MITSUBISHI MATERIALS

AJX Series

HIGH FEED RADIUS MILLING CUTTER





TOOL NEWS **B028A**

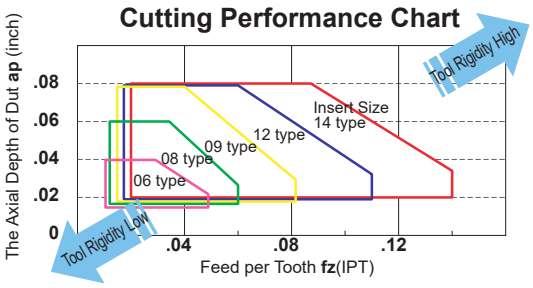
High Feed Radius Milling Cutter

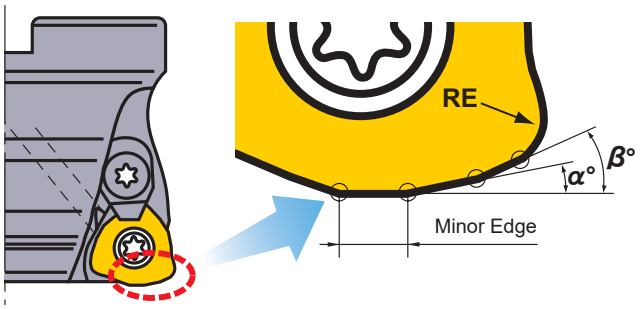
AJX

Features

Ultra High Feed Cutting

Employing a double phased straight cutting edge to form the lead angle α and β with a wiper edge, the AJX can achieve an ultra high feed rate for the ultimate efficiency in rough machining.





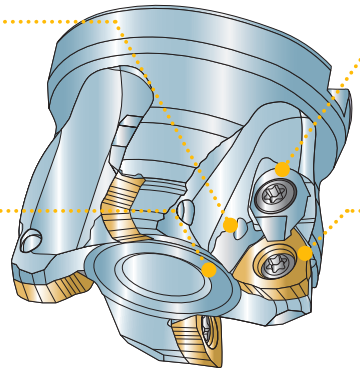
High Reliability Cutter Body

Standard with Coolant Through

All AJX bodies are supplied with through coolant throughs for smooth chip discharge, cutting edge cooling and lubrication.

Durable Tool Body

AJX bodies are made from heat resistant alloys.
The special surface treatment applied to the body increases corrosion and friction resistance.



Highly Rigid Clamping

Insert clamp bridges are standard (except in the AJX 06, 08 types, and the super extra fine pitch type).
Rigid insert clamping allows for stable and reliable cutting.

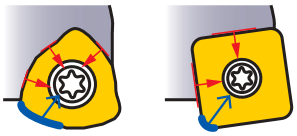
Cost-effective Insert

Specially designed triangular style insert geometry for cost effective milling.

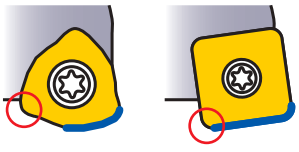
Triangular Insert Shape is Ideal for Safe Multi-Functional Milling



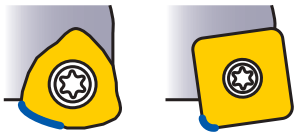
Edge Used During Machining



Insert pocket is designed to ensure precise positioning and provide secure multi-directional clamping.



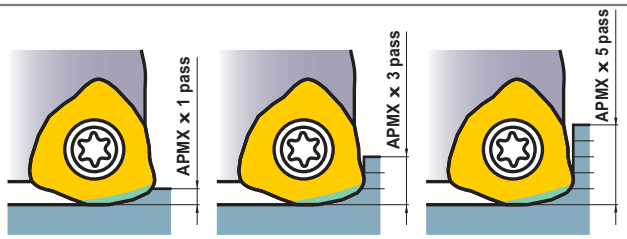
The unused edge is protected even during pocket milling and ramping.



Even if the ramping angle is steep, the left side of the cutting edge is designed to be used and therefore not be damaged.

Anti-Vibration Properties

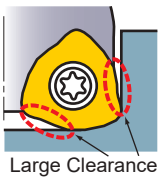
The AJX always uses the same portion of the cutting edge thereby maintaining stable cutting even when the tool overhang is long.



APMX=Max. Depth of Cut =Cutting Portion

Preventing Chip Packing Problems

The indents engineered into the inner and outer cutting edges maintain a large clearance preventing chip packing problems.
This provides improved efficiency and a more stable cutting performance when ramping and sinking compared to conventional products.



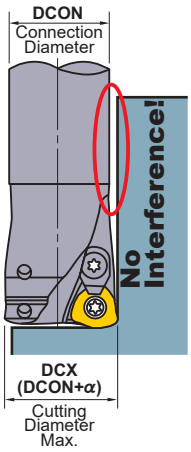
Comparison of Ramping Angles

	Max. Ramping Angle
AJX	3°
4 Corner Insert	1°
Conventional Products	1°

*With **DCX**=.625" type

No Workpiece Interference

Some AJX shank types are designed with an oversized cutting diameter for workpiece and chip clearance, as shown. Ideal for deep cutting and reduces the need for special long tools.



(inch)

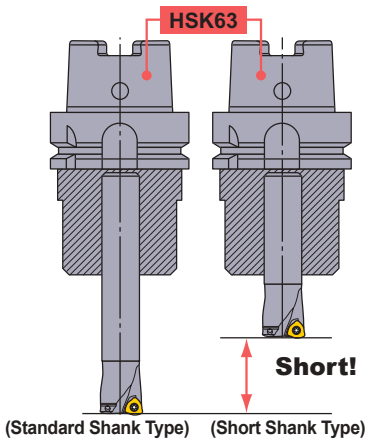
Order Number	DCX	DCONMS
AJXU06R112◌A10◌	.688	.625
AJXU08R142◌A12◌	.875	.750
AJXU09R182◌A16◌	1.125	1.000
AJXU09R244SA20M	1.500	1.250
AJXU12R243◌A20◌	1.500	1.250
AJXU14R323WA24S	2.000	1.500

Please refer to page 9 for details of the holder.

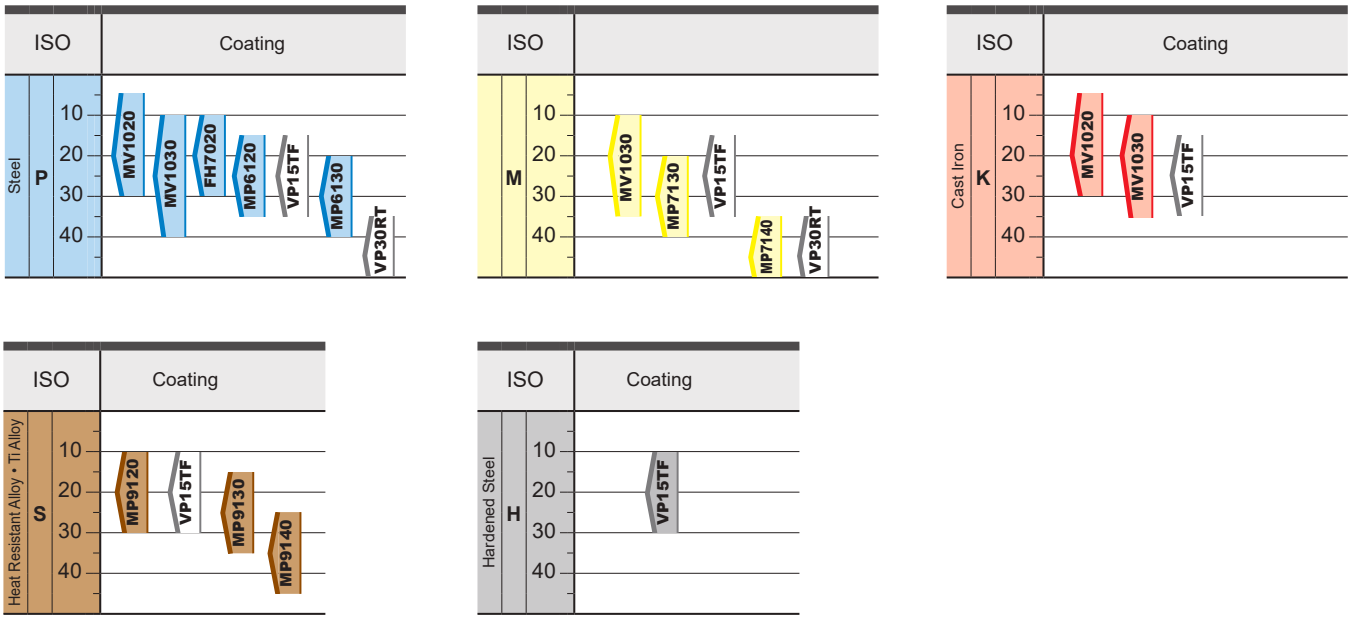
HSK63 Type Short Shanks

Short shank type AJX06 end mills are available.
Although HSK63 holders are already short, the use of the short shank type AJX permits minimum overhang for maximum rigidity.

The minimum tool overhang length enables stable, high efficiency machining even on high-speed machining centers.



Inserts Grades for a Wide Range of Materials



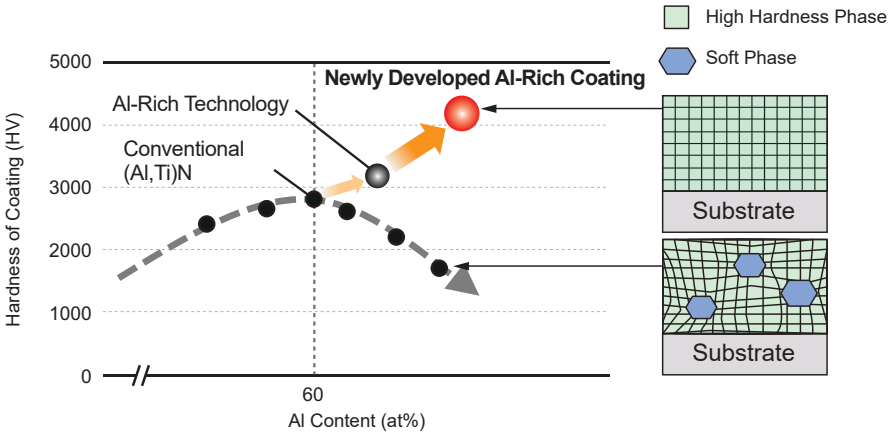
Coated Carbide Grade for Milling

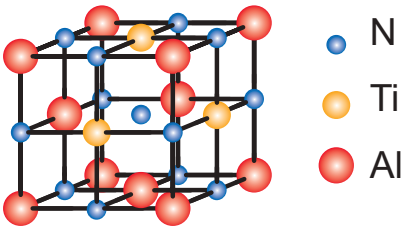
MV1020/MV1030

Newly Developed Al-Rich Coating

Advanced Wear and Thermal Shock Resistance

By adopting the newly developed Al-Rich coating technology, the (Al,Ti)N with a high Al content ratio displays a very high hardness. This greatly improves oxidation and wear resistance.
The extreme heat resistance of this new series achieves amazing stability not only during dry cutting, but also when wet cutting where inserts are usually prone to thermal cracking.
MV1020 offers overwhelmingly superior performance in high-speed cutting, and MV1030 achieves stable performance during interrupted and stainless steel machining.





