MITSUBISHI MITSUBISHI MATERIALS TOOL NEWS
2015.09 Update B045A YOUR GLOBAL CRAFTSMAN STUDIO

Chipbreaker System for Heavy Cutting

Specially designed for heavy cutting of stainless and alloy steels.

UE6110
MC6025
UH6400
US735

+

HZ/HL
HM/HX
HV/HR

Chipbreaker system for heavy cutting

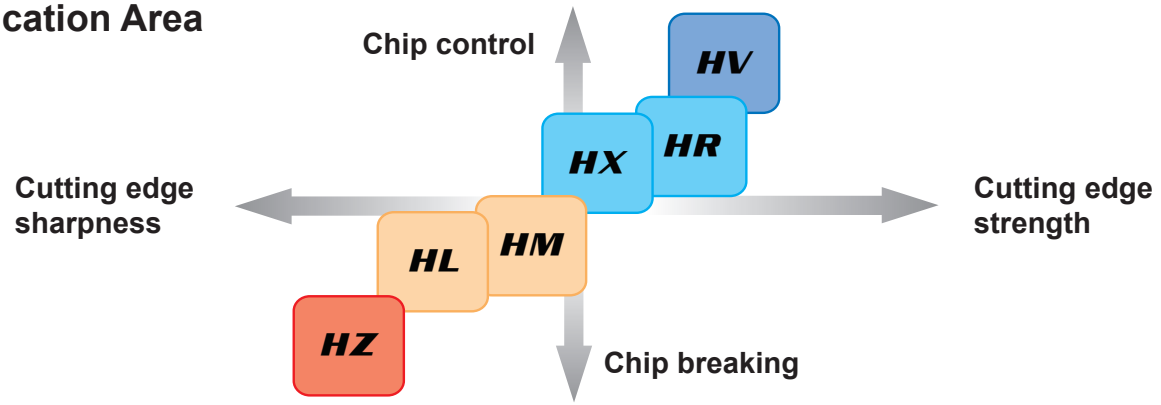
UE6110
MC6025
UH6400
US735

+

HZ/HL
HM/HX
HV/HR

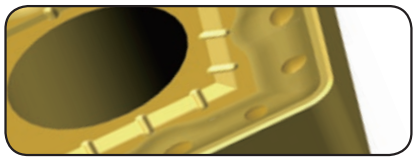
Main chipbreakers

Application Area

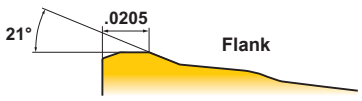


Single sided chipbreaker

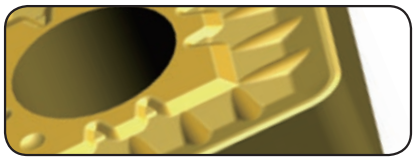
HX — First recommendation for heavy cutting of general steel and alloy steel



Covers the medium range of the heavy cutting region. The straight edge and chamfer gives a balance of sharpness and strength. Variable land and a wavy chipbreaker makes for good chip control.

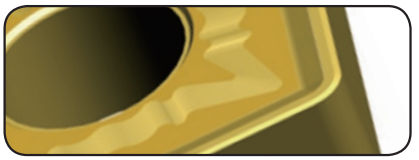


HR NEW — Alternative chipbreaker for heavy cutting of general steel and alloy steel

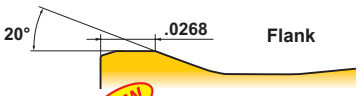


Covers the heavy cutting region by using a straight cutting edge with high edge strength.
It exhibits smooth chip control during large depths of cut and high feed rate machining.

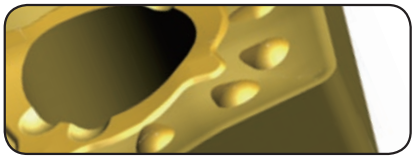
HV — Alternative chipbreaker for heavy cutting of general steel and alloy steel



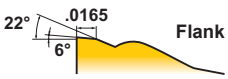
Covers the upper end of the heavy cutting region. Wide land and large chamfer offer high edge strength. A wide chipbreaker prevents chip jamming.



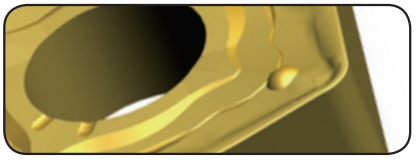
HZ — Alternative chipbreaker for heavy cutting of mild steel and stainless steel



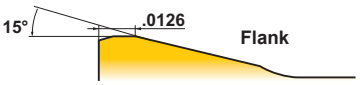
Covers the lower end of the heavy cutting region. Low cutting resistance due to positive land and curved edge.
Teardrop dots improve chip control without increasing cutting resistance.



