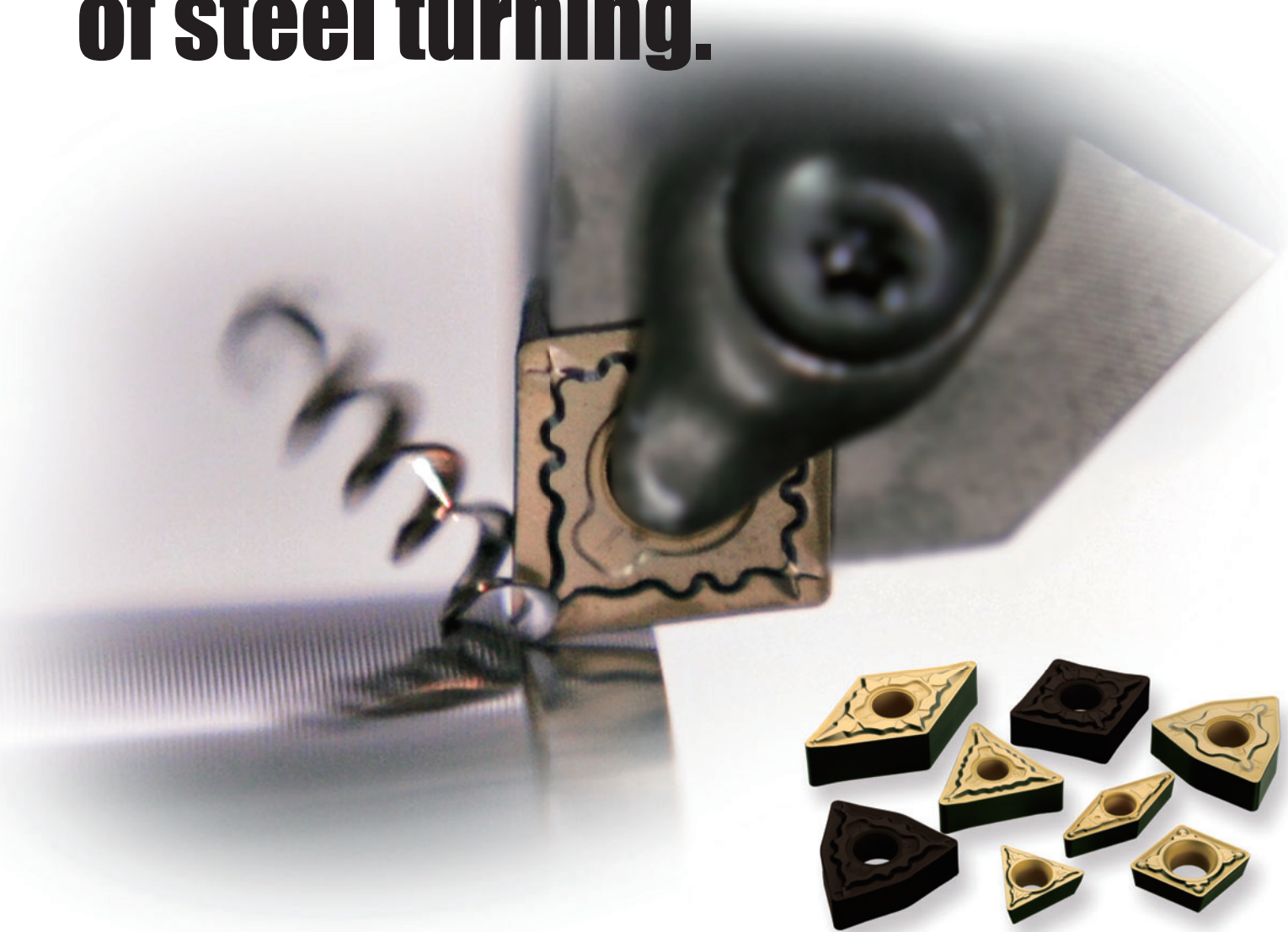


ISO Insert Series for Steel Turning

Item
Expansion

Pushing the boundaries of steel turning.



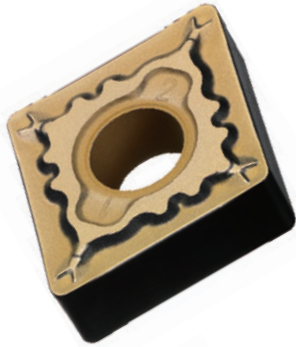
MC6015
MC6025
MC6035



FP/LP
MP/RP

ISO Insert Series for Steel Turning

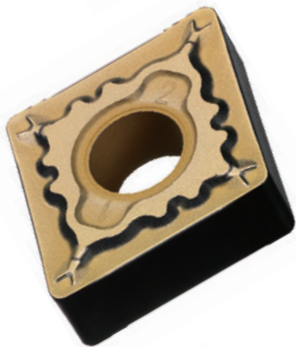
MC6000 Series



MC6015 for High Speed Cutting

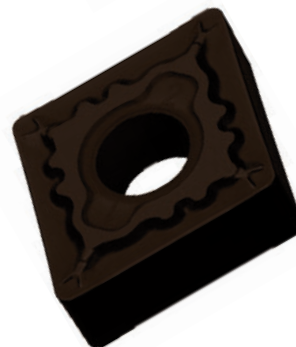
Delivers outstanding heat and wear the resistance during high speed cutting.

Machining time can be shortened and number of workpieces per cutting edge can be increased in stable machining.



MC6025 the Standard Grade for Steels

MC6025 is a standard grade for steels, and utilizes an optimum CVD coating which is suitable for crater and flank wear, thereby achieving general versatility for increased stability.



MC6035 for Interrupted Cutting, Medium to Low Speed Cutting

By dispersing an impact stress during interrupted machining, MC6035 controls crack development and achieves a good balance between fracture and welding resistance during low speed cutting.

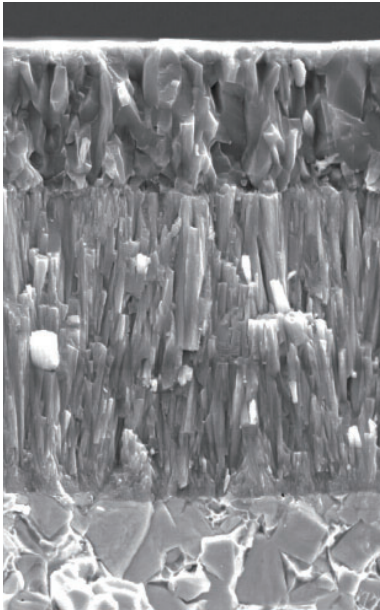
Selection Criteria

Work Material	Cutting Mode	Grade
P	Continuous Cutting	UE6105
		MC6015
	Interrupted Cutting	MC6025
		MC6035

Application Range

ISO	CVD
10	MC6015
20	MC6025
30	MC6035
40	MC6035

Key Technology



Improved Surface Finishes Welding Resistance

Prevents abnormal fracture and weld chipping.

The CVD Coating Layer Prevents Crater Wear

Flat Al_2O_3 layer with excellent heat resistance reduces crater wear development.

CVD Coating Layer Reduces Flank Wear

High wear resistance can be achieved due to the thickened Nano-texture TiCN layer.



Special Carbide Substrate with Improved Fracture Resistance

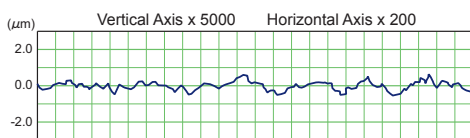
General Purpose Steels

MC6025

Comparison for Coating Surface Roughness

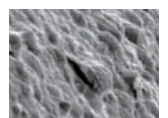
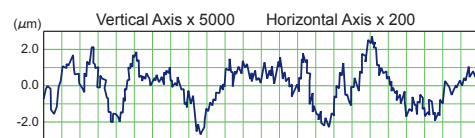
With an extremely smooth surface, the Black Super Even Coating provides improved surface roughness which results in excellent resistance against adhesion, abnormal damage and weld chipping.

MC6000 Series



[Magnified Photo]
Surface characteristics
of the chip breaker.

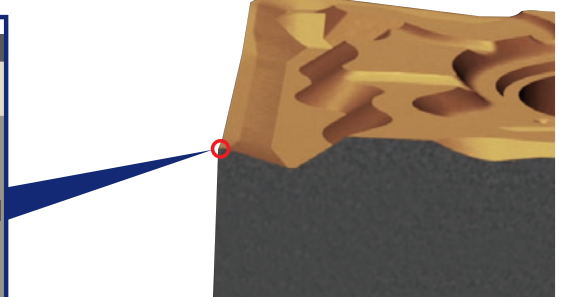
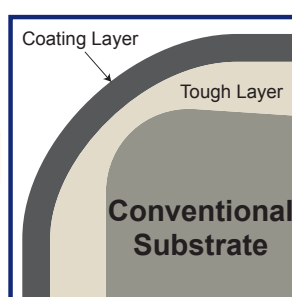
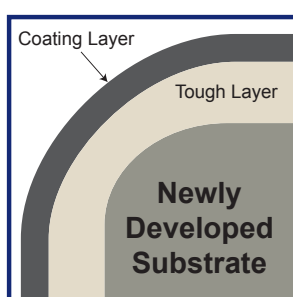
Conventional Coating



[Magnified Photo]
Surface characteristics
of the chip breaker.

Substrate with Improved Tough Layer

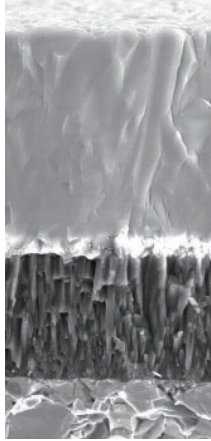
The new technology used in MC6025 ensures a tough edge layer that vastly reduces crack development and fracturing.



