7°	7.528	7.921	.098	.098

Note 1) When drilling, be careful of long scattered cutting chips.
Note 2) When cutting helical holes, do not exceed the largest APMX cutting depth per one rotation.
Note 3) When helical cutting, consider table above for the following: dc=desired hole diameter, DCX=tool diameter and respective DH=helical cutting diameter min/max range.
Note 4) For preventing trouble with recutting chips, especially when grooving, ramping, helical cutting, and drilling, use an air blast to push chips away.
Note 5) Flute space is small for extra fine pitch, and small diameter cutters.
Use with caution the ae and ap feed due to the possibility of cutting blockage.
Note 6) When cutting large ae with large diameter cutter, chip packing from long cutting chips is possible.
Regulate ap and feed.

Memo

MULTI FUNCTIONAL MILLING

ARX

P Steel | M Stainless Steel | K Cast Iron | N | S | H Hardened Steel



Metric Standard

Fig.1 (Type with the center cutting edge)

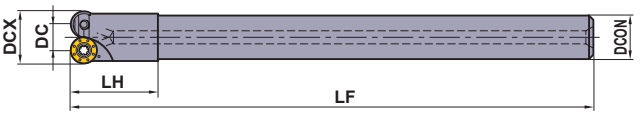
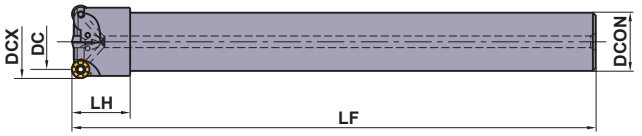


Fig.2 (Type without the center cutting edge (multi-tooth))



■ STEEL SHANK TYPE

Right hand tool holder only.

Type	Order Number	Stock R	Coolant Thru *1	Number of Teeth	Dimensions (mm) RE*3	DCX	DCON	DC	LF	LH	Type (Fig.)	Insert Screw *2	Wrench	Insert
With the Center Cutting Edge	**ARX25R102SA10S**	★	Y	2	2.5	10	10	5	120	20	1	TPS20	TIP06F	RDMW0517M0E
	ARX30R122SA10S	★	Y	2	3.0	12	10	6	120	20	1	TPS22S	TIP07FS	RDMW0620M0E
	ARX35R142SA12S	★	Y	2	3.5	14	12	7	140	20	1	TPS22	TIP07FS	RDMW0724M0E
Without the Center Cutting Edge (Multi-tooth)	**ARX25R122SA10S**	★	Y	2	2.5	12	10	7	120	20	2	TPS20	TIP06F	RDMW0517M0E
	ARX25R163SA16S	★	Y	3	2.5	16	16	11	180	20	2	TPS20	TIP06F	RDMW0517M0E
	ARX30R163SA16S	★	Y	3	3.0	16	16	10	180	20	2	TPS22	TIP07FS	RDMW0620M0E
	ARX25R173SA16S	★	Y	3	2.5	17	16	12	180	20	2	TPS20	TIP06F	RDMW0517M0E
	ARX30R173SA16S	★	Y	3	3.0	17	16	11	180	20	2	TPS22	TIP07FS	RDMW0620M0E
	ARX25R204SA20S	★	Y	4	2.5	20	20	15	180	20	2	TPS20	TIP06F	RDMW0517M0E
	ARX30R203SA20S	★	Y	3	3.0	20	20	14	180	20	2	TPS22	TIP07FS	RDMW0620M0E
	ARX25R224SA20S	★	Y	4	2.5	22	20	17	180	20	2	TPS20	TIP06F	RDMW0517M0E
	ARX30R224SA20S	★	Y	4	3.0	22	20	16	180	20	2	TPS22	TIP07FS	RDMW0620M0E
	ARX25R255SA20S	★	Y	5	2.5	25	20	20	180	20	2	TPS20	TIP06F	RDMW0517M0E
	ARX30R254SA20S	★	Y	4	3.0	25	20	19	180	20	2	TPS22	TIP07FS	RDMW0620M0E

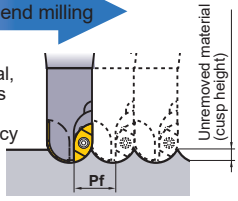
*1 Y=Yes *2 Clamp Torque (lbf-in) : TPS20=4.5, TPS22=4.5, TPS22S=4.5
*3 RE is shown for insert corner R.

Using the ARX Effectively (Reducing Unremoved Material)

●When Milling Even Surfaces

Ball nose end milling

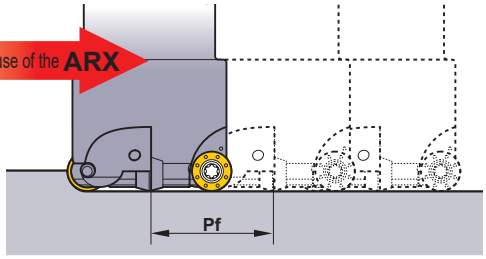
To reduce unremoved material, the pick feed needs to be reduced. (Machining efficiency will decrease.)



With the use of the ARX

Higher machining efficiency

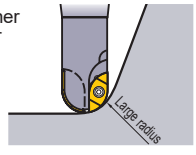
Even with a large pick feed, no unremoved material will remain.



●When Milling Corner Radius

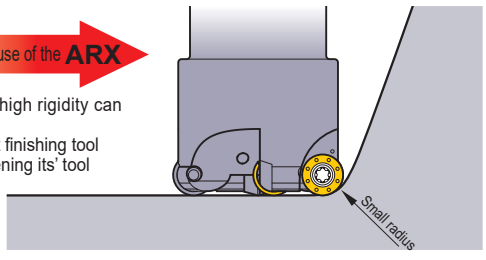
Ball nose end milling

To machine small corner radii, the tool diameter needs to be reduced. (Tool rigidity will decrease.)



With the use of the ARX

A large shank diameter offering high rigidity can also machine small corner radii. (The cutting load of a subsequent finishing tool will be decreased thereby lengthening its' tool life. Surface finish quality will be improved.)



 ★ : Stocked in Japan



Fig.1

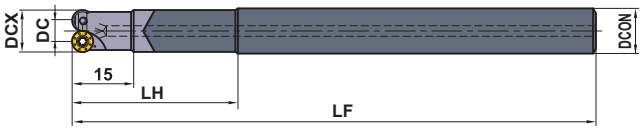


Fig.2

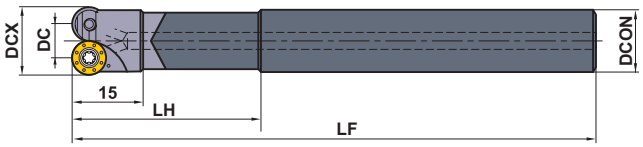
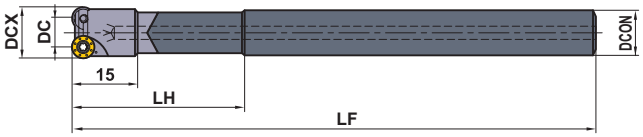


Fig.3



Metric Standard

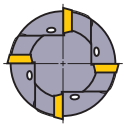
■ CARBIDE SHANK TYPE

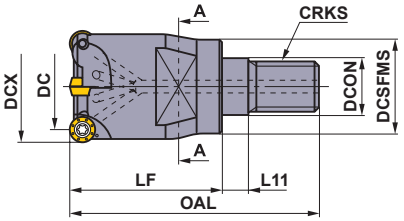
Right hand tool holder only.

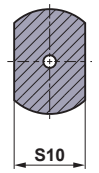
Type	Order Number	Stock	Coolant Thru *1	Number of Teeth	Dimensions (mm)						Type (Fig.)	*2		
		R			RE*3	DCX	DCON	DC	LF	LH		Insert Screw	Wrench	Insert
With the Center Cutting Edge	**ARX25R102SA10LW**	★	Y	2	2.5	10	10	5	150	40	1	TPS20	TIP06F	RDMW0517M0E
	ARX30R122SA10LW	★	Y	2	3.0	12	10	6	150	40	1	TPS22S	TIP07FS	RDMW0620M0E
	ARX35R142SA12LW	★	Y	2	3.5	14	12	7	170	40	2	TPS22	TIP07FS	RDMW0724M0E
Without the Center Cutting Edge (Multi-tooth)	**ARX25R122SA10LW**	★	Y	2	2.5	12	10	7	150	40	3	TPS20	TIP06F	RDMW0517M0E

*1 Y=Yes
*2 Clamp Torque (lbf-in) : TPS20=4.5, TPS22=4.5, TPS22S=4.5
*3 RE is shown for insert corner R.









Section **A-A**

Metric Standard

■ SCREW-IN TYPE

Right hand tool holder only.

Order Number	Stock	Coolant Thru *3	Number of Teeth	Dimensions (mm)										WT	*1		
	R			RE*4	DCX	DCON	DC	DCSFMS	OAL	LF	L11	S10	CRKS*2	(kg)	Insert Screw	Wrench	Insert
ARX25R163M08A30	★	Y	3	2.5	16	8.5	11	14.7	48	30	6	10	M8	0.1	TPS20	TIP06F	RDMW0517M0E
ARX25R173M08A30	★	Y	3	2.5	17	8.5	12	14.5	48	30	6	10	M8	0.1	TPS20	TIP06F	RDMW0517M0E
ARX25R204M10A30	★	Y	4	2.5	20	10.5	15	18.6	49	30	6	14	M10	0.2	TPS20	TIP06F	RDMW0517M0E
ARX25R224M10A30	★	Y	4	2.5	22	10.5	17	18.5	49	30	6	14	M10	0.2	TPS20	TIP06F	RDMW0517M0E
ARX25R255M12A35	★	Y	5	2.5	25	12.5	20	23.6	57	35	6	19	M12	0.2	TPS20	TIP06F	RDMW0517M0E
ARX30R163M08A30	★	Y	3	3.0	16	8.5	11	14.6	48	30	6	10	M8	0.1	TPS22	TIP07FS	RDMW0620M0E
ARX30R173M08A30	★	Y	3	3.0	17	8.5	12	14.5	48	30	6	10	M8	0.1	TPS22	TIP07FS	RDMW0620M0E
ARX30R203M10A30	★	Y	3	3.0	20	10.5	15	18.5	49	30	6	14	M10	0.2	TPS22	TIP07FS	RDMW0620M0E
ARX30R224M10A30	★	Y	4	3.0	22	10.5	17	18.5	49	30	6	14	M10	0.2	TPS22	TIP07FS	RDMW0620M0E
ARX30R254M12A35	★	Y	4	3.0	25	12.5	20	23.4	57	35	6	19	M12	0.2	TPS22	TIP07FS	RDMW0620M0E

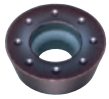
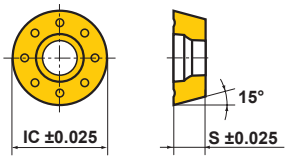
*1 Clamp Torque (lbf-in) : TPS20=4.5, TPS22=4.5
*2 Clamp Torque of the Head (lbf-ft) : M8=17.1, M10=33.8, M12=59.2
*3 Y=Yes
*4 RE is shown for insert corner R.

SCREW-IN HOLDERS ➤ L294
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

INSERTS

Work Material				
	P	Steel	●	◔
	M	Stainless Steel	◔	✣
	K	Cast Iron	●	✣
	H	Hardened Steel	●	◔

Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

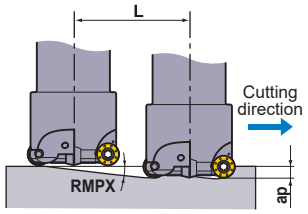
Shape	Order Number	Coated MP8010	Coated VP15TF	Dimensions (mm) IC	Dimensions (mm) S	Geometry
	**RDMW0517M0E**	★	★	5.0	1.70	
	RDMW0620M0E	★	★	6.0	1.99	
	RDMW0724M0E	★	★	7.0	2.38	

CUTTING MODE MAXIMUM CAPACITIES

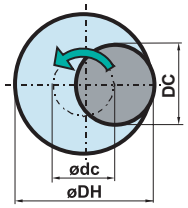
■ Ramping

Finding a cutters' distance moved **"L"** when depth of cut reaches **"ap"** at a ramping angle of **"α°"**.

L=ap/tan α (mm)



■ Helical Milling



- Setting a tool's center excursion

ødc = øDH - DC

Tool's center excursion | Required bore diameter | Tool's cutting diameter

- For the depth of cut per pass, refer to the cutting conditions on page L251 for helical milling.
- Set the machine spindle revolution so that the tool is rotating and cutting in a down cut direction.

Type	Order Number	DC (mm)	RE (mm)	Number of Teeth	Ramping RMPX *1	Ramping APMX (mm) *2	Ramping L (mm)	Helical Milling DH min. (mm)	Helical Milling DH max. (mm)
With the Center Cutting Edge	**ARX25R102SA10S**	10	2.5	2	90°	2.5	0	15	19
	ARX25R102SA10LW	10	2.5	2	90°	2.5	0	15	19
	ARX30R122SA10S	12	3.0	2	90°	3.0	0	18	23
	ARX30R122SA10LW	12	3.0	2	90°	3.0	0	18	23
	ARX35R142SA12S	14	3.5	2	90°	3.5	0	21	27
	ARX35R142SA12LW	14	3.5	2	90°	3.5	0	21	27
Without the Center Cutting Edge (Multi-tooth)	**ARX25R122SA10S**	12	2.5	2	27.17°	2.5	4.87	19	23
	ARX25R122SA10LW	12	2.5	2	27.17°	2.5	4.87	19	23
	ARX30R163SA16S	16	3.0	3	21.25°	3.0	7.71	26	31
	ARX25R163SA16S	16	2.5	3	13.70°	2.5	10.26	27	31
	ARX30R173SA16S	17	3.0	3	18.42°	3.0	9.01	28	33
	ARX25R173SA16S	17	2.5	3	12.22°	2.5	11.54	29	33
	ARX30R203SA20S	20	3.0	3	13.21°	3.0	12.78	34	39
	ARX25R204SA20S	20	2.5	4	9.23°	2.5	15.38	35	39
	ARX30R224SA20S	22	3.0	4	11.13°	3.0	15.25	38	43
	ARX25R224SA20S	22	2.5	4	7.94°	2.5	17.92	39	43
	ARX30R254SA20S	25	3.0	4	9.01°	3.0	18.92	44	49
	ARX25R255SA20S	25	2.5	5	6.57°	2.5	21.71	45	49

*1 RMPX : Max. Ramping Angle
*2 APMX : Max. Depth of Cut

★ : Stocked in Japan
<10 inserts in one case>

RECOMMENDED CUTTING CONDITIONS

Note 1) The cutting conditions below are a guide only.
Please make adjustments according to the machining conditions.

■ Shoulder / Pocket / Ramping / Copying

	Work Material	Hardness	Grade	Cutting Speed **vc** (SFM)	ARX25R□□□SA□□S		ARX30R□□□SA□□S		ARX35R□□□SA□□S	
					Depth of Cut **ap** (inch)	Feed per Tooth **fz** (inch/tooth)	Depth of Cut **ap** (inch)	Feed per Tooth **fz** (inch/tooth)	Depth of Cut **ap** (inch)	Feed per Tooth **fz** (inch/tooth)
P	Mild Steel	≤180HB	**VP15TF**	590 (490—720)	≤.039	≤.020	≤.047	≤.020	≤.059	≤.020
	Carbon Steel, Alloy Steel	180—350HB	**VP15TF**	525 (395—655)	≤.028	≤.012	≤.035	≤.012	≤.047	≤.012
M	Stainless Steel	≤270HB	**VP15TF**	490 (395—590)	≤.028	≤.012	≤.035	≤.012	≤.047	≤.012
K	Cast Iron	Tensile strength≤450MPa	**VP15TF**	590 (490—720)	≤.039	≤.020	≤.047	≤.020	≤.059	≤.020
H	Hardened Steel	45—55HRC	**VP15TF**	260 (165—395)	≤.020	≤.008	≤.028	≤.008	≤.039	≤.008

Note 1) When ramping, refer to the machining limits on page L250.

■ Slotting

	Work Material	Hardness	Grade	Cutting Speed **vc** (SFM)	ARX25R□□□SA□□S		ARX30R□□□SA□□S		ARX35R□□□SA□□S	
					Depth of Cut **ap** (inch)	Feed per Tooth **fz** (inch/tooth)	Depth of Cut **ap** (inch)	Feed per Tooth **fz** (inch/tooth)	Depth of Cut **ap** (inch)	Feed per Tooth **fz** (inch/tooth)
P	Mild Steel	≤180HB	**VP15TF**	590 (490—720)	≤.039	≤.016	≤.047	≤.016	≤.059	≤.016
	Carbon Steel, Alloy Steel	180—350HB	**VP15TF**	525 (395—655)	≤.028	≤.008	≤.035	≤.008	≤.047	≤.008
M	Stainless Steel	≤270HB	**VP15TF**	490 (395—590)	≤.028	≤.008	≤.035	≤.008	≤.047	≤.008
K	Cast Iron	Tensile strength≤450MPa	**VP15TF**	590 (490—720)	≤.039	≤.016	≤.047	≤.016	≤.059	≤.016
H	Hardened Steel	45—55HRC	**VP15TF**	260 (165—395)	≤.020	≤.004	≤.028	≤.004	≤.039	≤.004

■ Plunging

	Work Material	Hardness	Grade	Cutting Speed **vc** (SFM)	ARX25R□□□SA□□S		ARX30R□□□SA□□S		ARX35R□□□SA□□S	
					Width of Cut **ae** (inch)	Feed per Tooth **fz** (inch/tooth)	Width of Cut **ae** (inch)	Feed per Tooth **fz** (inch/tooth)	Width of Cut **ae** (inch)	Feed per Tooth **fz** (inch/tooth)
P	Mild Steel	≤180HB	**VP15TF**	590 (490—720)	≤.098	≤.012	≤.118	≤.012	≤.138	≤.012
	Carbon Steel, Alloy Steel	180—350HB	**VP15TF**	525 (395—655)	≤.098	≤.008	≤.118	≤.008	≤.138	≤.008
M	Stainless Steel	≤270HB	**VP15TF**	490 (395—590)	≤.098	≤.008	≤.118	≤.008	≤.138	≤.008
K	Cast Iron	Tensile strength≤450MPa	**VP15TF**	590 (490—720)	≤.098	≤.012	≤.118	≤.012	≤.138	≤.012
H	Hardened Steel	45—55HRC	**VP15TF**	260 (165—395)	≤.098	≤.004	≤.118	≤.004	≤.138	≤.004

■ Helical Milling

	Work Material	Hardness	Grade	Cutting Speed **vc** (SFM)	ARX25R□□□SA□□S		ARX30R□□□SA□□S		ARX35R□□□SA□□S	
					Depth of Cut Per Pass **ap** (inch/pass)	Feed per Tooth **fz** (inch/tooth)	Depth of Cut Per Pass **ap** (inch/pass)	Feed per Tooth **fz** (inch/tooth)	Depth of Cut Per Pass **ap** (inch/pass)	Feed per Tooth **fz** (inch/tooth)
P	Mild Steel	≤180HB	**VP15TF**	590 (490—720)	≤.039	≤.012	≤.039	≤.012	≤.039	≤.012
	Carbon Steel, Alloy Steel	180—350HB	**VP15TF**	525 (395—655)	≤.028	≤.008	≤.035	≤.008	≤.039	≤.008
M	Stainless Steel	≤270HB	**VP15TF**	490 (395—590)	≤.028	≤.008	≤.035	≤.008	≤.039	≤.008
K	Cast Iron	Tensile strength≤450MPa	**VP15TF**	590 (490—720)	≤.039	≤.012	≤.039	≤.012	≤.039	≤.012
H	Hardened Steel	45—55HRC	**VP15TF**	260 (165—395)	≤.020	≤.004	≤.028	≤.004	≤.039	≤.004

Note 1) When helical milling, refer to the machining limits on page L250.

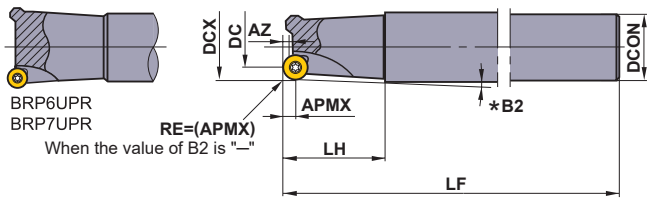
MULTI FUNCTIONAL MILLING

BRP

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron		Heat Resistant Alloy	Hardened Steel



Fig.1



*Please allow for an inclination angle of B2+1°

Fig.2

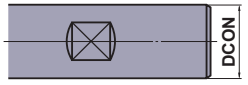


Fig.3

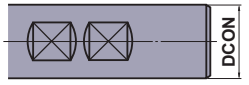
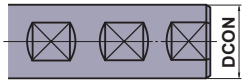


Fig.4



SHANK TYPE

Right hand tool holder only.