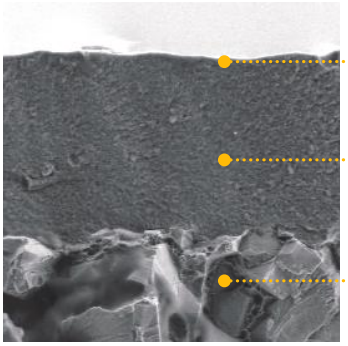
Crystal image of **MV1000** series

PVD Coated Grade for Difficult-to-Cut Materials

MP9140

MP9140 provides excellent weld and fracture resistance resulting from a special cemented carbide substrate and a smoothened surface.

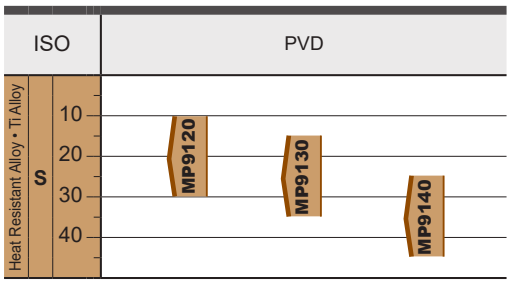




Smooth surface is excellent in providing welding resistance.

The high Al-rich AlTiN coating succeeds in dramatically improving wear and heat resistance.

Special cemented carbide substrate with improved fracture resistance.

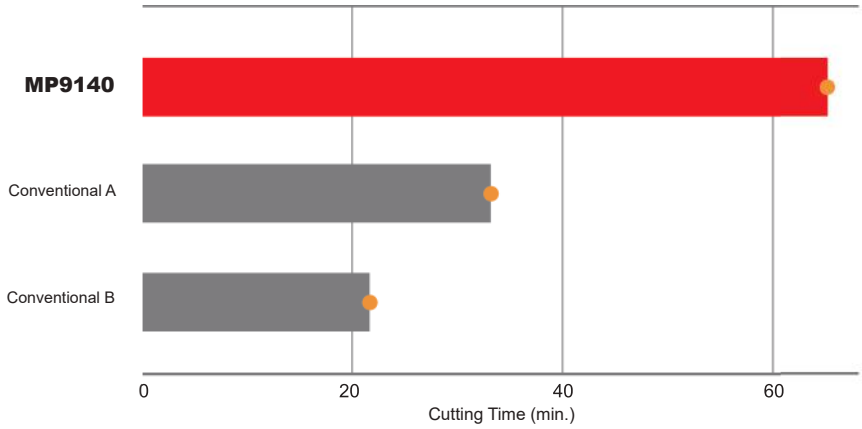


Grade	Features
MP9120	Focus on Wear Resistance
MP9130	Standard Grade
MP9140	Focus on Fracture Resistance

Cutting Performance

Comparison of Fracture Resistance by Titanium Alloy Machining

MP9140 achieved 3X more tool life than conventional product B.



<Cutting Conditions>

Material	: Ti-6Al-4V
Tool	: AJX06R162AM0830
Inserts	: JOMT06T216ZZER-JL
Cutting Speed	: vc=195 SFM
Feed per Tooth	: fz=.020 IPT
Depth of Cut	: ap=.02 inch
Width of Cut	ae=.315 inch, .63 inch
Cutting Mode	: Wet Cutting

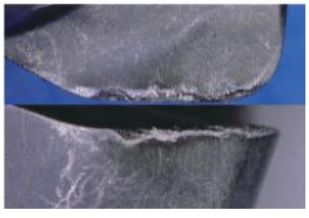
MP9140



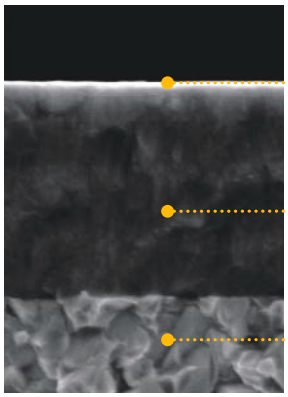
Conventional A



Conventional B



Al-Ti-Cr-N Base PVD Accumulated Coating

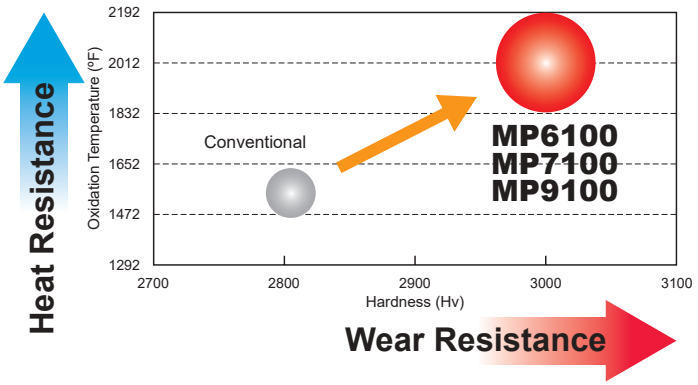


Excellent Welding Resistance Due to Low Coefficient of Friction

Pvd Accumulated Coating (Each Damage Measures)

Special Cemented Carbide Substrate

Dramatically Improving the Heat and Wear Resistance!



Excellent Welding Resistance due to Low Coefficient of Friction!

	Material	Grade	Coefficient of Friction Measured at 1112ºF		
			1055	304	Ti-6Al-4V
P	Carbon Steel, Alloy Steel	**MP6100**	**.4**		
M	Stainless Steel	**MP7100**		**.5**	
S	Titanium Alloys, Heat Resistant Alloys	**MP9100**			**.3**
	Conventional		.7	.7	.7

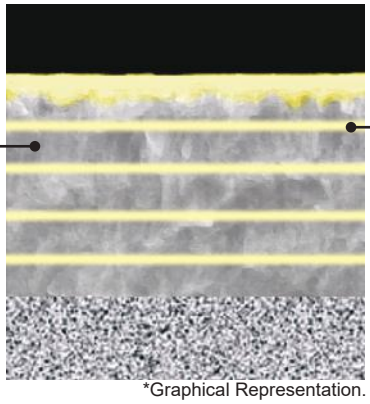
TOUGH-Σ Technology

A fusion of the separate coating technologies; PVD and multi-layering realises extra toughness.

PVD Accumulated Coating

Base Layer High Al-(Al, Ti)N

The new technology Al-(Al, Ti)N coating provides stabilization of the high hardness phase and succeeds in dramatically improving wear, crater and welding resistance.



*Graphical Representation.

Best Layer of Each Workpiece Material

P		(Al,Cr)N
		Tough! Thermal Cracks
M		TiN
		Tough! Notching
S		CrN
		Tough! Resists Chipping

Wide Selection of Inserts

Focus on Cutting Edge Strength

Focus on Cutting Edge Sharpness

Strong Cutting Edge Type Chipbreaker

P M K ~~S~~ H

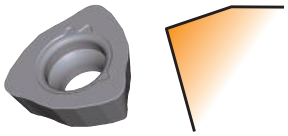


Stable Machining even on Interrupted Workpiece Material Surfaces

With increased fracture resistance during interrupted cutting due to the tougher cutting edges.
For increased reliability and higher efficiency machining to reduce costs.

General Use Type Chipbreaker

P M K S H



First Recommended Chipbreaker for General Cutting

An optimum balance of sharpness and fracture resistance.
Versatile insert for a wide range of workpiece materials and cutting conditions.

Sharp Cutting Edge Type Chipbreaker (For General Use)

P M K S H



Suitable for Use on BT40 and HSK63 Machines

Boosts cutting performance with a large rake angle.
Effective for anti-vibration machining for long overhang applications at higher than normal feeds for cost saving efficiency.

Sharp Cutting Edge Type Chipbreaker (For Difficult-to-cut Materials)

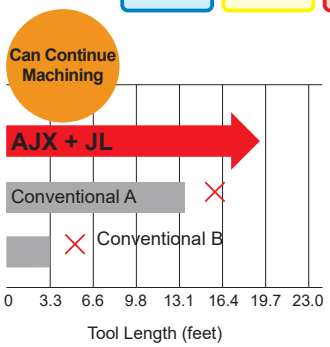
P M K S ~~H~~





Optimized for Difficult-to-cut Materials

The optimized cutting edge of the JL chipbreaker provides the sharpness and low cutting resistance that is ideal for difficult-to-cut materials.
The maximum depth of cut is different in the insert size.
Please refer to page 28.