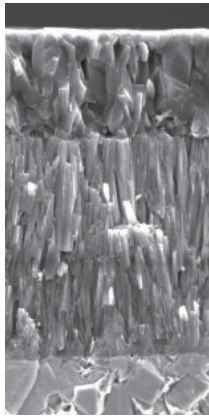
For High Speed Cutting

MC6015

Delivers Outstanding Wear Resistance
even at High Temperatures



MC6015



MC6025

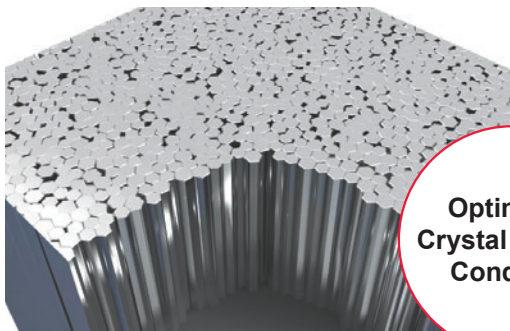


Better wear resistance can be achieved even at high temperature due to the thickened Al_2O_3 layer.

Nano-texture Coating Technology

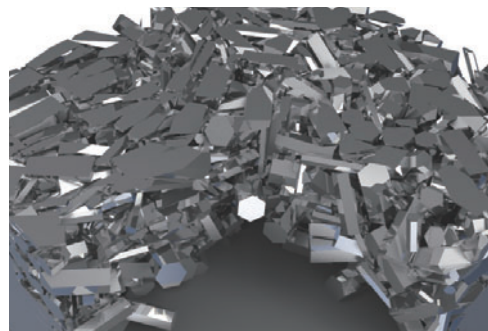
The optimized crystal growth, Nano-texture coating technology provides outstanding wear and chipping.

Nano-texture Coating Image

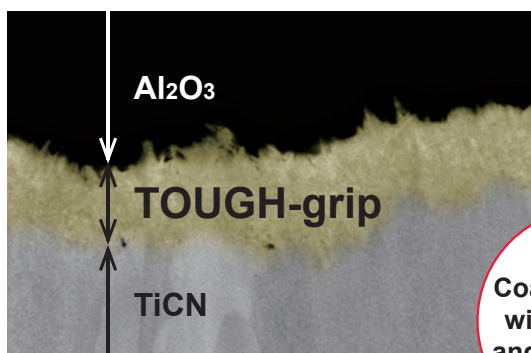


Optimized
Crystal Growth
Condition

Conventional Coating Image



TOUGH-grip



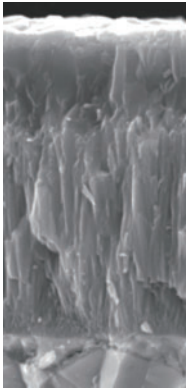
Coating Layers
with Strength
and Toughness

The interface between the layers is controlled at the nano level, allowing the TOUGH-grip layer extremely high levels of adhesion to prevent delamination.

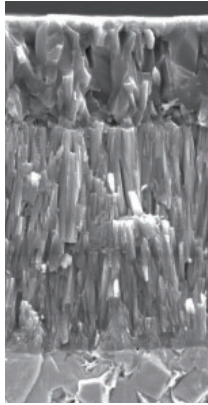
For Interrupted Cutting,
Medium to Low Surface Speeds

MC6035

Prevents Severe Damage for
Increased Stability



MC6035



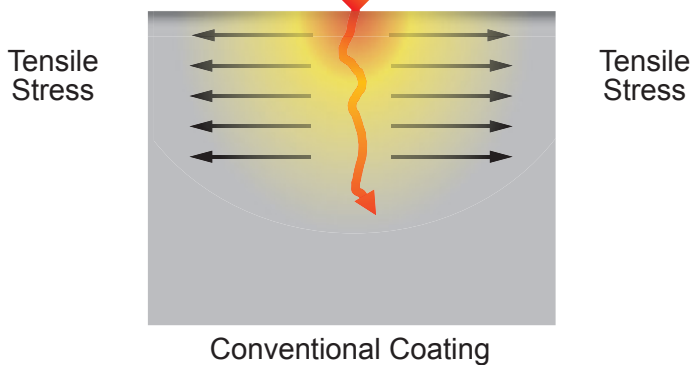
MC6025

The smooth coating surface provides excellent welding resistance. With the thickened TiCN, MC6035 also achieves superior wear resistance for increased stability.

Reducing the Effect of Severe Fracturing

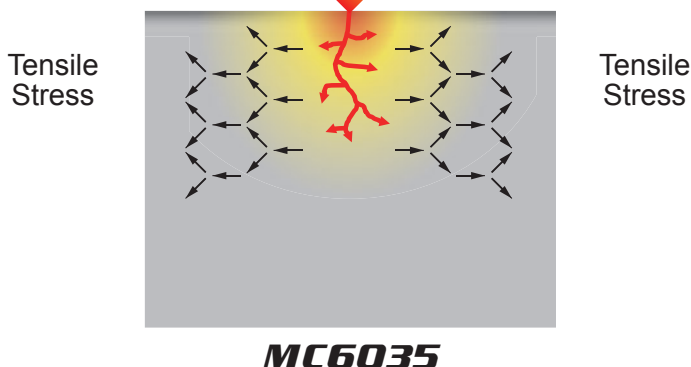
By reducing the tensile stress in the coating layer during interrupted cutting, crack development caused by impact stress is prevented.

Impact Stress when Interrupted Cutting



Conventional products tend to result in fracturing because impact stress is transmitted deep into the coating layer during interrupted cutting.

Impact Stress when Interrupted Cutting

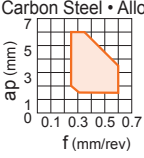


MC6035 has succeeded in alleviating tensile stress in the coating layer, therefore, cracks that can develop by impact stress can be prevented when interrupted cutting.

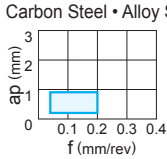
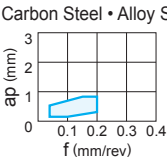
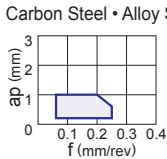
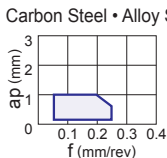
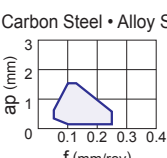
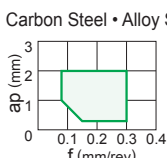
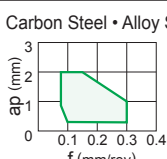
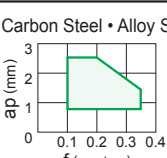
Chip Breaker System for Steel Turning

Negative Inserts

Application	Tolerance	Chip Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	M	NEW FP 	Better choice for finish cutting of steel Offers good chip control in wide cutting conditions Stable chip control in wide range. Available to both general and low carbon steel cuttings. A good surface finish through the 20° positive high rake angle.	Carbon Steel • Alloy Steel ap (mm) vs f (mm/rev) graph Nose: 20° Flank: 20°
		LP 	First recommendation for light cutting of carbon and alloy steels Stable chip control in the light cutting range. The curved edge allows smooth chip discharge.	Carbon Steel • Alloy Steel ap (mm) vs f (mm/rev) graph Nose: 15° Flank: 11°
Light Cutting	M	SH 	Alternative chip breaker for light cutting of carbon and alloy steels Can be used at low depth of cuts and high feed rates. The curved edge allows smooth chip discharge. Recommended for work materials in the 160—250HB range.	Carbon Steel • Alloy Steel ap (mm) vs f (mm/rev) graph Nose: 15° Flank: 15°
		SA 	Alternative chip breaker for light cutting of carbon and alloy steels Superior chip control at small depths of cuts. Wavy cutting edge is ideal for copying and back turning. Recommended for work materials in the 200—300HB range.	Carbon Steel • Alloy Steel ap (mm) vs f (mm/rev) graph Nose: 25° Flank: 25°
		SW 	Wiper insert for light cutting of carbon and alloy steels In comparison to conventional chip breakers, the surface finish is maintained even if the feed rate is doubled.	Carbon Steel • Alloy Steel ap (mm) vs f (mm/rev) graph Nose: 18° Flank: 18°
		MP 	First recommendation for medium cutting of carbon and alloy steels Suitable for medium to light cutting. Chip breaker geometry suitable for copying and back turning. Cutting edge geometry for an optimum balance of sharpness and fracture resistance.	Carbon Steel • Alloy Steel ap (mm) vs f (mm/rev) graph Nose: 15° Flank: 11°
Medium Cutting	M	MA 	Alternative chip breaker for medium cutting of carbon and alloy steels Ideal for general-purpose use. Positive land provides sharp cutting action. Smooth chip control for low-carbon steels, etc.	Carbon Steel • Alloy Steel ap (mm) vs f (mm/rev) graph Nose: 22° Flank: 22°
		MH 	First recommendation for rough cutting of mild steel Alternative chip breaker for medium cutting of carbon and alloy steels Flat land offers high edge strength.	Carbon Steel • Alloy Steel ap (mm) vs f (mm/rev) graph Nose: 16° Flank: 16°
		Standard 	First recommendation for medium cutting of cast iron Alternative chip breaker for medium cutting of carbon and alloy steels Flat land offers high edge strength.	Carbon Steel • Alloy Steel ap (mm) vs f (mm/rev) graph Nose: 15° Flank: 15°
		MW 	Wiper insert for medium cutting carbon and alloy steels In comparison to conventional chip breakers, the surface finish is maintained even if the feed rate is doubled.	Carbon Steel • Alloy Steel ap (mm) vs f (mm/rev) graph Nose: 19° Flank: 19°

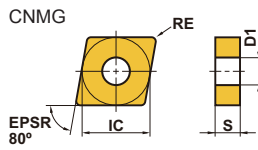
Application	Tolerance	Chip Breaker Name and Picture	Features	Cross Section Geometry
Rough Cutting	M	RP 	First recommendation for rough cutting of carbon and alloy steels For interrupted cuts and removing scale. Good balance of cutting edge strength and low cutting resistance because of a suitable rake angle.	Carbon Steel • Alloy Steel  Nose 0.33 3° Flank 0.33

