MITSUBISHI MATERIALS

MX3030

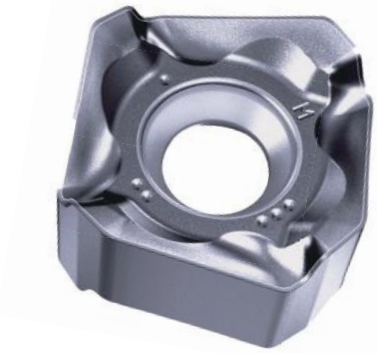
CERMET GRADE FOR MILLING



TOOL NEWS **B280A**

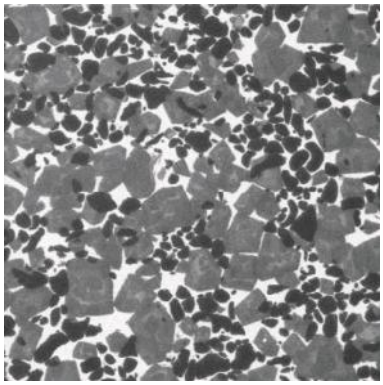
Cermet Grade for Milling

MX3030



Improved machining efficiency by maintaining excellent surface finishes even at large depths of cut.

Cermet has a low affinity with iron, excellent thermal stability and oxidation resistance, and is a suitable grade for finishing.
However, it does not have the same bonding strength as cemented carbide, and the challenge is to compensate for fracture resistance.
MX3030 has higher thermal conductivity than conventional products and has excellent thermal cracking resistance. Therefore, it is possible to suppress wear and maintain the surface finish.
Also, since it has excellent toughness, it can be expected to improve machining efficiency through machining at large depths of cut.

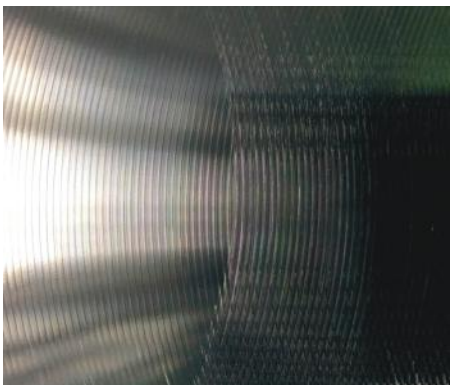


MX3030

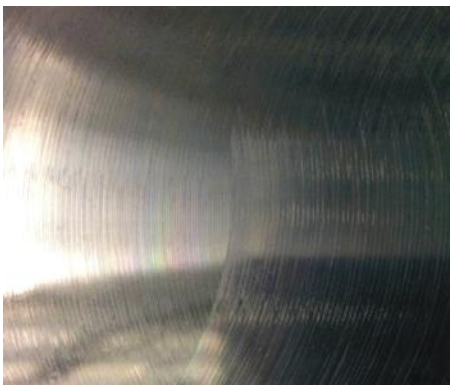
A special alloy is used for the binder material → **Fracture resistance properties increased**

High hardness Ti compound particles are used in the metal → **High wear resistance properties**

Mild Steel SS400, Finished Surface Comparison



Conventional



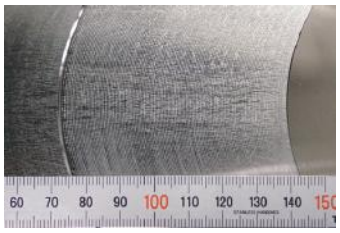
MX3030

<Cutting Conditions>
Material : JIS SS400
Cutter Dia. : DC=5.000 inch
Cutting Speed : 655 SFM
Feed per Tooth : .004 IPT
Depth of Cut : ap=.079 inch
Width of Cut : ae=3.937 inch
Cutting Mode : Dry Cutting
8 Inserts
Center Cut
After 26.2 feet Cutting Work

Cutting Performance

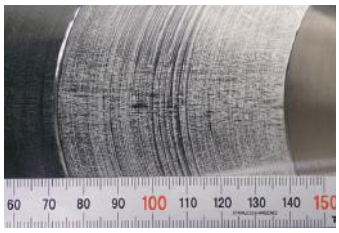
Finished surface comparison when machining 4140 Alloy Steel

The MX3030 grades produced an excellent finished surface with uniform machining marks and only a slight cloudiness.



MX3030

Ra 020 µ-inch Rz 124 µ-inch



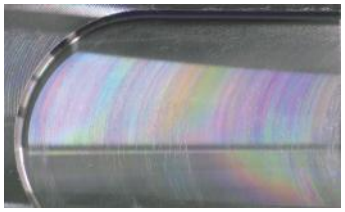
Conventional

Ra 021 µ-inch Rz 153 µ-inch

<Cutting Conditions>
Material : AISI 4140
Tool : ASX400-JL
Cutting Speed : vc=820 SFM
Feed per Tooth : fz=.002 IPT
Depth of Cut : ap=.020 inch
Width of Cut ae=3.937 inch
Cutting Mode : Dry Cutting

Finished surface comparison when machining 4140 Alloy Steel

The MX3030 grades has increased gloss and produces an excellent machined surface.



