

Cermet Grade for Milling

Environmentally Friendly Product

MX3030Item
Addition

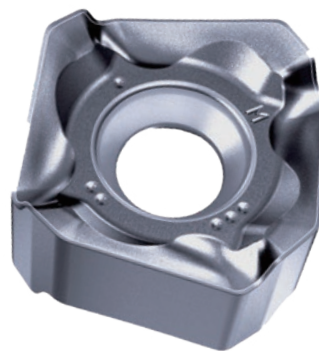
Expands The Effective Application Range of Cermet Grades

Enables excellent surface finishes even at highly efficient machining conditions.



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MX3030



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

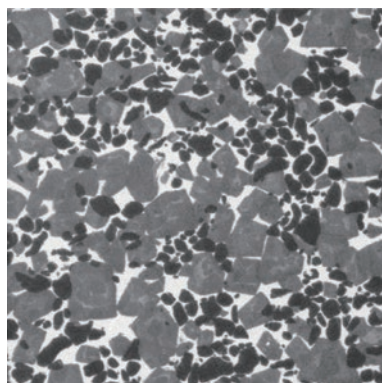
Improved machining efficiency by maintaining excellent surface finishes even at large depths of cut.

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

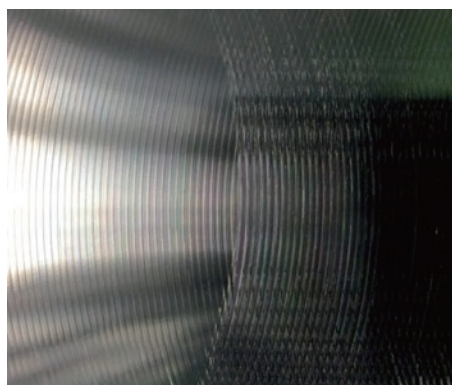
A special alloy is used for the binder material

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 v_c (m/min)	Feed per Tooth f_t (mm/t.)	
					Face Milling	Chamfer Milling
P						
Mild Steel	$\leq 180\text{HB}$	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	$\leq 270\text{HB}$	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	$\leq 500\text{MPa}$	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.

(mm)

● = NEW

3

Finished surface comparison when machining SCM440 Alloy Steel

A close-up photograph of a metal surface, possibly a bullet casing, showing concentric circular ripples or striations. A ruler is placed below the surface for scale, with markings from 60 to 150 visible. The ripples are centered around a point that corresponds to approximately 100 on the ruler.

Workpiece Material : JIS SCM440
Tool : ASX400-JL
Cutting Speed : $v_c=250$ m/min
Feed per Tooth : $f_z=0.05$ mm/t.
Depth of Cut : $a_p=0.5$ mm
Width of Cut : $a_e=100$ mm
Cutting Mode : Dry Cutting

This image shows a full page of a document template designed for writing. At the top left, there is a header area containing the word "Memo" in a large, bold, black sans-serif font. A solid dark grey horizontal bar runs across the entire width of the page directly beneath the header. The main body of the page is filled with numerous thin, light grey horizontal lines spaced evenly apart, providing a guide for handwriting or typing. The overall design is clean, minimalist, and functional.



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.



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.

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(Tools specifications subject to change without notice.)

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