Positive Inserts

Application	Tolerance	Chip Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	M	FP 	First recommendation for finish cutting of carbon and alloy steels The protuberance at the tip of the chip breaker controls chips even at small depths of cut. Corner strength is maintained to prevent abnormal fracturing. 5° 7° Positive Insert	Carbon Steel • Alloy Steel  Nose 6° 6° Flank 6°
	M	FV 	Finish cutting of carbon steel, alloy steel and mild steel Suitable for low depths of cut and low feed rates. Sharp cutting edge and low resistance design achieves excellent cutting performance. 7° Positive Insert	Carbon Steel • Alloy Steel  Nose 18° 8° Flank 8°
Light Cutting	M	LP 	First recommendation for light cutting of carbon and alloy steels Excellent cutting edge sharpness due to the large rake angle. Prevents chip welding of the insert to ensure good surface finishes. Optimized chip breaker realizes a wide range of chip control. 5° 7° Positive Insert	Carbon Steel • Alloy Steel  Nose 18° 8° Flank 8°
	M	SV 	Light cutting of carbon steel, alloy steel and mild steel Large rake angle provides sharp cutting action. A peninsular dot ensures chip control at depths of cut under 1mm. 7° 11° Positive Insert	Carbon Steel • Alloy Steel  Nose 18° 8° Flank 8°
	M	SW 	Wiper insert for light cutting of carbon steel, alloy steel, mild steel In comparison to conventional chip breakers, the surface finish is maintained even if the feed rate is doubled. 7° Positive Insert	Carbon Steel • Alloy Steel  Nose 20° 0.12 12° 16° 0.12 8° Flank 8°
Medium Cutting	M	MP 	First recommendation for medium cutting of carbon and alloy steels The wide pocket reduces vibration and chip jamming and also prevents increases in cutting resistance even at high depths of cut. 5° 7° Positive Insert	Carbon Steel • Alloy Steel  Nose 18° 0.1 18° 0.1 Flank 18°
	M	MV 	Medium cutting of carbon steel, alloy steel and mild steel A positive insert and large rake angle achieves sharp cutting edge performance. Double chip breakers in the rake face give a wide range of chip control. 5° 7° 11° Positive Insert	Carbon Steel • Alloy Steel  Nose 20° 0.2 8° 20° 0.2 8° Flank 8°
	M	MW 	Wiper insert for medium cutting of carbon steel, alloy steel, mild steel In comparison to conventional chip breakers, the surface finish is maintained even if the feed rate is doubled. 7° Positive Insert	Carbon Steel • Alloy Steel  Nose 18° 0.2 7° 18° 0.2 7° Flank 7°

MC6015/MC6025/MC6035**Negative Inserts (With hole)**

M Class



Finish	Light	Light	Light	Light	
FP	LP	SH	SA	SW (Wiper)	
					
Medium	Medium	Medium	Medium	Medium	Rough
MP	MA	MH	Standard	MW (Wiper)	RP
					

(mm)

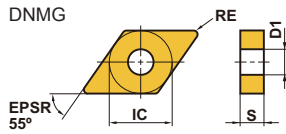
Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
NEW CNMG120402-FP	F	●	●		12.7	4.76	0.2	5.16
NEW CNMG120404-FP	F	●	●		12.7	4.76	0.4	5.16
NEW CNMG120408-FP	F	●	●		12.7	4.76	0.8	5.16
CNMG120404-LP	L	●	●	●	12.7	4.76	0.4	5.16
CNMG120408-LP	L	●	●	●	12.7	4.76	0.8	5.16
CNMG120412-LP	L	●	●	●	12.7	4.76	1.2	5.16
CNMG120404-SH	L	●	●		12.7	4.76	0.4	5.16
CNMG120408-SH	L	●	●		12.7	4.76	0.8	5.16
CNMG120412-SH	L	●	●		12.7	4.76	1.2	5.16
CNMG120404-SA	L	●	●		12.7	4.76	0.4	5.16
CNMG120408-SA	L	●	●		12.7	4.76	0.8	5.16
CNMG120412-SA	L	●	●		12.7	4.76	1.2	5.16
CNMG120404-SW	L	●			12.7	4.76	0.4	5.16
CNMG120408-SW	L	●			12.7	4.76	0.8	5.16
CNMG120412-SW	L	●			12.7	4.76	1.2	5.16

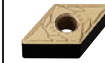
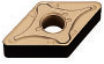
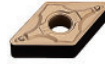
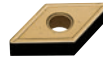
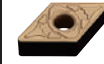
Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
CNMG120404-MP	M	●	●	●	12.7	4.76	0.4	5.16
CNMG120408-MP	M	●	●	●	12.7	4.76	0.8	5.16
CNMG120412-MP	M	●	●	●	12.7	4.76	1.2	5.16
CNMG120416-MP	M	●	●	●	12.7	4.76	1.6	5.16
CNMG160608-MP	M		●		15.875	6.35	0.8	6.35
CNMG160612-MP	M		●		15.875	6.35	1.2	6.35
CNMG160616-MP	M		●		15.875	6.35	1.6	6.35
CNMG120404-MA	M	●	●		12.7	4.76	0.4	5.16
CNMG120408-MA	M	●	●	●	12.7	4.76	0.8	5.16
CNMG120412-MA	M	●	●	●	12.7	4.76	1.2	5.16
CNMG160608-MA	M	●	●	●	15.875	6.35	0.8	6.35
CNMG160612-MA	M	●	●	●	15.875	6.35	1.2	6.35
CNMG160616-MA	M	●	●	●	15.875	6.35	1.6	6.35
CNMG190612-MA	M	●	●	●	19.05	6.35	1.2	7.93
CNMG190616-MA	M	●	●	●	19.05	6.35	1.6	7.93
CNMG120408-MH	M	●	●	●	12.7	4.76	0.8	5.16
CNMG120412-MH	M	●	●	●	12.7	4.76	1.2	5.16
CNMG160612-MH	M	●	●	●	15.875	6.35	1.2	6.35
CNMG190612-MH	M	●	●	●	19.05	6.35	1.2	7.93
CNMG09T304	M	●	●		9.525	3.97	0.4	3.81
CNMG09T308	M	●	●		9.525	3.97	0.8	3.81
CNMG120404	M	●	●		12.7	4.76	0.4	5.16
CNMG120408	M	●	●	●	12.7	4.76	0.8	5.16
CNMG120412	M	●	●	●	12.7	4.76	1.2	5.16
CNMG120416	M	●	●		12.7	4.76	1.6	5.16
CNMG160608	M	●	●	●	15.875	6.35	0.8	6.35
CNMG160612	M	●	●	●	15.875	6.35	1.2	6.35
CNMG160616	M	●	●	●	15.875	6.35	1.6	6.35
CNMG190608	M	●	●	●	19.05	6.35	0.8	7.93
CNMG190612	M	●	●	●	19.05	6.35	1.2	7.93
CNMG190616	M	●	●	●	19.05	6.35	1.6	7.93
CNMG120408-MW	M	●	●		12.7	4.76	0.8	5.16
CNMG120412-MW	M	●	●		12.7	4.76	1.2	5.16
CNMG120408-RP	R	●	●	●	12.7	4.76	0.8	5.16
CNMG120412-RP	R	●	●	●	12.7	4.76	1.2	5.16
CNMG120416-RP	R	●	●	●	12.7	4.76	1.6	5.16
CNMG160612-RP	R	●	●	●	15.875	6.35	1.2	6.35
CNMG160616-RP	R	●	●	●	15.875	6.35	1.6	6.35
CNMG190612-RP	R	●	●	●	19.05	6.35	1.2	7.93
CNMG190616-RP	R	●	●	●	19.05	6.35	1.6	7.93

● : Inventory maintained in Japan.

Negative Inserts (With hole)

M Class



Finish	Light	Light	Light	Light	Medium
FP	LP	SH	SA	SW (Wiper)	MP
					
Medium	Medium	Medium	Medium	Rough	
MA	MH	Standard	MW (Wiper)	RP	
					

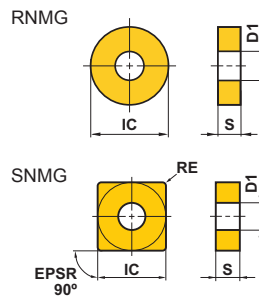
(mm)

Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
NEW DNMG150402-FP	F	●	●		12.7	4.76	0.2	5.16
NEW DNMG150404-FP	F	●	●		12.7	4.76	0.4	5.16
NEW DNMG150408-FP	F	●	●		12.7	4.76	0.8	5.16
NEW DNMG150602-FP	F	●	●		12.7	6.35	0.2	5.16
NEW DNMG150604-FP	F	●	●		12.7	6.35	0.4	5.16
NEW DNMG150608-FP	F	●	●		12.7	6.35	0.8	5.16
DNMG110404-LP	L	●	●	●	9.525	4.76	0.4	3.81
DNMG110408-LP	L	●	●	●	9.525	4.76	0.8	3.81
DNMG150404-LP	L	●	●	●	12.7	4.76	0.4	5.16
DNMG150408-LP	L	●	●	●	12.7	4.76	0.8	5.16
DNMG150412-LP	L	●	●	●	12.7	4.76	1.2	5.16
DNMG150604-LP	L	●	●	●	12.7	6.35	0.4	5.16
DNMG150608-LP	L	●	●	●	12.7	6.35	0.8	5.16
DNMG150612-LP	L	●	●	●	12.7	6.35	1.2	5.16
DNMG150404-SH	L	●	●		12.7	4.76	0.4	5.16
DNMG150408-SH	L	●	●		12.7	4.76	0.8	5.16
DNMG150412-SH	L	●	●		12.7	4.76	1.2	5.16
DNMG150404-SA	L	●	●		12.7	4.76	0.4	5.16
DNMG150408-SA	L	●	●		12.7	4.76	0.8	5.16
DNMG150412-SA	L	●	●		12.7	4.76	1.2	5.16
DNMX110404-SW	L	●			9.525	4.76	0.4	3.81
DNMX110408-SW	L	●			9.525	4.76	0.8	3.81
DNMX150404-SW	L	●			12.7	4.76	0.4	5.16
DNMX150408-SW	L	●			12.7	4.76	0.8	5.16
DNMX150412-SW	L	●			12.7	4.76	1.2	5.16
DNMX150604-SW	L	●			12.7	6.35	0.4	5.16
DNMX150608-SW	L	●			12.7	6.35	0.8	5.16
DNMX150612-SW	L	●			12.7	6.35	1.2	5.16

Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
DNMG150404-MP	M	●	●	●	12.7	4.76	0.4	5.16
DNMG150408-MP	M	●	●	●	12.7	4.76	0.8	5.16
DNMG150412-MP	M	●	●	●	12.7	4.76	1.2	5.16
DNMG150416-MP	M	●	●	●	12.7	4.76	1.6	5.16
DNMG150604-MP	M	●	●	●	12.7	6.35	0.4	5.16
DNMG150608-MP	M	●	●	●	12.7	6.35	0.8	5.16
DNMG150612-MP	M	●	●	●	12.7	6.35	1.2	5.16
DNMG150616-MP	M	●	●	●	12.7	6.35	1.6	5.16
DNMG110404-MA	M	●	●		9.525	4.76	0.4	3.81
DNMG110408-MA	M	●	●		9.525	4.76	0.8	3.81
DNMG110412-MA	M	●	●		9.525	4.76	1.2	3.81
DNMG150404-MA	M	●	●		12.7	4.76	0.4	5.16
DNMG150408-MA	M	●	●		12.7	4.76	0.8	5.16
DNMG150412-MA	M	●	●		12.7	4.76	1.2	5.16
DNMG150604-MA	M	●	●		12.7	6.35	0.4	5.16
DNMG150608-MA	M	●	●		12.7	6.35	0.8	5.16
DNMG150612-MA	M	●	●		12.7	6.35	1.2	5.16
DNMG150408-MH	M	●	●	●	12.7	4.76	0.8	5.16
DNMG150412-MH	M	●	●	●	12.7	4.76	1.2	5.16
DNMG150608-MH	M	●	●	●	12.7	6.35	0.8	5.16
DNMG150612-MH	M	●	●	●	12.7	6.35	1.2	5.16
DNMG150404	M	●	●		12.7	4.76	0.4	5.16
DNMG150408	M	●	●		12.7	4.76	0.8	5.16
DNMG150412	M	●	●		12.7	4.76	1.2	5.16
DNMG150416	M	●	●		12.7	4.76	1.6	5.16
DNMG150604	M	●	●		12.7	6.35	0.4	5.16
DNMG150608	M	●	●		12.7	6.35	0.8	5.16
DNMG150612	M	●	●		12.7	6.35	1.2	5.16
DNMG150616	M	●	●		12.7	6.35	1.6	5.16
DNMX150408-MW	M	●			12.7	4.76	0.8	5.16
DNMX150412-MW	M	●			12.7	4.76	1.2	5.16
DNMX150608-MW	M	●			12.7	6.35	0.8	5.16
DNMX150612-MW	M	●			12.7	6.35	1.2	5.16
DNMG150408-RP	R	●	●	●	12.7	4.76	0.8	5.16
DNMG150412-RP	R	●	●	●	12.7	4.76	1.2	5.16
DNMG150416-RP	R	●	●	●	12.7	4.76	1.6	5.16
DNMG150608-RP	R	●	●	●	12.7	6.35	0.8	5.16
DNMG150612-RP	R	●	●	●	12.7	6.35	1.2	5.16
DNMG150616-RP	R	●	●	●	12.7	6.35	1.6	5.16

MC6015/MC6025/MC6035**Negative Inserts (With hole)**

M Class



Medium	Finish	Light	Medium	Medium
Standard	FP	LP	MP	MA
Medium	Medium	Rough		
MH	Standard	RP		

(mm)

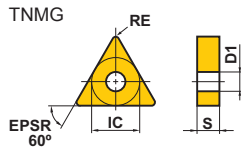
Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
RNMG120400	M	●	●		12.7	4.76	—	5.16

Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
NEW SNMG120404-FP	F	●	●		12.7	4.76	0.4	5.16
NEW SNMG120408-FP	F	●	●		12.7	4.76	0.8	5.16
SNMG120404-LP	L	●	●	●	12.7	4.76	0.4	5.16
SNMG120408-LP	L	●	●	●	12.7	4.76	0.8	5.16
SNMG120412-LP	L	●	●	●	12.7	4.76	1.2	5.16
SNMG120404-MP	M	●	●	●	12.7	4.76	0.4	5.16
SNMG120408-MP	M	●	●	●	12.7	4.76	0.8	5.16
SNMG120412-MP	M	●	●	●	12.7	4.76	1.2	5.16
SNMG120404-MA	M	●	●		12.7	4.76	0.4	5.16
SNMG120408-MA	M	●	●	●	12.7	4.76	0.8	5.16
SNMG120412-MA	M	●	●	●	12.7	4.76	1.2	5.16
SNMG150612-MA	M	●	●	●	15.875	6.35	1.2	6.35
SNMG150616-MA	M	●	●	●	15.875	6.35	1.6	6.35
SNMG190612-MA	M	●	●	●	19.05	6.35	1.2	7.93
SNMG190616-MA	M	●	●	●	19.05	6.35	1.6	7.93
SNMG120408-MH	M	●	●	●	12.7	4.76	0.8	5.16
SNMG120412-MH	M	●	●	●	12.7	4.76	1.2	5.16
SNMG090304	M	●	●		9.525	3.18	0.4	3.81
SNMG090308	M	●	●		9.525	3.18	0.8	3.81
SNMG120404	M	●	●		12.7	4.76	0.4	5.16
SNMG120408	M	●	●	●	12.7	4.76	0.8	5.16
SNMG120412	M	●	●	●	12.7	4.76	1.2	5.16
SNMG120416	M	●	●	●	12.7	4.76	1.6	5.16
SNMG120420	M	●	●	●	12.7	4.76	2.0	5.16
SNMG150612	M	●	●	●	15.875	6.35	1.2	6.35
SNMG150616	M	●	●	●	15.875	6.35	1.6	6.35
SNMG190612	M	●	●	●	19.05	6.35	1.2	7.93
SNMG190616	M	●	●	●	19.05	6.35	1.6	7.93
SNMG120408-RP	R	●	●	●	12.7	4.76	0.8	5.16
SNMG120412-RP	R	●	●	●	12.7	4.76	1.2	5.16
SNMG120416-RP	R	●	●	●	12.7	4.76	1.6	5.16
SNMG150612-RP	R	●	●	●	15.875	6.35	1.2	6.35
SNMG150616-RP	R	●	●	●	15.875	6.35	1.6	6.35
SNMG190612-RP	R	●	●	●	19.05	6.35	1.2	7.93
SNMG190616-RP	R	●	●	●	19.05	6.35	1.6	7.93

● : Inventory maintained in Japan.

Negative Inserts (With hole)

M Class



Finish	Light	Light	Light	Light	
FP	LP	SH	SA	SW (Wiper)	
Medium	Medium	Medium	Medium	Medium	Rough
MP	MA	MH	Standard	MW (Wiper)	RP

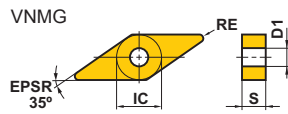
(mm)

Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
NEW TNMG160402-FP	F	●	●		9.525	4.76	0.2	3.81
NEW TNMG160404-FP	F	●	●		9.525	4.76	0.4	3.81
NEW TNMG160408-FP	F	●	●		9.525	4.76	0.8	3.81
TNMG160404-LP	L	●	●	●	9.525	4.76	0.4	3.81
TNMG160408-LP	L	●	●	●	9.525	4.76	0.8	3.81
TNMG160412-LP	L	●	●	●	9.525	4.76	1.2	3.81
TNMG220408-LP	L	●	●	●	12.7	4.76	0.8	5.16
TNMG220412-LP	L	●	●	●	12.7	4.76	1.2	5.16
TNMG160404-SH	L	●	●		9.525	4.76	0.4	3.81
TNMG160408-SH	L	●	●		9.525	4.76	0.8	3.81
TNMG160404-SA	L	●	●		9.525	4.76	0.4	3.81
TNMG160408-SA	L	●	●		9.525	4.76	0.8	3.81
TNMG160404-SW	L	●			9.525	4.76	0.4	3.81
TNMG160408-SW	L	●			9.525	4.76	0.8	3.81

Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
TNMG160404-MP	M	●	●	●	9.525	4.76	0.4	3.81
TNMG160408-MP	M	●	●	●	9.525	4.76	0.8	3.81
TNMG160412-MP	M	●	●	●	9.525	4.76	1.2	3.81
TNMG220408-MP	M	●	●	●	12.7	4.76	0.8	5.16
TNMG220412-MP	M	●	●	●	12.7	4.76	1.2	5.16
TNMG160404-MA	M	●	●		9.525	4.76	0.4	3.81
TNMG160408-MA	M	●	●		9.525	4.76	0.8	3.81
TNMG160412-MA	M	●	●		9.525	4.76	1.2	3.81
TNMG220408-MA	M	●	●		12.7	4.76	0.8	5.16
TNMG220412-MA	M	●	●		12.7	4.76	1.2	5.16
TNMG160408-MH	M	●	●	●	9.525	4.76	0.8	3.81
TNMG160412-MH	M	●	●	●	9.525	4.76	1.2	3.81
TNMG220408-MH	M	●	●	●	12.7	4.76	0.8	5.16
TNMG220412-MH	M	●	●	●	12.7	4.76	1.2	5.16
TNMG110304	M	●	●		6.35	3.18	0.4	2.26
TNMG110308	M	●	●		6.35	3.18	0.8	2.26
TNMG160304	M	●	●		9.525	3.18	0.4	3.81
TNMG160308	M	●	●		9.525	3.18	0.8	3.81
TNMG160404	M	●	●		9.525	4.76	0.4	3.81
TNMG160408	M	●	●	●	9.525	4.76	0.8	3.81
TNMG160412	M	●	●	●	9.525	4.76	1.2	3.81
TNMG160416	M	●	●	●	9.525	4.76	1.6	3.81
TNMG220404	M	●	●	●	12.7	4.76	0.4	5.16
TNMG220408	M	●	●	●	12.7	4.76	0.8	5.16
TNMG220412	M	●	●	●	12.7	4.76	1.2	5.16
TNMG220416	M	●	●	●	12.7	4.76	1.6	5.16
TNMG270608	M	●	●	●	15.875	6.35	0.8	6.35
TNMG270612	M	●	●	●	15.875	6.35	1.2	6.35
TNMG160408-MW	M	●			9.525	4.76	0.8	3.81
TNMG160412-MW	M	●			9.525	4.76	1.2	3.81
TNMG160408-RP	R	●	●	●	9.525	4.76	0.8	3.81
TNMG160412-RP	R	●	●	●	9.525	4.76	1.2	3.81
TNMG220408-RP	R	●	●	●	12.7	4.76	0.8	5.16
TNMG220412-RP	R	●	●	●	12.7	4.76	1.2	5.16
TNMG220416-RP	R	●	●	●	12.7	4.76	1.6	5.16
TNMG270612-RP	R	●	●	●	15.875	6.35	1.2	6.35
TNMG270616-RP	R	●	●	●	15.875	6.35	1.6	6.35