<Cutting Conditions>

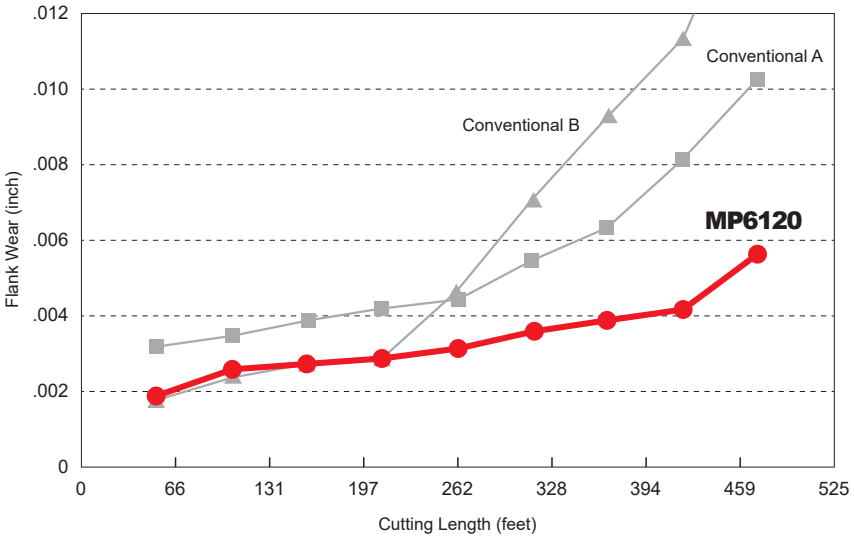
Tool	: DCX=ø2.5" 5 teeth
Material	: Ti-6Al-4V
Revolution	: n=202 min^{-1}
Cutting Speed	: vc=130 SFM
Table Feed	: vf=23.86 IPM
Feed per Tooth	: fz=.024 IPT
Depth of Cut	: ap=.04 inch
Width of Cut	: ae=1.77 inch
Cutting Mode	: Wet Cutting

Material	Cutting Conditions
P K H	Light: JM/JL; General: FT; Interrupted: ST
M	Light: JL; General: JM; FT; ST
S	Light: JL; General: JM; Interrupted: FT

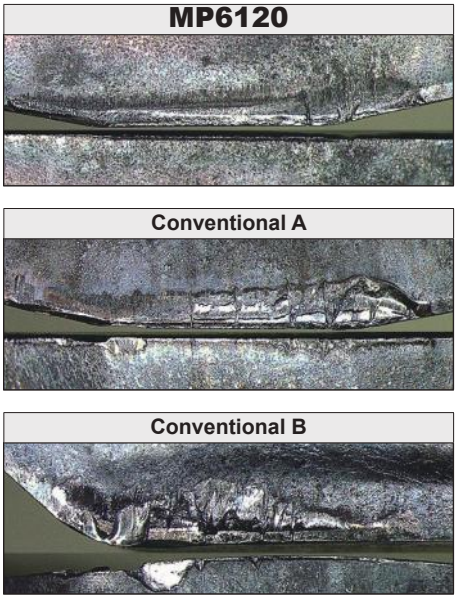
Cutting Performance

General Steel Machining

MP6120 Provides Superior Resistance to Thermal Cracking and Welding



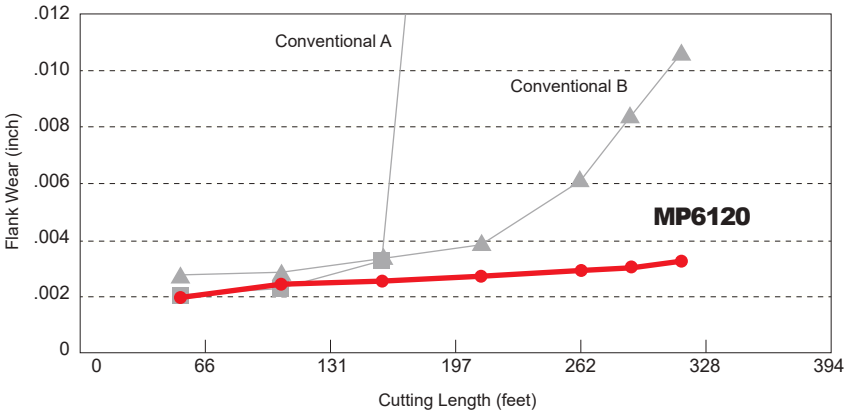
<Cutting Conditions>
Tool : AJX14-063A04R
Inserts : JDMT140520ZDSR-JM
Cutting Speed : vc=655 SFM
Feed per Tooth : fz=.059 IPT
Depth of Cut : ap=.039 inch
Width of Cut : ae=1.969 inch
Cutting Mode : Dry Cutting



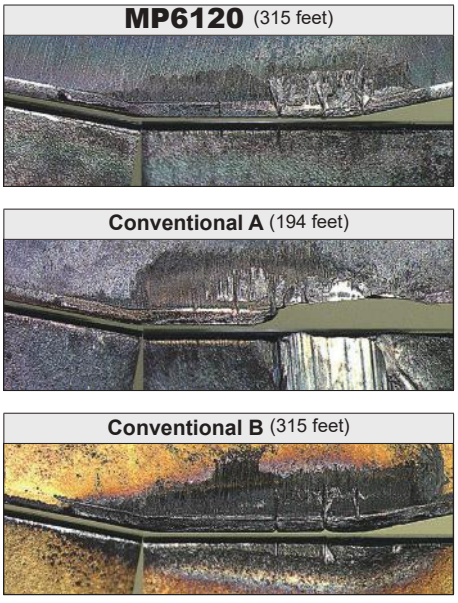
Cutting Length : 459.3 feet

MP6120 Achieves Long Tool Life in Low to Middle Speed Cutting

CVD coated FH7020 is recommended for higher speeds that exceed 655 SFM.



<Cutting Conditions>
Material : AISI 4140
Tool : AJX14-063A04R
Inserts : JDMW140520ZDSR-FT
Cutting Speed : vc=655 SFM
Feed per Tooth : fz=.059 IPT
Depth of Cut : ap=.039 inch
Width of Cut : ae=1.969 inch
Cutting Mode : Dry Cutting



MULTI-FUNCTIONAL MILLING

AJX

P M K N S H



Fig.1 **"FA" Flat Shank**

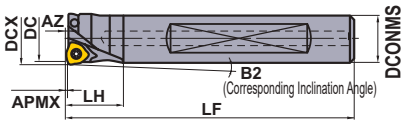


Fig.2

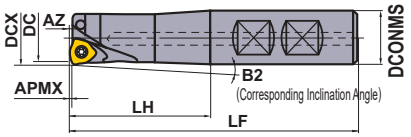


Fig.3

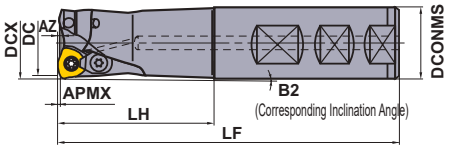
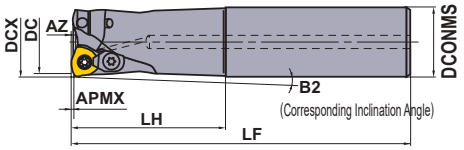


Fig.4



Shank Type

Right hand tool holder only.

With Coolant Through

(inch)

DCX	Order Number	Stock R	* No.T	LF	DC	LH	DCONMS	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□1204

* Number of Teeth

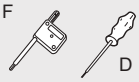
Note 1) Refer to page 32, for the max. depth of cut (**APMX**) and max. drilling depth (**AZ**).

Dimensions and Symbols (ISO 13399 Compliance)

DCX = Cutting Diameter Max.
DC = Cutting Diameter
LF = Functional Length
LH = Head Length
DCONMMS = Connection Diameter Machine Side
APMX = Depth of Cut Max.
RMPX = Ramping Angle Max.

● : **USA Stock**

Spare Parts

Tool Holder Type	 * Clamp Screw	 Clamp Bridge	 * Clamp Bridge Screw	 Spring	 F D Wrench
AJXU06R	TS25	–	–	–	TKY08F
AJXU08R	TS33	–	–	–	TKY08D
AJXU09R	TS351	AMS3	AJS3010T10	ASS2	TKY10D
AJXU12R	TS43	AMS4	AJS4012T15	ASS2	TKY15D
AJXU14R	TS54	AMS5	AJS5014T25	ASS3	TKY25D

* Clamp Torque (lbf-in) : TS25=8.9, TS33=8.9, TS351=22, TS43=31, TS54=66, AJS3010T10=22, AJS4012T15=31, AJS5014T25=66

● : USA Stock



Fig.1

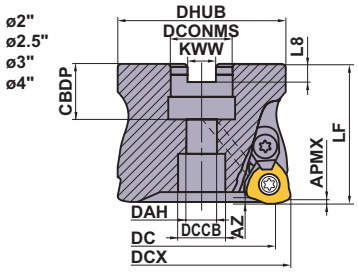
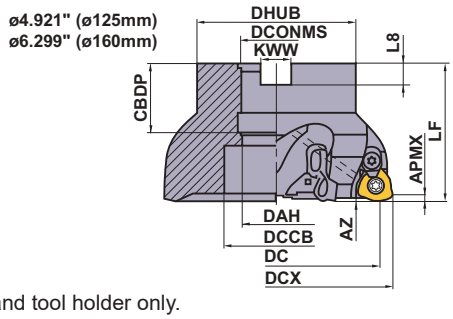


Fig.2



Right hand tool holder only.

(inch)

DCX	Set Bolt	Geometry	
2.000"	HSCU37513H	①	① ② With Coolant Through
2.500", 3.000"	HSCU50014H		
4.000"	HSCU75016H		
4.921"	MBAU75016H	②	
6.299"	MBAU100016H		

Arbor Type

With Coolant Through

DCX = Inch, DCON = Inch

(inch)

DCX	Order Number	Stock R	* No.T	DC	LF	DCONMS	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

* Number of Teeth

Note 1) Refer to page 32, 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
DCONMS = Connection Diameter Machine Side
WT = Weight of Item
APMX = Depth of Cut Max.
RMPX = Ramping Angle Max.
CBDP = Connection Bore Depth
DAH = Diameter Access Hole
DCCB = Counterbore Diameter Connection Bore
DHUB = Hub Diameter
KWW = Keyway Width

Mounting Dimensions

DCX = Inch, DCON = Inch

(inch)

DCX	Order Number	DCONMS	CBDP	DAH	DCCB	DHUB	KWW	L8	Fig.
2.000	**AJXU12R0203**	.750	.748	.415	.600	1.875	.313	.187	1
2.000	**AJXU12R0204**	.750	.748	.415	.600	1.875	.313	.187	1
2.000	**AJXU09R0205**	.750	.748	.415	.600	1.875	.313	.187	1
2.500	**AJXU14R2503C**	1.000	1.024	.539	.787	2.375	.375	.219	1
2.500	**AJXU14R2504C**	1.000	1.024	.539	.787	2.375	.375	.219	1
2.500	**AJXU12R2505C**	1.000	1.024	.539	.787	2.375	.375	.219	1
3.000	**AJXU14R0304C**	1.000	1.024	.539	.787	2.750	.375	.219	1
3.000	**AJXU14R0305C**	1.000	1.024	.539	.787	2.750	.375	.219	1
3.000	**AJXU12R0306C**	1.000	1.024	.539	.787	2.750	.375	.219	1
4.000	**AJXU14R0405E**	1.500	1.181	.787	1.181	3.750	.625	.375	1
4.000	**AJXU14R0406E**	1.500	1.181	.787	1.181	3.750	.625	.375	1
4.000	**AJXU12R0407E**	1.500	1.181	.787	1.181	3.750	.625	.375	1
4.921	**AJX14RA12505E**	1.500	1.575	-	2.205	3.937	.625	.375	2
4.921	**AJX14RA12507E**	1.500	1.575	-	2.205	3.937	.625	.375	2
6.299	**AJX14RA16006F**	2.000	1.693	-	2.835	3.937	.750	.437	2
6.299	**AJX14RA16008F**	2.000	1.693	-	2.835	3.937	.750	.437	2