Corner Radius	Type *1	Order Number	Stock R	Number of Teeth	Dimensions (inch) DCX	DC	LF	DCON	LH	AZ	APMX	B2	Type (Fig.)	*2 Insert Screw	① ② Wrench	① ② Insert
.156	R	BRP3UNR081W08	●	1	.500	.177	2.781	.500	1.000	.007	.146	2.93°	2	CS250560T	①TKY08F	①RPMW07T200E ②RPMT07T200E-JS
		BRP3UNR101W10	●	1	.625	.303	3.500	.625	1.000	.039	.146	2.93°	3	CS250560T	①TKY08F	
		BRP3UNR122W12	●	2	.750	.429	4.000	.750	1.250	.066	.146	2.27°	3	CS250560T	①TKY08F	
		BRP3UNR163W16	●	3	1.000	.681	4.500	1.000	1.250	.078	.146	2.27°	4	CS250560T	①TKY08F	
	L	BRP3UNR081LW08	●	1	.500	.177	6.000	.500	2.800	.007	.146	0.93°	1	CS250560T	①TKY08F	
		BRP3UNR101LW10	●	1	.625	.303	6.000	.625	2.800	.039	.146	0.93°	1	CS250560T	①TKY08F	
	EL	BRP3UNR122ELW12	●	2	.750	.429	10.000	.750	5.100	.066	.146	0.5°	1	CS250560T	①TKY08F	
		BRP3UNR163ELW16	●	3	1.000	.681	10.000	1.000	5.100	.078	.146	0.5°	1	CS250560T	①TKY08F	
.187	R	BRP4UNR101W10	●	1	.625	.244	3.500	.625	1.000	.011	.177	3.05°	3	CS350760T	①TKY15F	①RPMW09T300E ②RPMT09T300E-JS
		BRP4UNR121W12	●	1	.750	.366	4.000	.750	1.250	.035	.177	2.33°	3	CS350760T	①TKY15F	
		BRP4UNR162W16	●	2	1.000	.618	4.500	1.000	1.250	.098	.177	2.33°	4	CS350760T	①TKY15F	
		BRP4UNR203W20	●	3	1.250	.866	5.000	1.250	1.750	.098	.177	1.58°	4	CS350760T	①TKY15F	
	L	BRP4UNR101LW10	●	1	.625	.244	6.000	.625	2.800	.011	.177	0.95°	1	CS350760T	①TKY15F	
		BRP4UNR121LW12	●	1	.750	.366	7.000	.750	3.900	.035	.177	0.67°	1	CS350760T	①TKY15F	
	EL	BRP4UNR162ELW16	●	2	1.000	.618	10.000	1.000	5.100	.098	.177	0.5°	1	CS350760T	①TKY15F	
		BRP4UNR203ELW20	●	3	1.250	.866	12.000	1.250	7.100	.098	.177	0.37°	1	CS350760T	①TKY15F	
.250	R	BRP6UPR202W20	●	2	1.250	.744	5.000	1.250	1.750	.157	.240	—	4	TS43	②TKY15D	①RPMW120400E ②RPMT120400E-JS
		BRP6UPR243W20	●	3	1.500	.976	5.000	1.250	1.750	.157	.240	—	4	TS43	②TKY15D	
		BRP6UPR324W20	●	4	2.000	1.492	5.000	1.250	1.750	.157	.240	—	4	TS43	②TKY15D	
		BRP6UPR405W20	●	5	2.500	1.999	5.000	1.250	1.750	.157	.240	—	4	TS43	②TKY15D	
	EL	BRP6UPR202ELS20	●	2	1.250	.744	12.000	1.250	1.750	.157	.240	—	1	TS43	②TKY15D	
		BRP6UPR243ELS20	●	3	1.500	.996	12.000	1.250	1.750	.157	.240	—	1	TS43	②TKY15D	
		BRP6UPR324ELS20	●	4	2.000	1.492	12.000	1.250	1.750	.157	.240	—	1	TS43	②TKY15D	
.312	R	BRP7UPR323W20	●	3	2.000	1.370	5.000	1.250	1.750	.217	.302	—	4	TS54	②TKY25D	①RPMW150600E ②RPMT150600E-JS
		BRP7UPR404W20	●	4	2.500	1.866	5.000	1.250	1.750	.217	.302	—	4	TS54	②TKY25D	
	EL	BRP7UPR323ELS20	●	3	2.000	1.370	12.000	1.250	1.750	.217	.302	—	1	TS54	②TKY25D	

*1 Type R : Standard shank, L : Long shank, EL : Extra Long shank

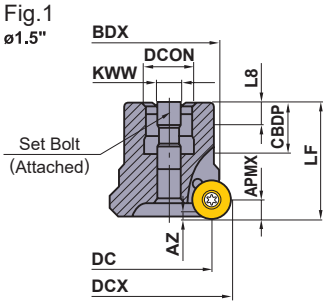
*2 Clamp Torque (lbf-in) : CS250560T=8.9, CS350760T=31, TS43=31, TS54=66

● : USA Stock

<10 inserts in one case>

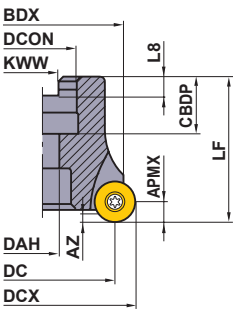


Fig.1
ø1.5"



Use the attached set bolt.

Fig.2
ø2"
ø2.5"
ø3"
ø4"



■ ARBOR TYPE

Right hand tool holder only.

Corner Radius	Order Number	Stock R	Number of Teeth	Dimensions (inch) DCX	DC	BDX	LF	DCON	CBDP	DAH	KWW	L8	Max. Depth of cut AZ	APMX	Type (Fig.)	Insert
.250	**BRP6UPR1503X**	●	3	1.500	.996	1.228	2.000	.750	.748	—	.313	.187	.157	.240	1	RPMW120400E RPMT120400E-JS
	BRP6UPR0204	●	4	2.000	1.492	1.715	2.000	.750	.748	.415	.313	.187	.157	.240	2	
	BRP6UPR2505	●	5	2.500	1.992	2.214	2.000	.750	.748	.415	.313	.187	.157	.240	2	
	BRP6UPR0306C	●	6	3.000	2.492	2.706	2.000	1.000	1.024	.539	.375	.219	.157	.240	2	
	BRP6UPR0407E	●	7	4.000	3.492	3.696	2.500	1.500	1.181	.787	.625	.375	.157	.240	2	
.312	**BRP7UPR2504**	●	4	2.500	1.866	2.165	2.000	.750	.748	.415	.313	.187	.217	.302	2	RPMW150600E RPMT150600E-JS
	BRP7UPR0305C	●	5	3.000	2.366	2.649	2.000	1.000	.969	.539	.375	.219	.217	.302	2	
	BRP7UPR0406E	●	6	4.000	3.366	3.631	2.500	1.500	1.122	.787	.625	.375	.217	.302	2	

SPARE PARTS

Tool Holder Number	Insert Screw *	Wrench	Set Screw
BRP6UPR1503X	TS43	TKY15D	HDSU37513
BRP6UPR0204 ~ BRP6UPR0407E	TS43	TKY15D	—
BRP7UPR2504 ~ BRP7UPR0406E	TS54	TKY25D	—

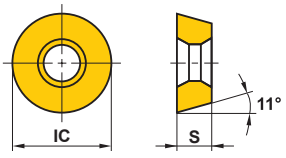
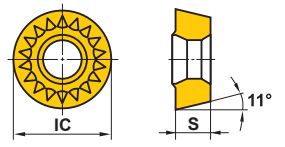
* Clamp Torque (lbf-in) : TS43=31, TS54=66

Note 1) Set bolt not included.

INSERTS

Work Material		
P	Steel	● ◔
M	Stainless Steel	○ ◔
K	Cast Iron	✣
S	Heat-resistant Alloy, Titanium Alloy	◔
H	Hardened Materials	◔

Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting ✣ : Unstable Cutting

Shape	Order Number	Class	Coated F7010	Coated VP15TF	Dimensions (inch) IC	S	Geometry
	**RPMW120400E**	M	●	●	.500	.188	
	RPMW150600E	M		●	.625	.250	
JS breaker 	**RPMT07T200E-JS**	M		●	.313	.109	
	RPMT09T300E-JS	M		●	.375	.156	
	RPMT120400E-JS	M		●	.500	.188	
	RPMT150600E-JS	M		●	.625	.250	

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

RECOMMENDED CUTTING CONDITIONS

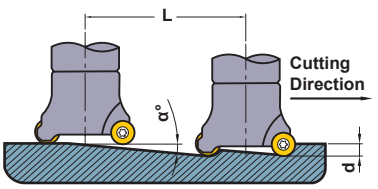
Work Material			Cutting Speed (SFM)	
			CVD	PVD
	Material	Hardness	F7010 / F7030 / F620	VP15TF / AP20M
P	Mild Steel	≤180HB	820 (660—980)	820 (660—980)
	Carbon Steel	180—280HB	590 (425—720)	590 (425—720)
	Alloy Steel	280—380HB	525 (360—620)	525 (360—620)
	Prehardened Steel	35—45HB	390 (260—460)	390 (260—460)
	High Alloy Steel	≤300HB	425 (295—525)	425 (295—525)
	Sintered Steel	45—60HRC	—	215 (155—275)
M	Stainless Steel	≤260HB	590 (425—720)	590 (425—720)
K	Gray Cast Iron	Tensile Strength≤350MPa	—	570 (425—720)
	Ductile Cast Iron	Tensile Strength 360—500MPa	—	470 (340—600)
		Tensile Strength 500—800MPa	—	360 (260—460)

■ Feed per Tooth (IPT) for Straight Line (Non-ramping) Cutting Only

Type	Depth of Cut (inch)								
	.040	.080	.120	.150	.180	.200	.240	.280	.320
BRP3U	.012	.009	.008	.006	—	—	—	—	—
BRP4U	.014	.012	.010	.010	.007	—	—	—	—
BRP6U	.020	.016	.012	.012	.011	.009	.008	—	—
BRP7U	.024	.020	.018	.016	.012	.013	.012	.010	.008

■ Ramping

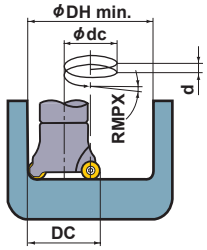
Type	Tool Diameter (inch)	Max. Ramping Angle RMPX	Tan α per inch	Min. Cutting Length According to Max. Ramping Angle **L** min. (inch)						
				d= .094"	d= .125"	d= .156"	d= .188"	d= .250"	d= .281"	d= .312"
BRP3U	.500	3.71°	.065°	1.446	1.923	2.400	—	—	—	—
	.625	12.34°	.219°	.429	.571	.712	—	—	—	—
	.750	13.50°	.240°	.392	.521	.650	—	—	—	—
	1.000	8.48°	.149°	.631	.839	1.047	—	—	—	—
BRP4U	.625	4.07°	.071°	1.324	1.761	2.197	2.648	—	—	—
	.750	8.41°	.148°	.635	.845	1.054	1.270	—	—	—
	1.000	12.98°	.231°	.407	.541	.675	.814	—	—	—
	1.250	8.18°	.144°	.653	.868	1.083	1.306	—	—	—
BRP6U	1.250	17.3°	.312°	.301	.401	.500	.603	.801	—	—
	1.500	11.78°	.209°	.450	.598	.746	.900	1.196	—	—
	2.000	7.15°	.125°	.752	1.000	1.248	1.504	2.000	—	—
	2.500	5.13°	.090°	1.044	1.389	1.733	2.089	2.778	—	—
	3.000	3.99°	.070°	1.343	1.786	2.229	2.686	3.571	—	—
	4.000	2.77°	.048°	1.958	2.604	3.250	3.917	5.208	—	—
BRP7U	2.000	11.49°	.203°	.463	.616	.768	.926	1.232	1.384	1.537
	2.500	7.88°	.138°	.681	.906	1.130	1.362	1.812	2.036	2.261
	3.000	5.99°	.105°	.895	1.190	1.486	1.790	2.381	2.676	2.971
	4.000	4.04°	.071°	1.324	1.761	2.197	2.648	3.521	3.958	4.394



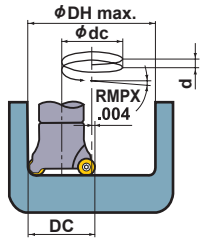
Helical Milling

Relationship Between Hole Diameter and Depth of Cut

Minimum Cutting Diameter



Maximum Cutting Diameter



Type	DC (inch)	*1 ϕDH min.	*2 ϕdc	Inclination Angle RMPX d=.094"	d=.156"	d=.188"	d=.250"	d=.312"	*1 ϕDH max.	*2 ϕdc	Inclination Angle RMPX d=.094"	d=.156"	d=.188"	d=.250"	d=.312"
BRP3U	.500	.688	.188	d=.039 → RMPX=3.778°					.922	.422	d=.078 → RMPX= 3.367°				
	.625	.938	.313	5.461°	9.015°	—	—	—	1.172	.547	3.131°	5.187°	—	—	—
	.750	1.188	.438	3.908°	6.468°	—	—	—	1.422	.672	2.549°	4.226°	—	—	—
	1.000	1.688	.688	2.490°	4.128°	—	—	—	1.922	.922	1.859°	3.083°	—	—	—
BRP4U	.625	.874	.249	d=.039 → RMPX=2.854°					1.172	.547	3.131°	5.187°	6.243°	—	—
	.750	1.124	.374	4.574°	7.563°	9.091°	—	—	1.422	.672	2.549°	4.226°	5.089°	—	—
	1.000	1.624	.624	2.745°	4.550°	5.478°	—	—	1.922	.922	1.859°	3.083°	3.714°	—	—
	1.250	2.124	.874	1.961°	3.252°	3.917°	—	—	2.422	1.172	1.462°	2.426°	2.923°	—	—
BRP6U	1.250	2.000	.750	2.285°	3.788°	4.562°	6.057°	—	2.422	1.172	1.462°	2.426°	2.923°	3.884°	—
	1.500	2.500	1.000	1.714°	2.843°	3.425°	4.550°	—	2.922	1.422	1.205°	2.000°	2.410°	3.203°	—
	2.000	3.500	1.500	1.143°	1.896°	2.285°	3.037°	—	3.922	1.922	.892°	1.480°	1.783°	2.371°	—
	2.500	4.500	2.000	.857°	1.422°	1.714°	2.279°	—	4.922	2.422	.708°	1.175°	1.415°	1.882°	—
	3.000	5.500	2.500	.686°	1.138°	1.371°	1.823°	—	5.922	2.922	.587°	.974°	1.173°	1.560°	—
	4.000	7.500	3.500	.490°	.813°	.980°	1.302°	—	7.922	3.922	.437°	.725°	.874°	1.162°	—
BRP7U	2.000	3.376	1.376	1.246°	2.067°	2.490°	3.310°	4.128°	3.922	1.922	.892°	1.480°	1.783°	2.371°	2.958°
	2.500	4.376	1.876	.914°	1.516°	1.827°	2.429°	3.030°	4.922	2.422	.708°	1.175°	1.415°	1.882°	2.348°
	3.000	5.376	2.376	.721°	1.197°	1.443°	1.918°	2.393°	5.922	2.922	.587°	.974°	1.173°	1.560°	1.947°
	4.000	7.376	3.376	.508°	.842°	1.016°	1.350°	1.685°	7.922	3.922	.437°	.725°	.874°	1.162°	1.451°

*1 DH = Cutting Hole Diameter : ϕ (inch)
*2 dc = Tool Pass Diameter : ϕ (inch)

BRP3U type DH min. = (DC-.156) X 2, DH max. = (DC-.039) X 2, d max. =.156 (inch)
BRP4U type DH min. = (DC-.188) X 2, DH max. = (DC-.039) X 2, d max. =.188 (inch)
BRP6U type DH min. = (DC-.250) X 2, DH max. = (DC-.039) X 2, d max. =.250 (inch)
BRP7U type DH min. = (DC-.312) X 2, DH max. = (DC-.039) X 2, d max. =.312 (inch)
dc = DH-D
*DH min. (Minimum Cutting Diameter) DH max.(Maximum Cutting Diameter) d (Maximum Depth of Cut)

MULTI FUNCTIONAL MILLING

42° KAPR

BOE

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron			Hardened Steel



Fig.1 (BOE4 type)

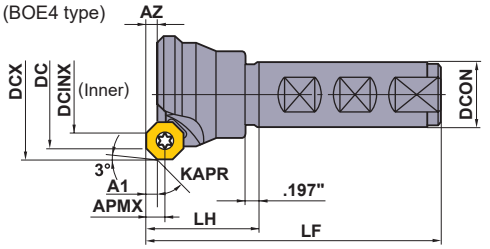
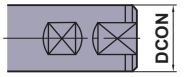


Fig.2 (BOE type)



■ WELDON SHANK TYPE

Right hand tool holder only.

Order Number	Stock	Number of Teeth	Dimensions (inch)						Max. Depth of Cut			Type (Fig.)	*	① ②	① ②
	R		DCX	DC	DCINX	LF	DCON	LH	A1	APMX	AZ		Insert Screw	Wrench	Insert
BOE4R202W20	●	2	1.250	.925	.516	5.022	1.250	1.772	.098	.276	.118	1	CS350990T	①TKY10F	
BOE4R243W20	●	3	1.500	1.177	.767	5.022	1.250	1.772	.098	.276	.118	1	CS350990T	①TKY10F	①OEMX12T3ETR
BOE4R323W20	●	3	2.000	1.680	1.269	5.022	1.250	1.772	.098	.276	.118	1	CS350990T	①TKY10F	②REMX12T3EN
BOE4R404W20	●	4	2.500	2.181	1.772	5.022	1.250	1.772	.098	.276	.118	1	CS350990T	①TKY10F	
BOER322W20	●	2	2.000	1.539	.996	4.053	1.250	1.772	.118	.354	.155	2	CS501290T	②TKY25T	①OEMX1705E□R1
BOER403W20	●	3	2.500	2.043	1.500	4.053	1.250	1.772	.118	.354	.155	2	CS501290T	②TKY25T	②REMX1705□N
BOER504W20	●	4	3.125	2.668	2.129	4.053	1.250	1.772	.118	.354	.155	2	CS501290T	②TKY25T	

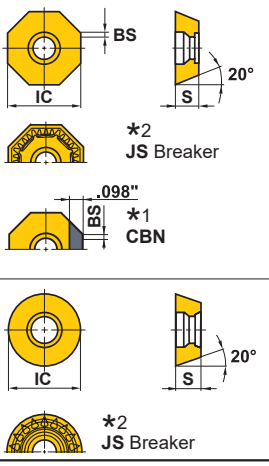
* Clamp Torque (lbf-in) : CS350990T=22, CS501290T=66

INSERTS

Work Material		
P	Steel	● ● ● ●
M	Stainless Steel	● ● ● ●
K	Cast Iron	✱ ✱ ●
H	Hardened Material	

Cutting Conditions (Guide) :
● : Stable Cutting ● : General Cutting
✱ : Unstable Cutting
Honing :
E : Round **S** : Chamfer + Round **T** : Chamfer

Shape	Order Number	Class	Honing	Coated F7010	Coated F7030	Coated VP15TF	Cermet NX2525		CBN*1 MB730		Dimensions (inch) IC	S	BS	Geometry
	OEMX12T3ETR1	M	T				●		●		.500	.156	.039	
	OEMX12T3ETR5	M	T						●		.500	.156	.197	
	OEMX12T3ESR1	M	S		●						.500	.156	.039	
	✱2 **OEMX12T3EER1-JS**	M	E		★						.500	.156	.039	
	✱2 **OEMX12T3ETR1-JS**	M	T				★				.500	.156	.039	
	OEMX1705ETR1	M	T	●		●	●				.669	.197	.055	
	OEMX1705ESR1	M	S		●						.669	.197	.055	
	✱2 **OEMX1705EER1-JS**	M	E		★						.669	.197	.055	
✱2 JS Breaker	✱2 **OEMX1705ETR1-JS**	M	T			●	●				.669	.197	.055	
	✱2 **REMX12T3EN-JS**	M	E		●						.500	.164	—	
	REMX1705EN	M	E		●						.679	.205	—	
	REMX1705SN	M	S		★						.679	.205	—	
✱2 JS Breaker	✱2 **REMX1705EN-JS**	M	E		●						.679	.205	—	



✱1 Flat insert.
✱2 Insert with breaker.

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case> <1 insert in one case for CBN>



Fig.1

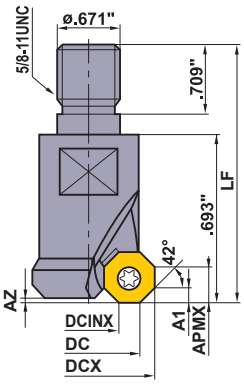


Fig.2

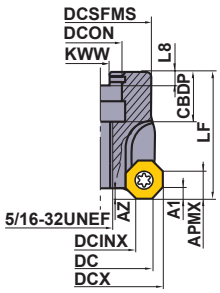


Fig.3

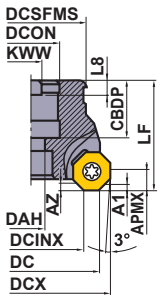
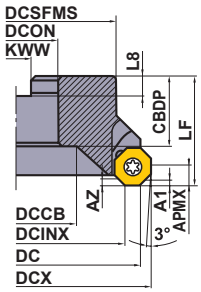


Fig.4



■ ARBOR TYPE

Right hand tool holder only.

Order Number	Stock	Number of Teeth	Dimensions (inch)											WT (lbs)	Max. Depth of Cut			Type (Fig.)	Insert
	R		DCX	DC	DCINX	LF	DCON	CBDP	DAH	DCCB	KWW	DCSFMS	L8		A1	APMX	AZ		
BOE4R202	●	2	1.250	.925	.516	2.598	—	—	—	—	—	—	—	—	.098	.276	.118	1	OEMX12T3 REMX12T3
BOE4R1503X	●	3	1.500	1.177	.767	1.575	.750	.748	—	—	.313	1.228	.187	.5	.098	.276	.118	2	
BOE4R0203	●	3	2.000	1.680	1.269	1.575	.750	.748	—	—	.313	1.701	.201	.8	.098	.276	.118	3	
BOE4R2504	●	4	2.500	2.181	1.772	1.969	.750	.748	.415	—	.313	1.732	.201	1.3	.098	.276	.118	3	
BOE4R0305C	●	5	3.000	2.682	2.271	1.969	1.000	1.024	.512	—	.375	2.087	.236	2.4	.098	.276	.118	3	
BOER2503A	●	3	2.480	2.024	1.480	1.969	.750	.748	.415	—	.313	1.732	.187	1.3	.118	.354	.155	3	OEMX1705 REMX1705
BOER0304C	●	4	3.150	2.693	2.154	1.969	1.000	1.024	.512	—	.375	2.087	.219	3.8	.118	.354	.155	3	
BOER0405E	●	5	3.937	3.484	2.941	2.480	1.500	1.181	.787	—	.625	2.756	.375	6.3	.118	.354	.155	3	
BOER0506E	●	6	4.921	4.469	3.929	2.480	1.500	1.380	—	2.362	.625	3.150	.375	7.0	.118	.354	.155	4	
BOER0608F	●	8	6.300	5.846	5.307	2.480	2.000	1.496	—	3.185	.750	4.724	.437	11.4	.118	.354	.155	4	
BOER0809F	●	9	8.000	7.547	7.003	2.500	2.000	1.496	—	2.185	.750	6.890	.437	16.2	.118	.354	.155	4	

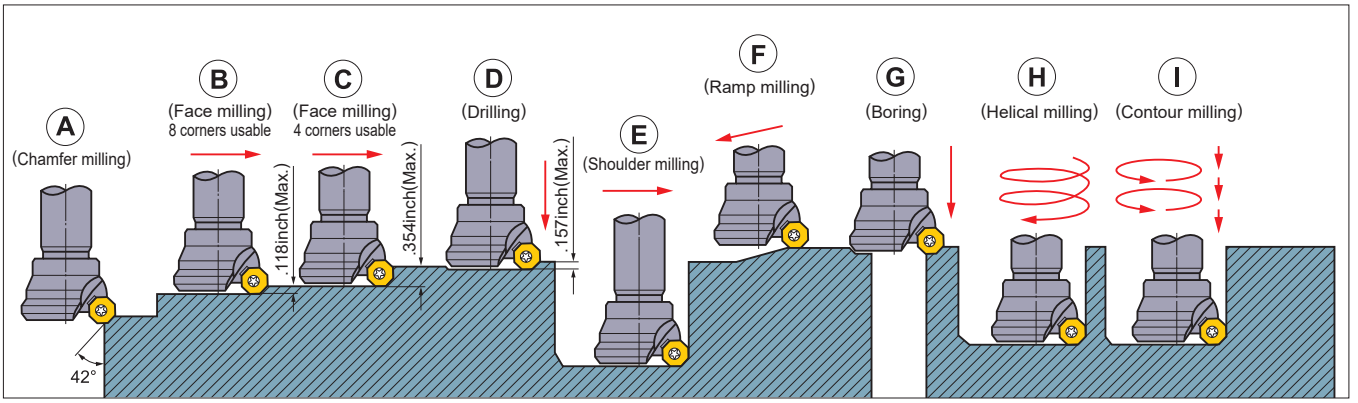
Note 1) Set bolt not included.