MC6015/MC6025/MC6035**Negative Inserts (With hole)**

M Class



Finish	Light	Light	Light
FP	LP	SH	SA
Medium	Medium	Medium	Medium
MP	MA	MH	Standard

(mm)

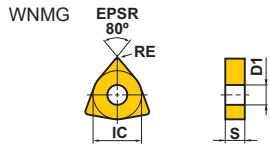
Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
NEW VNMG160402-FP	F	●	●		9.525	4.76	0.2	3.81
NEW VNMG160404-FP	F	●	●		9.525	4.76	0.4	3.81
NEW VNMG160408-FP	F	●	●		9.525	4.76	0.8	3.81
VNMG160404-LP	L	●	●	●	9.525	4.76	0.4	3.81
VNMG160408-LP	L	●	●	●	9.525	4.76	0.8	3.81
VNMG160404-SH	L	●	●		9.525	4.76	0.4	3.81
VNMG160408-SH	L	●	●		9.525	4.76	0.8	3.81
VNMG160404-SA	L	●	●		9.525	4.76	0.4	3.81
VNMG160408-SA	L	●	●		9.525	4.76	0.8	3.81

Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
VNMG160404-MP	M	●	●	●	9.525	4.76	0.4	3.81
VNMG160408-MP	M	●	●	●	9.525	4.76	0.8	3.81
VNMG160412-MP	M	●	●	●	9.525	4.76	1.2	3.81
VNMG160404-MA	M	●	●		9.525	4.76	0.4	3.81
VNMG160408-MA	M	●	●	●	9.525	4.76	0.8	3.81
VNMG160408-MH	M	●	●	●	9.525	4.76	0.8	3.81
VNMG160404	M	●	●		9.525	4.76	0.4	3.81
VNMG160408	M	●	●	●	9.525	4.76	0.8	3.81
VNMG160412	M	●	●	●	9.525	4.76	1.2	3.81

● : Inventory maintained in Japan.

Negative Inserts (With hole)

M Class



Finish	Light	Light	Light	Light	
FP	LP	SH	SA	SW (Wiper)	
Medium	Medium	Medium	Medium	Medium	Rough
MP	MA	MH	Standard	MW (Wiper)	RP

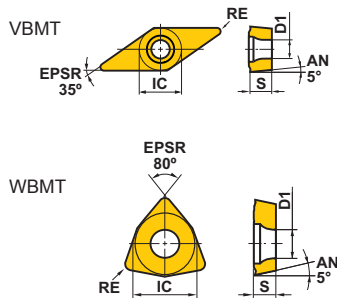
(mm)

Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
NEW WNMG080402-FP	F	●	●		12.7	4.76	0.2	5.16
NEW WNMG080404-FP	F	●	●		12.7	4.76	0.4	5.16
NEW WNMG080408-FP	F	●	●		12.7	4.76	0.8	5.16
WNMG06T304-LP	L	●	●	●	9.525	3.97	0.4	3.81
WNMG06T308-LP	L	●	●	●	9.525	3.97	0.8	3.81
WNMG060404-LP	L	●	●	●	9.525	4.76	0.4	3.81
WNMG060408-LP	L	●	●	●	9.525	4.76	0.8	3.81
WNMG080404-LP	L	●	●	●	12.7	4.76	0.4	5.16
WNMG080408-LP	L	●	●	●	12.7	4.76	0.8	5.16
WNMG080412-LP	L	●	●	●	12.7	4.76	1.2	5.16
WNMG080404-SH	L	●	●		12.7	4.76	0.4	5.16
WNMG080408-SH	L	●	●		12.7	4.76	0.8	5.16
WNMG080412-SH	L	●	●		12.7	4.76	1.2	5.16
WNMG080404-SA	L	●	●		12.7	4.76	0.4	5.16
WNMG080408-SA	L	●	●		12.7	4.76	0.8	5.16
WNMG080412-SA	L	●	●		12.7	4.76	1.2	5.16
WNMG060404-SW	L	●			9.525	4.76	0.4	3.81
WNMG060408-SW	L	●			9.525	4.76	0.8	3.81
WNMG080404-SW	L	●			12.7	4.76	0.4	5.16
WNMG080408-SW	L	●			12.7	4.76	0.8	5.16
WNMG080412-SW	L	●			12.7	4.76	1.2	5.16

Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
WNMG06T304-MP	M	●	●	●	9.525	3.97	0.4	3.81
WNMG06T308-MP	M	●	●	●	9.525	3.97	0.8	3.81
WNMG06T312-MP	M	●	●	●	9.525	3.97	1.2	3.81
WNMG060404-MP	M	●	●	●	9.525	4.76	0.4	3.81
WNMG060408-MP	M	●	●	●	9.525	4.76	0.8	3.81
WNMG060412-MP	M	●	●	●	9.525	4.76	1.2	3.81
WNMG080404-MP	M	●	●	●	12.7	4.76	0.4	5.16
WNMG080408-MP	M	●	●	●	12.7	4.76	0.8	5.16
WNMG080412-MP	M	●	●	●	12.7	4.76	1.2	5.16
WNMG080416-MP	M	●	●	●	12.7	4.76	1.6	5.16
WNMG060404-MA	M	●	●		9.525	4.76	0.4	3.81
WNMG060408-MA	M	●	●		9.525	4.76	0.8	3.81
WNMG060412-MA	M	●	●		9.525	4.76	1.2	3.81
WNMG080404-MA	M	●	●		12.7	4.76	0.4	5.16
WNMG080408-MA	M	●	●		12.7	4.76	0.8	5.16
WNMG080412-MA	M	●	●		12.7	4.76	1.2	5.16
WNMG080408-MH	M	●	●	●	12.7	4.76	0.8	5.16
WNMG080412-MH	M	●	●	●	12.7	4.76	1.2	5.16
WNMG080404	M	●	●		12.7	4.76	0.4	5.16
WNMG080408	M	●	●	●	12.7	4.76	0.8	5.16
WNMG080412	M	●	●	●	12.7	4.76	1.2	5.16
WNMG060408-MW	M	●	●		9.525	4.76	0.8	3.81
WNMG060412-MW	M	●	●		9.525	4.76	1.2	3.81
WNMG080408-MW	M	●	●		12.7	4.76	0.8	5.16
WNMG080412-MW	M	●	●		12.7	4.76	1.2	5.16
WNMG080408-RP	R	●	●	●	12.7	4.76	0.8	5.16
WNMG080412-RP	R	●	●	●	12.7	4.76	1.2	5.16

MC6015/MC6025/MC6035**5° Positive Inserts (With hole)**

M Class



Finish	Light	Medium	Medium
FP	LP	MP	MV
Medium			
MV			

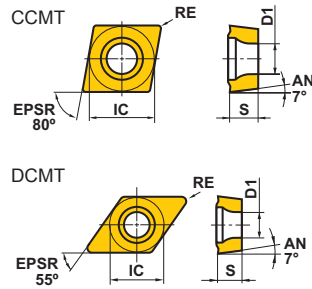
(mm)

Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
VBMT110302-FP	F	●	●		6.35	3.18	0.2	2.9
VBMT110304-FP	F	●	●		6.35	3.18	0.4	2.9
VBMT110308-FP	F	●	●		6.35	3.18	0.8	2.9
VBMT160404-FP	F	●	●		9.525	4.76	0.4	4.4
VBMT160408-FP	F	●	●		9.525	4.76	0.8	4.4
VBMT110304-LP	L	●	●		6.35	3.18	0.4	2.9
VBMT110308-LP	L	●	●		6.35	3.18	0.8	2.9
VBMT160404-LP	L	●	●		9.525	4.76	0.4	4.4
VBMT160408-LP	L	●	●		9.525	4.76	0.8	4.4
VBMT160404-MP	M	●	●		9.525	4.76	0.4	4.4
VBMT160408-MP	M	●	●		9.525	4.76	0.8	4.4
VBMT110304-MV	M		●		6.35	3.18	0.4	2.9
VBMT110308-MV	M		●		6.35	3.18	0.8	2.9
VBMT160404-MV	M		●		9.525	4.76	0.4	4.4
VBMT160408-MV	M		●		9.525	4.76	0.8	4.4

Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
WBMTL30202R-MV	M		●		4.76	2.38	0.2	2.3
WBMTL30202L-MV	M		●		4.76	2.38	0.2	2.3
WBMTL30204R-MV	M		●		4.76	2.38	0.4	2.3
WBMTL30204L-MV	M		●		4.76	2.38	0.4	2.3

7° Positive Inserts (With hole)

M Class



Finish	Light	Light	Light	Medium	Medium
FP	LP	SV	SW (Wiper)	MP	MV
Medium	Finish	Light	Medium	Medium	
MW (Wiper)	FP	LP	MP	MV	

(mm)

