DIA EDGE

TOOL NEWS

2023.10 Update
B280G

Cermet Grade for Milling

MX3030

Environmentally Friendly Product

Item Addition

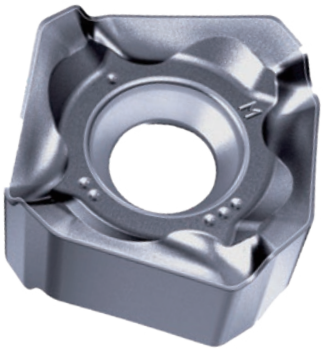
Expands The Effective Application Range of Cermet Grades

Enables excellent surface finishes even at highly efficient machining conditions.

MITSUBISHI MATERIALS CORPORATION

Cermet Grade for Milling

MX3030

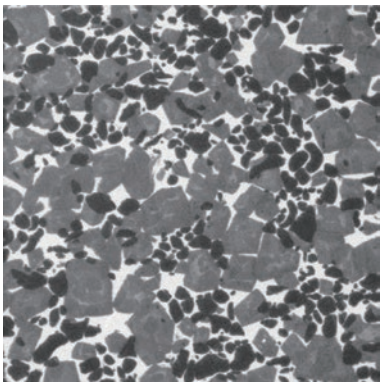


2017-021
JTA ECO PRODUCT
(一社) 日本機械工具工業会 (JTA)
環境調和製品

Please refer to the last page for more information on certified environmentally friendly products.

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.

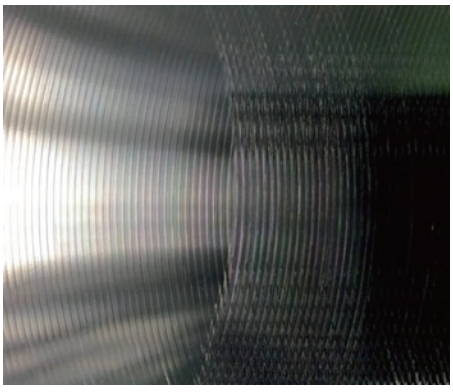


MX3030

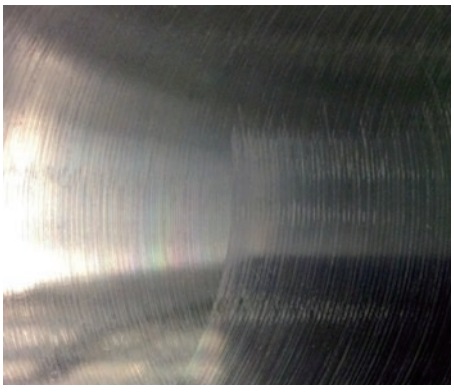
A special alloy is used for the binder material → **Fracture resistance properties increased**

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

Mild Steel SS400, Finished Surface Comparison



Conventional



MX3030

<Cutting Conditions>
Workpiece Material : JIS SS400
Cutter Dia. : DC=125mm
Cutting Speed : 200m/min
Feed per Tooth : 0.1mm/t.
Depth of Cut : ap=2.0mm
Width of Cut : ae=100mm
Cutting Mode : Dry Cutting
8 Inserts
Centre Cut
After 8m Cutting Work