SPARE PARTS

Milling Cutter No.	* Insert Screw	Wrench	Set Bolt
BOE4R202	CS350990T	①TKY10F	—
BOE4R0203			BOE4S06U
BOE4R2504			—
BOE4R0305C			—
BOER2503A ~ **BOER0809F**	CS501290T	②TKY25T	—

* Clamp Torque (lbf-in) : CS350990T=22, CS501290T=66

RECOMMENDED CUTTING CONDITIONS

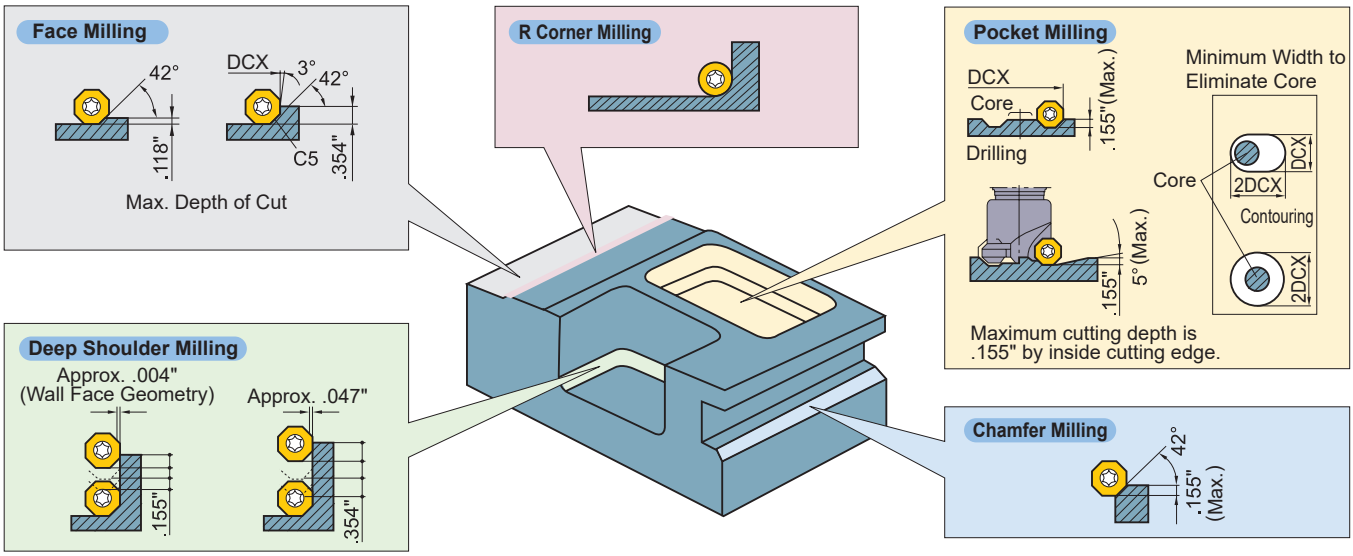


Note 1) These are recommended cutting conditions when cutter diameter is less than 3.15 inch. For cutters with diameter ≥ ϕ3.15 inch increase cutting speed by 10%.
Above sizes are for OEMX1705 ○○○○.

	Work Material	Hardness	Grade	Cutting Speed (SFM)	Cutting Mode	Feed per Tooth (inch/tooth)
P	Mild Steel	≤180HB	**F7010**	785 (590—985)	A	.008 (.006—.010)
					B	.008 (.006—.010)
			F7030	705 (475—820)	C,E,F	.008 (.006—.010)
			VP15TF / NX4545	590 (330—820)	D,G,H,I	.003 (.002—.004)
	Carbon Steel Alloy Steel	180—280HB	**F7010**	655 (460—785)	A	.008 (.006—.010)
					B	.008 (.006—.010)
			F7030	590 (390—690)	C,E,F	.008 (.006—.010)
			VP15TF	590 (330—820)	D,G,H,I	.003 (.002—.004)
		280—380HB	**F7010**	490 (330—555)	A	.008 (.006—.010)
					B	.008 (.006—.010)
			F7030	425 (295—525)	C,E,F	.008 (.006—.010)
			VP15TF / NX4545	390 (260—525)	D,G,H,I	.003 (.002—.004)
	Pre-Hardened Steel	35—45HRC	**F7010**	425 (295—525)	A	.006 (.004—.008)
					B	.006 (.004—.008)
			F7030	360 (260—460)	C,E,F	.004 (.002—.006)
			VP15TF	390 (260—525)	D,G,H,I	.002 (.001—.003)
	High Alloy Steel	≤300HB	**F7010**	490 (330—555)	A	.006 (.004—.008)
					B	.006 (.004—.008)
			F7030	425 (295—525)	C,E,F	.004 (.002—.006)
			VP15TF	390 (260—525)	D,G,H,I	.002 (.001—.003)
M	Stainless Steel	≤270HB	**F7010**	655 (460—785)	A	.006 (.004—.008)
					B	.006 (.004—.008)
			F7030	590 (390—690)	C,E,F	.004 (.002—.006)
			VP15TF / NX4545	490 (330—655)	D,G,H,I	.003 (.002—.004)
K	Cast Iron	Tensile Strength ≤350MPa	**VP15TF NX4545**	525 (330—720)	A	.012 (.010—.014)
					B	.010 (.008—.012)
					C,E,F	.006 (.004—.008)
					D,G,H,I	.003 (.002—.004)
			MB730	4920 (3280—9840)	B (Depth of Cut .004—.020 inch)	.006 (.004—.008)
	Ductile Cast Iron	Tensile Strength 360—500MPa	**VP15TF**	525 (330—720)	A	.010 (.008—.012)
					B	.008 (.006—.010)
					C,E,F	.004 (.002—.006)
					D,G,H,I	.002 (.001—.003)
		Tensile Strength 500—800MPa	**VP15TF**	460 (295—620)	A	.010 (.008—.012)
					B	.008 (.006—.010)
					C,E,F	.004 (.002—.006)
					D,G,H,I	.002 (.001—.003)
H	Heat-Treated Steel	45—60HRC	**VP15TF**	260 (165—330)	A	.006 (.004—.008)
					B	.006 (.004—.008)
					C,E,F	.004 (.002—.005)
					D,G,H,I	.002 (.001—.002)

Note 1) This list of recommended cutting conditions is for flank wear of .012 inch in 30 min. cutting time.
Note 2) More than 2 inch shank length should be clamped in the milling chuck.
Note 3) Use peck feed when drilling. (.020 inch step is recommended)
Note 4) When chattering occurs, reduce cutting speed to 70—80%.
Note 5) When using round inserts, make sure that the flat portion of the flank surface is secure against the insert seat wall.

APPLICATION



Above sizes are for OEMX1705□□□□.

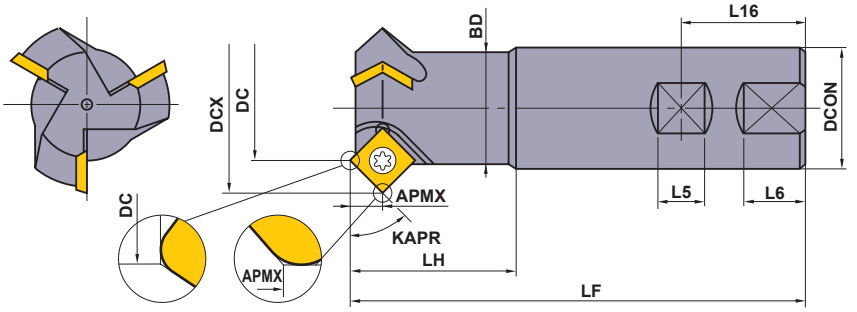
CHAMFER MILLING

45° KAPR

CFSP

P Steel | M | K Cast Iron | N | S | H





Right hand tool holder only.

Order Number	Stock	Number of Teeth	Dimensions (inch)										*		
	R		DC	DCX	LF	DCON	BD	LH	L16	L5	L6	APMX	Insert Screw	Wrench	Insert
CFSPR051W16	●	1	.313	.964	4.000	1.000	.768	1.719	1.141	.515	.500	.327	TS52	TKY25R	SPMW42◌
CFSPR101W16	●	1	.625	1.280	4.000	1.000	.768	1.719	1.141	.515	.500	.327	TS5	TKY25R	SPMW42◌
CFSPR203W20	●	3	1.250	1.905	4.125	1.250	1.220	1.844	1.141	.515	.500	.327	TS5	TKY25R	SPMW42◌

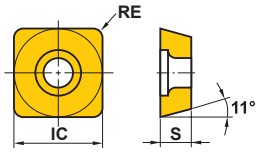
* Clamp Torque (lbf-in) : TS52=66, TS5=66

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

INSERTS

Work Material		
P	Steel	
K	Cast Iron	

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✠ : Unstable Cutting

Shape	Order Number	ISO Number	Class	Coated			Cermet		Carbide		Dimensions (inch)			Geometry
				VP15TF	UP20M		NX2525	NX4545	UTi20T	HTi10	IC	S	RE	
	**SPMW421**	**SPMW120304**	M	●	●		★	★	●	●	.500	.125	.016	
	SPMW422	**SPMW120308**	M	●	●		★	★	●	●	.500	.125	.031	

RECOMMENDED CUTTING CONDITIONS

Work Material		Hardness	Grade	Cutting Speed (SFM)	Feed per Tooth (inch/tooth)	
					Chamfer Milling	Face Milling
P	Carbon Steel Alloy Steel	180—280HB	**UTi20T**	590 (425—720)	.016	.006
			VP15TF / UP20M	590 (425—720)	.016	.008
			NX2525 / NX4545	590 (425—720)	.016	.008
		280—350HB	**UTi20T**	330 (230—395)	.012	.006
K	Cast Iron	Tensile Strength ≤450MPa	**VP15TF / UTi20T**	460 (330—560)	.020	.004
			HTi10 / NX2525 / NX4545	460 (330—560)	.020	.004

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

BALL NOSE AND RADIUS END MILL

SRF/SUF

P	M	K	N	S	H
Steel	(For SUF)	Cast Iron	(For SRF)		Hardened Steel



Fig. 1

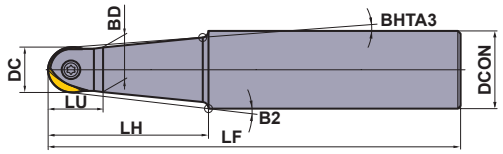


Fig. 2

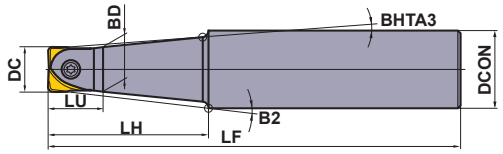


Fig. 3

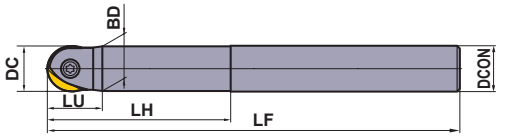


Fig. 4

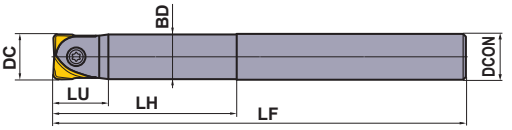


Fig. 5

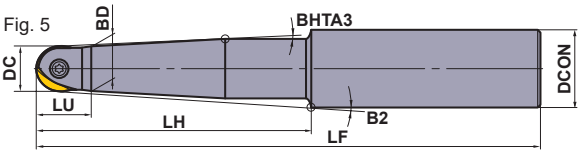
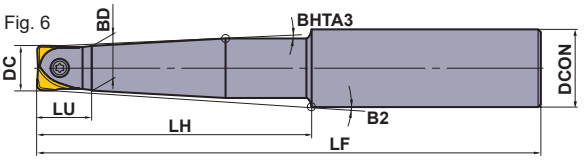


Fig. 6



■STEEL SHANK

Right hand tool holder only.
Refer to page L270 for APMX, PRFRAD&RE.

Type	Order Number	Stock	Inserts	Dimensions (inch)									Fig.	*1 Clamp Screw	① ② Wrench	Anti-seize Lubricant
		R		RE*2	DC	DCON	LF	BD	LH	LU	B2	BHTA3				
Standard	SRFU06S08M	●	SRFT0375	.1875	.375	.500	4.375	.354	1.625	.512	2.5°	1.5°	1	RS3008TS	① TKY08D	MK1KS
			SRFT10	.1969	.394						2.13°	1.5°	1			
			SUFT10R○○	—	.394						2.13°	1.5°	2			
	SRFU08S10M	●	SRFT0500	.2500	.500	.625	4.750	.453	2.000	.591	2.05°	1.5°	1	RS3510T	① TKY10D	MK1KS
			SRFT12	.2362	.472						2.48°	1.5°	1			
			SUFT12R○○	—	.472						2.48°	1.5°	2			
	SRFU10S12M	●	SRFT0625	.3125	.625	.750	5.125	.606	2.000	.787	2.12°	1.5°	1	RS4015T	② TKY15T	MK1KS
			SRFT16	.3150	.630						2.03°	1.5°	1			
			SUFT16R○○	—	.630						2.03°	1.5°	2			
	SRFU12S16M	●	SRFT0750	.3750	.750	1.000	6.000	.732	2.875	.945	2.87°	1.5°	1	RS5020T	② TKY20T	MK1KS
			SRFT20	.3937	.787						2.45°	1.5°	1			
			SUFT20R○○	—	.787						2.45°	1.5°	2			
	SRFU16S20M	●	SRFT1000	.5000	1.000	1.250	7.125	.965	3.250	1.181	2.6°	1.5°	1	RS6025T	② TKY25T	MK1KS
			SRFT25	.4921	.984						2.77°	1.5°	1			
			SUFT25R○○	—	.984						2.77°	1.5°	2			
	SRFU20S20M	●	SRFT1250	.6250	1.250	1.250	8.039	1.161	4.164	1.417	—	—	3	RS8030T	② TKY30T	MK1KS
			SRFT30	.5906	1.181		8.000		4.125	1.378			3			
			SRFT32	.6299	1.260		8.039		4.164	1.417			3			
			SUFT30R○○	—	1.181		8.000		4.125	1.378			4			
Long	SRFU06S08L	●	SRFT0375	.1875	.375	.500	6.000	.354	2.500	.512	1.55°	1.5°	1	RS3008TS	① TKY08D	MK1KS
			SRFT10	.1969	.394						1.32°	1.5°	1			
			SUFT10R○○	—	.394						1.32°	1.5°	2			
	SRFU08S10L	●	SRFT0500	.2500	.500	.625	6.375	.453	2.875	.591	1.36°	1.5°	1	RS3510T	① TKY10D	MK1KS
			SRFT12	.2362	.472						1.65°	1.5°	1			
			SUFT12R○○	—	.472						1.65°	1.5°	2			
	SRFU10S12L	●	SRFT0625	.3125	.625	.750	7.125	.606	3.625	.787	1.08°	1.5°	5	RS4015T	② TKY15T	MK1KS
			SRFT16	.3150	.630						1.03°	1.5°	5			
			SUFT16R○○	—	.630						1.03°	1.5°	6			
	SRFU12S16L	●	SRFT0750	.3750	.750	1.000	8.500	.732	4.625	.945	1.68°	1.5°	1	RS5020T	② TKY20T	MK1KS
			SRFT20	.3937	.787						1.42°	1.5°	1			
			SUFT20R○○	—	.787						1.42°	1.5°	2			
	SRFU16S20L	●	SRFT1000	.5000	1.000	1.250	9.625	.965	5.750	1.181	1.37°	1.5°	1	RS6025T	② TKY25T	MK1KS
			SRFT25	.4921	.984						1.45°	1.5°	1			
			SUFT25○○	—	.984						1.45°	1.5°	2			
	SRFU20S20L	●	SRFT1250	.6250	1.250	1.250	10.539	1.161	6.664	1.417	—	—	3	RS8030T	② TKY30T	MK1KS
			SRFT30	.5906	1.181		10.500		6.625	1.378			3			
			SRFT32	.6299	1.260		10.539		6.664	1.417			3			
			SUFT30○○	—	1.181		10.500		6.625	1.378			4			

*1 Clamp Torque (lbf-in) : RS3008TS=13, RS3510T=22, RS4015T=29, RS5020T=44, RS6025T=66, RS8030T=88
*2 RE is shown for insert corner R.
Note 1) Fit inserts in the right direction. (Refer to page L269 & L270)

● : USA Stock



Fig. 1

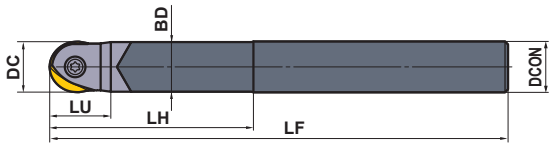
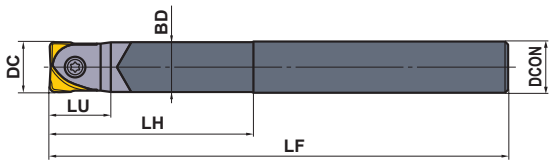


Fig. 2



CARBIDE SHANK

Right hand tool holder only.
Refer to page L270 for APMX, PRFRAD&RE.

Type	Order Number	Stock	Inserts	Dimensions (inch)							Fig.	✶1 Clamp Screw	①② Wrench	Anti-seize Lubricant
		R		RE✶2	DC	DCON	LF	BD	LH	LU				
Standard	SRFU06S06MW	●	SRFT0375	.1875	.375	.375	4.375	.354	1.625	0.512	1	RS3008TS	①TKY08D	MK1KS
			SRFT10	.1969	.394						1			
			SUFT10R○○	—	.394						2			
	SRFU08S08MW	●	SRFT0500	.2500	.500	.500	4.750	.453	2.000	0.591	1	RS3510T	①TKY10D	MK1KS
			SRFT12	.2362	.472						1			
			SUFT12R○○	—	.472						2			
	SRFU10S10MW	●	SRFT0625	.3125	.625	.625	5.250	.606	2.125	0.787	1	RS4015T	②TKY15T	MK1KS
			SRFT16	.3150	.630						1			
			SUFT16R○○	—	.630						2			
	SRFU12S12MW	●	SRFT0750	.3750	.750	.750	7.125	.732	4.000	0.945	1	RS5020T	②TKY20T	MK1KS
			SRFT20	.3937	.787						1			
			SUFT20R○○	—	.787						2			
	SRFU16S16MW	●	SRFT1000	.5000	1.000	1.000	8.000	.965	4.125	1.181	1	RS6025T	②TKY25T	MK1KS
			SRFT25	.4921	.984						1			
			SUFT25R○○	—	.984						2			
Long	SRFU06S06LW	●	SRFT0375	.1875	.375	.375	6.625	.354	3.125	.512	1	RS3008TS	①TKY08D	MK1KS
			SRFT10	.1969	.394						1			
			SUFT10R○○	—	.394						2			
	SRFU08S08LW	●	SRFT0500	.2500	.500	.500	6.625	.453	3.125	.591	1	RS3510T	①TKY10D	MK1KS
			SRFT12	.2362	.472						1			
			SUFT12R○○	—	.472						2			
	SRFU10S10LW	●	SRFT0625	.3125	.625	.625	8.000	.606	4.500	.787	1	RS4015T	②TKY15T	MK1KS
			SRFT16	.3150	.630						1			
			SUFT16R○○	—	.630						2			
	SRFU12S12LW	●	SRFT0750	.3750	.750	.750	10.000	.732	6.125	.945	1	RS5020T	②TKY20T	MK1KS
			SRFT20	.3937	.787						1			
			SUFT20R○○	—	.787						2			
	SRFU16S16LW	●	SRFT1000	.5000	1.000	1.000	12.000	.965	8.125	1.181	1	RS6025T	②TKY25T	MK1KS
			SRFT25	.4921	.984						1			
			SUFT25R○○	—	.984						2			

✶1 Clamp Torque (lbf-in) : RS3008TS=13, RS3510T=22, RS4015T=29, RS5020T=44, RS6025T=66
✶2 RE is shown for insert corner R.
Note 1) Fit inserts in the right direction. (Refer to page L269 & L270)

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001



Fig. 1

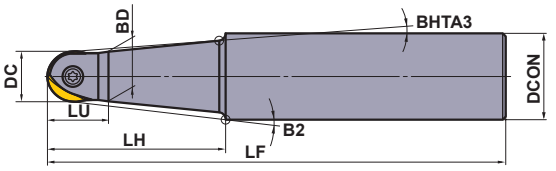


Fig. 2

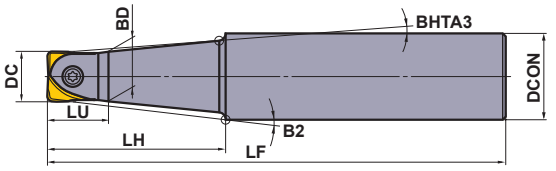


Fig. 3

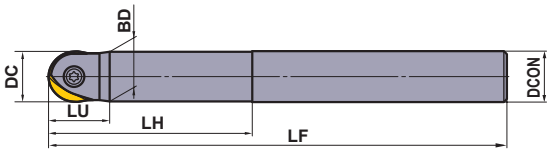


Fig. 4

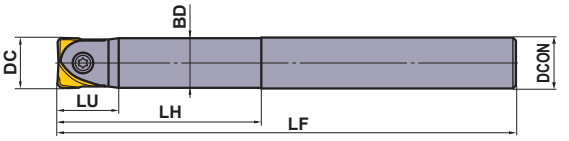


Fig. 5

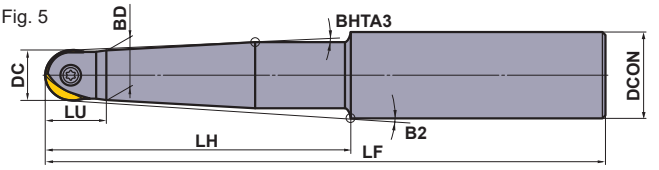
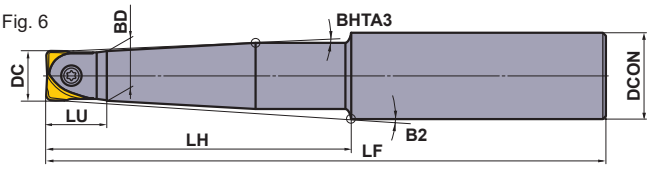


Fig. 6



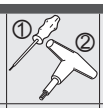
Metric Standard

■STEEL SHANK

Right hand tool holder only.
Refer to page L270 for APMX, PRFRAD&RE.