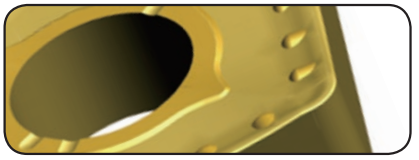
HL NEW — First recommendation for heavy cutting of mild steel and stainless steel



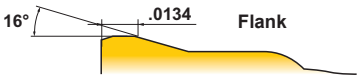
Covers the lower end of the heavy cutting region. The curved edge and narrow chamfer allow good chip control and sharp cutting action. Dots on the nose radius ensure chip control at low depths of cut.



HM NEW — Alternative chipbreaker for heavy cutting of mild steel and stainless steel



Covers the lower end through to the medium range of the heavy cutting region. The curved edge and narrow chamfer allow good chip control and sharp cutting action. Teardrop dots provided along the cutting edge ensures chip control even with variable depths of cut.

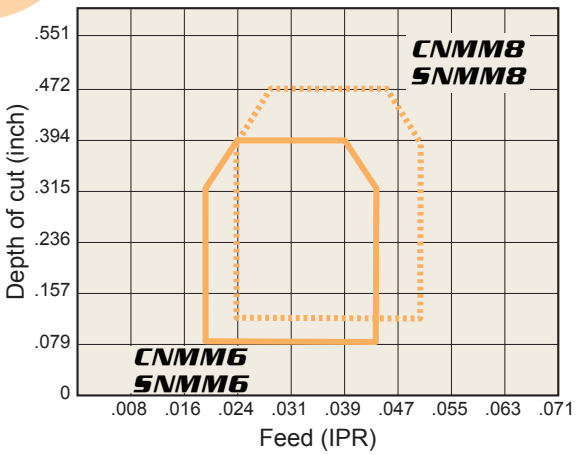