Recommended Cutting Conditions

MX3030

	Workpiece Material	Characteristics	Cutter Type	Inserts	Cutting Speed **vc**(m/min)	Feed per Tooth **ft**(mm/t.)	
						Face Milling	Chamfer Milling
P							
	Mild Steel	≤ 180HB	**WSX445**	L,M	180 (130—230)	0.15	
			ASX445	JL	180 (130—250)	0.15	
				JM	180 (130—250)	0.2	
			ASX400	JL	180 (130—250)	0.15	
				JM	180 (130—250)	0.18	
			OCTACUT	—	180 (100—250)	0.2	
			BAP	H	160 (120—200)	0.1	
			BRP	—	180 (130—250)	＊0.30	
	Carbon Steel Alloy Steel	180—280HB	**WSX445**	L,M	150 (120—180)	0.15	
			ASX445	JL	150 (120—180)	0.15	
				JM	150 (120—180)	0.2	
			ASX400	JL	150 (120—180)	0.13	
				JM	150 (120—180)	0.15	
			OCTACUT	—	120 (80—160)	0.2	
			BAP	H	120 (100—160)	0.08	
			BRP	—	150 (120—180)	＊0.30	
			CESP, CFSP, CGSP	—	130 (100—160)	0.2	0.4
	Carbon Steel Alloy Steel	280—350HB	**WSX445**	L,M	150 (120—180)	0.15	
			ASX445	JL	100 (80—160)	0.15	
				JM	100 (80—160)	0.2	
			ASX400	JL	100 (80—160)	0.1	
				JM	100 (80—160)	0.13	
			OCTACUT	—	100 (80—160)	0.2	
			BAP	—	100 (80—160)	0.08	
			BRP	—	100 (80—160)	＊0.30	
M							
	Stainless Steel	≤ 270HB	**WSX445**	L,M	130 (100—180)	0.15	
			ASX445	JL	150 (120—180)	0.15	
				JM	150 (120—180)	0.2	
			ASX400	JL	150 (120—180)	0.15	
				JM	150 (120—180)	0.18	
			OCTACUT	—	150 (100—200)	0.15	
			BAP	M	120 (80—140)	0.1	
			BRP4	—	150 (120—180)	＊0.30	
K							
	Cast Iron Ductile Cast Iron	≤ 500MPa	**WSX445**	L,M	150 (120—180)	0.15	
			ASX445	JL	130 (100—160)	0.15	
				JM	130 (100—160)	0.2	
			ASX400	JL	150 (120—180)	0.15	
				JM	150 (120—180)	0.18	
			BAP	H	100 (80—120)	0.1	
			BRP4	—	150 (120—180)	＊0.30	

＊BRP is the feed amount at a depth of cut of 3 mm.

MX3030

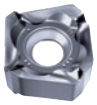
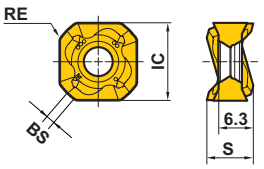
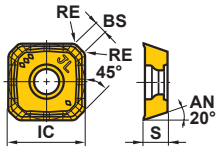
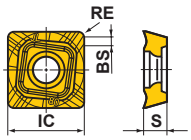
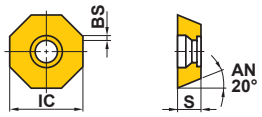
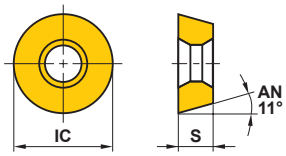
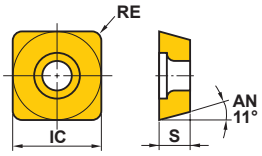
Inserts

(mm)

Workpiece 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	Cermet NX4545		IC	S	BS	RE	Geometry
WSX445 	SNGU140812ANER-L	R	G	E	●			14.0	8.4	1.5	1.2	
	SNGU140812ANER-M	R	G	E	●			14.0	8.4	1.5	1.2	
	SNMU140812ANER-M	R	M	E	●			14.0	8.4	1.5	1.2	
	SNGU140812ANEL-L	L	G	E	●			14.0	8.4	1.5	1.2	
	SNGU140812ANEL-M	L	G	E	●			14.0	8.4	1.5	1.2	
	SNMU140812ANEL-M	L	M	E	●			14.0	8.4	1.5	1.2	
ASX445 	SEET13T3AGEN-JL	–	E	E	●	●		13.4	3.97	1.9	1.5	
	SEMT13T3AGSN-JM	–	M	S	●	●		13.4	3.97	1.9	1.5	
ASX400 	SOET12T308PEER-JL	R	E	E	●	●		12.7	3.97	1.4	0.8	
	SOMT12T308PEER-JM	R	M	E	●	●		12.7	3.97	1.4	0.8	
OCTACUT 	OEMX12T3ETR1	R	M	T	●	●		12.7	3.97	1.0	–	
	OEMX1705ETR1	R	M	T	●	●		17.0	5.0	1.4	–	
BRP 	RPMW10T3M0E	–	M	E	●	●		10.0	3.97	–	–	
	RPMW1204M0E	–	M	E	●	●		12.0	4.76	–	–	
CESP,SFSP,CGSP 	SPMW090304	–	M	T	●	●		9.525	3.18	–	0.4	
	SPMW090308	–	M	T	●	●		9.525	3.18	–	0.8	
	SPMW120304	–	M	T	●	●		12.7	3.18	–	0.4	
	SPMW120308	–	M	T	●	●		12.7	3.18	–	0.8	