Type	Order Number	Stock R	Inserts	Dimensions (mm) RE ✶2	DC	DCON	LF	BD	LH	LU	B2	BHTA3	Fig.	✶1 Clamp Screw	Wrench	Anti-seize Lubricant
Standard	**SRFH10S12M**	★	SRFT10	5	10	12	110	9.5	40	13	1.63°	1.5°	1	RS3008T	①TKY08D	MK1KS
			SUFT10R○○	—	10	12	110	9.5	40	13	1.63°	—	2			
	SRFH12S16M	★	SRFT12	6	12	16	120	11.5	50	15	2.6°	1.5°	1	RS3510T	①TKY10D	MK1KS
			SUFT12R○○	—	12	16	120	11.5	50	15	2.6°	—	2			
	SRFH16S20M	★	SRFT16	8	16	20	130	15.5	50	20	2.73°	1.5°	1	RS4015T	②TKY15T	MK1KS
			SUFT16R○○	—	16	20	130	15.5	50	20	2.73°	—	2			
	SRFH20S25M	★	SRFT20	10	20	25	150	19.5	70	24	2.38°	1.5°	1	RS5020T	②TKY20T	MK1KS
			SUFT20R○○	—	20	25	150	19.5	70	24	2.38°	1.5°	2			
	SRFH25S32M	★	SRFT25	12.5	25	32	180	24.5	80	30	2.97°	1.5°	1	RS6025T	②TKY25T	MK1KS
			SUFT25R○○	—	25	32	180	24.5	80	30	2.97°	1.5°	2			
	SRFH30S32M	★	SRFT30	15	30	32	200	29.5	100	35	—	—	3	RS8030T	②TKY30T	MK1KS
			SUFT30R○○	—	30	32	200	29.5	100	35	—	—	4			
	SRFH32S32M	★	SRFT32	16	32	32	200	31.5	100	35	—	—	3	RS8030T	②TKY30T	MK1KS
			SUFT32R○○	—	32	32	200	31.5	100	35	—	—	4			
Semi Long	**SRFH10S12L**	★	SRFT10	5	10	12	150	9.5	60	13	1.5°	1.5°	1	RS3008T	①TKY08D	MK1KS
			SUFT10R○○	—	10	12	150	9.5	60	13	1.5°	—	2			
	SRFH12S16L	★	SRFT12	6	12	16	160	11.5	70	15	1.78°	1.5°	1	RS3510T	①TKY10D	MK1KS
			SUFT12R○○	—	12	16	160	11.5	70	15	1.78°	—	2			
	SRFH16S20L	★	SRFT16	8	16	20	160	15.5	70	20	1.85°	1.5°	1	RS4015T	②TKY15T	MK1KS
			SUFT16R○○	—	16	20	160	15.5	70	20	1.85°	—	2			
	SRFH20S25L	★	SRFT20	10	20	25	180	19.5	80	24	2.05°	1.5°	1	RS5020T	②TKY20T	MK1KS
			SUFT20R○○	—	20	25	180	19.5	80	24	2.05°	1.5°	2			
	SRFH20S20L80	★	SRFT20	10	20	20	180	19.5	80	24	—	—	3	RS5020T	②TKY20T	MK1KS
			SUFT20R○○	—	20	20	180	19.5	80	24	—	—	4			
	SRFH25S32L	★	SRFT25	12.5	25	32	200	24.5	100	30	2.28°	1.5°	1	RS6025T	②TKY25T	MK1KS
			SUFT25R○○	—	25	32	200	24.5	100	30	2.28°	1.5°	2			
	SRFH25S25L100	★	SRFT25	12.5	25	25	200	24.5	100	30	—	—	3	RS6025T	②TKY25T	MK1KS
			SUFT25R○○	—	25	25	200	24.5	100	30	—	—	4			
	SRFH30S32L	★	SRFT30	15	30	32	230	29.5	130	35	—	—	3	RS8030T	②TKY30T	MK1KS
			SUFT30R○○	—	30	32	230	29.5	130	35	—	—	4			

✶1 Clamp Torque (lbf-in) : RS3008T=13, RS3510T=22, RS4015T=29, RS5020T=44, RS6025T=66, RS8030T=88
✶2 RE is shown for insert corner R.
Note 1) Fit inserts in the right direction. (Refer to page L269 & L270)
Note 2) Inch type insert can not be installed on the metric holder.

Type	Order Number	Stock	Inserts	Dimensions (mm)									Fig.	 ✶1		
		R		RE ✶2	DC	DCON	LF	BD	LH	LU	B2	BHTA3		Clamp Screw	Wrench	Anti-seize Lubricant
Long	**SRFH20S25E**	★	SRFT20	10	20	25	220	19.5	120	24	1.5°	1.5°	5	RS5020T	②TKY20T	MK1KS
			SUFT20R○○	—	20	25	220	19.5	120	24	1.5°	1.5°	6			
	SRFH20S20E120	★	SRFT20	10	20	20	220	19.5	120	24	—	—	3	RS5020T	②TKY20T	MK1KS
			SUFT20R○○	—	20	20	220	19.5	120	24	—	—	4			
	SRFH25S32E	★	SRFT25	12.5	25	32	250	24.5	150	30	1.5°	1.5°	5	RS6025T	②TKY25T	MK1KS
			SUFT25R○○	—	25	32	250	24.5	150	30	1.5°	1.5°	6			
	SRFH25S25E150	★	SRFT25	12.5	25	25	250	24.5	150	30	—	—	3	RS6025T	②TKY25T	MK1KS
			SUFT25R○○	—	25	25	250	24.5	150	30	—	—	4			
	SRFH30S32E	★	SRFT30	15	30	32	300	29.5	200	35	—	—	3	RS8030T	②TKY30T	MK1KS
			SUFT30R○○	—	30	32	300	29.5	200	35	—	—	4			

✶1 Clamp Torque (lbf-in) : RS5020T=44, RS6025T=66, RS8030T=88
✶2 RE is shown for insert corner R.
Note 1) Fit inserts in the right direction. (Refer to page L269 & L270)
Note 2) Inch type insert can not be installed on the metric holder.



Fig. 1

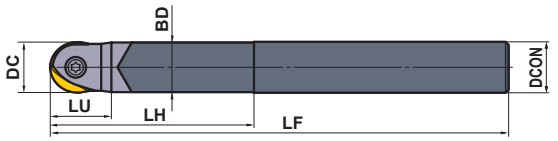
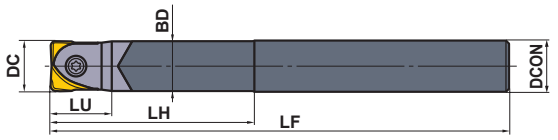


Fig. 2



Metric Standard

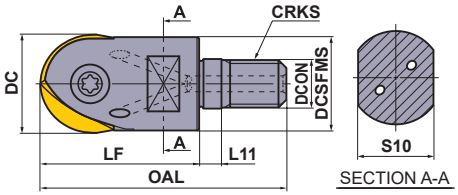
■ CARBIDE SHANK

Right hand tool holder only.
Refer to page L270 for APMX, PRFRAD&RE.

Type	Order Number	Stock	Inserts	Dimensions (mm)							Fig.	★1 Clamp Screw	① ② Wrench	Anti-seize Lubricant
		R		RE ★2	DC	DCON	LF	BD	LH	LU				
Standard	**SRFH10S10MW**	★	SRFT10	5	10	10	110	9.5	40	13	1	RS3008T	①TKY08D	MK1KS
			SUFT10R○○	—	10	10	110	9.5	40	13	1			
	SRFH12S12MW	★	SRFT12	6	12	12	120	11.5	50	15	1	RS3510T	①TKY10D	MK1KS
			SUFT12R○○	—	12	12	120	11.5	50	15	1			
	SRFH16S16MW	★	SRFT16	8	16	16	130	15.5	50	20	1	RS4015T	②TKY15T	MK1KS
			SUFT16R○○	—	16	16	130	15.5	50	20	1			
	SRFH20S20MW	★	SRFT20	10	20	20	180	19.5	80	24	1	RS5020T	②TKY20T	MK1KS
			SUFT20R○○	—	20	20	180	19.5	80	24	2			
	SRFH25S25MW	★	SRFT25	12.5	25	25	200	24.5	100	30	1	RS6025T	②TKY25T	MK1KS
			SUFT25R○○	—	25	25	200	24.5	100	30	2			
	SRFH30S32MW	★	SRFT30	15	30	32	230	29.5	130	35	1	RS8030T	②TKY30T	MK1KS
		★	SRFT32	16	32	32	231	29.5	131	36				
			SUFT30R○○	—	32	32	230	29.5	130	35	2			
Long	**SRFH10S10LW**	★	SRFT10	5	10	10	150	9.5	60	13	1	RS3008T	①TKY08D	MK1KS
			SUFT10R○○	—	10	10	150	9.5	60	13	1			
	SRFH12S12LW	★	SRFT12	6	12	12	160	11.5	70	15	1	RS3510T	①TKY10D	MK1KS
			SUFT12R○○	—	12	12	160	11.5	70	15	1			
	SRFH16S16LW	★	SRFT16	8	16	16	160	15.5	70	20	1	RS4015T	②TKY15T	MK1KS
			SUFT16R○○	—	16	16	160	15.5	70	20	1			
	SRFH16S16EW	★	SRFT16	8	16	16	200	15.5	110	20	1	RS4015T	②TKY15T	MK1KS
	SRFH20S20LW	★	SRFT20	10	20	20	250	19.5	150	24	1	RS5020T	②TKY20T	MK1KS
			SUFT20R○○	—	20	20	250	19.5	150	24	2			
	SRFH25S25LW	★	SRFT25	12.5	25	25	300	24.5	200	30	1	RS6025T	②TKY25T	MK1KS
			SUFT25R○○	—	25	25	300	24.5	200	30	2			
	SRFH30S32LW	★	SRFT30	15	30	32	350	29.5	250	35	1	RS8030T	②TKY30T	MK1KS
		★	SRFT32	16	32	32	351	29.5	251	36				
			SUFT30R○○	—	30	32	350	29.5	250	35	2			

★1 Clamp Torque (lbf-in) : RS3008T=13, RS3510T=22, RS4015T=29, RS5020T=44, RS6025T=66, RS8030T=88
★2 RE is shown for insert corner R.
Note 1) Fit inserts in the right direction. (Refer to page L269 & L270)
Note 2) Inch type insert can not be installed on the metric holder.





■ SCREW-IN TYPE

Ball nose type only
With Air / coolant through.

Right hand tool holder only.

DC	Insert Type	Order Number	Stock	Number of Teeth	Dimensions (inch)								WT (lbs)
					RE *	LF	OAL	DCON	DCSFMS	L11	S10	CRKS	
.625	**SRFT0625**	**SRFHU10AM0830**	●	1	.3125	1.181	1.890	.335	.587	.236	.394	M8	.2
.750	**SRFT0750**	**SRFHU12AM1035**	●	1	.3750	1.378	2.126	.413	.724	.236	.551	M10	.2

* RE is shown for insert corner R.

Metric Standard

■ SCREW-IN TYPE

Ball nose and corner radius shared holder
The dimensions of the case of using ball nose insert
With Air/coolant though.

Right hand tool holder only.

DC	Insert Type	Order Number	Stock	Number of Teeth	Dimensions (mm)								WT (kg)
					RE *	LF	OAL	DCON	DCSFMS	L11	S10	CRKS	
16	**SRFT16**	**SRFH16AM0830**	★	1	8	30	48	8.5	14.9	6	10	M8	0.1
20	**SRFT20**	**SRFH20AM1035**	★	1	10	35	54	10.5	18.4	6	14	M10	0.1
25	**SRFT25**	**SRFH25AM1240**	★	1	12.5	40	62	12.5	23.5	6	19	M12	0.1
30	**SRFT30**	**SRFH30AM1645**	★	1	15	45	68	17	28.1	6	24	M16	0.2
32	**SRFT32**	**SRFH30AM1645**	★	1	16	46	69	17	28.1	6	24	M16	0.2

* RE is shown for insert corner R.

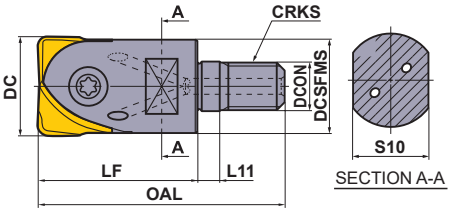
SPARE PARTS

Order Number	 * Insert Screw	 Insert Wrench	 Anti-seizure Lubricant
SRFHU10AM0830	RS4015T	TKY15T	MK1KS
SRFHU12AM1035	RS5020T	TKY20T	MK1KS
SRFH25AM1240	RS6025T	TKY25T	MK1KS
SRFH30AM1645	RS8030T	TKY30T	MK1KS

* Clamp Torque (lbf-in) : RS4015T=29, RS5020T=44, RS6025T=66, RS8030T=88
Note 1) Fit inserts in the right direction. (Refer to page L269 & L270)
Note 2) Inch type insert can not be installed on the metric holder.

SCREW-IN HOLDERS ➢ L294
SPARE PARTS ➢ N001
TECHNICAL DATA ➢ P001





Metric Standard

■ SCREW-IN TYPE

Ball nose and corner radius shared holder
The dimensions of the case of using corner radius insert
With Air/coolant though.

Right hand tool holder only.

DC	Insert Type	Order Number	Stock	Number of Teeth	Dimensions (mm)							WT (kg)
					LF	OAL	DCON	DCSFMS	L11	S10	CRKS	
16	**SUFT16R**	**SRFH16AM0830**	★	1	30	48	8.5	14.9	6	10	M8	0.1
20	**SUFT20R**	**SRFH20AM1035**	★	1	35	54	10.5	18.4	6	14	M10	0.1
25	**SUFT25R**	**SRFH25AM1240**	★	1	40	62	12.5	23.5	6	19	M12	0.1
30	**SUFT30R**	**SRFH30AM1645**	★	1	45	68	17	28.1	6	24	M16	0.2
32	**SUFT32R**	**SRFH30AM1645**	★	1	46	69	17	28.1	6	24	M16	0.2

SPARE PARTS

Order Number	 * Insert Screw	 Insert Wrench	 Anti-seizure Lubricant
SRFHU10AM0830	RS4015T	TKY15T	MK1KS
SRFHU12AM1035	RS5020T	TKY20T	MK1KS
SRFH25AM1240	RS6025T	TKY25T	MK1KS
SRFH30AM1645	RS8030T	TKY30T	MK1KS

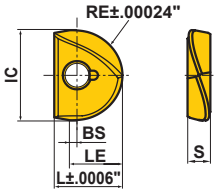
* Clamp Torque (lbf-in) : RS4015T=29, RS5020T=44, RS6025T=66, RS8030T=88
Note 1) Fit inserts in the right direction. (Refer to page L269 & L270)
Note 2) Inch type insert can not be installed on the metric holder.

INSERTS

Inch Standard

Work Material			MP8010	EP6120	VP15TF
	P	Steel		◐	◐
	K	Cast Iron	●		✣
	N	Non-ferrous Metal		◐	
	H	Hardened Steel	●	◐	◐

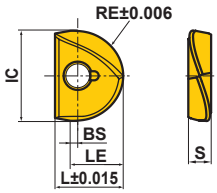
Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✣ : Unstable Cutting

Shape	Order Number	Coated			Dimensions (inch)							Geometry
		MP8010	EP6120	VP15TF	IC	RE	L	LE	BS	S	APMX	
	SRFT0375	●	●	●	.375	.1875	.335	.216	.020	.102	—	
	SRFT0500	●	●	●	.500	.2500	.394	.256	.020	.118	—	
	SRFT0625	●	●	●	.625	.3125	.472	.354	.039	.158	—	
	SRFT0750	●	●	●	.750	.3750	.591	.433	.039	.197	—	
	SRFT1000	●	●	●	1.000	.5000	.728	.531	.039	.236	—	
	SRFT1250	●	●	●	1.250	.6250	.925	.669	.039	.276	—	

Metric Standard

Work Material			MP8010	EP6120	VP15TF
	P	Steel		◐	◐
	K	Cast Iron	●		✣
	N	Non-ferrous Metal		◐	
	H	Hardened Steel	●	◐	◐

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✣ : Unstable Cutting

Shape	Order Number	Coated			Dimensions (mm)							Geometry
		MP8010	EP6120	VP15TF	IC	RE	L	LE	BS	S	APMX	
	SRFT10	★	★	★	10	5 (.1969")	8.5	5.5	0.5	2.6	—	
	SRFT12	★	★	★	12	6 (.2362")	10	6.5	0.5	3	—	
	SRFT16	★	★	★	16	8 (.3150")	12	9	1	4	—	
	SRFT20	★	★	★	20	10 (.3937")	15	11	1	5	—	
	SRFT25	★	★	★	25	12.5 (.4921")	18.5	13.5	1	6	—	
	SRFT30	★	★	★	30	15 (.5906")	22.5	16	1	7	—	
	SRFT32	★	★	★	32	16 (.6299")	23.5	17	1	7	—	

FITTING INSERTS ON HOLDERS

1. Clean the insert seat

Clean the insert seat in the holder body by blowing air or using a brush.

2. Fit the insert

Place the concave mark of the insert into the clamp-screw-fastening part of the holder(only SRF type inserts). Fasten the clamp screw while firmly pressing the insert against the insert seat wall. You are recommended to use the special lubricant for preventing screw seizing, MK1KS, and to fasten with recommended torque.

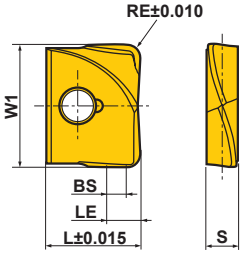


SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

INSERTS

Work Material				
	P	Steel		●
	M	Stainless Steel		◕
	K	Cast Iron	●	✱
	H	Hardened Steel	●	◕

Cutting Conditions (Guide) :
● : Stable Cutting ◕ : General Cutting ✱ : Unstable Cutting

Shape	Order Number	Coated			Dimensions (mm)							Geometry
		MP8010	EP6120		W1	RE	L	LE	BS	S	APMX	
	**SUFT10R05**	★	★		10	0.5 (.0197")	8.5	1.5	1	2.6	1.5	
	SUFT10R10	★	★		10	1 (.0394")	8.5	2	1	2.6	2	
	SUFT10R20	★	★		10	2 (.0787")	8.5	3	1	2.6	3	
	SUFT12R05	★	★		12	0.5 (.0197")	10	1.7	1.2	3	1.7	
	SUFT12R10	★	★		12	1 (.0394")	10	2.2	1.2	3	2.2	
	SUFT12R20	★	★		12	2 (.0787")	10	3.2	1.2	3	3.2	
	SUFT12R30	★	★		12	3 (.1181")	10	4.2	1.2	3	4.2	
	SUFT16R05	★	★		16	0.5 (.0197")	12	2.1	1.6	4	2.1	
	SUFT16R10	★	★		16	1 (.0394")	12	2.6	1.6	4	2.6	
	SUFT16R15	★	★		16	1.5 (.0591")	12	3.1	1.6	4	3.1	
	SUFT16R20	★	★		16	2 (.0787")	12	3.6	1.6	4	3.6	
	SUFT16R30	★	★		16	3 (.1181")	12	4.6	1.6	4	4.6	
	SUFT20R05	★	★		20	0.5 (.0197")	15	2.5	2	5	2.5	
	SUFT20R10	★	★		20	1 (.0394")	15	3	2	5	3	
	SUFT20R15	★	★		20	1.5 (.0591")	15	3.5	2	5	3.5	
	SUFT20R20	★	★		20	2 (.0787")	15	4	2	5	4	
	SUFT20R30	★	★		20	3 (.1181")	15	5	2	5	5	
	SUFT25R05	★	★		25	0.5 (.0197")	18.5	3	2.5	6	3	
	SUFT25R10	★	★		25	1 (.0394")	18.5	3.5	2.5	6	3.5	
	SUFT25R20	★	★		25	2 (.0787")	18.5	4.5	2.5	6	4.5	
	SUFT25R30	★	★		25	3 (.1181")	18.5	5.5	2.5	6	5.5	
	SUFT30R05	★	★		30	0.5 (.0197")	22.5	3.5	3	7	3.5	
	SUFT30R10	★	★		30	1 (.0394")	22.5	4	3	7	4	
	SUFT30R20	★	★		30	2 (.0787")	22.5	5	3	7	5	
	SUFT30R30	★	★		30	3 (.1181")	22.5	6	3	7	6	
	SUFT32R05	★	★		32	0.5 (.0197")	23.5	3.7	3.2	7	3.7	
	SUFT32R10	★	★		32	1 (.0394")	23.5	4.2	3.2	7	4.2	
	SUFT32R20	★	★		32	2 (.0787")	23.5	5.2	3.2	7	5.2	

FITTING INSERTS ON HOLDERS

1. Clean the insert seat

Clean the insert seat in the holder body by blowing air or using a brush.

2. Fit the insert

Place the concave mark of the insert into the clamp-screw-fastening part of the holder(only SRF type inserts). Fasten the clamp screw while firmly pressing the insert against the insert seat wall. You are recommended to use the special lubricant for preventing screw seizing, MK1KS, and to fasten with recommended torque.



★ : Stocked in Japan
<2 inserts in one case>

RECOMMENDED CUTTING CONDITIONS FOR SRFT BALL-NOSE INSERTS

	Work Material	Hardness	Insert Grades	Cutting Speed **vc** (SFM)	Feed per Tooth **fz** (IPT)	Depth of Cut **ap** (inch)
P	Mild Steel	180HB	**EP6120**	655 (260—985)	.008 (.004—.012)	≤0.05DC
	Carbon Steel Alloy Steel	180—280HB	**EP6120**	655 (260—985)	.008 (.004—.012)	≤0.05DC
			VP15TF	655 (260—985)	.008 (.004—.012)	≤0.05DC
		280—350HB	**EP6120**	655 (260—985)	.008 (.004—.012)	≤0.05DC
	Pre-hardened Steel	35—45HRC	**EP6120**	490 (260—655)	.008 (.004—.012)	≤0.05DC
			VP15TF	490 (260—655)	.008 (.004—.012)	≤0.05DC
	Alloy Tool Steel	350HB	**EP6120**	490 (260—655)	.008 (.004—.012)	≤0.05DC
			VP15TF	490 (260—655)	.008 (.004—.012)	≤0.05DC
K	Gray Cast Iron	350MPa	**MP8010**	820 (260—1475)	.008 (.004—.012)	≤0.05DC
	Ductile Cast Iron	450MPa	**MP8010**	655 (260—985)	.008 (.004—.012)	≤0.05DC
		800MPa	**MP8010**	655 (260—985)	.008 (.004—.012)	≤0.05DC
N	Copper,Copper Alloy		**EP6120**	655 (260—985)	.008 (.004—.012)	≤0.05DC
H	Hardened Steel	45—55HRC	**MP8010**	330 (195—395)	.008 (.004—.012)	≤0.05DC
		55—65HRC	**MP8010**	260 (195—395)	.008 (.004—.012)	≤0.01DC

Note 1) The values above are for average machining conditions. The optimum values can change slightly according to the condition and rigidity of the machine and work holding. Adjust the values accordingly.