Spare Parts

Tool Holder Type	*  Clamp Screw	 Clamp Bridge	*  Clamp Bridge Screw	 Spring	T  D Wrench
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) : TS351=22, TS43=31, TS54=66, AJS3010T10=22, AJS4012T15=31, AJS5014T25=66

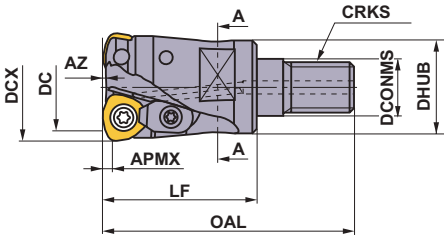
Dimensions and Symbols (ISO 13399 Compliance)

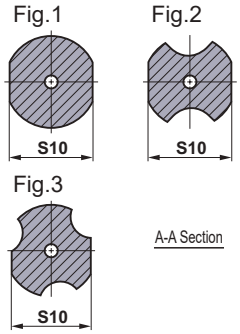
DCX = Cutting Diameter Max.
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WT = Weight of Item
APMX = Depth of Cut Max.
RMPX = Ramping Angle Max.
CBDP = Connection Bore Depth
DAH = Diameter Access Hole
DCCB = Counterbore Diameter Connection Bore
DHUB = Hub Diameter
KWW = Keyway Width

● : **USA Stock**









Screw-in Type

With Coolant Through

Right hand tool holder only.

(inch)

DCX	Order Number	Stock R	* No.T	DC	LF	OAL	DCONMS	DHUB	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

* Number of Teeth

Note 1) Refer to page 32, for the max. depth of cut (**APMX**) and max. drilling depth (**AZ**).

Note 2) For screw-in type shank arbors, refer to page 21.

Spare Parts

Tool Holder Type	* Clamp Screw	Clamp Bridge	* Clamp Bridge Screw	Spring	F D Wrench
AJXU06R	TS25	—	—	—	TKY08F
AJXU08R	TS33	—	—	—	TKY08D
AJXU09R	TS351	AMS3	AJS3010T10	ASS2	TKY10D

* Clamp Torque (lbf-in) : TS25=8.9, 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
DCONMS = Connection Diameter Machine Side
DHUB = Hub Diameter
CRKS = Connection Retention Knob Thread Size
APMX = Depth of Cut Max.
RMPX = Ramping Angle Max.

High Feed Radius Milling Cutter



Fig.1

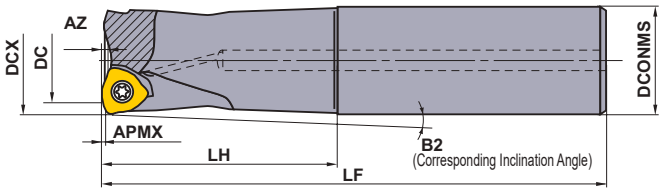


Fig.2

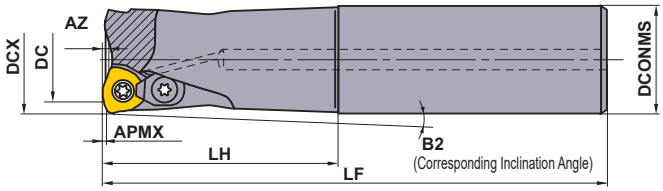
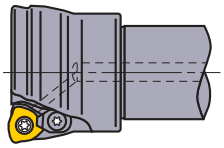


Fig3



Metric Standard

Right hand tool holder only.

Shank Type

With Coolant Through

(mm)

DCX	Order Number	Stock R	* No.T	LF	DC	LH	DCONMS	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°	2	JDM□09T3
25	**AJX08R253SA25S**	★	3	140	16.4	60	25	1.1	0.9	2°	1	JOM□0803
25	**AJX06R254SA25S**	★	4	140	17.9	60	25	1.11	0.6	0.8°	1	JOM□06T2
25	**AJX09R252SA25L**	★	2	200	14.9	120	25	0.54	1.2	4°	2	JDM□09T3
25	**AJX08R253SA25L**	★	3	200	16.4	120	25	0.54	0.9	2°	1	JOM□0803
25	**AJX06R254SA25L**	★	4	200	17.9	120	25	0.54	0.6	0.8°	1	JOM□06T2
25	**AJX09R252SA25EL**	★	2	300	14.9	180	25	0.36	1.2	4°	2	JDM□09T3

* Number of Teeth

Note 1) Refer to page 32, for the max. depth of cut (**APMX**) and maximum drilling depth (**AZ**).

★ : Stocked in Japan

(mm)

DCX	Order Number	Stock R	* No.T	LF	DC	LH	DCONMS	B2	APMX	RMPX	Fig.	Insert Type
28	**AJX09R282SA25S**	★	2	140	17.9	40	25	–	1.2	3°	2	JDM□09T3
28	**AJX08R283SA25S**	★	3	140	19.4	40	25	–	0.9	1.7°	1	JOM□0803
28	**AJX06R284SA25S**	★	4	140	20.9	40	25	–	0.6	0.7°	1	JOM□06T2
28	**AJX09R282SA25L**	★	2	200	17.9	40	25	–	1.2	3°	2	JDM□09T3
28	**AJX08R283SA25L**	★	3	200	19.4	40	25	–	0.9	1.7°	1	JOM□0803
28	**AJX06R284SA25L**	★	4	200	20.9	40	25	–	0.6	0.7°	1	JOM□06T2
28	**AJX09R282SA25EL**	★	2	300	17.9	40	25	–	1.2	3°	2	JDM□09T3
30	**AJX12R302SA32S**	★	2	150	18.3	70	32	1.82	1.2	4.5°	2	JDM□1204
30	**AJX09R303SA32S**	★	3	150	20	70	32	1.79	1.2	2.7°	2	JDM□09T3
30	**AJX12R302SA32L**	★	2	200	18.3	120	32	1.04	1.2	4.5°	2	JDM□1204
30	**AJX09R303SA32L**	★	3	200	20	120	32	1.03	1.2	2.7°	2	JDM□09T3
30	**AJX12R302SA32EL**	★	2	300	18.3	180	32	0.69	1.2	4.5°	2	JDM□1204
32	**AJX12R322SA32S**	★	2	150	20.3	70	32	0.96	1.2	4°	2	JDM□1204
32	**AJX09R323SA32S**	★	3	150	21.9	70	32	0.94	1.2	2.5°	2	JDM□09T3
32	**AJX08R324SA32S**	★	4	150	23.4	70	32	0.95	0.9	1.4°	1	JOM□0803
32	**AJX06R325SA32S**	★	5	150	24.9	70	32	0.94	0.6	0.5°	1	JOM□06T2
32	**AJX06R326SA32S**	★	6	150	24.9	70	32	0.94	0.6	0.5°	1	JOM□06T2
32	**AJX12R322SA32L**	★	2	200	20.3	120	32	0.55	1.2	4°	2	JDM□1204
32	**AJX09R323SA32L**	★	3	200	21.9	120	32	0.54	1.2	2.5°	2	JDM□09T3
32	**AJX08R324SA32L**	★	4	200	23.4	120	32	0.55	0.9	1.4°	1	JOM□0803
32	**AJX06R325SA32L**	★	5	200	24.9	120	32	0.54	0.6	0.5°	1	JOM□06T2
32	**AJX12R322SA32EL**	★	2	300	20.3	180	32	0.36	1.2	4°	2	JDM□1204
35	**AJX12R352SA32S**	★	2	150	23.3	50	32	–	1.2	3.5°	2	JDM□1204
35	**AJX09R353SA32S**	★	3	150	24.9	50	32	–	1.2	2°	2	JDM□09T3
35	**AJX12R352SA32L**	★	2	200	23.3	50	32	–	1.2	3.5°	2	JDM□1204
35	**AJX09R353SA32L**	★	3	200	24.9	50	32	–	1.2	2°	2	JDM□09T3
35	**AJX12R352SA32EL**	★	2	300	23.3	50	32	–	1.2	3.5°	2	JDM□1204
40	**AJX12R403SA32S**	★	3	150	28.3	50	32	–	1.2	3°	2	JDM□1204
40	**AJX09R404SA32S**	★	4	150	29.9	50	32	–	1.2	1.5°	2	JDM□09T3
40	**AJX08R406SA32S**	★	6	150	31.4	50	32	–	0.9	1°	1	JOM□0803
40	**AJX12R403SA32L**	★	3	250	28.3	50	32	–	1.2	3°	2	JDM□1204
40	**AJX09R404SA32L**	★	4	250	29.9	50	32	–	1.2	1.5°	2	JDM□09T3
40	**AJX08R406SA32L**	★	6	250	31.4	50	32	–	0.9	1°	1	JOM□0803
40	**AJX12R402SA32EL**	★	2	350	28.3	50	32	–	1.2	3°	2	JDM□1204
40	**AJX12R403SA42S**	★	3	150	28.3	70	42	1.79	1.2	3°	2	JDM□1204
40	**AJX09R404SA42S**	★	4	150	29.9	70	42	1.8	1.2	1.5°	2	JDM□09T3
40	**AJX12R403SA42L**	★	3	250	28.3	70	42	1.79	1.2	3°	2	JDM□1204
40	**AJX09R404SA42L**	★	4	250	29.9	70	42	1.8	1.2	1.5°	2	JDM□09T3
40	**AJX12R402SA42EL**	★	2	350	28.3	70	42	1.79	1.2	3°	2	JDM□1204
50	**AJX14R503SA42S**	★	3	150	38.2	50	42	–	1.2	4.2°	2	JDM□1405
50	**AJX14R503SA42L**	★	3	250	38.1	50	42	–	1.2	4.2°	2	JDM□1405
63	**AJX14R634SA42S**	★	4	150	51.1	50	42	–	1.2	2.8°	3	JDM□1405
63	**AJX14R634SA42L**	★	4	250	51.1	50	42	–	1.2	2.8°	3	JDM□1405

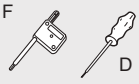
* Number of Teeth

Note 1) Refer to page 32, for the max. depth of cut (**APMX**) and maximum drilling depth (**AZ**).