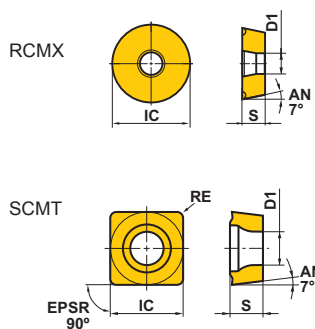
Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
CCMT060202-FP	F	●	●		6.35	2.38	0.2	2.8
CCMT060204-FP	F	●	●		6.35	2.38	0.4	2.8
CCMT09T302-FP	F	●	●		9.525	3.97	0.2	4.4
CCMT09T304-FP	F	●	●		9.525	3.97	0.4	4.4
CCMT09T308-FP	F	●	●		9.525	3.97	0.8	4.4
CCMT060204-LP	L	●	●		6.35	2.38	0.4	2.8
CCMT060208-LP	L	●	●		6.35	2.38	0.8	2.8
CCMT09T304-LP	L	●	●		9.525	3.97	0.4	4.4
CCMT09T308-LP	L	●	●		9.525	3.97	0.8	4.4
CCMH060202-SV	L		●		6.35	2.38	0.2	2.8
CCMH060204-SV	L		●		6.35	2.38	0.4	2.8
CCMT060202-SW	L	●	●		6.35	2.38	0.2	2.8
CCMT060204-SW	L	●	●		6.35	2.38	0.4	2.8
CCMT09T302-SW	L	●	●		9.525	3.97	0.2	4.4
CCMT09T304-SW	L	●	●		9.525	3.97	0.4	4.4
CCMT060204-MP	M	●	●		6.35	2.38	0.4	2.8
CCMT060208-MP	M	●	●		6.35	2.38	0.8	2.8
CCMT09T304-MP	M	●	●		9.525	3.97	0.4	4.4
CCMT09T308-MP	M	●	●		9.525	3.97	0.8	4.4
CCMT120404-MP	M	●	●		12.7	4.76	0.4	5.5
CCMT120408-MP	M	●	●		12.7	4.76	0.8	5.5
CCMT120412-MP	M	●	●		12.7	4.76	1.2	5.5
CCMH060202-MV	M		●		6.35	2.38	0.2	2.8
CCMH060204-MV	M		●		6.35	2.38	0.4	2.8
CCMT060204-MW	M	●	●		6.35	2.38	0.4	2.8
CCMT060208-MW	M	●	●		6.35	2.38	0.8	2.8
CCMT09T304-MW	M	●	●		9.525	3.97	0.4	4.4
CCMT09T308-MW	M	●	●		9.525	3.97	0.8	4.4
CCMT120404-MW	M	●	●		12.7	4.76	0.4	5.5
CCMT120408-MW	M	●	●		12.7	4.76	0.8	5.5

Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
DCMT070202-FP	F	●	●		6.35	2.38	0.2	2.8
DCMT070204-FP	F	●	●		6.35	2.38	0.4	2.8
DCMT11T302-FP	F	●	●		9.525	3.97	0.2	4.4
DCMT11T304-FP	F	●	●		9.525	3.97	0.4	4.4
DCMT11T308-FP	F	●	●		9.525	3.97	0.8	4.4
DCMT070204-LP	L	●	●		6.35	2.38	0.4	2.8
DCMT070208-LP	L	●	●		6.35	2.38	0.8	2.8
DCMT11T304-LP	L	●	●		9.525	3.97	0.4	4.4
DCMT11T308-LP	L	●	●		9.525	3.97	0.8	4.4
DCMT070204-MP	M	●	●		6.35	2.38	0.4	2.8
DCMT070208-MP	M	●	●		6.35	2.38	0.8	2.8
DCMT11T304-MP	M	●	●		9.525	3.97	0.4	4.4
DCMT11T308-MP	M	●	●		9.525	3.97	0.8	4.4
DCMT150404-MP	M	●	●		12.7	4.76	0.4	5.5
DCMT150408-MP	M	●	●		12.7	4.76	0.8	5.5
DCMT070202-MV	M		●		6.35	2.38	0.2	2.8
DCMT070204-MV	M		●		6.35	2.38	0.4	2.8
DCMT070208-MV	M		●		6.35	2.38	0.8	2.8
DCMT11T302-MV	M		●		9.525	3.97	0.2	4.4
DCMT11T304-MV	M		●		9.525	3.97	0.4	4.4
DCMT11T308-MV	M		●		9.525	3.97	0.8	4.4

MC6015/MC6025/MC6035

7° Positive Inserts (With hole)

M Class



Medium		Rough	
Standard		RR	
			
Finish		Light	Medium
FP		LP	MP
			

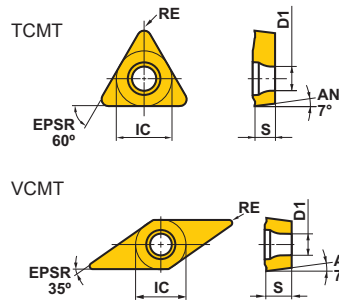
(mm)

Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
RCMX1003M0	M	●			10	3.18	—	3.6
RCMX1204M0	M	●			12	4.76	—	4.2
RCMX1606M0	M	●			16	6.35	—	5.2
RCMX2006M0	M	●			20	6.35	—	6.5
RCMX1606M0-RR	R	●			16	6.35	—	5.2
RCMX2006M0-RR	R	●			20	6.35	—	6.5

Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
SCMT09T304-FP	F	●	●		9.525	3.97	0.4	4.4
SCMT09T308-FP	F	●	●		9.525	3.97	0.8	4.4
SCMT09T304-LP	L	●	●		9.525	3.97	0.4	4.4
SCMT09T308-LP	L	●	●		9.525	3.97	0.8	4.4
SCMT09T304-MP	M	●	●		9.525	3.97	0.4	4.4
SCMT09T308-MP	M	●	●		9.525	3.97	0.8	4.4
SCMT120404-MP	M	●	●		12.7	4.76	0.4	5.5
SCMT120408-MP	M	●	●		12.7	4.76	0.8	5.5

7° Positive Inserts (With hole)

M Class



Finish	Light	Medium			
FP	LP	MP			
					
Finish	Finish	Light	Light	Medium	Medium
FP	FV	LP	SV	MP	MV
					

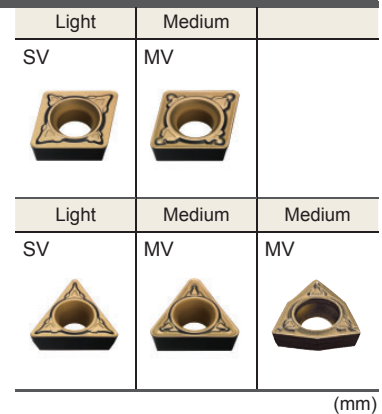
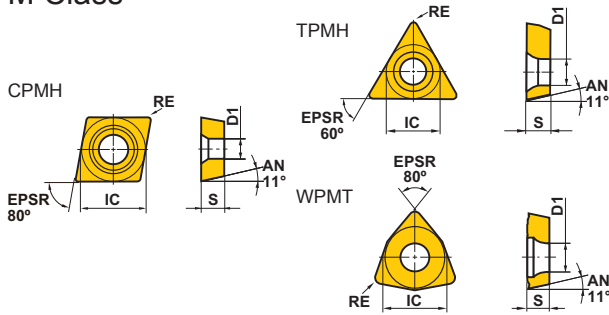
(mm)

Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
TCMT090202-FP	F	●	●		5.56	2.38	0.2	2.5
TCMT090204-FP	F	●	●		5.56	2.38	0.4	2.5
TCMT110202-FP	F	●	●		6.35	2.38	0.2	2.8
TCMT110204-FP	F	●	●		6.35	2.38	0.4	2.8
TCMT16T304-FP	F	●	●		9.525	3.97	0.4	4.4
TCMT090204-LP	L	●	●		5.56	2.38	0.4	2.5
TCMT090208-LP	L	●	●		5.56	2.38	0.8	2.5
TCMT110204-LP	L	●	●		6.35	2.38	0.4	2.8
TCMT110208-LP	L	●	●		6.35	2.38	0.8	2.8
TCMT16T304-LP	L	●	●		9.525	3.97	0.4	4.4
TCMT16T308-LP	L	●	●		9.525	3.97	0.8	4.4
TCMT090204-MP	M	●	●		5.56	2.38	0.4	2.5
TCMT090208-MP	M	●	●		5.56	2.38	0.8	2.5
TCMT110204-MP	M	●	●		6.35	2.38	0.4	2.8
TCMT110208-MP	M	●	●		6.35	2.38	0.8	2.8
TCMT130304-MP	M	●	●		7.94	3.18	0.4	3.4
TCMT16T304-MP	M	●	●		9.525	3.97	0.4	4.4
TCMT16T308-MP	M	●	●		9.525	3.97	0.8	4.4
TCMT16T312-MP	M	●	●		9.525	3.97	1.2	4.4

Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
VCMT110302-FP	F	●	●		6.35	3.18	0.2	2.8
VCMT110304-FP	F	●	●		6.35	3.18	0.4	2.8
VCMT160404-FP	F	●	●		9.525	4.76	0.4	4.4
VCMT160408-FP	F	●	●		9.525	4.76	0.8	4.4
VCMT080202-FV	F		●		4.76	2.38	0.2	2.4
VCMT080204-FV	F		●		4.76	2.38	0.4	2.4
VCMT110304-LP	L	●	●		6.35	3.18	0.4	2.8
VCMT110308-LP	L	●	●		6.35	3.18	0.8	2.8
VCMT160404-LP	L	●	●		9.525	4.76	0.4	4.4
VCMT160408-LP	L	●	●		9.525	4.76	0.8	4.4
VCMT080202-SV	L		●		4.76	2.38	0.2	2.4
VCMT080204-SV	L		●		4.76	2.38	0.4	2.4
VCMT160404-MP	M	●	●		9.525	4.76	0.4	4.4
VCMT160408-MP	M	●	●		9.525	4.76	0.8	4.4
VCMT160412-MP	M	●	●		9.525	4.76	1.2	4.4
VCMT080202-MV	M		●		4.76	2.38	0.2	2.4
VCMT080204-MV	M		●		4.76	2.38	0.4	2.4

MC6015/MC6025/MC6035**11° Positive Inserts (With hole)**

M Class



(mm)

Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
CPMH080202-SV	L	●			7.94	2.38	0.2	3.5
CPMH080204-SV	L	●			7.94	2.38	0.4	3.5
CPMH090302-SV	L	●			9.525	3.18	0.2	4.5
CPMH090304-SV	L	●			9.525	3.18	0.4	4.5
CPMH090308-SV	L	●			9.525	3.18	0.8	4.5
CPMH080204-MV	M	●			7.94	2.38	0.4	3.5
CPMH080208-MV	M	●			7.94	2.38	0.8	3.5
CPMH090304-MV	M	●			9.525	3.18	0.4	4.5
CPMH090308-MV	M	●			9.525	3.18	0.8	4.5

Order Number	Cutting Area	Stock			IC	S	RE	D1
		MC6015	MC6025	MC6035				
TPMH080202-SV	L	●			4.76	2.38	0.2	2.4
TPMH080204-SV	L	●			4.76	2.38	0.4	2.4
TPMH090202-SV	L	●			5.56	2.38	0.2	2.9
TPMH090204-SV	L	●			5.56	2.38	0.4	2.9
TPMH110302-SV	L	●			6.35	3.18	0.2	3.4
TPMH110304-SV	L	●			6.35	3.18	0.4	3.4
TPMH110308-SV	L	●			6.35	3.18	0.8	3.4
TPMH160302-SV	L	●			9.525	3.18	0.2	4.4
TPMH160304-SV	L	●			9.525	3.18	0.4	4.4
TPMH160308-SV	L	●			9.525	3.18	0.8	4.4
TPMH080202-MV	M	●			4.76	2.38	0.2	2.4
TPMH080204-MV	M	●			4.76	2.38	0.4	2.4
TPMH090202-MV	M	●			5.56	2.38	0.2	2.9
TPMH090204-MV	M	●			5.56	2.38	0.4	2.9
TPMH090208-MV	M	●			5.56	2.38	0.8	2.9
TPMH110302-MV	M	●			6.35	3.18	0.2	3.4
TPMH110304-MV	M	●			6.35	3.18	0.4	3.4
TPMH110308-MV	M	●			6.35	3.18	0.8	3.4
TPMH160304-MV	M	●			9.525	3.18	0.4	4.4
TPMH160308-MV	M	●			9.525	3.18	0.8	4.4
WPMT040202-MV	M	●			6.35	2.38	0.2	2.8
WPMT040204-MV	M	●			6.35	2.38	0.4	2.8
WPMT060304-MV	M	●			9.525	3.18	0.4	4.4
WPMT060308-MV	M	●			9.525	3.18	0.8	4.4

● : Inventory maintained in Japan.

Recommended Cutting Conditions

Negative Inserts (For External Turning)

(mm)

Work Material	Hardness	Cutting Range		Grade	Chip Breaker	vc (m/min)	f (mm/rev)	ap
P	Carbon and Alloy Steel	Finish Cutting	General Cutting	MC6015	FP	230—395	0.08—0.25	0.10—1.00
			Unstable Cutting	MC6025	FP	230—375	0.08—0.25	0.10—1.00
		Light Cutting	General Cutting	MC6015	LP,SH,SA	210—355	0.10—0.40	0.30—2.00
					SW	210—355	0.10—0.50	0.30—2.50
			Unstable Cutting	MC6025	LP,SH,SA	210—340	0.10—0.40	0.30—2.00
				MC6035	LP	185—260	0.10—0.40	0.30—2.00
		Medium Cutting	General Cutting	MC6015	MP	190—325	0.16—0.50	0.30—4.00
					MA	190—325	0.20—0.50	0.30—4.00
					MH	190—325	0.20—0.55	1.00—4.00
					Standard	190—325	0.25—0.60	1.50—5.00
					MW	190—325	0.20—0.60	0.90—4.00
			Unstable Cutting	MC6025	MP	190—310	0.16—0.50	0.30—4.00
					MA	190—310	0.20—0.50	0.30—4.00
					MH	190—310	0.20—0.55	1.00—4.00
					Standard	190—310	0.25—0.60	1.50—5.00
					MW	190—310	0.20—0.60	0.90—4.00
				MC6035	MP	170—240	0.16—0.50	0.30—4.00
					MA	170—240	0.20—0.50	0.30—4.00
					MH	170—240	0.20—0.55	1.00—4.00
					Standard	170—240	0.25—0.60	1.50—5.00
		Rough Cutting	General Cutting	MC6015	RP	180—310	0.25—0.60	1.50—6.00
			Unstable Cutting	MC6025	RP	180—295	0.25—0.60	1.50—6.00
				MC6035	RP	160—225	0.25—0.60	1.50—6.00

7° Positive Inserts (For External Turning)

(mm)

Work Material	Hardness	Cutting Range		Grade	Chip Breaker	vc (m/min)	f (mm/rev)	ap
P	Mild Steel	Finish Cutting	General Cutting	MC6015	FP,FV	250—425	0.04—0.20	0.20—0.90
			Unstable Cutting	MC6025	FP,FV	250—405	0.04—0.20	0.20—0.90
		Light Cutting	General Cutting	MC6015	LP	250—425	0.06—0.25	0.20—1.00
			Unstable Cutting	MC6025	LP,SV	250—405	0.06—0.25	0.20—1.00
		Medium Cutting	General Cutting	MC6015	MP	205—350	0.08—0.30	0.30—2.00
			Unstable Cutting	MC6025	MP,MV	205—335	0.08—0.30	0.30—2.00
	Carbon and Alloy Steel	Finish Cutting	General Cutting	MC6015	FP,FV	185—310	0.04—0.20	0.20—0.90
			Unstable Cutting	MC6025	FP,FV	185—295	0.04—0.20	0.20—0.90
		Light Cutting	General Cutting	MC6015	LP	185—310	0.06—0.25	0.20—1.00
					SW	185—310	0.06—0.24	0.20—1.50
			Unstable Cutting	MC6025	LP,SV	185—295	0.06—0.25	0.20—1.00
					SW	185—295	0.06—0.24	0.20—1.50
		Medium Cutting	General Cutting	MC6015	MP	150—260	0.08—0.30	0.30—2.00
					MW	150—260	0.10—0.35	0.80—2.50
			Unstable Cutting	MC6025	MP,MV	150—245	0.08—0.30	0.30—2.00
					MW	150—245	0.10—0.35	0.80—2.50
	Carbon and Alloy Steel	Medium Cutting	General Cutting	MC6015	MP	110—185	0.08—0.30	0.30—2.00
			Unstable Cutting	MC6025	MP,MV	110—175	0.08—0.30	0.30—2.00

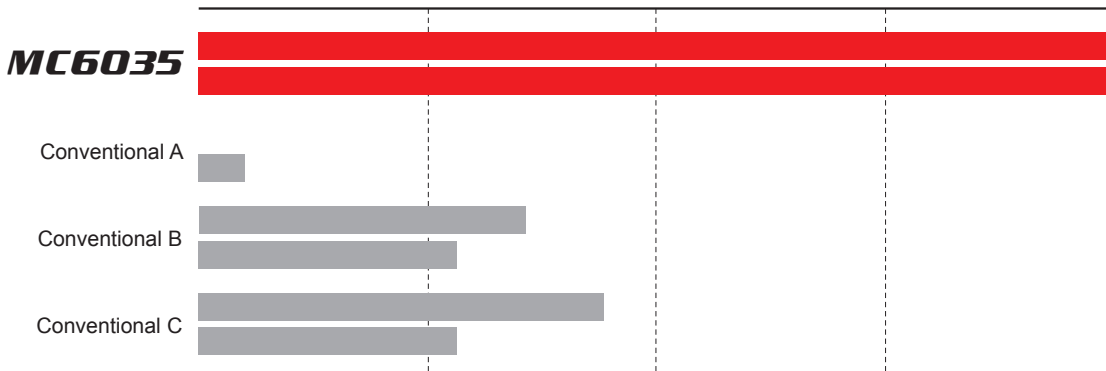
*Recommended cutting conditions for 5°/7°/11° positive inserts are provided as a guideline only.

Verify the recommended conditions for each boring bar as cutting conditions for internal machining will vary depending on the length of overhang.

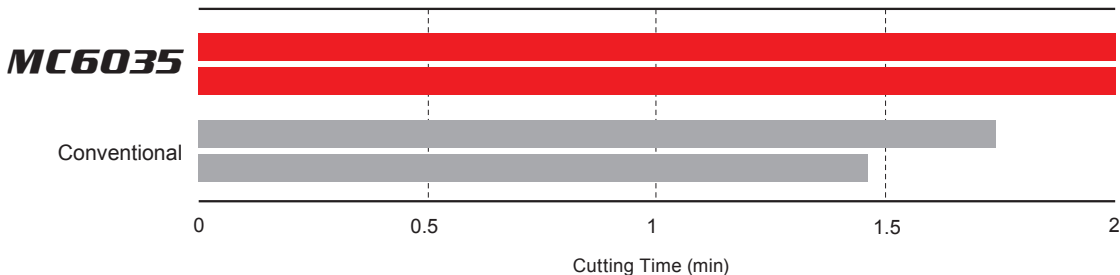
Cutting Performance

Interuppted Machining of AISI 4340

f=0.3 mm/rev



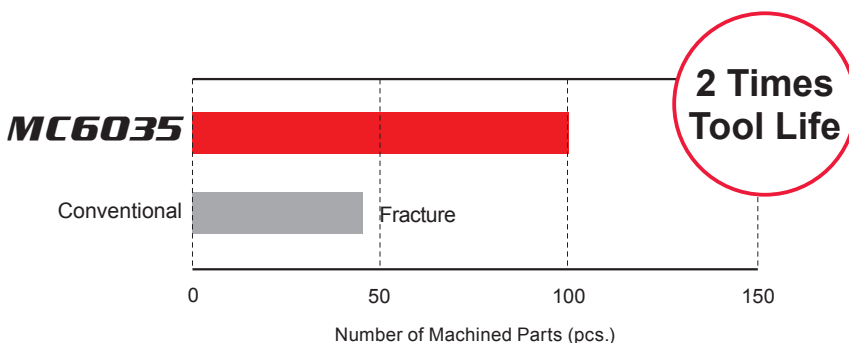
f=0.335 mm/rev



<Cutting Conditions>
 Work Material : AISI 4340
 Insert : CNMG120408-
 Cutting Speed : 100 m/min
 Depth of Cut : 3 mm
 Cutting Mode : Dry Cutting

Interrupted Machining of AISI 1050

It is possible to machine up to 100 pieces without fracturing.