Note 2) For end mills with a carbide shank, up to 20% higher cutting conditions are possible.

Note 3) Please note the following when machining hardened steel with MP8010.

- Please shorten the overhang length as much as possible.
- Use with carbide shank recommended.
- Take special care with the depth of cut to prevent fracture.

RECOMMENDED CUTTING CONDITIONS FOR SUFT CORNER RADIUS INSERT

■Shoulder Milling(When small width of cut.*)

	Work Material	Hardness	Insert Grades	Cutting Speed **vc** (SFM)	Depth of Cut **ap** (inch)	Wide of Cut **ae** (inch)	Feed per Tooth **fz** (IPT)
P	Carbon Steel Alloy Steel	180—280HB	**VP15TF**	655 (260—985)	≤0.05DC	≤0.05DC	.008 (≤.016)
	Pre-hardened steel	≤45HRC	**VP15TF**	490 (260—655)	≤0.05DC	≤0.05DC	.006 (≤.012)
	Alloy Tool Steel	180—380HB	**VP15TF**	490 (260—655)	≤0.05DC	≤0.05DC	.006 (≤.012)
M	Stainless Steel	≤270HB	**VP15TF**	490 (330—655)	≤0.05DC	≤0.05DC	.008 (≤.016)
K	Cast Iron	Tensile Strength ≤350MPa	**MP8010**	820 (590—1475)	≤0.05DC	≤0.1DC	.012 (≤.016)
	Ductile Cast Iron	Tensile Strength ≤800MPa	**MP8010**	655 (260—985)	≤0.05DC	≤0.1DC	.012 (≤.016)
H	Hardened Steel	45—55HRC	**MP8010**	330 (260—395)	≤0.05DC	≤0.02DC	.004 (≤.008)
	Hardened Steel	55—65HRC	**MP8010**	260 (195—330)	≤0.05DC	≤0.02DC	.004 (≤.008)

* When the pick feed direction is along the axis of the tool such as finish machining at the wall part.

■Slot Milling / Shoulder Milling(When large width of cut.*)

	Work Material	Hardness	Insert Grades	Cutting Speed **vc** (SFM)	Depth of Cut **ap** (inch)	Wide of Cut **ae** (inch)	Feed per Tooth **fz** (IPT)
P	Carbon Steel Alloy Steel	180—280HB	**VP15TF**	655 (260—985)	≤0.02DC	≤DC	.008 (≤.016)
	Pre-hardened steel	≤45HRC	**VP15TF**	490 (260—655)	≤0.02DC	≤DC	.006 (≤.012)
	Alloy Tool Steel	180—380HB	**VP15TF**	490 (260—655)	≤0.02DC	≤DC	.006 (≤.012)
M	Stainless Steel	≤270HB	**VP15TF**	490 (330—655)	≤0.02DC	≤DC	.008 (≤.016)
K	Cast Iron	Tensile Strength ≤350MPa	**MP8010**	835 (590—1475)	≤0.03DC	≤DC	.012 (≤.016)
	Ductile Cast Iron	Tensile Strength ≤800MPa	**MP8010**	655 (260—985)	≤0.03DC	≤DC	.012 (≤.016)
H	Hardened Steel	45—55HRC	**MP8010**	330 (260—395)	≤0.01DC	≤DC	.004 (≤.006)
	Hardened Steel	55—65HRC	**MP8010**	230 (195—330)	≤0.01DC	≤DC	.004 (≤.008)

* When the pick feed direction is along the radius of the tool such as finish face machining.

Note 1) This cutting condition is the standard condition when using the steel standard shank type.
If vibration or chipping on cutting edge occurs, please decrease the cutting condition as width of cut, depth of cut and feed per tooth depending on the situation.

Note 2) Recommended cutting speeds apply to tool outside diameter.
Please calculate the spindle speed of tool in the following expressions.
Spindle speed of cutting tool n(min^{-1})=12×Cutting speed vc ÷ Diameter of cutting tool DC ÷ 3.14

CALCULATING ACTUAL CUTTING SPEED

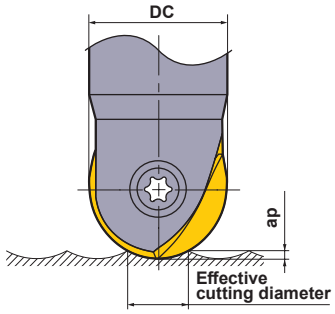
1. Effective cutting diameter = $2\sqrt{ap\,(DC-ap)}$

DC: Tool diameter (inch)
ap : Depth of Cut (inch)

2. Using ap ➡ Calculate cutting speed at the depth of cut line.

$$vc = \frac{2\pi n\sqrt{ap(DC-ap)}}{12}$$

vc : Actual cutting speed (SFM)
n : Revolution (min^{-1})



SELECTING PICK FEED

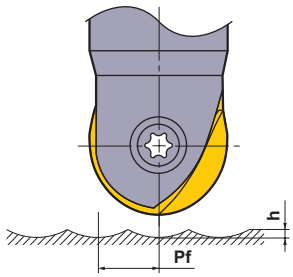
Theoretical

$$h = \frac{(Pf)^2}{8R}$$

h : Cusp height
Pf : Pick feed
PRFRAD : Ball nose or corner radius

Actual surface roughness Rz will be about 3 times worse than theoretical h.
This is because of the effect of a built-up edge.
To determine Pf, use the formula below based on a particular Rz value.

$$Pf = \sqrt{\frac{8xPRFRADxRz}{3}}$$



BALL NOSE END MILL

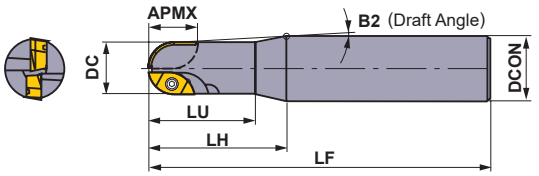
SRM2

P	M	K	N	S	H
Steel	Stainless Steel	Cast Iron		Heat Resistant Alloy	Hardened Steel

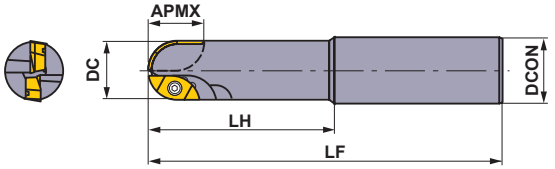


● Short Type

SRM210SAS2
SRM212SAS2

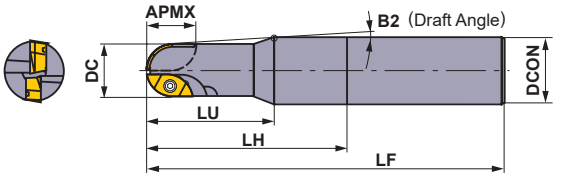


SRM216SAS2
SRM220SAS2

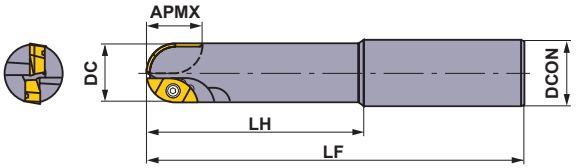


● Medium Type

SRM210SAM2
SRM212SAM2

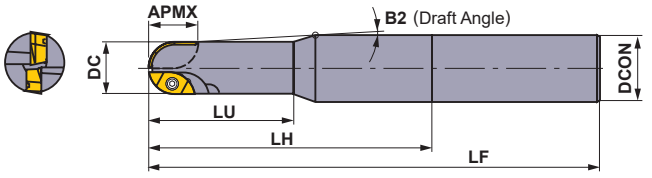


SRM216SAM2
SRM220SAM2

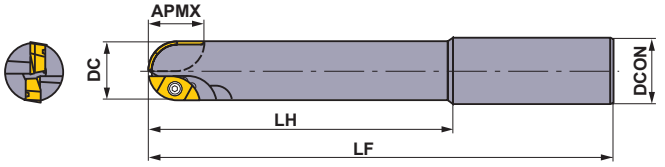


● Long Type

SRM210SAL2
SRM212SAL2
SRM216SAL2

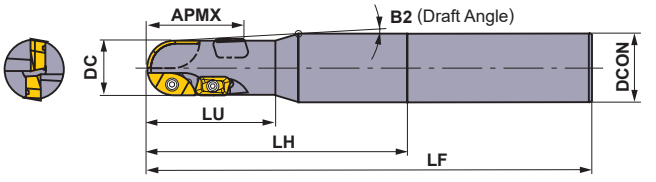


SRM220SAL2

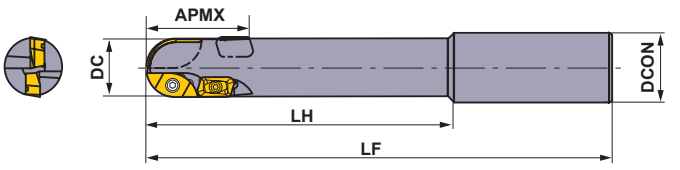


● Long Edge Type

SRM212SAL4
SRM216SAL4



SRM220SAL4



Right hand tool holder only.

■ SHANK TYPE

With Coolant Hole

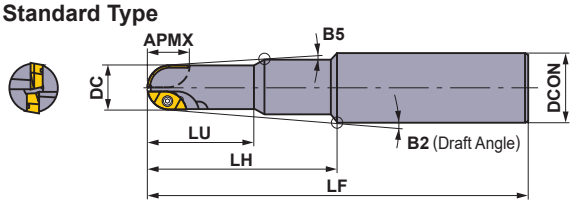
Type	Order Number	Stock	Number of Teeth	Dimensions (inch)								*1 Inner, Outer	*1 Peripheral	①②③ Inner, Outer	①②③ Peripheral	Inner	Outer	Peripheral
		R		RE*2	DC	LF	DCON	LH	LU	APMX	B2	Insert Screw		Wrench		Insert		
Short	**SRM210SAS2**	●	2	.313	.625	4.0	.75	1.5	1.00	.625	3°	TS25H	—	① TKY08D	—	SRM210C-M	SRM210E-M	—
	SRM212SAS2	●	2	.375	.750	4.0	1.00	1.5	1.25	.750	6.5°	TS32	—	① TKY08D	—	SRM212C SRM212C-M	SRM212E SRM212E-M	—
	SRM216SAS2	●	2	.500	1.000	4.5	1.00	2.0	—	.945	—	TS43	—	② TKY15T	—	SRM216C SRM216C-M	SRM216E SRM216E-M	—
	SRM220SAS2	●	2	.625	1.250	5.0	1.25	2.0	—	1.102	—	TS55	—	② TKY25T	—	SRM220C SRM220C-M	SRM220E SRM220E-M	—
Medium	**SRM210SAM2**	●	2	.313	.625	5.0	.75	2.5	1.00	.625	1.5°	TS25H	—	① TKY08D	—	SRM210C-M	SRM210E-M	—
	SRM212SAM2	●	2	.375	.750	5.0	1.00	2.5	1.25	.750	1.5°	TS32	—	① TKY08D	—	SRM212C SRM212C-M	SRM212E SRM212E-M	—
	SRM216SAM2	●	2	.500	1.000	5.5	1.00	3.0	—	.945	—	TS43	—	② TKY15T	—	SRM216C SRM216C-M	SRM216E SRM216E-M	—
	SRM220SAM2	●	2	.625	1.250	6.5	1.25	3.5	—	1.102	—	TS55	—	② TKY25T	—	SRM220C SRM220C-M	SRM220E SRM220E-M	—
Long	**SRM210SAL2**	●	2	.313	.625	6.0	.75	3.5	1.00	.625	1.5°	TS25H	—	① TKY08D	—	SRM210C-M	SRM210E-M	—
	SRM212SAL2	●	2	.375	.750	6.0	1.00	3.5	1.50	.750	1.5°	TS32	—	① TKY08D	—	SRM212C SRM212C-M	SRM212E SRM212E-M	—
	SRM216SAL2	●	2	.500	1.000	6.5	1.25	4.0	1.75	.945	1.5°	TS43	—	② TKY15T	—	SRM216C SRM216C-M	SRM216E SRM216E-M	—
	SRM220SAL2	●	2	.625	1.250	8.0	1.25	5.0	—	1.102	—	TS55	—	② TKY25T	—	SRM220C SRM220C-M	SRM220E SRM220E-M	—
Long Edge	**SRM212SAL4**	●	4	.375	.750	6.0	1.00	3.5	1.50	1.180	1.5°	TS32	TS25	① TKY08D	① TKY08D	SRM212C SRM212C-M	SRM212E SRM212E-M	APMT1135 PDER-□2
	SRM216SAL4	●	4	.500	1.000	6.5	1.25	4.0	1.75	1.457	1.5°	TS43	TS25	② TKY15T	③ TKY08F	SRM216C SRM216C-M	SRM216E SRM216E-M	APMT1135 PDER-□2
	SRM220SAL4	●	4	.625	1.250	8.0	1.25	5.0	—	1.732	—	TS55	TS43	② TKY25T	③ TKY15F	SRM220C SRM220C-M	SRM220E SRM220E-M	APMT1604 PDER-□2

*1 Clamp Torque (lbf-in) : TS25H=15, TS25=8.9, TS32=18, TS43=31, TS55=66

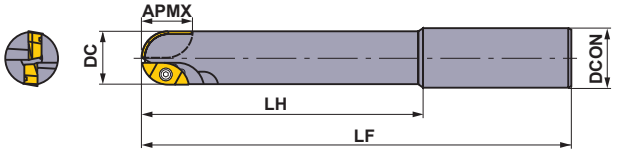
*2 RE is shown for insert corner R.

Metric Standard

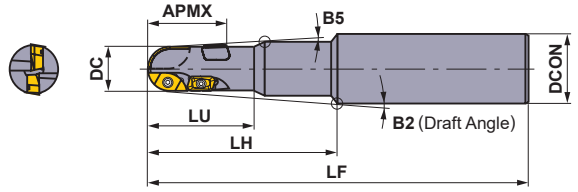
● Standard Type



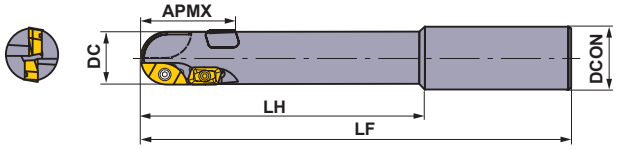
● Long Neck Type



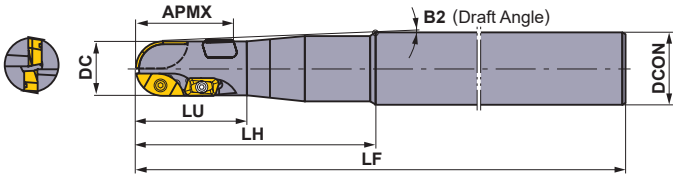
● Long Cutting Edge Type



● Long Neck Cutting Edge Type



● Extra Long Cutting Edge Type



Right hand tool holder only.

Type	Order Number	Stock R	Coolant Thru ★1	Number of Teeth	Dimensions (mm) RE ★3	DC	DCON	LF	LH	LU	APMX	B2	B5	★2 Inner, Outer Clamp	★2 Peripheral Screw	Wrench Inner, Outer	Wrench Peripheral	Insert Inner	Insert Outer	Insert Peripheral
Standard	**SRM2160SNM**	★	N	2	8	16	20	130	50	25	12	2.8°	1.5°	TS25H	—	①TKY08D	—	SRG16C SRM16C-M	SRG16E SRM16E-M	—
	SRM2160SAM	★	Y	2	8	16	20	130	50	25	12	2.8°	1.5°	TS25H	—	①TKY08D	—	SRG16C SRM16C-M	SRG16E SRM16E-M	—
	SRM2200SNM	★	N	2	10	20	25	150	70	35	14	2.45°	1.5°	TS32	—	①TKY08D	—	SRG20C SRM20C-M	SRG20E SRM20E-M	—
	SRM2200SAM	★	Y	2	10	20	25	150	70	35	14	2.45°	1.5°	TS32	—	①TKY08D	—	SRG20C SRM20C-M	SRG20E SRM20E-M	—
	SRM2250SNM	★	N	2	12.5	25	32	180	80	40	19	3.22°	1.5°	TS43	—	②TKY15T	—	SRG25C SRM25C-M	SRG25E SRM25E-M	—
	SRM2250SAM	★	Y	2	12.5	25	32	180	80	40	19	3.22°	1.5°	TS43	—	②TKY15T	—	SRG25C SRM25C-M	SRG25E SRM25E-M	—
	SRM2300SNM	★	N	2	15	30	32	200	100	50	24	0.73°	0.5°	TS55	—	②TKY25T	—	SRG30C SRM30C-M	SRG30E SRM30E-M	—
	SRM2300SAM	★	Y	2	15	30	32	200	100	50	24	0.73°	0.5°	TS55	—	②TKY25T	—	SRG30C SRM30C-M	SRG30E SRM30E-M	—
Long Cutting Edge	**SRM2200SNL**	★	N	4	10	20	25	150	70	35	30	2.45°	1.5°	TS32	TS25	①TKY08D	①TKY08D	SRG20C SRM20C-M	SRG20E SRM20E-M	APMT1135 PDER-□2
	SRM2200SAL	★	Y	4	10	20	25	150	70	35	30	2.45°	1.5°	TS32	TS25	①TKY08D	①TKY08D	SRG20C SRM20C-M	SRG20E SRM20E-M	APMT1135 PDER-□2
	SRM2250SNL	★	N	4	12.5	25	32	180	80	40	37	3.22°	1.5°	TS43	TS25	②TKY15T	③TKY08F	SRG25C SRM25C-M	SRG25E SRM25E-M	APMT1135 PDER-□2
	SRM2250SAL	★	Y	4	12.5	25	32	180	80	40	37	3.22°	1.5°	TS43	TS25	②TKY15T	③TKY08F	SRG25C SRM25C-M	SRG25E SRM25E-M	APMT1135 PDER-□2
	SRM2300SNL	★	N	4	15	30	32	200	100	50	44	0.73°	0.5°	TS55	TS43	②TKY25T	③TKY15F	SRG30C SRM30C-M	SRG30E SRM30E-M	APMT1604 PDER-□2
	SRM2300SAL	★	Y	4	15	30	32	200	100	50	44	0.73°	0.5°	TS55	TS43	②TKY25T	③TKY15F	SRG30C SRM30C-M	SRG30E SRM30E-M	APMT1604 PDER-□2

★1 Y=Yes, N=No
★2 Clamp Torque (N • m) : TS25H=1.0, TS25=1.0, TS32=2.0, TS43=3.5, TS55=7.5
★3 RE is shown for insert corner R.

Type	Order Number	Stock	*1 Coolant Thru	Number of Teeth	Dimensions (mm)									*2 Inner, Outer	*2 Peripheral	Wrench Inner, Outer	Wrench Peripheral	Insert Inner	Insert Outer	Insert Peripheral
		R			*3 RE	DC	DCON	LF	LH	LU	APMX	B2	B5	Clamp Screw		Wrench				
Long Neck	**SRM2160SNF**	★	N	2	8	16	16	150	70	—	12	—	—	TS25H	—	①TKY08D	—	SRG16C SRM16C-M	SRG16E SRM16E-M	—
	SRM2160SAF	★	Y	2	8	16	16	150	70	—	12	—	—	TS25H	—	①TKY08D	—	SRG16C SRM16C-M	SRG16E SRM16E-M	—
	SRM2200SNF	★	N	2	10	20	20	180	100	—	14	—	—	TS32	—	①TKY08D	—	SRG20C SRM20C-M	SRG20E SRM20E-M	—
	SRM2200SAF	★	Y	2	10	20	20	180	100	—	14	—	—	TS32	—	①TKY08D	—	SRG20C SRM20C-M	SRG20E SRM20E-M	—
	SRM2250SNF	★	N	2	12.5	25	25	200	120	—	19	—	—	TS43	—	②TKY15T	—	SRG25C SRM25C-M	SRG25E SRM25E-M	—
	SRM2250SAF	★	Y	2	12.5	25	25	200	120	—	19	—	—	TS43	—	②TKY15T	—	SRG25C SRM25C-M	SRG25E SRM25E-M	—
	SRM2300SNF	★	N	2	15	30	32	230	150	—	24	—	—	TS55	—	②TKY25T	—	SRG30C SRM30C-M	SRG30E SRM30E-M	—
	SRM2300SAF	★	Y	2	15	30	32	230	150	—	24	—	—	TS55	—	②TKY25T	—	SRG30C SRM30C-M	SRG30E SRM30E-M	—
Long Neck Cutting Edge	**SRM2200SNLF**	★	N	4	10	20	20	180	100	—	30	—	—	TS32	TS25	①TKY08D	①TKY08D	SRG20C SRM20C-M	SRG20E SRM20E-M	APMT1135 PDER-□2
	SRM2200SALF	★	Y	4	10	20	20	180	100	—	30	—	—	TS32	TS25	①TKY08D	①TKY08D	SRG20C SRM20C-M	SRG20E SRM20E-M	APMT1135 PDER-□2
	SRM2250SNLF	★	N	4	12.5	25	25	200	120	—	37	—	—	TS43	TS25	②TKY15T	③TKY08F	SRG25C SRM25C-M	SRG25E SRM25E-M	APMT1135 PDER-□2
	SRM2250SALF	★	Y	4	12.5	25	25	200	120	—	37	—	—	TS43	TS25	②TKY15T	③TKY08F	SRG25C SRM25C-M	SRG25E SRM25E-M	APMT1135 PDER-□2
	SRM2300SNLF	★	N	4	15	30	32	230	150	—	44	—	—	TS55	TS43	②TKY25T	③TKY15F	SRG30C SRM30C-M	SRG30E SRM30E-M	APMT1604 PDER-□2
	SRM2300SALF	★	Y	4	15	30	32	230	150	—	44	—	—	TS55	TS43	②TKY25T	③TKY15F	SRG30C SRM30C-M	SRG30E SRM30E-M	APMT1604 PDER-□2
Extra Long Cutting Edge	**SRM2200SNLL**	★	N	4	10	20	25	250	120	35	30	1.5°	—	TS32	TS25	①TKY08D	①TKY08D	SRG20C SRM20C-M	SRG20E SRM20E-M	APMT1135 PDER-□2
	SRM2200SALL	★	Y	4	10	20	25	250	120	35	30	1.5°	—	TS32	TS25	①TKY08D	①TKY08D	SRG20C SRM20C-M	SRG20E SRM20E-M	APMT1135 PDER-□2
	SRM2250SNLL	★	N	4	12.5	25	32	300	170	37	37	1.5°	—	TS43	TS25	②TKY15T	③TKY08F	SRG25C SRM25C-M	SRG25E SRM25E-M	APMT1135 PDER-□2
	SRM2250SALL	★	Y	4	12.5	25	32	300	170	37	37	1.5°	—	TS43	TS25	②TKY15T	③TKY08F	SRG25C SRM25C-M	SRG25E SRM25E-M	APMT1135 PDER-□2
	SRM2300SNLL	★	N	4	15	30	32	350	100	50	44	1.5°	—	TS55	TS43	③TKY25T	③TKY15F	SRG30C SRM30C-M	SRG30E SRM30E-M	APMT1604 PDER-□2
	SRM2300SALL	★	Y	4	15	30	32	350	100	50	44	1.5°	—	TS55	TS43	③TKY25T	③TKY15F	SRG30C SRM30C-M	SRG30E SRM30E-M	APMT1604 PDER-□2

*1 Y=Yes, N=No

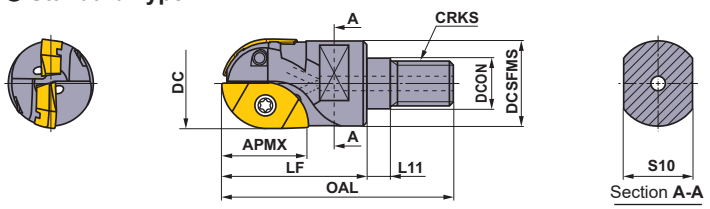
*2 Clamp Torque (N • m) : TS25H=1.0, TS25=1.0, TS32=2.0, TS43=3.5, TS55=7.5

*3 RE is shown for insert corner R.