Dimensions and Symbols (ISO 13399 Compliance)

DCX = Cutting Diameter Max.
DC = Cutting Diameter
LF = Functional Length
LH = Head Length
DCONMMS = Connection Diameter Machine Side
APMX = Depth of Cut Max.
RMPX = Ramping Angle Max.

Spare Parts

Tool Holder Type	 * Clamp Screw	 Clamp Bridge	 * Clamp Bridge Screw	 Spring	 Wrench
AJX06R	TS25	—	—	—	TKY08F
AJX08R	TS33	—	—	—	TKY08D
AJX09R	TS351	AMS3	AJS3010T10	ASS2	TKY10D
AJX12R30	TS407	AMS4	AJS4012T15	ASS2	TKY15D
AJX12R32	TS43	AMS4	AJS4012T15	ASS2	TKY15D
AJX12R35	TS43	AMS4	AJS4012T15	ASS2	TKY15D
AJX12R40	TS43	AMS4	AJS4012T15	ASS2	TKY15D
AJX14R	TS54	AMS5	AJS5014T25	ASS3	TKY25D

* Clamp Torque (N • m) : TS25=1.0, TS33=1.0, TS351=2.5, TS407=3.5, TS43=3.5, TS54=7.5, AJS3010T10=2.5, AJS4012T15=3.5, AJS5014T25=7.5

Dimensions and Symbols (ISO 13399 Compliance)

DCX = Cutting Diameter Max.
DC = Cutting Diameter
LF = Functional Length
DCONMS = Connection Diameter Machine Side
WT = Weight of Item
APMX = Depth of Cut Max.
RMPX = Ramping Angle Max.
CBDP = Connection Bore Depth
DAH = Diameter Access Hole
DCCB = Counterbore Diameter Connection Bore
DHUB = Hub Diameter
KWW = Keyway Width

★ : **Stocked in Japan**



Metric Standard

Arbor Type

With Coolant Through

DCX = mm size, DCON = inch size

(mm)

DCX	Order Number	Stock R	* No.T	DC	LF	DCONMS	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 size, DCON = mm size

(mm)

DCX	Order Number	Stock R	* No.T	DC	LF	DCONMS	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
63	**AJX14-063X03R**	★	3	51.1	50	27	0.6	1.2	2.8	1	JDM□1405
63	**AJX14-063X04R**	★	4	51.1	50	27	0.6	1.2	2.8	1	JDM□1405
63	**AJX12-063X05R**	★	5	51.3	50	27	0.6	1.2	1.5	1	JDM□1204
66	**AJX14-066X03R**	★	3	54.1	50	27	0.6	1.2	2.6	1	JDM□1405
66	**AJX14-066X04R**	★	4	54.1	50	27	0.6	1.2	2.6	1	JDM□1405
66	**AJX12-066X05R**	★	5	54.3	50	27	0.7	1.2	1.4	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

Fig.1

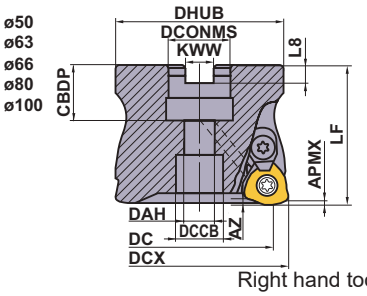
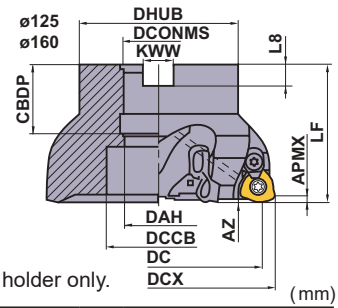


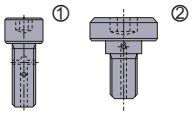
Fig.2



Right hand tool holder only.

(mm)

DCX		Set Bolt	Geometry
DCON inch size	DCON mm size		
ϕ50, ϕ63	ϕ50, ϕ63(DCON=22)	HSC10030H	①
	ϕ63(DCON=27), ϕ80	HSC12035H	
ϕ80, ϕ100	ϕ100	HSC16040H	
ϕ125	ϕ125, ϕ160	MBA20040H	②
ϕ160		MBA24045H	



High Feed Radius Milling Cutter

DCX	Order Number	Stock R	* No.T	DC	LF	DCONMS	WT (kg)	APMX	RMPX	Fig.	Insert Type
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

Fig.3

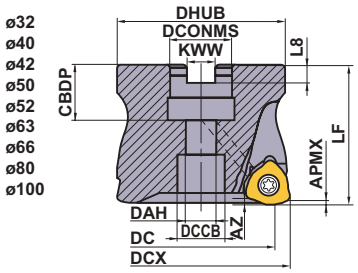
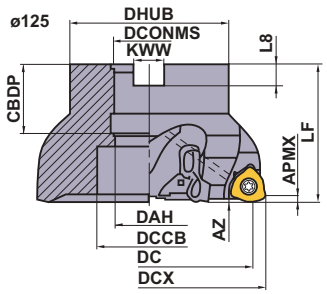


Fig.4



Right hand tool holder only.

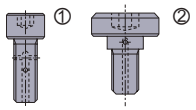


Arbor Type Super Extra Fine Pitch

With Coolant Through
DCX = mm size, DCON = mm size

(mm)

DCX	Set Bolt	Geometry
ϕ32, ϕ40, ϕ42	HSC08025H	①
ϕ50, ϕ52, ϕ63 ϕ66 (DCON=22)	HSC10030H	①
ϕ63 ϕ66 (DCON=27), ϕ80	HSC12035H	①
ϕ100	HSC16040H	①
ϕ125	MBA20040H	②



With Coolant Through

(mm)

DCX	Order Number	Stock R	* No.T	DC	LF	DCONMS	WT (kg)	APMX	RMPX	Fig.	Insert Type
32	**AJX06-032A05R**	★	5	24.9	40	16	0.1	0.6	0.5°	3	JOM□06T2
32	**AJX06-032A06R**	★	6	24.9	40	16	0.1	0.6	0.5°	3	JOM□06T2
40	**AJX08-040A06R**	★	6	31.4	40	16	0.2	0.9	1°	3	JOM□0803
42	**AJX08-042A06R**	★	6	33.4	40	16	0.2	0.9	0.9°	3	JOM□0803
50	**AJX09-050A06R**	★	6	39.3	50	22	0.4	1.2	1.1°	3	JDM□09T3
50	**AJX08-050A07R**	★	7	41.4	50	22	0.4	0.9	0.7°	3	JOM□0803
52	**AJX09-052A06R**	★	6	41.9	50	22	0.4	1.2	1°	3	JDM□09T3
52	**AJX08-052A07R**	★	7	43.4	50	22	0.5	0.9	0.7°	3	JOM□0803
63	**AJX12-063A06R**	★	6	51.3	50	22	0.7	1.2	1.5°	3	JDM□1204
63	**AJX09-063A07R**	★	7	52.9	50	22	0.7	1.2	0.8°	3	JDM□09T3
63	**AJX12-063X06R**	★	6	51.3	50	27	0.6	1.2	1.5°	3	JDM□1204
63	**AJX09-063X07R**	★	7	52.9	50	27	0.7	1.2	0.8°	3	JDM□09T3
66	**AJX12-066A06R**	★	6	54.3	50	22	0.7	1.2	1.4°	3	JDM□1204
66	**AJX09-066A07R**	★	7	55.9	50	22	0.8	1.2	0.8°	3	JDM□09T3
66	**AJX12-066X06R**	★	6	54.3	50	27	0.7	1.2	1.4°	3	JDM□1204
66	**AJX09-066X07R**	★	7	55.9	50	27	0.8	1.2	0.8°	3	JDM□09T3
80	**AJX12-080A08R**	★	8	68.3	50	27	1.1	1.2	1.1°	3	JDM□1204
100	**AJX12-100A09R**	★	9	88.3	63	32	2.5	1.2	0.8°	3	JDM□1204
125	**AJX14-125B09R**	★	9	113.2	63	40	3.0	1.2	0.8°	4	JDM□1405

* Number of Teeth

Note 1) Refer to page 32, for the max. depth of cut (**APMX**) and maximum drilling depth (**AZ**).

Dimensions and Symbols (ISO 13399 Compliance)

DCX = Cutting Diameter Max.
DC = Cutting Diameter
LF = Functional Length
DCONMS = Connection Diameter Machine Side
WT = Weight of Item
APMX = Depth of Cut Max.
RMPX = Ramping Angle Max.
CBDP = Connection Bore Depth
DAH = Diameter Access Hole
DCCB = Counterbore Diameter Connection Bore
DHUB = Hub Diameter
KWW = Keyway Width

★ : **Stocked in Japan**

Mounting Dimensions

Fig.1

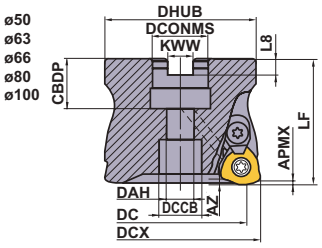


Fig.2

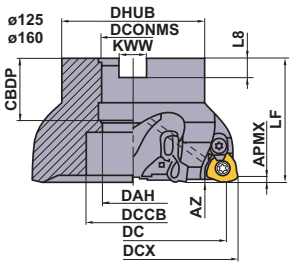


Fig.3

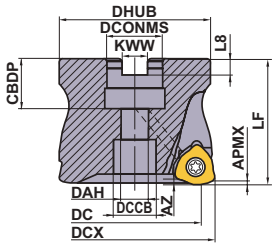
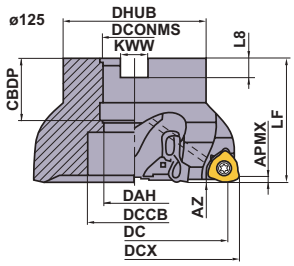


Fig.4



DCX = mm size, DCON = inch size (mm)

DCX	Order Number	DCONMS	CBDP	DAH	DCCB	DHUB	KWW	L8	Fig.
50	**AJX12R050**	22.225	19	11	17	47	8.4	5	1
50	**AJX09R050**	22.225	19	11	17	47	8.4	5	1
63	**AJX14R063**	22.225	19	11	17	60	8.4	5	1
63	**AJX12R063**	22.225	19	11	17	60	8.4	5	1
80	**AJX14R080**	31.75	32	17	26	76	12.7	8	1
80	**AJX12R080**	31.75	32	17	26	76	12.7	8	1
100	**AJX14R100**	31.75	32	17	26	96	12.7	8	1
100	**AJX12R100**	31.75	32	17	26	96	12.7	8	1
125	**AJX14R125**	38.1	40	—	56	100	15.9	10	2
160	**AJX14R160**	50.8	43	—	72	100	19.1	11	2