● = NEW

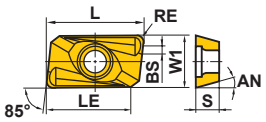
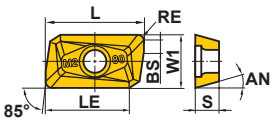
● : Stocked in Japan
(10 inserts in one case)

(mm)

Workpiece Material			MX3030	NX4545
	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

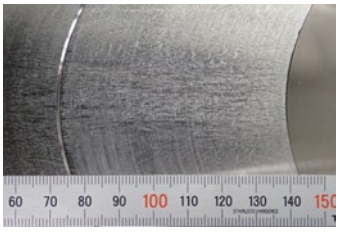
Insert Shape	Order Number	Hand	Class	Edge Preparation	Cermet MX3030	Cermet NX4545	L	LE	W1	S	BS	RE	Geometry
BAP300 	**APMT1135PDER-H1**	R	M	E	●	●	11.25	9	6.35	3.5	1.5	0.4	
	APMT1135PDER-H2	R	M	E	●	●	11.25	9	6.35	3.5	1.2	0.8	
	APMT1135PDER-M2	R	M	E	●	●	11.18	9	6.35	3.5	1.2	0.8	
BAP400, SRM2 	**APMT1604PDER-H2**	R	M	E	●	●	17.11	14	9.525	4.76	1.4	0.8	
	APMT1604PDER-M2	R	M	E	●	●	17.10	14	9.525	4.76	1.4	0.8	

● = NEW

Cutting Performance

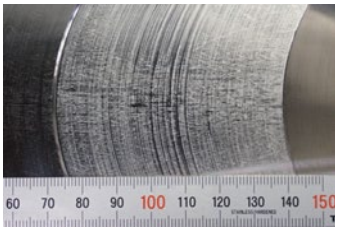
Finished surface comparison when machining SCM440 Alloy Steel

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



MX3030

Ra 0.5105 µm Rz 3.1582 µm



Conventional

Ra 0.5320 µm Rz 3.8950 µm

<Cutting Conditions>
Workpiece Material : JIS SCM440
Tool : ASX400-JL
Cutting Speed : vc=250 m/min
Feed per Tooth : fz=0.05mm/t.
Depth of Cut : ap=0.5mm
Width of Cut ae=100mm
Cutting Mode : Dry Cutting

Memo

Memo

Cermet Grade for Milling

MX3030

Environmentally Friendly Product

This product has been certified as an environmentally friendly product in the machine tool industry by the Japan Cutting & Wear-resistant Tool Association. This is a product unique to the industry, in harmony with the environment, and with the aim of fulfilling the social responsibilities of the machine tool industry.

The Japan Cutting & Wear-resistant Tool Association evaluates the product's environmental impact during the manufacturing and usage stages and issues a certification according to the evaluation score.

2017-021
JTA ECO PRODUCT
(一社)日本機械工具工業会(JTA)
環境調和製品 ☆☆☆

MX3030 Subject : WSX445 Inserts

For People, Society and the Earth

More information about MITSUBISHI MATERIALS' efforts to address social and environmental issues can be found in the website below or by scanning the QR code.

https://mmc.disclosure.site/en/

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.

MITSUBISHI MATERIALS CORPORATION

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http://www.mmc-carbide.com/
(Tools specifications subject to change without notice.)

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