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001



● Standard Type



■ SCREW-IN TYPE

With Air / coolant through.

Right hand tool holder only.

DC	Order Number	Stock	Dimensions (inch)									WT (lbs)
			RE *2	LF	OAL	DCON	DCSFMS	L11	S10	CRKS *1	APMX	
.750	**SRM212AM10S35**	●	.375	1.378	2.126	.413	.701	.236	.551	M10	.551	.2
1.000	**SRM216AM12S40**	●	.500	1.575	2.441	.492	.933	.236	.748	M12	.748	.4
1.250	**SRM220AM16S45**	●	.625	1.772	2.677	.669	1.169	.236	.945	M16	1.102	.4

*1 Clamp Torque of the Head (lbf-ft) : M10=33.8, M12=59.2, M16=66.7
*2 RE is shown for insert corner R.

SPARE PARTS

DC	Order Number	 *1	 *1					
		Insert Screw Inner,Outer	Insert Screw Peripheral	Insert Wrench	Insert Wrench	Insert Inner	Insert Outer	Insert Peripheral
.750	**SRM212AM10S35**	TS32	—	①TKY08D	—	SRM212C	SRM212E	—
1.000	**SRM216AM12S40**	TS43	TS25	②TKY15T	—	SRM216C	SRM216E	—
1.250	**SRM220AM16S45**	TS55	TS43	②TKY25T	TKY15F	SRM220C	SRM220E	—

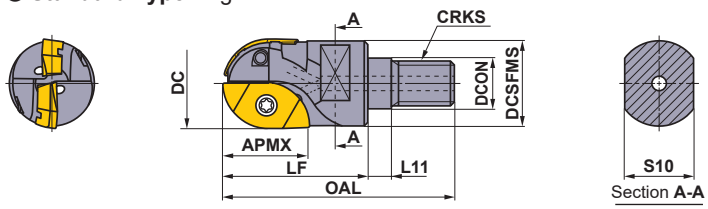
*1 Clamp Torque (lbf-in) : TS32=18, TS43=31, TS55=66



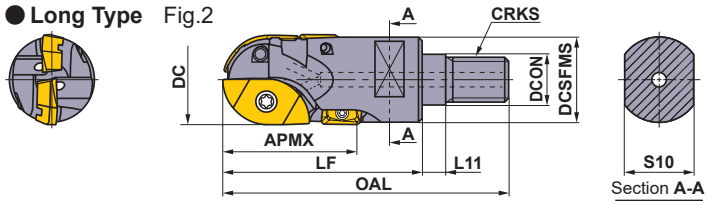
Metric Standard

With Air / coolant through.

● **Standard Type** Fig.1



● **Long Type** Fig.2



Right hand tool holder only.

DC	Order Number	Stock	Dimensions (mm)									WT (kg)	Type (Fig.)
			RE *2	LF	OAL	DCON	DCSFMS	L11	S10	CRKS *1	APMX		
16	**SRM2160AM08S30**	★	8	30	48	8.5	14.6	6	10	M8	12	0.1	1
20	**SRM2200AM10L45**	★	10	45	64	10.5	18.6	6	14	M10	30	0.2	2
20	**SRM2200AM10S35**	★	10	35	54	10.5	18.6	6	14	M10	14	0.1	1
25	**SRM2250AM12L55**	★	12.5	55	77	12.5	23.5	6	19	M12	37	0.3	2
25	**SRM2250AM12S40**	★	12.5	40	62	12.5	23.5	6	19	M12	19	0.2	1
30	**SRM2300AM16L60**	★	15	60	83	17	28.3	6	24	M16	44	0.3	2
30	**SRM2300AM16S45**	★	15	45	68	17	28.3	6	24	M16	24	0.2	1
32	**SRM2320AM16L60**	★	16	60	83	17	29	6	24	M16	44	0.3	2
32	**SRM2320AM16S45**	★	16	45	68	17	30	6	24	M16	28	0.2	1

*1 Clamp Torque of the Head (lbf-ft) : M8=17.1, M10=33.8, M12=59.2, M16=66.7
*2 RE is shown for insert corner R.

SPARE PARTS

DC	Order Number	*1	*1	①②				
		Insert Screw Inner,Outer	Insert Screw Peripheral	Insert Wrench	Insert Wrench	Insert Inner	Insert Outer	Insert Peripheral
16	**SRM2160AM08S30**	TS25H	–	TKY08D	–	SR○16C	SR○16E	–
20	**SRM2200AM10L45**	TS32	TS25	TKY08D	–	SR○20C	SR○20E	APMT1135
20	**SRM2200AM10S35**	TS32	–	TKY08D	–	SR○20C	SR○20E	–
25	**SRM2250AM12L55**	TS43	TS25	TKY15T	TKY08F	SR○25C	SR○25E	APMT1135
25	**SRM2250AM12S40**	TS43	TS25	TKY15T	–	SR○25C	SR○25E	–
30	**SRM2300AM16L60**	TS55	TS43	TKY25T	TKY15F	SR○30C	SR○30E	APMT1604
30	**SRM2300AM16S45**	TS55	–	TKY15T	TKY08F	SR○30C	SR○30E	–
32	**SRM2320AM16L60**	TS55	TS43	TKY25T	TKY15F	SR○32C	SR○32E	APMT1604
32	**SRM2320AM16S45**	TS55	TS43	TKY25T	TKY15F	SR○32C	SR○32E	–

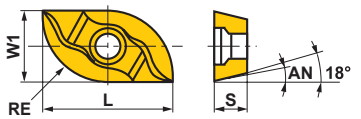
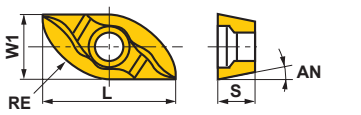
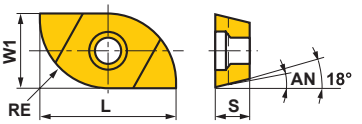
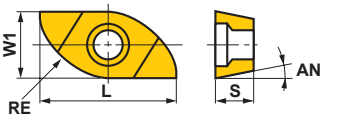
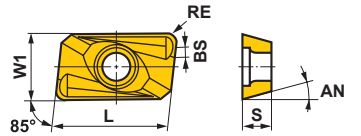
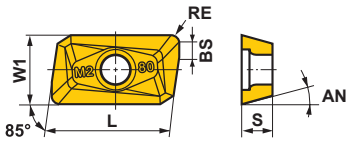
*1 Clamp Torque (lbf-in) : TS25H=15, TS25=8.9, TS32=18, TS43=31, TS55=66

SCREW-IN HOLDERS ➤ L294
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

INSERTS

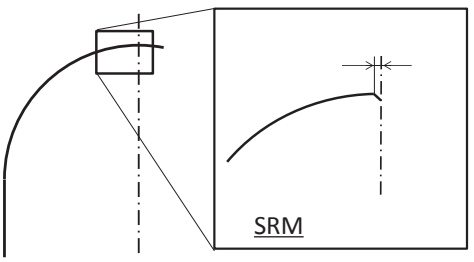
Work Material		
P	Steel	
M	Stainless Steel	
K	Cast Iron	
S	Heat-resistant Alloy, Titanium Alloy	
H	Hardened Steel	

Cutting Conditions (Guide) :
● : Stable Cutting ◕ : General Cutting ✱ : Unstable Cutting

Type	Shape	Order Number	Class	Coated MP6120	Coated MP9120	Coated VP15TF	RE	L	W1	S	BS	AN	Geometry
Inner		**SRM210C-M**	M	●	●	●	.313	.630	.323	.138	—	11°	
		SRM212C-M	M	●	●	●	.375	.748	.385	.169	—	11°	
		SRM216C-M	M	●	●	●	.500	.945	.512	.216	—	11°	
		SRM220C-M	M	●	●	●	.625	1.102	.638	.275	—	11°	
Outer		**SRM210E-M**	M	●	●	●	.313	.531	.258	.138	—	11°	
		SRM212E-M	M	●	●	●	.375	.610	.315	.169	—	11°	
		SRM216E-M	M	●	●	●	.500	.807	.409	.216	—	11°	
		SRM220E-M	M	●	●	●	.625	.964	.520	.275	—	11°	
Inner	Strong Cutting Edge Type 	**SRM212C**	M	●	●	●	.375	.748	.385	.169	—	11°	
		SRM216C	M	●	●	●	.500	.945	.512	.216	—	11°	
		SRM220C	M	●	●	●	.625	1.102	.638	.275	—	11°	
Outer	Strong Cutting Edge Type 	**SRM212E**	M	●	●	●	.375	.610	.315	.169	—	11°	
		SRM216E	M	●	●	●	.500	.807	.409	.216	—	11°	
		SRM220E	M	●	●	●	.625	.964	.520	.275	—	11°	
Peripheral	Strong Cutting Edge Type 	**APMT1135PDER-H2**	M			●	.031	.433	.250	.138	.047	11°	
		APMT1604PDER-H2	M			●	.031	.650	.375	.187	.055	11°	
	Low Resistance Type 	**APMT1135PDER-M2**	M			●	.031	.433	.250	.138	.047	11°	
		APMT1604PDER-M2	M			●	.031	.650	.375	.187	.055	11°	

Note 1) The **M** type breaker (APMT....PDER-M2) is the first recommendation for its excellent cutting performance.
Please use **H** type breakers (APMT....PDER-H2) due to cutting edge strength.

Note 2) SRM tooling is designed for rough machining applications.
*Programming Note: If you choose to use SRM tooling for semi-finishing applications, care must be taken when setting the tool height. The SRM insert includes a chamfer flat at the tip as illustrated. To assist with SRM programming needs, please download our CAD data from our web site; http://www.mitsubishicarbide.com/



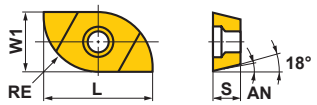
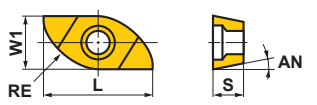
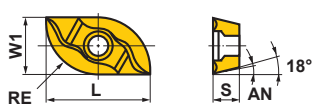
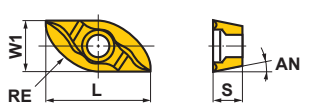
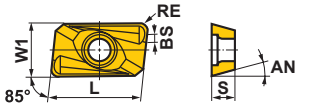
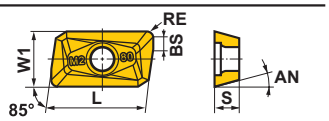
● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

INSERTS

For Metric Standard

Work Material			F7030	MP6120	MP9120	VP15TF
	P	Steel	●	●		●
	M	Stainless Steel	◔			◔
	K	Cast Iron				✱
	S	Heat-resistant Alloy, Titanium Alloy			●	●
	H	Hardened Steel				◔

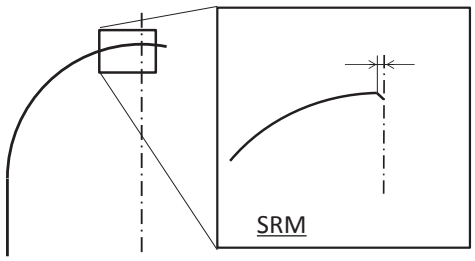
Cutting Conditions (Guide) :
● : Stable Cutting ◔ : General Cutting ✱ : Unstable Cutting

Type	Shape	Order Number	Class	Coated F7030	Coated MP6120	Coated MP9120	Coated VP15TF	RE	L	W1	S	BS	AN	Geometry
Inner	Strong Cutting Edge Type 	**SRG16C**	G		★	★	★	8	16	8.2	3.5	—	11°	
		SRG20C	G		★	★	★	10	19	10.2	4.6	—	10°	
		SRG25C	G		★	★	★	12.5	24	12.8	5.5	—	10°	
		SRG30C	G		★	★	★	15	28	15.3	7	—	10°	
		SRG32C	G		★	★	★	16	28	16.3	7	—	10°	
Outer	Strong Cutting Edge Type 	**SRG16E**	G		★	★	★	8	13.5	6.7	3.5	—	11°	
		SRG20E	G		★	★	★	10	15.5	8.5	4.6	—	9°	
		SRG25E	G		★	★	★	12.5	20.5	10.2	5.5	—	9°	
		SRG30E	G		★	★	★	15	25.2	12.2	7	—	9°	
		SRG32E	G		★	★	★	16	26.1	13.1	7	—	9°	
Inner	Low Resistance Type 	**SRM16C-M**	M		★	★	★	8	16	8.2	3.5	—	11°	
		SRM20C-M	M		★	★	★	10	19	10.2	4.6	—	10°	
		SRM25C-M	M		★	★	★	12.5	24	12.8	5.5	—	10°	
		SRM30C-M	M		★	★	★	15	28	15.3	7	—	10°	
		SRM32C-M	M		★	★	★	16	28	16.3	7	—	10°	
Outer	Low Resistance Type 	**SRM16E-M**	M		★	★	★	8	13.5	6.7	3.5	—	11°	
		SRM20E-M	M		★	★	★	10	15.5	8.5	4.6	—	9°	
		SRM25E-M	M		★	★	★	12.5	20.5	10.2	5.5	—	9°	
		SRM30E-M	M		★	★	★	15	25.2	12.2	7	—	9°	
		SRM32E-M	M		★	★	★	16	26.1	13.1	7	—	9°	
* Peripheral	Strong Cutting Edge Type 	**APMT1135PDER-H2**	M	●			●	0.8	11	6.35	3.5	1.2	11°	
		APMT1604PDER-H2	M	●			●	0.8	16.5	9.525	4.76	1.4	11°	
	Low Resistance Type 	**APMT1135PDER-M2**	M	●			●	0.8	11	6.35	3.5	1.2	11°	
		APMT1604PDER-M2	M	●			●	0.8	16.5	9.525	4.76	1.4	11°	

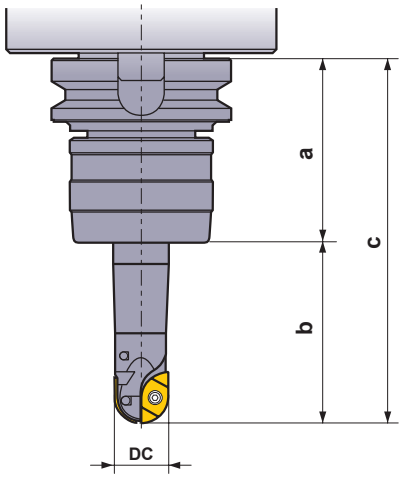
(Low-resistance inner or outer inserts are precision M class type.)

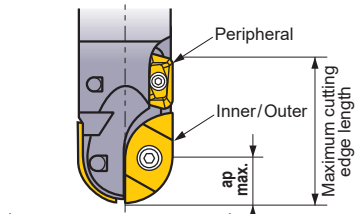
* Selection guide for peripheral cutting edges : The first recommendation is the super sharp M breaker (APMT....PDER-M2).
When cutting edge strength is particularly important, use the H breaker (APMT....PDER-H2).

Note 1) SRM tooling is designed for rough machining applications. *Programming Note: If you choose to use SRM tooling for semi-finishing applications, care must be taken when setting the tool height. The SRM insert includes a chamfer flat at the tip as illustrated. To assist with SRM programming needs, please download our CAD data from our web site; http://www.mitsubishicarbide.com/



RECOMMENDED CUTTING CONDITIONS





(Long cutting edge type)

Tool Overhang

Recommended cutting conditions on this literature are chosen based on deflection, vibration and machined surface when using a CAT50 arbor. Conditions-**"a"** is the length from a gage line to the arbor end face, and **"b"** is the neck length (tool overhang from the arbor).

(Inch)

Cutting Diameter : DC	Type	a	b	c
.625"	Short	4	1.5	5.5
	Medium		2.5	6.5
	Long		3.5	7.5
.750"	Short		1.5	5.5
	Medium		2.5	6.5
	Long		3.5	7.5
1.000"	Short		2.0	6.0
	Medium		3.0	7.0
	Long		4.0	8.0
1.250"	Short		2.0	6.0
	Medium		3.5	7.5
	Long		5.0	9.0

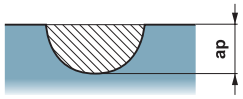
Recommended Depth of Cut for Long Cutting Edge Type

The maximum cutting edge length of the long cutting edge type with a peripheral insert is 1.4-1.5DC. The peripheral insert is for light machining only.

Please refer the recommended cutting condition or page L285.

■Slot Milling

Cutting Mode

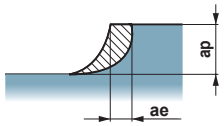


N: Spindle Speed (min^{-1})
F: Table Feed (IPM)

	Work Material	Hardness	Cutting Speed (SFM)	Insert Grade, Type	Type	ϕ.625"			ϕ.750"			ϕ1.000"			ϕ1.250"		
						min^{-1}	IPM	ap	min^{-1}	IPM	ap	min^{-1}	IPM	ap	min^{-1}	IPM	ap
P	Carbon Steel Alloy Steel	180-280HB	525	MP6120 VP15TF Low Resistance Type	Short	3183	15	.236	2546	12	.315	2037	19	.492	1698	16	.591
			395		Medium	3183	15	.236	2546	12	.315	2037	19	.492	1698	16	.591
			655		Long	3183	15	.157	2546	12	.157	2037	19	.236	1698	16	.295
		280-350HB	460	MP6120 VP15TF Low Resistance Type	Short	2785	13	.236	2228	11	.315	1783	17	.492	1485	14	.591
			395		Medium	2785	13	.236	2228	11	.315	1783	17	.492	1485	14	.591
			525		Long	2785	13	.157	2228	11	.157	1783	17	.236	1485	14	.295
	Pre-Hardened Steel	35-45HRC	395	MP6120 VP15TF Low Resistance Type	Short	2387	11	.236	1910	9	.315	1528	14	.492	1273	12	.472
			330		Medium	2387	11	.236	1910	9	.315	1528	14	.492	1273	12	.472
			525		Long	2387	11	.157	1910	9	.157	1528	14	.236	1273	12	.177
	Alloy Tool Steel	≤350HB	460	MP6120 VP15TF Low Resistance Type	Short	2785	13	.236	2228	11	.315	1783	21	.394	1485	23	.295
			395		Medium	2785	13	.236	2228	11	.315	1783	21	.394	1485	23	.295
			525		Long	2785	13	.157	2228	11	.157	1783	21	.197	1485	23	.177
M	Stainless Steel	≤270HB	655	VP15TF Low Resistance Type	Short	3979	19	.157	3183	15	.197	2546	30	.236	2122	33	.591
			330		Medium	3979	19	.157	3183	15	.197	2546	30	.236	2122	33	.591
			820		Long	3979	19	.118	3183	15	.118	2546	24	.157	2122	25	.177
K	Gray Cast Iron	≤350MPa	655	VP15TF Low Resistance Type	Short	3979	31	.236	3183	25	.315	2546	40	.492	2122	33	.591
			490		Medium	3979	31	.236	3183	25	.315	2546	40	.492	2122	33	.591
			985		Long	3979	31	.157	3183	25	.157	2546	40	.295	2122	33	.177
	Ductile Cast Iron	≤500MPa	590	VP15TF Low Resistance Type	Short	3581	28	.236	2865	23	.315	2292	36	.492	1910	30	.591
			490		Medium	3581	28	.236	2865	23	.315	2292	36	.492	1910	30	.591
			785		Long	3581	28	.157	2865	23	.157	2292	36	.295	1910	30	.177
		≤800MPa	525	VP15TF Low Resistance Type	Short	3183	25	.236	2546	20	.315	2037	32	.492	1698	27	.591
			490		Medium	3183	25	.236	2546	20	.315	2037	32	.492	1698	27	.591
			820		Long	3183	25	.157	2546	20	.157	2037	32	.295	1698	27	.177
S	Titanium Alloy	≤350HB	165	MP9120	Short	995	4	.157	796	3	.157	637	3	.236	531	2	.295
			100		Medium	995	4	.157	796	3	.157	637	3	.236	531	2	.295
			195		Long	995	4	.079	796	3	.079	637	3	.157	531	2	.118
	Heat-resistant Alloy	–	165	MP9120	Short	995	4	.157	796	3	.157	637	3	.236	531	2	.295
			100		Medium	995	4	.157	796	3	.157	637	3	.236	531	2	.295
			195		Long	995	4	.079	796	3	.079	637	3	.157	531	2	.118
H	Hardened Steel	45-50HRC	330	VP15TF Strong Cutting Edge Type	Short	1989	9	.157	1591	8	.157	1273	10	.236	1061	8	.295
			195		Medium	1989	9	.157	1591	8	.157	1273	10	.236	1061	8	.295
			395		Long	1989	9	.079	1591	8	.079	1273	10	.157	1061	8	.118
		50-60HRC	195	VP15TF Strong Cutting Edge Type	Short	1194	6	.157	955	5	.157	764	6	.236	637	5	.295
			130		Medium	1194	6	.157	955	5	.157	764	6	.236	637	5	.295
			330		Long	1194	6	.079	955	5	.079	764	6	.157	637	5	.118