Effective chip control range

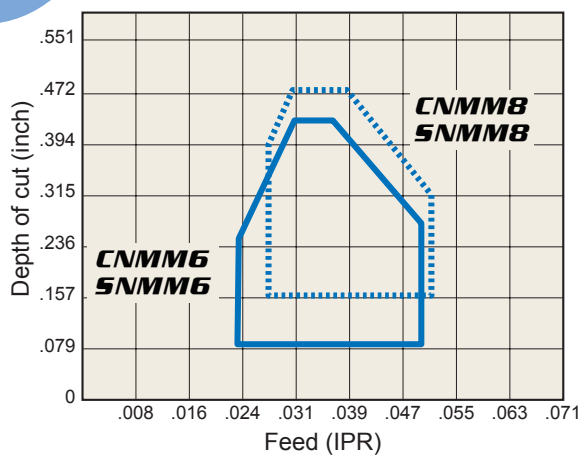
Main chipbreakers

<Cutting condition>
Workpiece : AISI 4140
Cutting speed : 490 SFM
Dry cutting

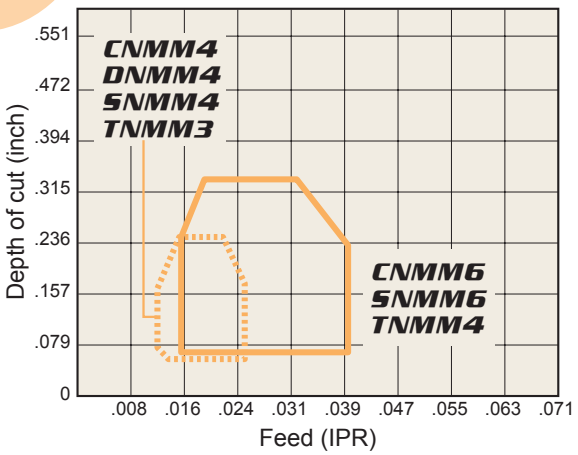
HM NEW



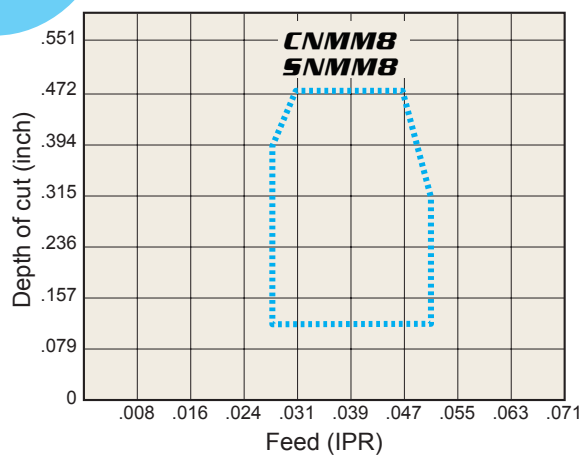
HV



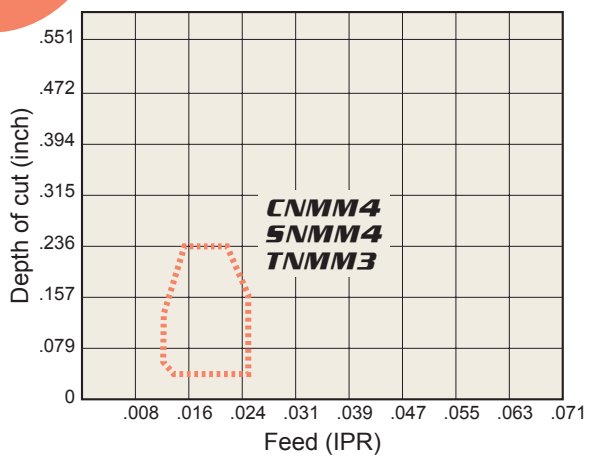
HL NEW



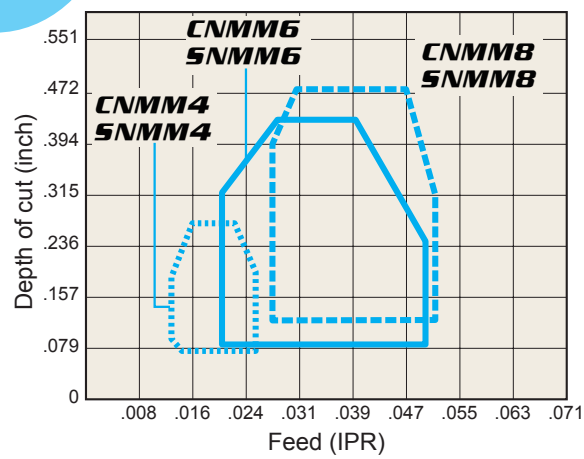
HR NEW



HZ

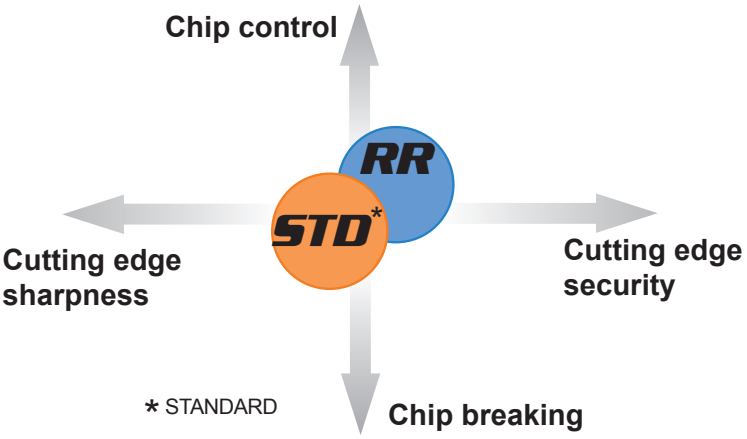


HX



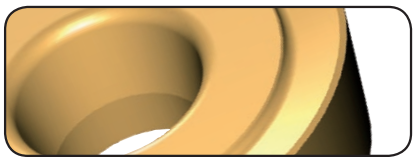
Round chipbreakers

Application Area

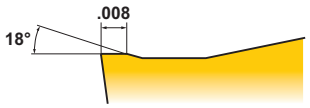


STD*

Medium cutting of general steel, alloy steel and stainless steel

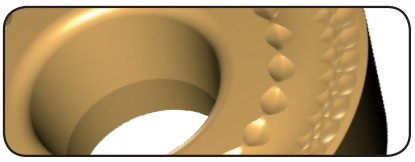


Balance of edge strength and sharpness due to a combination of a flat land and large rake angle.