MX3030



Conventional

<Cutting Conditions>
Material : AISI 4140
Tool : APX3000R324SA32SA
Cutting Speed : vc=395 SFM
Feed per Tooth : fz=.003 IPT
Cutting Mode : Dry Cutting Single Insert

MX3030

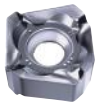
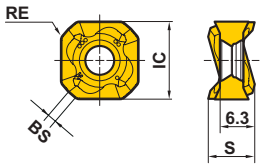
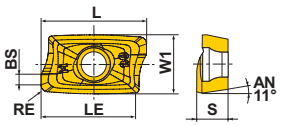
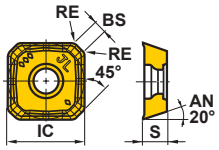
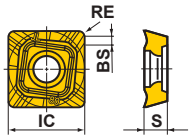
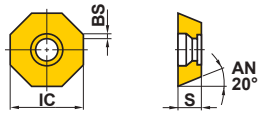
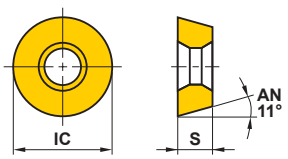
Inserts

(inch)

Material		
P	Steel	◆
M	Stainless Steel	◆
K	Cast Iron	◆

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 + Round **T :** Chamfer

Insert Shape	Order Number	Hand	Class	Edge Preparation	Cermet MX3030	IC	L	LE	W1	S	BS	RE	Geometry
WSX445	SNGU140812ANER-L	R	G	E	●	.551	–	–	–	.331	.059	.047	
	SNGU140812ANER-M	R	G	E	●	.551	–	–	–	.331	.059	.047	
	SNMU140812ANER-M	R	M	E	●	.551	–	–	–	.331	.059	.047	
	SNGU140812ANEL-L	L	G	E	●	.551	–	–	–	.331	.059	.047	
	SNGU140812ANEL-M	L	G	E	●	.551	–	–	–	.331	.059	.047	
	SNMU140812ANEL-M	L	M	E	●	.551	–	–	–	.331	.059	.047	
APX3000	AOMT123604PEER-M	R	M	E	●	–	.472	.394	.260	.142	.063	.016	
	AOMT123608PEER-M	R	M	E	●	–	.472	.394	.260	.142	.047	.031	
													
ASX445	SEET13T3AGEN-JL	–	E	E	●	.528	–	–	–	.156	.075	.059	
	SEMT13T3AGSN-JM	–	M	S	●	.528	–	–	–	.156	.075	.059	
													
ASX400	SOET12T308PEER-JL	R	E	E	●	.500	–	–	–	.156	.055	.031	
	SOMT12T308PEER-JM	R	M	E	●	.500	–	–	–	.156	.055	.031	
													
OCTACUT	OEMX12T3ETR1	R	M	T	●	.500	–	–	–	.156	.039	–	
	OEMX1705ETR1	R	M	T	●	.669	–	–	–	.197	.055	–	
													
BRP	RPMW10T3M0E	–	M	E	●	.394	–	–	–	.156	–	–	
	RPMW1204M0E	–	M	E	●	.472	–	–	–	.187	–	–	
													

● : USA Stock
(10 inserts in one case)

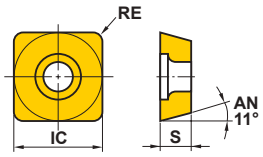
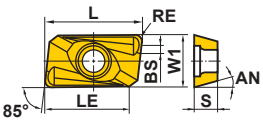
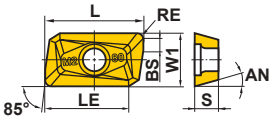
● = NEW

(inch)

Material		
	P	Steel
	M	Stainless Steel
	K	Cast Iron

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

Edge Preparation : E : Round **T :** Chamfer

Insert Shape	Order Number	Hand	Class	Edge Preparation	Cermet MX3030			IC	L	LE	W1	S	BS	RE	Geometry
CESP,SFSP,CGSP	**SPMW090304**	–	M	T	●			.375	–	–	–	.125	–	.016	
	SPMW090308	–	M	T	●			.375	–	–	–	.125	–	.031	
	**SPMW120304**	–	M	T	●			.500	–	–	–	.125	–	.016	
	SPMW120308	–	M	T	●			.500	–	–	–	.125	–	.031	
BAP300	**APMT1135PDER-H1**	R	M	E	●			–	.443	.354	.250	.138	.059	.016	
	APMT1135PDER-H2	R	M	E	●			–	.443	.354	.250	.138	.047	.031	
	**APMT1135PDER-M2**	R	M	E	●			–	.440	.354	.250	.138	.047	.031	
BAP400, SRM2	**APMT1604PDER-H2**	R	M	E	●			–	.674	.551	.375	.187	.055	.031	
	APMT1604PDER-M2	R	M	E	●			–	.673	.551	.375	.187	.055	.031	
															