■Shoulder Milling (Cutting Depth : Small)

Cutting Mode

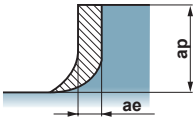


N : Spindle Speed (min^{-1})
F : Table Feed (IPM)

	Work Material	Hardness	Cutting Speed (SFM)	Insert Grade, Type	Type	ϕ.625"				ϕ.750"				ϕ1.000"				ϕ1.250"			
						min^{-1}	IPM	ap	ae	min^{-1}	IPM	ap	ae	min^{-1}	IPM	ap	ae	min^{-1}	IPM	ap	ae
P	Carbon Steel Alloy Steel	180-280HB	655	MP6120 VP15TF Low Resistance Type	Short	3979	31	.157	.236	3183	38	.197	.315	2546	50	.236	.394	2122	50	.295	.394
			525		Medium	3979	31	.157	.236	3183	38	.197	.315	2546	50	.236	.394	2122	50	.295	.394
			820		Long	3979	25	.157	.157	3183	25	.197	.236	2546	50	.236	.295	2122	50	.295	.295
		280-350HB	525	MP6120 VP15TF Low Resistance Type	Short	3183	20	.157	.236	2546	20	.197	.315	2037	32	.236	.394	1698	33	.295	.394
			395		Medium	3183	20	.157	.236	2546	20	.197	.315	2037	32	.236	.394	1698	33	.295	.394
			655		Long	3183	15	.157	.157	2546	16	.197	.236	2037	24	.236	.295	1698	20	.295	.295
	Pre-Hardened Steel	35-45HRC	525	MP6120 VP15TF Low Resistance Type	Short	3183	20	.157	.236	2546	20	.197	.315	2037	32	.236	.394	1698	33	.295	.394
			395		Medium	3183	20	.157	.236	2546	20	.197	.315	2037	32	.236	.394	1698	33	.295	.394
			655		Long	3183	15	.157	.157	2546	16	.197	.236	2037	24	.236	.295	1698	27	.295	.295
	Alloy Tool Steel	≤350HB	525	MP6120 VP15TF Low Resistance Type	Short	3183	20	.157	.236	2546	20	.197	.315	2037	32	.236	.394	1698	33	.295	.394
			395		Medium	3183	20	.157	.236	2546	20	.197	.315	2037	32	.236	.394	1698	33	.295	.394
			655		Long	3183	15	.157	.157	2546	16	.197	.236	2037	24	.236	.295	1698	20	.295	.295
M	Stainless Steel	≤270HB	655	VP15TF Low Resistance Type	Short	3979	19	.157	.236	3183	20	.197	.315	2546	30	.236	.394	2122	33	.295	.394
			330		Medium	3979	19	.157	.236	3183	20	.197	.315	2546	30	.236	.394	2122	33	.295	.394
			820		Long	3979	19	.157	.157	3183	15	.197	.236	2546	24	.236	.295	2122	33	.295	.295
K	Gray Cast Iron	≤350MPa	655	VP15TF Low Resistance Type	Short	3979	63	.157	.315	3183	63	.197	.394	2546	60	.236	.394	2122	58	.295	.394
			490		Medium	3979	63	.157	.315	3183	63	.197	.394	2546	60	.236	.394	2122	58	.295	.394
			985		Long	3979	47	.157	.236	3183	50	.197	.315	2546	60	.236	.394	2122	58	.295	.236
	Ductile Cast Iron	≤500MPa	655	VP15TF Low Resistance Type	Short	3979	63	.157	.315	3183	63	.197	.394	2546	60	.236	.394	2122	50	.295	.394
			490		Medium	3979	63	.157	.315	3183	63	.197	.394	2546	60	.236	.394	2122	50	.295	.394
			920		Long	3979	47	.157	.236	3183	50	.197	.315	2546	60	.236	.394	2122	50	.295	.236
		≤800MPa	590	VP15TF Low Resistance Type	Short	3581	56	.157	.315	2865	56	.197	.394	2292	54	.236	.394	1910	45	.295	.394
			490		Medium	3581	56	.157	.315	2865	56	.197	.394	2292	54	.236	.394	1910	45	.295	.394
			820		Long	3581	42	.157	.236	2865	45	.197	.315	2292	54	.236	.394	1910	45	.295	.236
S	Titanium Alloy	≤350HB	165	MP9120	Short	995	12	.157	.157	796	9	.157	.197	637	8	.236	.236	531	6	.295	.118
			100		Medium	995	12	.157	.157	796	9	.157	.197	637	8	.236	.236	531	6	.295	.118
			195		Long	995	12	.079	.079	796	9	.079	.118	637	8	.157	.157	531	6	.118	.059
	Heat-resistant Alloy	–	165	MP9120	Short	995	12	.157	.157	796	9	.157	.197	637	8	.236	.236	531	6	.295	.118
			100		Medium	995	12	.157	.157	796	9	.157	.197	637	8	.236	.236	531	6	.295	.118
			195		Long	995	12	.079	.079	796	9	.079	.118	637	8	.157	.157	531	6	.118	.059
H	Hardened Steel	45-50HRC	330	VP15TF Strong Cutting Edge Type	Short	1989	9	.157	.157	1591	8	.197	.197	1273	10	.236	.295	1061	8	.295	.118
			195		Medium	1989	9	.157	.157	1591	8	.197	.197	1273	10	.236	.295	1061	8	.295	.118
			395		Long	1989	9	.157	.079	1591	8	.197	.118	1273	10	.236	.157	1061	8	.295	.059
		50-60HRC	195	VP15TF Strong Cutting Edge Type	Short	1194	6	.157	.157	955	5	.197	.197	764	6	.236	.295	637	5	.295	.118
			130		Medium	1194	6	.157	.157	955	5	.197	.197	764	6	.236	.295	637	5	.295	.118
			330		Long	1194	6	.157	.079	955	5	.197	.118	764	6	.236	.157	637	5	.295	.059

■Shoulder Milling (Cutting Depth : Large)

Cutting Mode



N : Spindle Speed (min^{-1})
F : Table Feed (IPM)

✱Machining Stainless Steels

Down cutting (Climb milling) is preferred.

	Work Material	Hardness	Cutting Speed (SFM)	Insert Grade, Type	Type	ϕ.625"				ϕ.750"				ϕ1.000"				ϕ1.250"			
						min^{-1}	IPM	ap	ae	min^{-1}	IPM	ap	ae	min^{-1}	IPM	ap	ae	min^{-1}	IPM	ap	ae
P	Carbon Steel Alloy Steel	180-280HB	655	MP6120 VP15TF Low Resistance Type	Short	3979	25	.315	.157	3183	30	.394	.157	2546	50	.492	.197	2122	50	.591	.177
			525		Medium	3979	25	.315	.157	3183	30	.394	.157	2546	50	.492	.197	2122	50	.591	.177
			820		Long	3979	19	.315	.118	3183	20	.394	.118	2546	40	.492	.157	2122	33	.591	.118
		280-350HB	525	MP6120 VP15TF Low Resistance Type	Short	3183	15	.315	.157	2546	20	.394	.157	2037	32	.492	.197	1698	33	.591	.177
			395		Medium	3183	15	.315	.157	2546	20	.394	.157	2037	32	.492	.197	1698	33	.591	.177
			655		Long	3183	15	.315	.118	2546	12	.394	.118	2037	24	.492	.157	1698	20	.591	.118
	Pre-Hardened Steel	35-45HRC	525	MP6120 VP15TF Low Resistance Type	Short	3183	15	.315	.157	2546	20	.394	.157	2037	32	.492	.197	1698	33	.591	.177
			395		Medium	3183	15	.315	.157	2546	20	.394	.157	2037	32	.492	.197	1698	33	.591	.177
			655		Long	3183	15	.315	.118	2546	12	.394	.118	2037	24	.492	.157	1698	20	.591	.118
	Alloy Tool Steel	≤350HB	525	MP6120 VP15TF Low Resistance Type	Short	3183	15	.315	.157	2546	20	.394	.157	2037	32	.492	.197	1698	33	.591	.177
			395		Medium	3183	15	.315	.157	2546	20	.394	.157	2037	32	.492	.197	1698	33	.591	.177
			655		Long	3183	15	.315	.118	2546	12	.394	.118	2037	24	.492	.098	1698	20	.591	.118
M	Stainless Steel	≤270HB	655	VP15TF Low Resistance Type	Short	3979	19	.315	.157	3183	20	.394	.157	2546	30	.492	.394	2122	33	.591	.394
			330		Medium	3979	19	.315	.157	3183	20	.394	.157	2546	30	.492	.394	2122	33	.591	.394
			820		Long	3979	19	.315	.118	3183	15	.394	.118	2546	24	.492	.157	2122	20	.591	.177
K	Gray Cast Iron	≤350MPa	655	VP15TF Low Resistance Type	Short	3979	47	.315	.315	3183	50	.394	.315	2546	50	.492	.394	2122	58	.591	.394
			490		Medium	3979	47	.315	.315	3183	50	.394	.315	2546	50	.492	.394	2122	58	.591	.394
			985		Long	3979	38	.315	.197	3183	38	.394	.157	2546	50	.492	.295	2122	42	.591	.177
	Ductile Cast Iron	≤500MPa	655	VP15TF Low Resistance Type	Short	3979	47	.315	.315	3183	50	.394	.315	2546	50	.492	.394	2122	50	.591	.394
			490		Medium	3979	47	.315	.315	3183	50	.394	.315	2546	50	.492	.394	2122	50	.591	.394
			920		Long	3979	38	.315	.197	3183	38	.394	.157	2546	50	.492	.295	2122	33	.591	.177
		≤800MPa	590	VP15TF Low Resistance Type	Short	3581	42	.315	.315	2865	45	.394	.315	2292	45	.492	.394	1910	45	.591	.394
			490		Medium	3581	42	.315	.315	2865	45	.394	.315	2292	45	.492	.394	1910	45	.591	.394
			820		Long	3581	34	.315	.197	2865	34	.394	.157	2292	45	.492	.295	1910	30	.591	.177
S	Titanium Alloy	≤350HB	165	MP9120	Short	995	8	.157	.079	796	6	.157	.118	637	5	.236	.157	531	4	.295	.118
			100		Medium	995	8	.157	.079	796	6	.157	.118	637	5	.236	.157	531	4	.295	.118
			195		Long	995	8	.079	.039	796	6	.079	.079	637	5	.157	.059	531	4	.118	.059
	Heat-resistant Alloy	–	165	MP9120	Short	995	8	.157	.079	796	6	.157	.118	637	5	.236	.157	531	4	.295	.118
			100		Medium	995	8	.157	.079	796	6	.157	.118	637	5	.236	.157	531	4	.295	.118
			195		Long	995	8	.079	.039	796	6	.079	.079	637	5	.157	.059	531	4	.118	.059
H	Hardened Steel	45-50HRC	330	VP15TF Strong Cutting Edge Type	Short	1989	9	.315	.079	1591	8	.394	.118	1273	10	.492	.157	1061	8	.591	.118
			195		Medium	1989	9	.315	.079	1591	8	.394	.118	1273	10	.492	.157	1061	8	.591	.118
			395		Long	1989	9	.315	.039	1591	8	.394	.079	1273	8	.492	.059	1061	4	.591	.059
		50-60HRC	195	VP15TF Strong Cutting Edge Type	Short	1194	6	.315	.079	955	5	.394	.118	764	6	.492	.157	637	5	.591	.118
			130		Medium	1194	6	.315	.079	955	5	.394	.118	764	6	.492	.157	637	5	.591	.118
			330		Long	1194	6	.315	.039	955	5	.394	.079	764	5	.492	.059	637	3	.591	.059

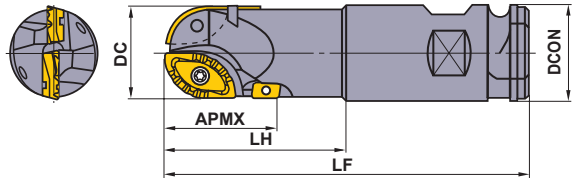
BALL NOSE END MILL

SRM2 Ø40 (1.575") Ø50 (1.969")

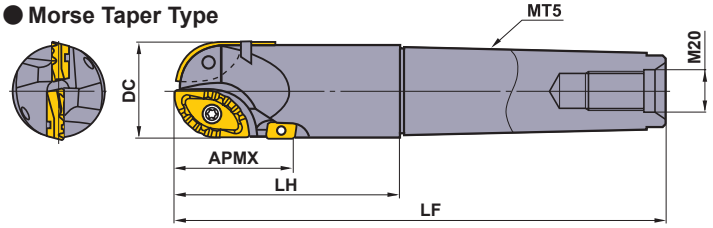
P Steel | M | K Cast Iron | N | S | H



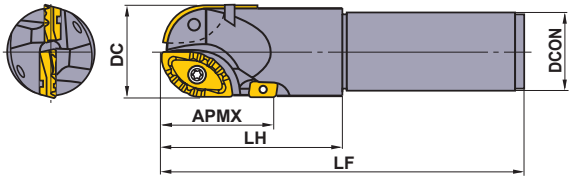
● Combination Type



● Morse Taper Type



● Straight Type



Metric Standard

Right hand tool holder only.

Type		Order Number	Stock	Number of Flutes	Dimensions (inch)						✶1	✶1					
			R		✶2 RE	DC	DCON	LF	LH	APMX	Inner, Outer	Peripheral	Inner, Outer	Peripheral	Inner	Outer	Peripheral
											Insert Screw		Wrench		Insert		
Combination	Standard	**SRM2400WNLS**	★	2	.787	1.575	2.000	7.874	4.724	2.126	TS6S	TS43	TKY30T	TKY15F	SRG40C	SRG40E	APMT1604 PDER-□2
		SRM2500WNLS	★	2	.984	1.969	2.000	7.874	4.724	2.480	TS6	TS43	TKY30T	TKY15F	SRG50C	SRG50E	APMT1604 PDER-□2
	Long	**SRM2400WNLM**	★	2	.787	1.575	2.000	9.843	6.693	2.126	TS6S	TS43	TKY30T	TKY15F	SRG40C	SRG40E	APMT1604 PDER-□2
		SRM2500WNLM	★	2	.984	1.969	2.000	9.843	6.693	2.480	TS6	TS43	TKY30T	TKY15F	SRG50C	SRG50E	APMT1604 PDER-□2
	Extra Long	**SRM2500WNLL**	★	2	.984	1.969	2.000	11.811	8.661	2.480	TS6	TS43	TKY30T	TKY15F	SRG50C	SRG50E	APMT1604 PDER-□2
		SRM2500WNLX	★	2	.984	1.969	2.000	13.780	10.630	2.480	TS6	TS43	TKY30T	TKY15F	SRG50C	SRG50E	APMT1604 PDER-□2
Straight	Standard	**SRM2400SNLS**	★	2	.787	1.575	1.654	7.874	3.937	2.126	TS6S	TS43	TKY30T	TKY15F	SRG40C	SRG40E	APMT1604 PDER-□2
		SRM2500SNLS	★	2	.984	1.969	1.654	7.874	3.937	2.480	TS6	TS43	TKY30T	TKY15F	SRG50C	SRG50E	APMT1604 PDER-□2
	Long	**SRM2400SNLM**	★	2	.787	1.575	1.654	9.843	5.906	2.126	TS6S	TS43	TKY30T	TKY15F	SRG40C	SRG40E	APMT1604 PDER-□2
		SRM2500SNLM	★	2	.984	1.969	1.654	9.843	3.937	2.480	TS6	TS43	TKY30T	TKY15F	SRG50C	SRG50E	APMT1604 PDER-□2
Morse Taper	Standard	**SRM2500MNLS**	★	2	.984	1.969	—	10.079	4.724	2.480	TS6	TS43	TKY30T	TKY15F	SRG50C	SRG50E	APMT1604 PDER-□2
	Long	**SRM2500MNLM**	★	2	.984	1.969	—	11.260	5.906	2.480	TS6	TS43	TKY30T	TKY15F	SRG50C	SRG50E	APMT1604 PDER-□2

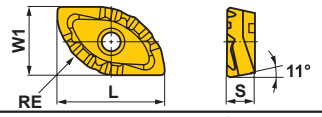
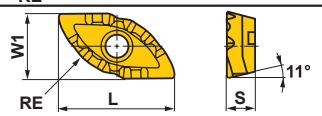
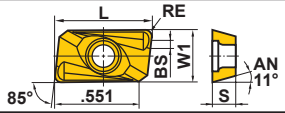
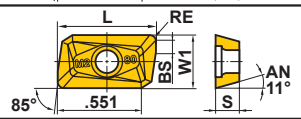
✶1 Clamp Torque (lbf-in) : TS43=53, TS6=89, TS6S=89

✶2 RE is shown for insert corner R.

● : USA Stock ★ : Stocked in Japan

<10 inserts in one case><Inserts with asterisk (✶2) are available in 2 piece in one case>

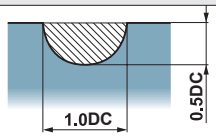
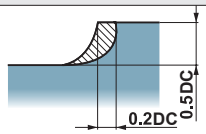
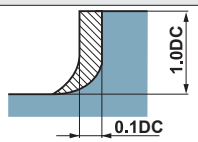
INSERTS

Work Material			Coated			Dimensions (inch)					
Application	Shape	Order Number	Class	VP15TF	VP20RT	VP30RT	RE	L	W1	S	BS	Geometry
		P Steel		●	●	✱						
		K Cast Iron		✱	✱	✱						
Inner		✱2 **SRG40C**	G	★	★	★	.787	1.417	.807	.315	—	
		✱2 **SRG50C**	G	★	★	★	.984	1.575	1.024	.335	—	
Outer		✱2 **SRG40E**	G	★	★	★	.787	1.260	.654	.315	—	
		✱2 **SRG50E**	G	★	★	★	.984	1.409	.787	.335	—	
✱1 Peripheral		**APMT1604PDER-M2**	M	●			.031	.650	.375	.187	.055	
	Strong Cutting Edge Type 	**APMT1604PDER-H2**	M	●			.031	.650	.375	.187	.055	

(Low-resistance inner or outer inserts are precision M class type.)

✱1 Selection guide for peripheral cutting edges : The first recommendation is the super sharp M breaker (APMT....PDER-M2).
When cutting edge strength is particularly important, use the H breaker (APMT....PDER-H2).

RECOMMENDED CUTTING CONDITIONS

Cutting Mode	A : Slot Milling	B : Shoulder Milling (Standard Type)	C : Shoulder Milling (Long Cutting Edge Type)
			

	Work Material	Hardness	Grade	Cutting Speed (SFM)	Feed per Tooth (IPR)	Cutting Mode
P	Alloy Tool Steel	≤250HB	**VP20RT VP30RT**	655 (525—820)	.008 (.004—.012)	A
					.008 (.004—.016)	B
					.012 (.004—.016)	C
	Cast Tool Steel	≤230HB	**VP15TF VP20RT**	655 (525—985)	.008 (.004—.012)	A
					.012 (.004—.018)	B
					.008 (.004—.016)	C
K	Ductile Cast Iron	Tensile Strength ≤540MPa	**VP15TF VP20RT**	655 (525—985)	.010 (.004—.016)	A
					.010 (.004—.018)	B
					.014 (.004—.018)	C
	Gray Cast Iron	Tensile Strength ≤350MPa	**VP15TF VP20RT**	655 (525—985)	.010 (.004—.016)	A
					.014 (.004—.018)	B
					.010 (.004—.016)	C

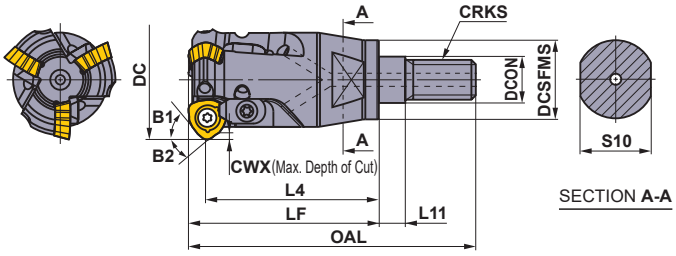
SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

VERTICAL FEED MILLING

PMC

P	M	K	N	S	H
Steel		Cast Iron			





Metric Standard

With Air / coolant through.

Right hand tool holder only.