**2 Times
Tool Life**

<Cutting Conditions>
 Work Material : AISI 1050
 Insert : WNMG080412-
 Cutting Speed : 110 m/min
 Feed Rate : 0.3 mm/rev
 Depth of Cut : 1.2 mm
 Cutting Mode : Dry Cutting

Conventional



45 pieces

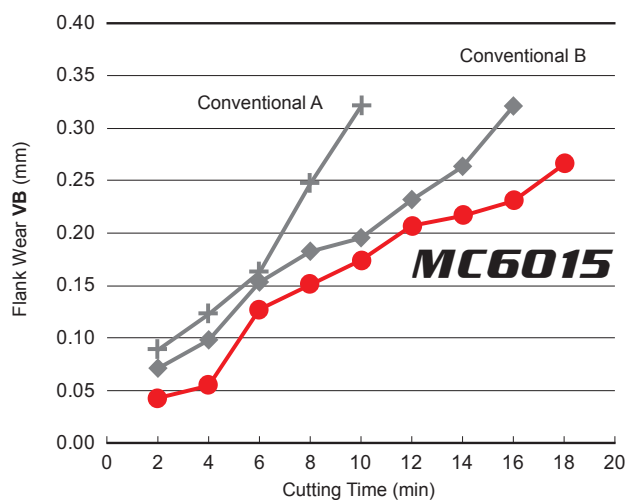
MC6035



VB=0.19 mm

100 pieces

Continuous Cutting of Bearing Steel



<Cutting Conditions>

Work Material : AISI 52100

Inserts : CNMG120408-○○○

Cutting Speed : 300 m/min

Feed Rate : 0.3 mm/rev

Depth of Cut : 1.5 mm

Cutting Mode : Wet Cutting

MC6015



Cutting Time: 18 min

Conventional A



Cutting Time: 10 min

Conventional B

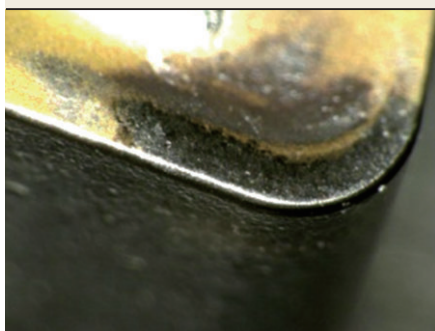


Cutting Time: 16 min

Performance Evaluation During Interrupted Turning of AISI 4131

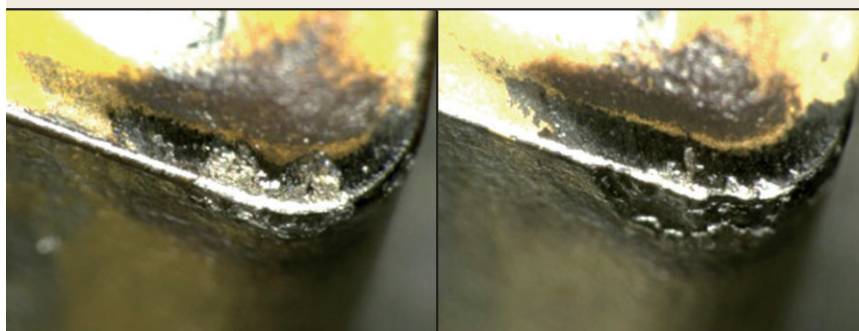
Provides outstanding fracture resistance and prevents crack development

MC6025



* Cutting edge after 3000 times of impacts

Conventional



<Cutting Conditions>

Work Material : AISI 4131

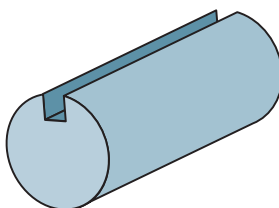
Inserts : CNMG120408-○○○

Cutting Speed : 200 m/min

Feed Rate : 0.25 mm/rev

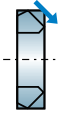
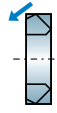
Depth of Cut : 1.5 mm

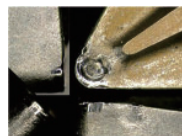
Cutting Mode : Wet Cutting

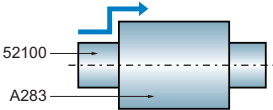
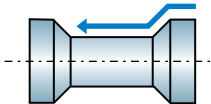
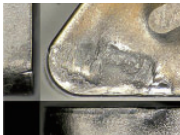


ISO Insert Series for Steel Turning

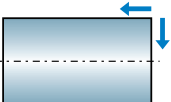
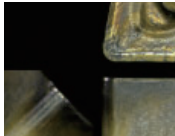
Examples of Usage

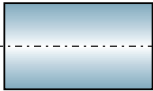
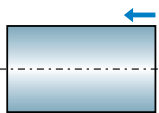
Insert		Conventional	CNMG120408-SH	Conventional	DNMG150412-MA
Workpiece		Carbon Steel (External Turning) 		Carbon Steel (External Turning) 	
Cutting Conditions	Cutting Speed (m/min)	250	350	400	
	Feed Rate (mm/rev)	0.4		0.4	
	Depth of Cut (mm)	2.0 – 3.0		1.0 – 1.4	
Cutting Mode		Wet Cutting		Wet Cutting	
Results		Conventional VB=0.30mm 	MC6015-SH VB=0.24mm 	Conventional VB=0.38mm 	MC6015-MA VB=0.33mm 
		300 pieces	535 pieces	300 pieces	400 pieces
		MC6015 could use increased cutting conditions and gave double tool life.		MC6015 achieved 1.3 times longer tool life during high speed cutting.	

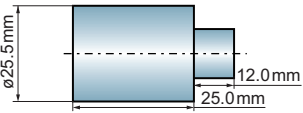
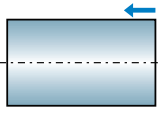
Insert		Conventional	TNMG160404-LP	Conventional	DNMG150408-RP	
Workpiece		AISI W1-10 (External, Face Turning) 		AISI 1045 (External Turning) 		
Cutting Conditions	Cutting Speed (m/min)	170		200		
	Feed Rate (mm/rev)	0.15		0.25		
	Depth of Cut (mm)	0.15		3.0		
Cutting Mode		Wet Cutting		Wet Cutting		
Results	Conventional VB=0.25mm  75 pieces		MC6015-LP VB=0.24mm  90 pieces		MC6015-RP VB=0.19mm  50 pieces	
			MC6015 produced a good surface finish and provided a longer tool life.		MC6015 is resistant to sudden fracturing so could achieve 2.5 times longer tool life.	

Insert		Conventional	DNMG150408-MA	Conventional	DNMG150408-SA	
Workpiece	AISI 52100+A283 (External, Face Turning) 			AISI 1043 (External Copy Turning) 		
Cutting Conditions	Cutting Speed (m/min)	220		290		
	Feed Rate (mm/rev)	0.35		0.25 – 0.33		
	Depth of Cut (mm)	2.0		0.5 – 1.5		
Cutting Mode		Wet Cutting		Wet Cutting		
Results	Number of Machined Parts (pcs. /corner) 20406080 MC6015 60 Conventional 45		MC6015-MA VB=0.19mm  60 pieces	Number of Machined Parts (pcs. /corner) 4080120 MC6015 110 Conventional 60		MC6015-SA VB=0.26mm  110 pieces
	MC6015 achieved longer tool life when machining composite materials.		MC6015 is resistant to sudden fracturing so could achieve 2.5 times longer tool life.			

The examples shown are actual applications and can differ from the recommended cutting conditions.

Insert		Conventional	WNMG080408-MP	Conventional	WNMG080404-LP
Workpiece	AISI 1055 (External, Face Turning)			AISI 4140 (External, Face Turning)	
					
Cutting Conditions	Cutting Speed (m/min)	180(External) 200(Face Turning)			140
	Feed Rate (mm/rev)	0.26(External) 0.27(Face Turning)			0.2 – 0.23
	Depth of Cut (mm)	1.0 – 2.0			0.8 – 1.0
Cutting Mode		Wet Cutting			Wet Cutting
Results	Conventional		MC6025-MP	Conventional	
					
	120 pieces		120 pieces	70 pieces	
		MC6025 achieved longer tool life due to its excellent wear resistance			MC6025 achieved 2.6 times longer tool life.

Insert		Conventional	CNMG120408-MP	Conventional	CNMG120408-MP
Workpiece	AISI 4135H (Face Turning)			AISI H13 (External Turning)	
					
Cutting Conditions	Cutting Speed (m/min)	180			120
	Feed Rate (mm/rev)	0.25			0.25
	Depth of Cut (mm)	2			1.0
Cutting Mode		Wet Cutting			Wet Cutting
Results	Conventional (Number of Pieces: 20)		MC6025-MP (Number of Pieces: 20)	Conventional	
					
	Fractured after 25 pieces		Life extended to 40 pieces.	60 pieces machined	
		MC6025 achieved longer tool life compared to a conventional insert due to its excellent chipping resistance.			MC6025 exhibited substantially less wear after machining the same number of pieces.

Insert		Conventional	CNMG120408-MP	Conventional	WNMG080408-RP
Workpiece	Cr-Mo Steel (External Turning)			AISI 1045 (External, Face Turning)	
					
Cutting Conditions	Cutting Speed (m/min)	150			250
	Feed Rate (mm/rev)	0.25			0.25
	Depth of Cut (mm)	1.0			2.2
Cutting Mode		Wet Cutting			Wet Cutting
Results	Conventional		MC6025-MP	Conventional	
					
	Fractured after machining 185 pieces		After machining 555 pieces	218 pieces	
		MC6025 tool life was 3 times longer than conventional grades.			MC6025 achieved 1.2 times longer tool life due to its excellent welding resistance.

The examples shown are actual applications and can differ from the recommended cutting conditions.

New CVD Coated Carbide Grade for Steels



MC6015/MC6025/MC6035

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.

 **MITSUBISHI MATERIALS CORPORATION**

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(Tools specifications subject to change without notice.)

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