Recommended Cutting Conditions

MX3030

Material	Characteristics	Cutter Type	Inserts	Cutting Speed **vc**(SFM)	Feed per Tooth **ft** (IPT)	
					Face Milling	Chamfer Milling
P						
Mild Steel	≤ 180HB	**WSX445**	L,M	590(425–755)	.006	
		APX3000	M	525 (395–655)	.006	
		ASX445	JL	590(425–820)	.006	
			JM	590(425–820)	.008	
		ASX400	JL	590(425–820)	.006	
			JM	590(425–820)	.007	
		OCTACUT	–	590(330–820)	.008	
		BAP	H	525(395–655)	.004	
		BRP	–	590(425–820)	*.012	
Carbon Steel Alloy Steel	180–280HB	**WSX445**	L,M	490(395–590)	.006	
		APX3000	M	460 (330–590)	.006	
		ASX445	JL	490(395–590)	.006	
			JM	490(395–590)	.008	
		ASX400	JL	490(395–590)	.005	
			JM	490(395–590)	.006	
		OCTACUT	–	395(260–525)	.008	
		BAP	H	395(330–525)	.003	
		BRP	–	490(395–590)	*.012	
		CESP, CFSP, CGSP	–	425(330–525)	.008	.016
Carbon Steel Alloy Steel	280–350HB	**WSX445**	L,M	490(395–590)	.006	
		APX3000	M	330 (260–525)	.006	
		ASX445	JL	330(260–525)	.006	
			JM	330(260–525)	.008	
		ASX400	JL	330(260–525)	.004	
			JM	330(260–525)	.005	
		OCTACUT	–	330(260–525)	.008	
		BAP	–	330(260–525)	.003	
		BRP	–	330(260–525)	*.012	
M						
Stainless Steel	≤ 270HB	**WSX445**	L,M	425(330–590)	.006	
		APX3000	M	395 (260–460)	.006	
		ASX445	JL	490(395–590)	.006	
			JM	490(395–590)	.008	
		ASX400	JL	490(395–590)	.006	
			JM	490(395–590)	.007	
		OCTACUT	–	490(330–655)	.006	
		BAP	M	395(260–460)	.004	
		BRP4	–	490(395–590)	*.012	
K						
Cast Iron Ductile Cast Iron	≤ 500MPa	**WSX445**	L,M	490(395–590)	.006	
		APX3000	M	395 (260–460)	.006	
		ASX445	JL	425(330–525)	.006	
			JM	425(330–525)	.008	
		ASX400	JL	490(395–590)	.006	
			JM	490(395–590)	.007	
		BAP	H	330(260–395)	.004	
		BRP4	–	490(395–590)	*.012	

Note 1) BRP is the feed amount at a depth of cut of .012 inch.

Note 2) For APX3000, the feed rate is for cutter diameter DC of .472-.630 inch, cutting depth ae ≤ DC×0.25, and ap ≤ .157 inch.

Memo

MITSUBISHI MATERIALS U.S.A.

MITSUBISHI MATERIALS U.S.A. CORPORATION

California Office
(Headquarters)

3535 Hyland Avenue, Suite 200
Costa Mesa, CA 92626
Customer Service: 800.523.0800
Technical Service: 800.486.2341

Chicago Office
(Engineering)

300 N. Martingale Road, Suite 500
Schaumburg, IL 60173
Main: 847.252.6300
Fax: 847.519.1732

MMC Metal de Mexico, S.A. DE C.V.

Av. La Cañada No.16,
Parque Industrial Bernardo
Quintana, El Marques,
Queretaro C.P. 76246 MEXICO
Main: +52.442.221.61.36
Fax: +52.442.221.61.34

North Carolina-MTEC
(Marketing & Technical Center)

105 Corporate Center Drive, Suite A
Mooresville, NC 28117
Main: 980.312.3100
Fax: 704.746.9292

Toronto Office
(Canada Branch)

600 Matheson Blvd. Unit 5 (Office)
Mississauga, ON L5R 4C1
Main: 905.814.0240
Fax: 905.814.0245

Detroit Office
(Moldino CS)

41700 Gardenbrook Road, Suite 120
Novi, MI 48375
Main: 248.308.2620
Fax: 248.308.2627

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.

B280A-US-2025.4