DCX = mm size, DCON = mm size (mm)

DCX	Order Number	DCONMS	CBDP	DAH	DCCB	DHUB	KWW	L8	Fig.
32	**AJX06-032A**	16	18	9	14	30	8.4	5.6	3
40	**AJX08-040A**	16	18	9	14	37	8.4	5.6	3
42	**AJX08-042A**	16	18	9	14	37	8.4	5.6	3
50	**AJX12-050A**	22	20	11	17	47	10.4	6.3	1
50	**AJX09-050A**	22	20	11	17	47	10.4	6.3	1, 3
52	**AJX09-052A**	22	20	11	17	47	10.4	6.3	3
52	**AJX08-052A**	22	20	11	17	47	10.4	6.3	3
63	**AJX14-063A**	22	20	11	17	60	10.4	6.3	1
63	**AJX12-063A**	22	20	11	17	60	10.4	6.3	1, 3
63	**AJX09-063A**	22	20	11	17	60	10.4	6.3	3
63	**AJX12-063X**	27	23	13	20	60	12.4	7.0	3
63	**AJX09-063X**	27	23	13	20	60	12.4	7.0	3
66	**AJX12-066A**	22	20	11	17	60	10.4	6.3	3
66	**AJX09-066A**	22	20	11	17	60	10.4	6.3	3
66	**AJX14-066X**	27	23	13	20	60	12.4	7.0	1
66	**AJX12-066X**	27	23	13	20	60	12.4	7.0	1, 3
66	**AJX09-066X**	27	23	13	20	60	12.4	7.0	3
80	**AJX14-080A**	27	23	13	19	76	12.4	7.0	1
80	**AJX12-080A**	27	23	13	19	76	12.4	7.0	1, 3
100	**AJX14-100A**	32	26	17	26	96	14.4	8.0	1
100	**AJX12-100A**	32	26	17	26	96	14.4	8.0	1, 3
125	**AJX14-125B**	40	40	—	56	100	16.4	9.0	2, 4
160	**AJX14-160B**	40	40	—	56	100	16.4	9.0	2

Spare Parts

Tool Holder Type	Clamp Screw *	Clamp Bridge	Clamp Bridge Screw *	Spring	Wrench (F, D, T)
AJX06 Super Extra Fine Pitch	TS25	—	—	—	TKY08F
AJX08 Super Extra Fine Pitch	TS33	—	—	—	TKY08D
AJX09	TS351	AMS3	AJS3010T10	ASS2	TKY10D
AJX09 Super Extra Fine Pitch	TS351	—	—	—	TKY10D
AJX12	TS43	AMS4	AJS4012T15	ASS2	TKY15T
AJX12 Super Extra Fine Pitch	TS43	—	—	—	TKY15T
AJX14	TS54	AMS5	AJS5014T25	ASS3	TKY25T
AJX14 Super Extra Fine Pitch	TS54	—	—	—	TKY25T

* Clamp Torque (N • m) : TS25=1.0, TS33=1.5, TS351=2.5, TS43=3.5, TS54=7.5, AJS3010T10=2.5, AJS4012T15=3.5, AJS5014T25=7.5

High Feed Radius Milling Cutter



Fig.1



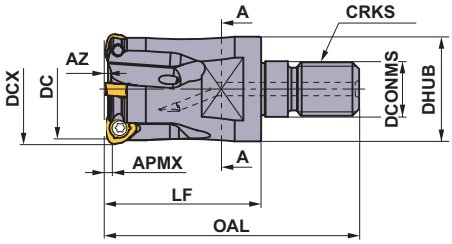
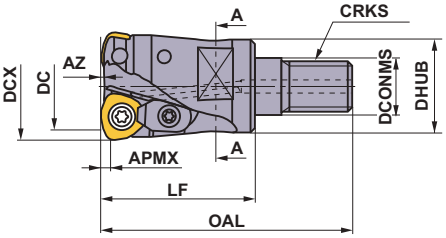
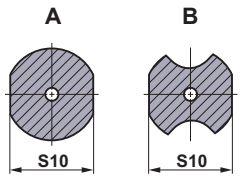


Fig.2





Connection Type



Screw-in Type

With Coolant Through

Right hand tool holder only.

(mm)

DCX	Order Number	Stock R	* No.T	DC	LF	OAL	DCONMS	WT (kg)	APMX	RMPX	Fig.	Insert Type
16	**AJX06R162AM0830**	★	2	8.9	30	48	8.5	0.1	0.6	3°	1	JOM◌06T2
17	**AJX06R172AM0830**	★	2	9.9	30	48	8.5	0.1	0.6	2.5°	1	JOM◌06T2
20	**AJX08R202AM1030**	★	2	11.4	30	49	10.5	0.1	0.9	3.5°	1	JOM◌0803
20	**AJX06R203AM1030**	★	3	12.9	30	49	10.5	0.1	0.6	1.5°	1	JOM◌06T2
22	**AJX08R222AM1030**	★	2	13.4	30	49	10.5	0.1	0.9	3°	1	JOM◌0803
22	**AJX06R223AM1030**	★	3	14.9	30	49	10.5	0.1	0.6	1°	1	JOM◌06T2
25	**AJX09R252AM1235**	★	2	14.9	35	57	12.5	0.2	1.2	4°	2	JDM◌09T3
25	**AJX08R253AM1235**	★	3	16.4	35	57	12.5	0.1	0.9	2°	1	JOM◌0803
25	**AJX06R254AM1235**	★	4	17.9	35	57	12.5	0.1	0.6	0.8°	1	JOM◌06T2
28	**AJX09R282AM1235**	★	2	17.9	35	57	12.5	0.2	1.2	3°	2	JDM◌09T3
28	**AJX08R283AM1235**	★	3	19.4	35	57	12.5	0.1	0.9	1.7°	1	JOM◌0803
28	**AJX06R284AM1235**	★	4	20.9	35	57	12.5	0.1	0.6	0.7°	1	JOM◌06T2
30	**AJX12R302AM1645**	★	2	18.3	45	68	17.0	0.3	1.2	4.5°	2	JDM◌1204
30	**AJX09R303AM1645**	★	3	20	45	68	17.0	0.2	1.2	2.7°	2	JDM◌09T3
32	**AJX12R322AM1645**	★	2	20.3	45	68	17.0	0.3	1.2	4°	2	JDM◌1204
32	**AJX09R323AM1645**	★	3	21.9	45	68	17.0	0.2	1.2	2.5°	2	JDM◌09T3
32	**AJX08R324AM1645**	★	4	23.4	45	68	17.0	0.2	0.9	1.4°	1	JOM◌0803
35	**AJX12R352AM1645**	★	2	23.3	45	68	17.0	0.3	1.2	3.5°	2	JDM◌1204
35	**AJX09R353AM1645**	★	3	24.9	45	68	17.0	0.2	1.2	2°	2	JDM◌09T3
35	**AJX08R354AM1645**	★	4	26.4	45	68	17.0	0.2	0.9	1.2°	1	JOM◌0803
40	**AJX12R403AM1645**	★	3	28.3	45	68	17.0	0.3	1.2	3°	2	JDM◌1204
40	**AJX09R404AM1645**	★	4	29.9	45	68	17.0	0.2	1.2	1.5°	2	JDM◌09T3
40	**AJX08R406AM1645**	★	6	31.4	45	68	17.0	0.3	0.9	1°	1	JOM◌0803

* Number of Teeth

Note 1) Refer to page 32, for the max. depth of cut (**APMX**) and maximum drilling depth (**AZ**).

Note 2) For screw-in type arbors, refer to page 21.

Spare Parts

Tool Holder Type	*  Clamp Screw	 Clamp Bridge	*  Clamp Bridge Screw	 Spring	F  D Wrench
AJX06R	TS25	—	—	—	TKY08F
AJX08R	TS33	—	—	—	TKY08D
AJX09R	TS351	AMS3	AJS3010T10	ASS2	TKY10D
AJX12R30	TS407	AMS4	AJS4012T15	ASS2	TKY15D
AJX12R32	TS43	AMS4	AJS4012T15	ASS2	TKY15D
AJX12R35	TS43	AMS4	AJS4012T15	ASS2	TKY15D
AJX12R40	TS43	AMS4	AJS4012T15	ASS2	TKY15D

* Clamp Torque (N • m) : TS25=1.0, TS33=1.0, TS351=2.5, TS407=3.5, TS43=3.5, AJS3010T10=2.5, AJS4012T15=3.5, AJS5014T25=7.5

★ : **Stocked in Japan**

Mounting Dimensions

(mm)

DCX	Order Number	DCONMS	DHUB	S10	CRKS	Connection Type	Shank Arbor Type
16	**AJX06R162AM0830**	8.5	13	10	M8	A	SC16M08
17	**AJX06R172AM0830**	8.5	13	10	M8	A	SC16M08
20	**AJX08R202AM1030**	10.5	18	14	M10	B	SC20M10
20	**AJX06R203AM1030**	10.5	18	14	M10	C	SC20M10
22	**AJX08R222AM1030**	10.5	18	14	M10	B	SC20M10
22	**AJX06R223AM1030**	10.5	18	14	M10	C	SC20M10
25	**AJX09R252AM1235**	12.5	21	19	M12	B	SC25M12
25	**AJX08R253AM1235**	12.5	21	19	M12	A	SC25M12
25	**AJX06R254AM1235**	12.5	23.5	19	M12	A	SC25M12
28	**AJX09R282AM1235**	12.5	21	19	M12	B	SC25M12
28	**AJX08R283AM1235**	12.5	21	19	M12	A	SC25M12
28	**AJX06R284AM1235**	12.5	23.5	19	M12	A	SC25M12
30	**AJX12R302AM1645**	17.0	29	24	M16	B	SC32M16
30	**AJX09R303AM1645**	17.0	29	24	M16	A	SC32M16
32	**AJX12R322AM1645**	17.0	29	24	M16	B	SC32M16
32	**AJX09R323AM1645**	17.0	29	24	M16	A	SC32M16
32	**AJX08R324AM1645**	17.0	29	24	M16	A	SC32M16
35	**AJX12R352AM1645**	17.0	29	24	M16	B	SC32M16
35	**AJX09R353AM1645**	17.0	29	24	M16	A	SC32M16
35	**AJX08R354AM1645**	17.0	29	24	M16	A	SC32M16
40	**AJX12R403AM1645**	17.0	29	24	M16	B	SC32M16
40	**AJX09R404AM1645**	17.0	29	24	M16	A	SC32M16
40	**AJX08R406AM1645**	17.0	29	24	M16	A	SC32M16

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.