DC	Order Number	Stock	Number of Teeth	Dimensions (mm)									WT (kg)	B1	B2
				LF	OAL	DCON	DCSFMS	L4	L11	S10	CWX	CRKS*			
25	**PMC08R252AM1035**	★	2	39.7	58.7	10.5	18	35	6	14	1.5	M10	0.1	40.5°	35°
32	**PMC09R323AM1245**	★	3	50.5	72.5	12.5	21	45	6	19	3.0	M12	0.2	40.5°	35°
40	**PMC12R403AM1645**	★	3	51.4	74.4	17	29	45	6	24	3.5	M16	0.3	42°	35°

* Clamp Torque of the Head (lbf-ft) : M10=33.8, M12=59.2, M16=66.7

SPARE PARTS

DC	Order Number	Insert Screw*	Insert Wench	Clamp Bridge	Clamp Bridge Screw*	Clamp Wrench	Anti-seizure Lubricant	Spring	Insert
25	**PMC08R252AM1035**	AJS3010T10	①TKY08D	AMS3	TS33	TKY10R	MK1KS	ASS2	JOM□08
32	**PMC09R323AM1245**	AJS3010T10	②TKY10D	AMS3	TS351	TKY10D	MK1KS	ASS2	JOM□09
40	**PMC12R403AM1645**	AJS4012T15	②TKY15D	AMS4	TS43	TKY15D	MK1KS	ASS2	JOM□12

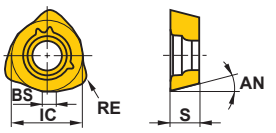
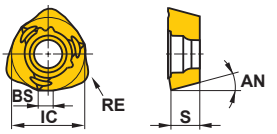
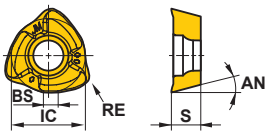
* Clamp Torque (lbf-in) : TS33=13, TS351=22, TS43=31, AJS3010T10=22, AJS4012T15=31

● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

INSERTS

Work Material			Coated			Dimensions (mm)						
P	Steel		●	●	✣							
K	Cast Iron			✣	✣							

Cutting Conditions (Guide) : ● : Stable Cutting ◐ : General Cutting ✣ : Unstable Cutting

Shape	Order Number	Class	FH7020	VP15TF	VP30RT	AN	IC	S	BS	RE	PMC holder	Geometry
Partial Profile FT Breaker	**JOMW080320ZZSR-FT**	M	●	●	●	13°	8	3.18	1.4	2	PMC08R252AM1035	
	JDMW09T320ZDSR-FT	M	●	●	●	15°	9.525	3.97	1.8	2	PMC09R323AM1245	
	JDMW120420ZDSR-FT	M	●	●	●	15°	12	4.76	2.5	2	PMC12R403AM1645	
Strong Cutting Edge Type ST Breaker	**JDMT120420ZDSR-ST**	M	●	●	●	15°	12	4.76	2.5	2	PMC12R403AM1645	
JM Breaker	**JOMT080320ZZSR-JM**	M	●	●	●	13°	8	3.18	1.4	2	PMC08R252AM1035	
	JDMT09T320ZDSR-JM	M	●	●	●	15°	9.525	3.97	1.8	2	PMC09R323AM1245	
	JDMT120420ZDSR-JM	M	●	●	●	15°	12	4.76	2.5	2	PMC12R403AM1645	

RECOMMENDED CUTTING CONDITIONS

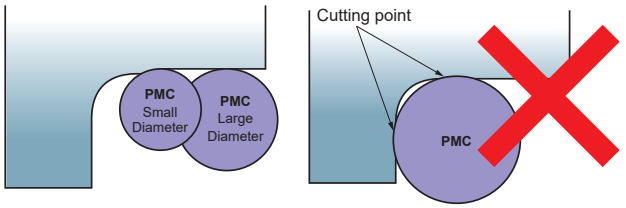
	Work Material	Hardness	Grade	Breaker	Diameter (mm)	Number of Teeth	Cutting Speed (SFM)	Feed per Tooth (inch/tooth)	Width of Cut (inch)	Pick Feed (inch)
P	Carbon Steel Alloy Steel	≤180HB	**VP15TF**	**FT**	ø40	3	820 (655—985)	—.024	—.059	—.236
					ø32	3	655 (490—720)	—.022	—.047	—.197
					ø25	2	655 (490—720)	—.022	—.039	—.197
	Alloy Tool Steel Hardening Tool Steel for Cold Work Dies	≤300HB	**VP15TF**	**FT**	ø40	3	820 (655—985)	—.022	—.059	—.197
					ø32	3	590 (490—655)	—.020	—.047	—.118
					ø25	2	590 (490—655)	—.020	—.039	—.118
	Alloy Tool Steel	≤300HB	**VP15TF**	**FT**	ø40	3	655 (330—985)	—.022	—.059	—.197
					ø32	3	490 (260—655)	—.020	—.047	—.118
					ø25	2	490 (260—655)	—.020	—.039	—.118
K	Gray Cast Iron	Tensile Strength ≤350MPa	**VP15TF**	**FT**	ø40	3	820 (655—985)	—.024	—.059	—.236
					ø32	3	655 (490—720)	—.022	—.047	—.197
					ø25	2	655 (490—720)	—.022	—.039	—.197
	Ductile Cast Iron	Tensile Strength ≤800MPa	**VP15TF**	**FT**	ø40	3	820 (655—985)	—.024	—.059	—.236
					ø32	3	655 (490—720)	—.022	—.047	—.197
					ø25	2	655 (490—720)	—.022	—.039	—.197

Note 1) The above cutting conditions are general guide lines. Adjustments maybe necessary depending on machine rigidity, work material geometry and clamping.
Note 2) A carbide shank extension is recommended to prevent vibrations.

NOTES ON MACHINING METHODS

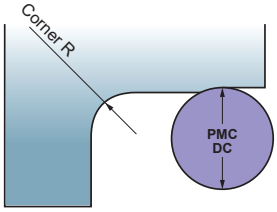
● How to choose an appropriate diameter tool.

Machine plain surfaces with a larger tool and corner radii with smaller diameter cutters.



● Relation of the cutter diameter and corner R size of work material

A guide for the smallest possible work material radius that can be machined is from 0.6—0.7 x diameter of the tool.



Tool diameter DC(mm)	Corner R (inch)
ϕ25	R ≥ .689
ϕ32	R ≥ .866
ϕ40	R ≥ .945

✱Adjust cutting conditions according to the set up.
✱Smaller work material corner radii (only >0.5 x cutter &) may be possible by reducing the width of cut, speed and pick feed.

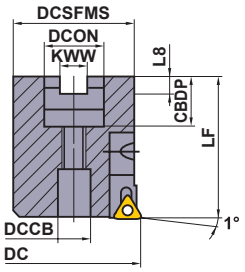
VERTICAL FEED MILLING

PMF

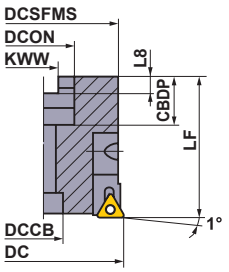
P Steel | M | K Cast Iron | N | S | H



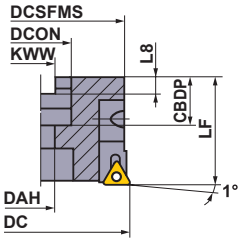
ø50



ø63



ø80



Metric Standard

Right hand tool holder only.

Order Number	Stock	Number of Teeth	Dimensions (mm)									Max. Allowable Revolution (min^{-1})		Cartridge	Insert Screw *2	Radial Screw	Set Bolt (Cartridge) *2	Wrench	Wrench	Set Bolt ①②	Insert
	R		DC	LF	DCON	CBDP	DAH	DCCB	KWW	L8	DCSFMS	Balance Unknown	G40 *1 Balanced								
PMF05004A22R	●	4	50	63	22	20	—	12	10.4	6.3	48	6300	12700	PMFA13R	TS254	TSS04005	HBH06012	TKY08F	HKY40R HKY50R	①HDS10031	TPEW 1303 ZP□R2
PMF06306A22R	●	6	63	63	22	20	—	18	10.4	6.3	60	5000	10100	PMFA13R	TS254	TSS04005	HBH06012	TKY08F	HKY40R	②HSC10050	
PMF08008A27R	●	8	80	50	27	23	13.5	—	12.4	7	75	3900	7900	PMFA13R	TS254	TSS04005	HBH06012	TKY08F	HKY40R	②HSC12035	

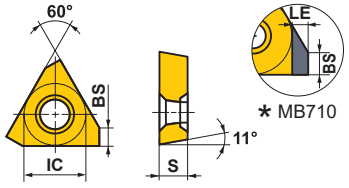
*1 You need to balance the tool and holder together so that it confirms to G40 or higher standards.
*2 Clamp Torque (lbf-in) : TS254=8.9, HBH06012=8.5

INSERTS

Work Material		
	P	Steel
	K	Cast Iron

Cutting Conditions (Guide) :
● : Stable Cutting ◐ : General Cutting ✱ : Unstable Cutting

Shape	Order Number	Class	Coated			CBN		Dimensions (mm)				Geometry
			VP15TF	AP10H		MB710		IC	LE	S	BS	
	TPEW1303ZPER2	E	●	●				7.94	—	3.18	2	
*	**TPEW1303ZPTR2**	E				●		7.94	1.5	3.18	2	



RECOMMENDED CUTTING CONDITIONS

Work Material		Hardness	Grade	Cutting Speed (SFM)	Feed per Tooth (inch/tooth)
P	Carbon Steel Alloy Steel	180—280HB	**VP15TF**	820 (490—1150)	.004 (.0019—.006)
		280—380HB	**VP15TF**	655 (330—985)	
K	Gray Cast Iron	Tensile Strength ≤350MPa	**AP10H**	1150 (655—1640)	.004 (.0019—.006)
			MB710	4920 (3280—6560)	

Work Material		Hardness	Grade	Cutting Speed (SFM)	Feed per Tooth (inch/tooth)
K	Dactile Cast Iron	Tensile Strength ≤500MPa	**AP10H**	820 (490—1150)	.004 (.002—.006)
			MB710	3280 (2625—3940)	
		Tensile Strength ≤800MPa	**AP10H**	655 (330—985)	.004 (.002—.006)
			MB710	3280 (2625—3940)	

Note 1) Recommended radial depth of cut is .004" to .008"(1—2 mm).
Note 2) Up and down vertical cutting is recommended for efficiency.
Note 3) For crossfeed cutting, feed per tooth should be reduced to less than .002 (inch/tooth).

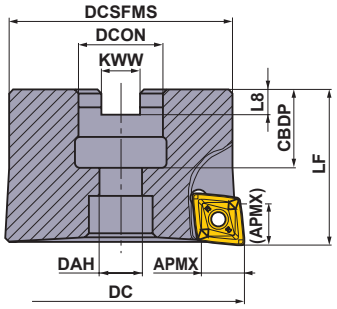
● : USA Stock ★ : Stocked in Japan
<10 inserts in one case>

VERTICAL FEED MILLING

PMR

P Steel | M | K Cast Iron | N | S | H





Right hand tool holder only.

	Order Number	Stock R	Number of Teeth	Dimensions (mm) DC	LF	DCON	CBDP	DAH	DCSFMS	KWW	L8	APMX	Insert
Metric	**PMR405003A22R**	★	3	50	40	22	20	11	45	10.4	6.3	11	CPMT1205ZPEN-M2/3
	PMR406304A22R	★	4	63	40	22	20	11	57	10.4	6.3	11	CPMT1205ZPEN-M2/3
	PMR408005A27R	★	5	80	50	27	23	13	73	12.4	7	11	CPMT1205ZPEN-M2/3
Inch	**PMR405003BR**	★	3	50	40	22.225	19	11	45	8.4	5	11	CPMT1205ZPEN-M2/3
	PMR406304BR	★	4	63	40	22.225	19	11	57	8.4	5	11	CPMT1205ZPEN-M2/3
	PMR408005DR	★	5	80	63	31.75	32	17	73	12.7	8	11	CPMT1205ZPEN-M2/3

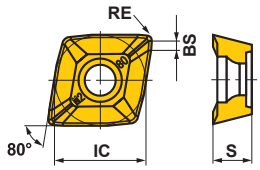


SPARE PARTS

Order Number	Shim	Shim Screw *	Insert Screw *	Wrench (Insert)	Wrench (Shim)	Set Bolt
PMR405003A22R	STPMR4N	WCS503507H	TPS35	TIP15T	HKY35R	HSC10035
PMR406304A22R	STPMR4N	WCS503507H	TPS35	TIP15T	HKY35R	HSC10035
PMR408005A27R	STPMR4N	WCS503507H	TPS35	TIP15T	HKY35R	HSC12040
PMR405003BR	STPMR4N	WCS503507H	TPS35	TIP15T	HKY35R	HSC10035
PMR406304BR	STPMR4N	WCS503507H	TPS35	TIP15T	HKY35R	HSC10035
PMR408005DR	STPMR4N	WCS503507H	TPS35	TIP15T	HKY35R	HSC16040

* Clamp Torque (lbf-in) : WCS503507H=44, TPS35=31

INSERTS

Shape	Order Number	Class	Coated VP15TF	Dimensions (mm) IC	S	BS	RE	Geometry
	**CPMT1205ZPEN-M2**	M	●	12.7	5.56	1.4	0.8	
	CPMT1205ZPEN-M3	M	★	12.7	5.56	1.4	1.2	

RECOMMENDED CUTTING CONDITIONS

	Work Material	Hardness	Grade	Cutting Speed (SFM)	Feed per Tooth (inch/tooth)	pf (mm)
P	Carbon Steel Alloy Steel	180—280HB	**VP15TF**	590 (490—655)	.008 (.004—.012)	≤.5DC
		280—380HB				
K	Gray Cast Iron	Tensile Strength ≤350MPa	**VP15TF**	590 (490—655)	.008 (.004—.012)	≤.5DC
	Ductile Cast Iron	Tensile Strength 360—500MPa	**VP15TF**	490 (390—555)	.008 (.004—.012)	≤.5DC
		Tensile Strength 500—800MPa	**VP15TF**	390 (330—490)	.008 (.004—.012)	≤.5DC

Note 1) The above conditions are suitable for general machining purposes, it is possible to use conditions that are different from the above.
Note 2) For horizontal feed machining, please reduce the feed rate by 20—40%.
Note 3) If vibration occurs when machining, please reduce the depth of cut, cutting speed by 20—50%.

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

Boring Cutter

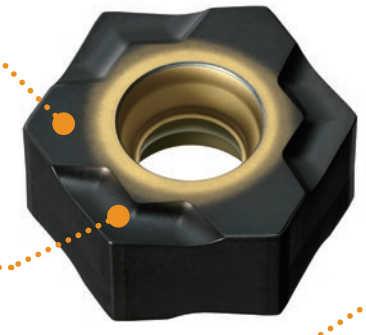
BMR

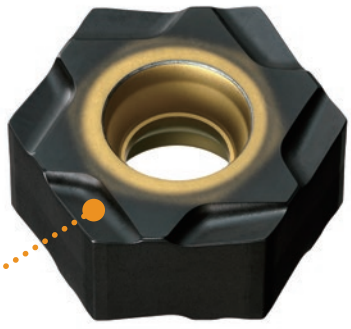
BMR Engineering Specials



High Clamping Rigidity

High feed processing possible with improved fracture resistance.





Double Positive Breaker

Reduced cutting resistance. Supports open deck work. Effective finished surface due to wiper edge.

12-Corner Type with Right Hand

Economical 12-corner type that preserves comparable insert rigidity of the 6-corner type by securing the seating surface directly below where the cutting force is absorbed.



Highly Rigid 6-corner Type and Economical 12-corner Type Inserts

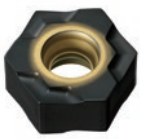
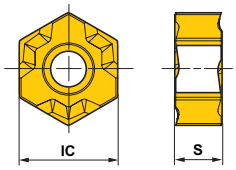
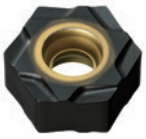
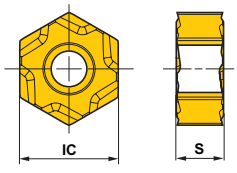
Body with Peripheral Cutting Edge Run-out Adjustable Mechanism

Economical M-class insert can be used since run out is adjustable.

* BMR Cutters - Non stock, engineering specials produced to order only.

INSERT

(inch)

Work Material	K	Cast Iron	◐	Cutting Conditions(Guide) : ● : Stable Cutting ◐ : General Cutting ✠ : Unstable Cutting					
Shape	Order Number	Grade	Hand	Cutting Edge	Stock	IC	S	Geometry	
	**HNMX1206EN06-R**	**MC5015**	–	6	★	.500	.236		
	**HNMX1206ER12-R**	**MC5015**	R	12	★	.500	.236		

★ : **Stocked in Japan**

RECOMMENDED CUTTING CONDITIONS

(inch)

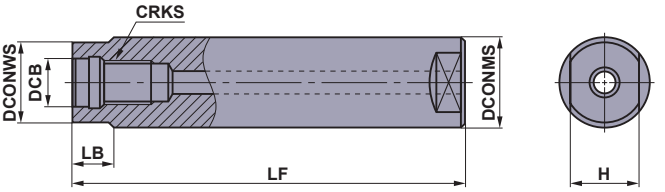
Work Material		Tensile Strength	Grade	vc (SFM)	fz (IPT)	ae
K	Gray Cast Iron	≤350MPa	**MC5015**	655 (490—820)	.008 (.004—.010)	≤.118

* With feed per cutter, settings are set small for finished surface roughness and large for ideal product life.

SCREW-IN HOLDERS

STRAIGHT SHANK TYPE





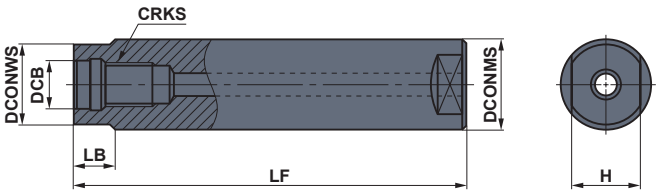
■ STEEL SHANK TYPE

CRKS	Order Number	Stock	Dimensions (inch)						WT (lbs)
			DCONMS	LF	DCB	DCONWS	LB	H	
M8	**SCU10M08S100S**	●	.625	3.937	.335	.571	.394	.394	.2
M8	**SCU10M08S200L**	●	.625	7.874	.335	.571	.394	.394	.7
M10	**SCU12M10S120S**	●	.750	4.724	.413	.728	.394	.551	.4
M10	**SCU12M10S220L**	●	.750	8.661	.413	.728	.394	.551	.9
M12	**SCU16M12S125S**	●	1.000	4.921	.492	.925	.394	.748	.9
M12	**SCU16M12S245L**	●	1.000	9.646	.492	.925	.394	.748	2.0
M16	**SCU20M16S140S**	●	1.250	5.512	.669	1.122	.591	.945	1.8
M16	**SCU20M16S280L**	●	1.250	11.024	.669	1.122	.591	.945	3.5

Metric Standard

CRKS	Order Number	Stock	Dimensions (mm)						WT (kg)
			DCONMS	LF	DCB	DCONWS	LB	H	
M8	**SC16M08S100S**	★	16	100	8.5	14.5	10	10	0.1
M8	**SC16M08S200L**	★	16	200	8.5	14.5	10	10	0.3
M10	**SC20M10S120S**	★	20	120	10.5	18.5	10	14	0.3
M10	**SC20M10S220L**	★	20	220	10.5	18.5	10	14	0.5
M12	**SC25M12S125S**	★	25	125	12.5	23.5	10	19	0.4
M12	**SC25M12S245L**	★	25	245	12.5	23.5	10	19	0.8
M16	**SC32M16S140S**	★	32	140	17	28.5	15	24	0.8
M16	**SC32M16S280L**	★	32	280	17	28.5	15	24	1.6





CARBIDE SHANK TYPE

CRKS	Order Number	Stock	Dimensions (inch)						WT (lbs)
			DCONMS	LF	DCB	DCONWS	LB	H	
M8	**SCU10M08S100SW**	●	.625	3.937	.335	.571	.394	.394	.4
M8	**SCU10M08S200LW**	●	.625	7.874	.335	.571	.394	.394	1.1
M10	**SCU12M10S120SW**	●	.750	4.724	.413	.728	.394	.551	.9
M10	**SCU12M10S220LW**	●	.750	8.661	.413	.728	.394	.551	1.8
M12	**SCU16M12S125SW**	●	1.000	4.921	.492	.925	.394	.748	1.8
M12	**SCU16M12S245LW**	●	1.000	9.646	.492	.925	.394	.748	3.5
M16	**SCU20M16S140SW**	●	1.250	5.512	.669	1.122	.591	.945	3.1
M16	**SCU20M16S280LW**	●	1.250	11.024	1.250	1.122	.591	.945	6.4

Metric Standard

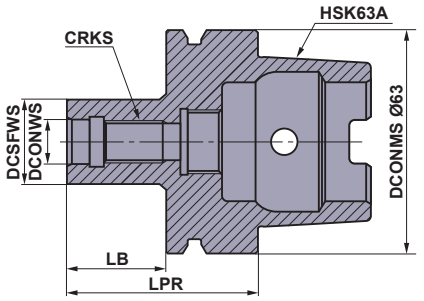
CRKS	Order Number	Stock	Dimensions (mm)						WT (kg)
			DCONMS	LF	DCB	DCONWS	LB	H	
M8	**SC16M08S100SW**	★	16	100	8.5	14.5	10	10	0.2
M8	**SC16M08S200LW**	★	16	200	8.5	14.5	10	10	0.5
M10	**SC20M10S120SW**	★	20	120	10.5	18.5	10	14	0.5
M10	**SC20M10S220LW**	★	20	220	10.5	18.5	10	14	0.9
M12	**SC25M12S125SW**	★	25	125	12.5	23.5	10	19	0.8
M12	**SC25M12S245LW**	★	25	245	12.5	23.5	10	19	1.5
M16	**SC32M16S140SW**	★	32	140	17	28.5	15	24	1.4
M16	**SC32M16S280LW**	★	32	280	17	28.5	15	24	2.8

SPARE PARTS ➤ N001
TECHNICAL DATA ➤ P001

SCREW-IN HOLDERS

HSK63A SHANK ARBOR





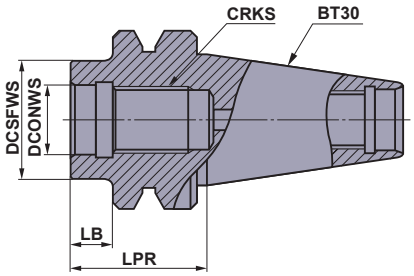
Metric Standard

CRKS	Order Number	Stock	Dimensions (mm)				WT (kg)
			DCONWS	DCSFWS	LPR	LB	
M8	**SC16M08S22-HSK63A**	★	8.5	14.5	48	22	0.7
M10	**SC20M10S24-HSK63A**	★	10.5	18.5	50	24	0.7
M12	**SC25M12S27-HSK63A**	★	12.5	23.5	53	27	0.7
M16	**SC32M16S28-HSK63A**	★	17	28.5	54	28	0.8

Note 1) The HSK63A shank type has a built-in coolant pipe for installation.

BT30 SHANK ARBOR



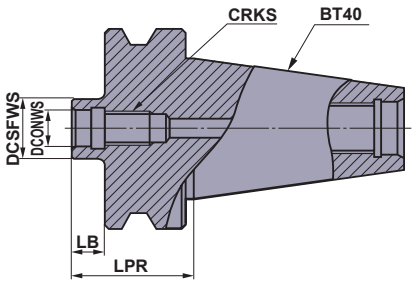


Metric Standard

CRKS	Order Number	Stock	Dimensions (mm)				WT (kg)
			DCONWS	DCSFWS	LPR	LB	
M8	**SC16M08S10-BT30**	★	8.5	14.5	32	10	0.4
M10	**SC20M10S10-BT30**	★	10.5	18.5	32	10	0.4
M12	**SC25M12S10-BT30**	★	12.5	23.5	32	10	0.4
M16	**SC32M16S10-BT30**	★	17	28.5	32	10	0.4

BT40 SHANK ARBOR





Metric Standard

CRKS	Order Number	Stock	Dimensions (mm)				WT (kg)
			DCONWS	DCSFWS	LPR	LB	
M8	**SC16M08S10-BT40**	★	8.5	14.5	37	10	1
M10	**SC20M10S10-BT40**	★	10.5	18.5	37	10	1
M12	**SC25M12S10-BT40**	★	12.5	23.5	37	10	1
M16	**SC32M16S10-BT40**	★	17	28.5	37	10	1

HOW TO INSTALL THE SCREW-IN HEAD

①Thoroughly clean the clamp section of the head and the arbor with an air blower or brush before installation.

②Tighten the head at the recommended torque and ensure that there is no gap between the head and arbor.



Screw Size	Recommended Torque (lbf-ft)	Wrench Size (mm)
M8	17.1	10
M10	33.8	14
M12	59.2	19
M16	66.7	24

- Cutting tools become extremely hot during cutting. Never touch them with bare hands after operation as this may produce risk of injuries or burns.
- Do not handle the cutting tools with bare hands as this may cause injuries.