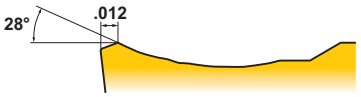


RR

Heavy cutting of general steel and alloy steel

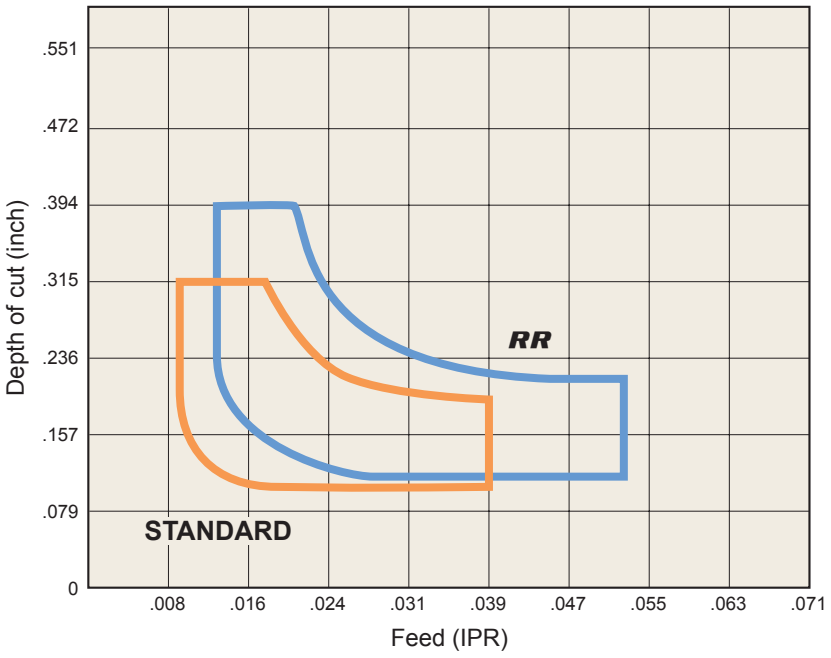


A wide groove chipbreaker prevents chips from jamming at large depths of cut. Small dimples improve chip control at small depths of cut.

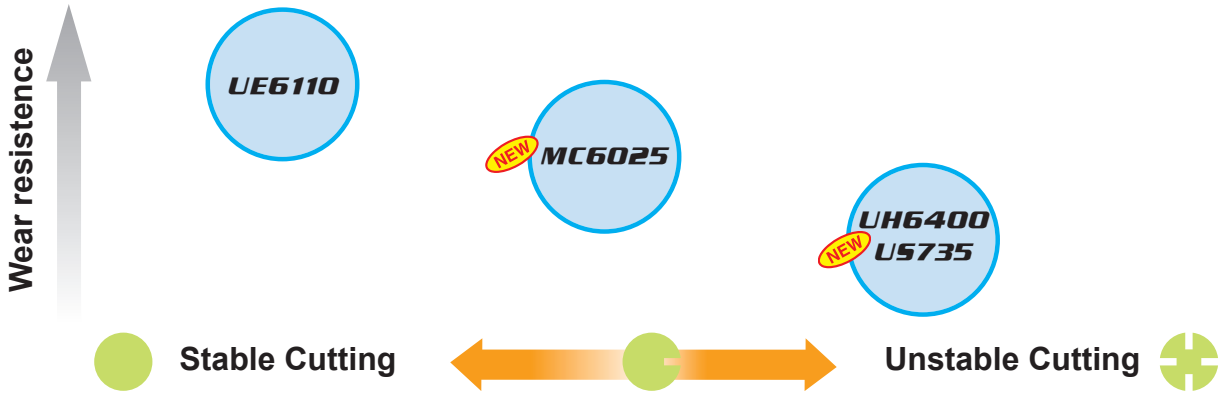


Effective chip control range

<Cutting condition>
Workpiece : AISI 4140
Insert : RCMX2006M0-RR, STANDARD
Cutting speed : 330 SFM
Cutting mode : Dry cutting



Recommended insert grades for heavy cutting



MC6025

Smooth coating surface

Prevents abnormal damage and weld chipping

Flat Al_2O_3

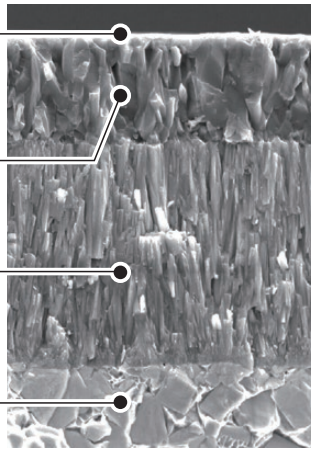
Excellent heat resistance

Microscopic TiCN

High wear resistance

Special carbide substrate

Prevents crack development
Stable tool life



2 IN 1 TECHNOLOGY

2-in-1 technology delivers the ultimate cutting perfomance.