(mm)

Screw Size	Recommended Torque (N • m)	Wrench Size
M8	23	10
M10	46	14
M12	80	19
M16	90	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.

Dimensions and Symbols (ISO 13399 Compliance)

DCX = Cutting Diameter Max.
DC = Cutting Diameter
LF = Functional Length
OAL = Overall Length
DCONMS = Connection Diameter Machine Side
DHUB = Hub Diameter
CRKS = Connection Retention Knob Thread Size
APMX = Depth of Cut Max.
RMPX = Ramping Angle Max.

Inserts

(inch)

Material		
P	Steel	◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆ ◆
M	Stainless Steel	◇ ◇ ◇ ◇ ◇
K	Cast Iron	◆ ◆ ◆ ◆
S	Heat Resistant Alloys, Titanium Alloys	◆ ◆ ◆ ◆
H	Hardened Steel	◆

This is the selection guideline for AJX.
Please note that the cutting conditions differ depending on multiple factors, for more details refer to the Recommended Cutting Conditions.

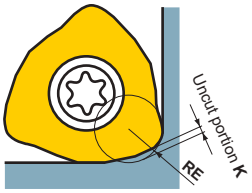
Edge Preparation :
E : Round **S :** Chamfer + Hone

Shape	Order Number	Class	Coated											AN	IC	S	BS	RE	Geometry
			MV1020	MV1030	FH7020	MP6130	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	**Edge Preparation : S**
Strong Cutting Edge Type	**JDMT120420ZDSR-ST**	M	●	●	●	●	●	●	●				●	●	15°	.472	.187	.098	.079	
	JDMT140520ZDSR-ST	M	●	●	●	●	●	●	●				●	●	15°	.551	.219	.110	.079	**Edge Preparation : S**
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	**Edge Preparation : E**
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	**Edge Preparation : S**

Note 1) When using ST chipbreaker, please check the height setting as it differs from other chipbreakers.

Note for Programming

(inch)



When using the AJX, please program the approximate radius as indicated.
The approximate uncut portions for the program are as in the right table.

Insert Size	Chipbreaker	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

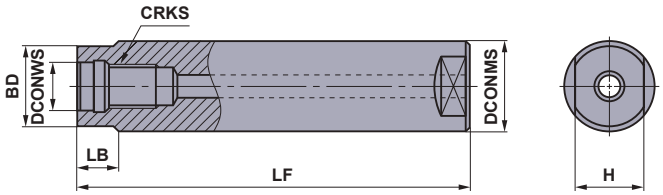
Note) The uncut portion may change slightly depending on cutting conditions.

● : USA Stock
(10 inserts in one case)

SCREW-IN HOLDERS

STRAIGHT SHANK TYPE





Steel Shank Type

With Coolant Through (inch)

CRKS	Order Number	Stock	DCONMS	LF	BD	DCSFWS	LB	H	WT (lbs)
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

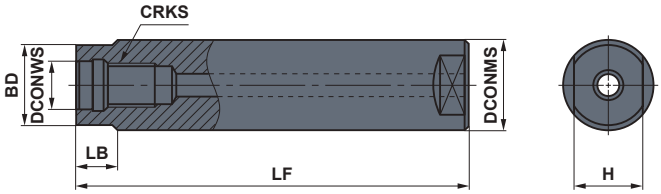
With Coolant Through (mm)

CRKS	Order Number	Stock	DCONMS	LF	BD	DCSFWS	LB	H	WT (kg)
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

● : USA Stock ★ : Stocked in Japan

SCREW-IN HOLDERS





Carbide Shank Type

With Coolant Through (inch)

CRKS	Order Number	Stock	DCONMS	LF	BD	DCSFWS	LB	H	WT (lbs)
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

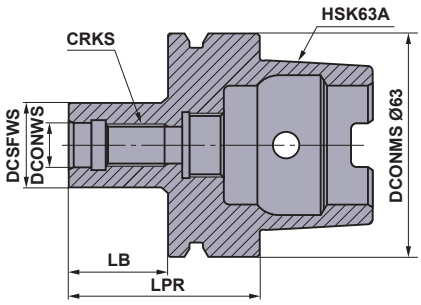
With Coolant Through (mm)

CRKS	Order Number	Stock	DCONMS	LF	BD	DCSFWS	LB	H	WT (kg)
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

● : USA Stock ★ : Stocked in Japan

HSK63A Shank Arbor





Metric Standard

With Coolant Through

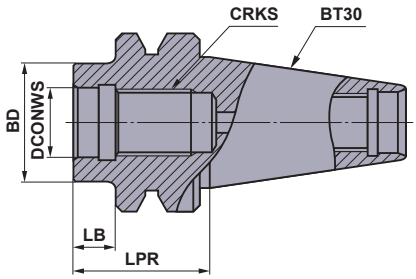
(mm)

CRKS	Order Number	Stock	DCONWS	DCSFWS	LPR	LB	WT (kg)
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

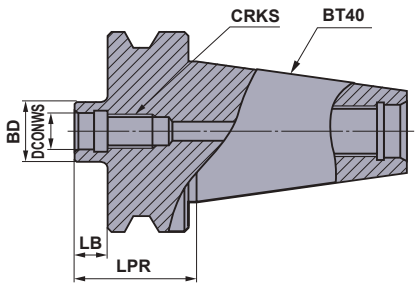
With Coolant Through

(mm)

CRKS	Order Number	Stock	DCONWS	BD	LPR	LB	WT (kg)
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

With Coolant Through

(mm)

CRKS	Order Number	Stock	DCONWS	BD	LPR	LB	WT (kg)
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 (inch)
M8	17.0	.394
M10	33.9	.551
M12	59.0	.748
M16	66.4	.945

- 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.

Recommended Cutting Conditions

Cutting Speed

	Material	Properties	Cutting Speed **vc** (SFM)					
P		**Grade**	**MV1020**	**MV1030**	**FH7020**	**MP6120**	**MP6130**	**VP30RT**
	Mild Steel	Hardness ≤180HB	755 (590—920)	525 (330—720)	560 (395—720)	490 (330—655)	425 (260—590)	360 (195—525)
	Carbon Steel Alloy Steel	Hardness 180—280HB	720 (560—885)	490 (260—720)	490 (330—655)	425 (260—590)	360 (195—525)	295 (130—460)
	Carbon Steel Alloy Steel	Hardness 280—350HB	590 (330—820)	460 (230—690)	425 (260—590)	330 (165—490)	260 (100—425)	195 (65—360)
	Alloy Tool Steel	Hardness ≤350HB (Annealing)	590 (330—820)	460 (230—690)	425 (260—590)	330 (165—490)	260 (100—395)	195 (65—295)
	Pre-hardened Steel	Hardness 35—45HRC			—	330 (230—425)	260 (165—360)	260 (100—295)
M		**Grade**	**MV1030**	**MP7130**	**MP7140**			
	Stainless Steel	Hardness ≤200HB	525 (425—655)	460 (330—590)	395 (260—525)	—	—	—
		Hardness >200HB						
K		**Grade**	**MV1020**	**MV1030**	**FH7020**	**VP15TF**		
	Gray Cast Iron	Tensile Strength ≤350MPa	690 (525—850)	525 (395—690)	490 (330—655)	—	—	—
	Ductile Cast Iron	Tensile Strength ≤800MPa	620 (460—785)	425 (295—560)	—	395 (260—525)	—	—
S		**Grade**	**MP9120**	**MP9130**	**MP9140**			
	Heat Resistant Alloys	Hardness ≤350HB	100 (65—130)	80 (65—115)	65 (50—100)	—	—	—
	Titanium Alloys	—	165 (130—195)	150 (100—180)	130 (100—165)	—	—	—
H		**Grade**	**VP15TF**					
	Hardened Steel	Hardness 40—55HRC	230 (165—295)	—	—	—	—	—

Recommended Cutting Conditions

Depth of Cut / Feed

Material		Properties	DCX=ϕ.625", ϕ.688" (ϕ16mm, ϕ17mm) (Shank Type)			DCX=ϕ.750", ϕ.875" (ϕ20mm, ϕ22mm) (Shank Type)			DCX=ϕ.750" (ϕ20mm, ϕ22mm) (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	Hardness ≤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 Alloy Steel	Hardness 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
	Carbon Steel Alloy Steel	Hardness 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	Hardness ≤350HB (Annealing)	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	Hardness 35—45HRC	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	Hardness ≤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 ≤800MPa	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	Hardness ≤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 Alloys	—	8.2	.012	.012	9.4	.016	.012	8.2	.012	.012
H	Hardened Steel	Hardness 40—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 chipbreaker is up to .024 inch. (06 size)
* Depth of cut of JL chipbreaker is up to .035 inch. (08 size)

(inch)

	DCX=ϕ1.000", ϕ1.125" (ϕ25mm, ϕ28mm) (Shank Type)			DCX=ϕ1.000" (ϕ25mm) (Shank Type)			DCX=ϕ1.250" (ϕ32mm) (Shank Type)			DCX=ϕ1.250" (ϕ32mm) (Shank Type)			DCX=ϕ1.500" (ϕ40mm) (ϕ1.250"Shank)			DCX=ϕ1.500" (ϕ40mm) (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 chipbreaker is up to .047 inch.(09, 12, 14 sizes)

Recommended Cutting Conditions

Depth of Cut / Feed

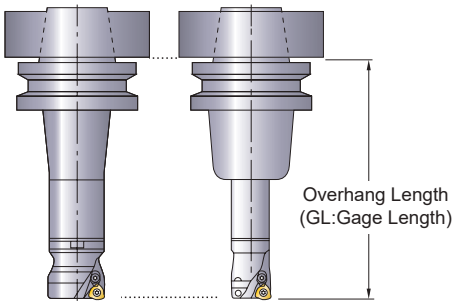
	Material	Properties	DCX=ϕ1.500" (ϕ40mm) (ϕ1.500"Shank) AJXU12 Type 3 (Number of Teeth)			DCX=ϕ2.000" (ϕ50mm) (Shank Type) AJXU14 Type 3 (Number of Teeth)			DCX=ϕ2.000", ϕ2.500" (ϕ50mm, ϕ63mm, ϕ66mm) (Arbor Type) AJXU09, 12 (ϕ2.000") AJXU12, 14 (ϕ2.500") 3, 4, 5 (Number of Teeth)		
			Over-hang	Axial 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	Hardness ≤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 Alloy Steel	Hardness 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
	Carbon Steel Alloy Steel	Hardness 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	Hardness ≤350HB (Annealing)	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	Hardness 35—45HRC	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	Hardness ≤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 ≤800MPa	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 Alloys	Hardness ≤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 Alloys	—	12.0	.031	.012	—	—	—	14.0	.031	.012
H	Hardened Steel	Hardness 40—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)

	DCX=ϕ2.000", ϕ2.500" (ϕ50mm, ϕ63mm, ϕ66mm) (Arbor Type)			DCX=ϕ3.000", ϕ4.000", ϕ4.921", ϕ6.299" (ϕ80mm, ϕ100mm, ϕ125mm, ϕ160mm) (Arbor Type)			DCX=ϕ3.000", ϕ4.000" (ϕ80mm, ϕ100mm) (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 chipbreaker is up to .047 inch.

①Overhang Length



②Main Spindle Speed
$n(min^{-1})$=(Recommended Cutting Speed x 12)÷(DCX x 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 chipbreaker 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.

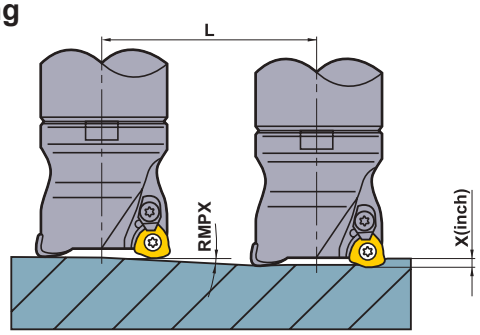
⑧Use “sharp” JM chipbreaker to lower cutting forces or when there is a long tool overhang.

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.

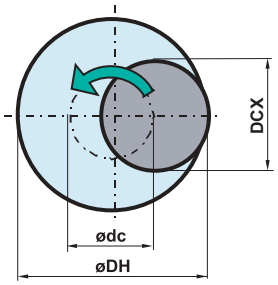
⑩The maximum depth of cut JL chipbreaker is different in the insert size. 06 size is up to .024 inch, 08 size is up to .035 inch, and 09, 12, 14 size is up to .047 inch.

Maximum Capacities by Mode

Ramping



Helical Milling and Drilling



- How to calculate the theoretical center of the tool path.

ødc = øDH - DCX

Theoretical Center of the Tool | Desired Hole Diameter | 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.

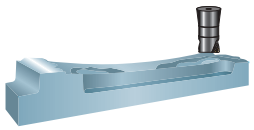
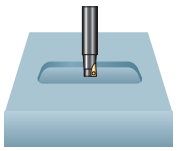
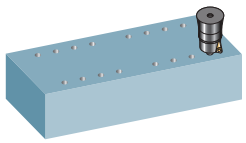
When ramping and helical milling, it is recommended to reduce the feed rate by 40%.
When drilling, please set the feed in the axial direction .008 IPR or less.
The long chips generated can discharge in any direction, so ensure that adequate safety precautions are taken.

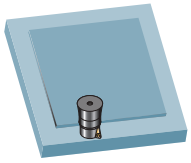
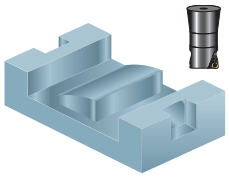
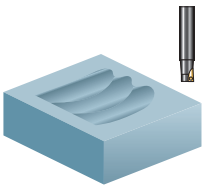
(inch)

	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 Z=.039	Z=.047	Z=.059	Z=.079	Min. Hole Diameter	Max. Hole Diameter	
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
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. **DC** = Cutting Diameter **DH** = Desired Hole Diameter
APMX = Depth of Cut Max. **RMPX** = Ramping Angle Max. **AZ** = Max. Drilling Depth

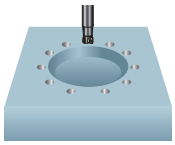
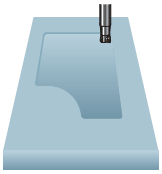
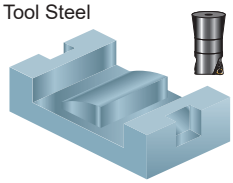
Application Examples

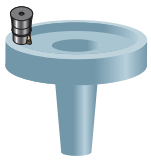
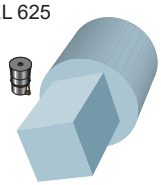
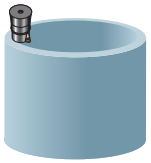
Tool (Grade)		AJXU14R2504C FT Chipbreaker (FH7020)	AJXU06R112FA10S FT Chipbreaker (VP15TF)	AJXU14R0304C ST Chipbreaker (FH7020)
Workpiece		AISI 1055 (220HB) 	ATSM H13 (40HRC) 	AISI 1049 (200HB) 
Component		Resin Mold	Resin Mold (Pocket Milling for Bushes)	Resin Mold
Cutting Conditions	Cutting Speed **vc** (SFM)	589 SFM (900 min-1)	504 SFM (2800 min-1)	471 SFM (600 min-1)
	Table Feed **vf** (Feed per T. **fz**)	160 IPM (.045 IPT)	157 IPM (.028 IPT)	192 IPM (.08 IPT)
	Depth of Cut **ap** (inch)	.060	.020	.060
	Width of Cut **ae** (inch)	1.8	.315	2.0
	Overhang Length (inch)	9.8	7.0(GL)	8.4(GL)
Cutting Mode		Air Blow	Air Blow	Air Blow
Results		Compared to a conventional product whose tool life was 2 hours, the AJX improved tool life by 3 hours. Realization of long tool life achieves great cost reductions.	Conventional solid end mills were used for pocket milling, but low efficiency and high costs were problematic. The use of the ø.688"AJX achieved high efficiency and cut costs.	The workpiece was perforated and conventional inserts suffered from fracturing. The ST chipbreaker with tougher cutting edges did not fracture, making unmanned machining possible.

Tool (Grade)		AJXU14R0406E FT Chipbreaker (VP30RT)	AJXU14R0305C FT Chipbreaker (FH7020)	AJXU12R243WA20S ST Chipbreaker (VP15TF)
Workpiece		304SS (200HB) 	Cast iron, Class45 	ASTM H13 (50HRC) 
Component		Electronics Part Manufacturing Device Component	Press Mold	Forging Mold
Cutting Conditions	Cutting Speed **vc** (SFM)	419 SFM (400 min-1)	628 SFM (800 min-1)	190 SFM (490 min-1)
	Table Feed **vf** (Feed per T. **fz**)	100 IPM (.042 IPT)	160 IPM (.040 IPT)	47 IPM (.032 IPT)
	Depth of Cut **ap** (inch)	.040	.080	.040
	Width of Cut **ae** (inch)	2.4	2.1	1.2
	Overhang Length (inch)	5.4 (GL)	11.7 (GL)	7.9 (GL)
Cutting Mode		Wet Cutting	Air Blow	Air Blow
Results		Although the workpiece was a thin stainless plate, the AJX displayed stable cutting performance without suffering from vibrations. The AJX achieved 3X longer tool life than a conventional product.	Enabled a stable cutting performance despite an uneven machining allowance. FH7020 achieved a longer tool life due to less crater wear of the insert.	Machining recycled molds with holes or welds, conventional inserts suffered from fracturing. The ST chipbreaker with tougher cutting edges suffered no sudden fracturing.

Please note that the machining performed in the application examples is dependent on the rigidity of the machine used and the rigidity of the workpiece and clamping.

Application Examples

Tool (Grade)		AJX09R252SA25S JM Chipbreaker (FH7020)	AJXU08R122WA12S FT Chipbreaker (VP15TF)	AJX14R10006D JM Chipbreaker (MP6120)
Workpiece		ASTM52100 	P20 (45HRC) 	Alloy Tool Steel 
Component		Automotive Part	Die Casting Mold	Press Mold
Cutting Conditions	Cutting Speed **vc** (SFM)	600 SFM (2300 min^{-1})	196 SFM (1000 min^{-1})	330 SFM (320 min^{-1})
	Table Feed **vf** (Feed per T. **fz**)	184 IPM (.040 IPT)	64 IPM (.032 IPT)	46 IPM (.024 IPT)
	Depth of Cut **ap** (inch)	.039	.039	.059
	Width of Cut **ae** (inch)	.710	.35	2.756
	Overhang Length (inch)	3.8(GL)	4.2(GL)	3.150
Cutting Mode		Air Blow	Air Blow	Air Blow
Results		Possible to use an HSK63 high-speed machining center to full capacity. No fear of workpiece distortion thanks to low cutting resistance and low heat generation of the JM chipbreaker.	High efficiency machining possible even on a high speed machining center with a CAT40 main spindle. Manufacturing costs have been slashed by directly machining quenched steel.	Achieved 2X longer tool life compared to conventional product.

Tool (Grade)		AJX12R08006D JL Chipbreaker (MP9130)	AJX12-080A06R JL Chipbreaker (MP9120)	AJX12-080A06R JL Chipbreaker (MP9130)
Workpiece		Co-Cr Alloy 	INCONEL 625 	Ti-6Al-4V 
Component		Medical Component	Aerospace Component	Aerospace Component
Cutting Conditions	Cutting Speed **vc** (SFM)	165 SFM (240 min^{-1})	115 SFM (140 min^{-1})	165 SFM (240 min^{-1})
	Table Feed **vf** (Feed per T. **fz**)	34.0 IPM (.024 IPT)	19.7 IPM (.024 IPT)	17.9 IPM (.015 IPT)
	Depth of Cut **ap** (inch)	.02	.031	.04
	Width of Cut **ae** (inch)	2.36	2.56	1.97
	Overhang Length (inch)	—	—	—
Cutting Mode		Wet Cutting	Wet Cutting	Wet Cutting
Results		The reduced wear displayed by MP9130 grade with JL chipbreaker gave an increase in efficiency of 40%.	JL chipbreaker + MP9120 achieves 1.5X longer tool life compared to conventional product.	The increased tool life and reduced wear displayed by MP9130 grade with JL chipbreaker gave an increase in efficiency of 40%.

Please note that the machining performed in the application examples is dependent on the rigidity of the machine used and the rigidity of the workpiece and clamping.

Memo

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FOR YOUR SAFETY

- Don't handle inserts and chips without gloves.
- Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage.
- Please use safety covers and wear safety glasses.
- When using compounded cutting oils, please take fire precautions.
- When attaching inserts or spare parts, please use only the correct wrench or driver.
- When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc.

www.mmc-carbide.com/us

Tools specifications subject to change without notice.

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