US735

Best for machining of super alloys

CVD coated carbide grade US7020 and US735 are suitable not only for stainless steel but also for nickel (Ni) based super alloys, which are among the hardest of difficult-to-cut materials.

Solves problems in (low speed, interrupted) machining of steels

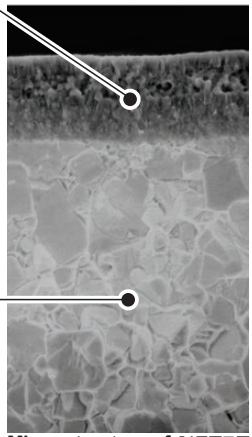
US7020 and US735 solves welding problems in low speed cutting of mild steel and abnormal wear problems such as fracturing of cutting edge in medium to low speed, interrupted machining.

Ti compound layer

Thin layer coating of micrograined Ti compound (Thin multi-layer micrograin coating achieving highest adhesion strength to the substrate)

Special cemented carbide

Extremely tough special cemented carbide substrate



Micro-structure of US735

UE6110

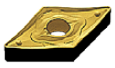
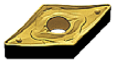
Superior machining performance achieved using 2 in 1 technology. Excellent crater wear resistance and flank wear resistance.

UH6400

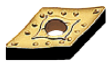
UH6400, a grade specially designed for heavy cutting. Ensuring longer tool life during interrupted cutting of surface scale and longer continuous cutting of pre-machined parts.

INSERTS

● Negative Inserts

	Shape	Order Number	Stock UE6110	Stock MC6025 (NEW)	Stock UH6400	Stock US735 (NEW)	IC	S	RE	D1
Focus on cutting edge sharpness	(NEW) HV 	CNMM644HV		★			.750	.250	.063	.312
		CNMM646HV		★			.750	.250	.094	.312
		CNMM866HV		★			1.000	.375	.094	.359
	(NEW) HR 	CNMM866HR		★			1.000	.375	.094	.359
	HX 	(NEW) CNMM432HX		★			.500	.187	.031	.203
		(NEW) CNMM433HX		★			.500	.187	.047	.203
		(NEW) CNMM543HX		★			.625	.250	.047	.250
		(NEW) CNMM544HX		★			.625	.250	.063	.250
		CNMM643HX	●	★	★		.750	.250	.047	.312
		CNMM644HX	●	★	★		.750	.250	.063	.312
		CNMM646HX	●	★	★		.750	.250	.094	.312
		CNMM866HX	●	★	★		1.000	.375	.094	.359
	(NEW) HM 	CNMM543HM		★		★	.625	.250	.047	.250
		CNMM544HM		★		★	.625	.250	.063	.250
		CNMM643HM		★		★	.750	.250	.047	.312
		CNMM644HM		★		★	.750	.250	.063	.312
		CNMM646HM		★		★	.750	.250	.094	.312
		CNMM866HM		★			1.000	.375	.094	.359
	(NEW) HL 	CNMM432HL		★		★	.500	.187	.031	.203
		CNMM433HL		★		★	.500	.187	.047	.203
		CNMM543HL		★		★	.625	.250	.047	.250
		CNMM544HL		★		★	.625	.250	.063	.250
		CNMM643HL		★		★	.750	.250	.047	.312
		CNMM644HL		★		★	.750	.250	.063	.312
		CNMM646HL		★		★	.750	.250	.094	.312
Focus on cutting edge strength	HZ 	CNMM432HZ	●	★			.500	.187	.031	.203
		CNMM433HZ	●	★			.500	.187	.047	.203
		CNMM543HZ	●				.625	.250	.047	.250
		CNMM544HZ	●				.625	.250	.063	.250
		CNMM643HZ	●		★		.750	.250	.047	.312
		CNMM644HZ	●		★		.750	.250	.063	.312
Focus on cutting edge sharpness	(NEW) HL 	DNMM432HL		★		★	.500	.187	.031	.203
		DNMM433HL		★		★	.500	.187	.047	.203
		DNMM442HL		★		★	.500	.250	.031	.203
		DNMM443HL		★		★	.500	.250	.047	.203

● : Inventory maintained. ★ : Inventory maintained in Japan.

	Shape	Order Number	Stock				Dimensions (mm)			
			UE6110	MC6025 NEW	UH6400	US735 NEW	IC	S	RE	D1
Focus on cutting edge sharpness	HZ 	DNMM432HZ	●	★			.500	.187	.031	.203
		DNMM433HZ	●	★			.500	.187	.047	.203
		DNMM442HZ	●	★			.500	.250	.031	.203
		DNMM443HZ	●	★			.500	.250	.047	.203
Focus on cutting edge strength	HV 	SNMM644HV	●	★	★		.750	.250	.063	.312
		SNMM646HV	●	★	★		.750	.250	.094	.312
		SNMM856HV	●	★	★		1.000	.313	.094	.359
		SNMM866HV	●	★	★		1.000	.375	.094	.359
	NEW HR 	SNMM856HR		★			1.000	.313	.094	.359
		SNMM866HR		★			1.000	.375	.094	.359
	HX 	NEW SNMM432HX		★			.500	.187	.031	.203
		NEW SNMM433HX		★			.500	.187	.047	.203
		NEW SNMM543HX		★			.625	.250	.047	.250
		SNMM643HX	●	★	★		.750	.250	.047	.312
		SNMM644HX	●	★	★		.750	.250	.063	.312
		SNMM646HX	●	★	★		.750	.250	.094	.312
		SNMM856HX	●	★	★		1.000	.313	.094	.359
		SNMM866HX	●	★	★		1.000	.375	.094	.359
	NEW HM 	SNMM543HM		★		★	.625	.250	.047	.250
		SNMM643HM		★		★	.750	.250	.047	.312
		SNMM644HM		★		★	.750	.250	.063	.312
		SNMM646HM		★		★	.750	.250	.094	.312
		SNMM856HM		★			1.000	.313	.094	.359
		SNMM866HM		★			1.000	.375	.094	.359
	NEW HL 	SNMM432HL		★		★	.500	.187	.031	.203
		SNMM433HL		★		★	.500	.187	.047	.203
		SNMM543HL		★		★	.625	.250	.047	.250
		SNMM643HL		★		★	.750	.250	.047	.312
		SNMM644HL		★		★	.750	.250	.063	.312
		SNMM646HL		★		★	.750	.250	.094	.312
Focus on cutting edge sharpness	HZ 	SNMM432HZ	●	★			.500	.187	.031	.203
		SNMM433HZ	●	★			.500	.187	.047	.203
		SNMM543HZ	●				.625	.250	.047	.250
		SNMM643HZ	●		★		.750	.250	.047	.312
		SNMM644HZ	●		★		.750	.250	.063	.312

INSERTS

● Negative Inserts

	Shape	Order Number	Stock				Dimensions (mm)			
			UE6110	MC6025 (NEW)	UH6400	US735 (NEW)	IC	S	RE	D1
Focus on cutting edge strength	(NEW) HL 	TNMM332HL		★		★	.375	.187	.031	.150
		TNMM333HL		★		★	.375	.187	.047	.150
		TNMM432HL		★		★	.500	.187	.031	.203
		TNMM433HL		★		★	.500	.187	.047	.203
		TNMM434HL		★		★	.500	.187	.063	.203
Focus on cutting edge sharpness	HZ 	TNMM332HZ	★	★			.375	.187	.031	.150
		(NEW) TNMM333HZ		★			.375	.187	.047	.150
		TNMM432HZ	●				.500	.187	.031	.203
		TNMM433HZ	●				.500	.187	.047	.203
		TNMM434HZ	●				.500	.187	.063	.203

● : Inventory maintained. ★ : Inventory maintained in Japan.

● 7°Positive Inserts

	Shape	Order Number	Stock					Dimensions (mm)			
			UE6105	UE6110	MC6025 (NEW)	UH6400	US735 (NEW)	IC	S	RE	D1
Focus on cutting edge strength	RR 	**RCMX1606M0-RR**		★	★	★		.630	.250	–	.205
		RCMX**2006M0-RR**		★	★	★		.787	.250	–	.256
		RCMX**2507M0-RR**		★	★	★		.984	.313	–	.283
		RCMX**3209M0-RR**		★				1.260	.375	–	.374
Focus on cutting edge sharpness	Standard 	**RCMX1003M0**		●	★			.394	.125	–	.142
		RCMX**1204M0**	●	●	★			.472	.187	–	.165
		RCMX**1606M0**	★	●	★	★		.630	.250	–	.205
		RCMX**2006M0**	★	●	★	★		.787	.250	–	.256
		RCMX**2507M0**	★	★	★			.984	.313	–	.283
		RCMX**3209M0**	★	★				1.260	.125	–	.374

Chipbreaker system for Heavy cutting

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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