MC6000 SERIES

ISO INSERT GRADE SERIES FOR STEEL TURNING

PUSHING THE BOUNDARIES OF STEEL MACHINING

MITSUBISHI
MITSUBISHI MATERIALS

MC6000 SERIES

ISO INSERT SERIES FOR STEEL TURNING

MC6015

FOR HIGH SPEED TURNING OF STEELS

Delivers outstanding heat and wear resistance during high speed cutting. The extra wear resistance provides increased stability and longer tool life for great efficiency.

MC6025

FOR MULTI-FUNCTIONAL TURNING OF STEELS

The optimum coating designed to prevent crater and flank wear means that MC6025 is a stable and versatile grade and is the first choice for general steel applications.

MC6035

FOR INTERRUPTED AND LOWER SPEED TURNING OF STEELS

Impact stresses during interrupted cutting are dispersed to prevent crack development. This achieves a good balance between fracture and welding resistance during low speed cutting.

SELECTION CRITERIA

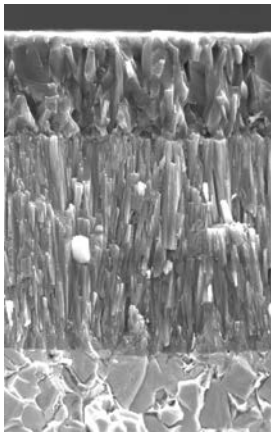
Work Material	Cutting Mode	Grade	ISO Category Codes	Application Range
P Steel	Continuous Cutting	MC6015	P01	MC6015
			P10	
		MC6025	P20	MC6025
	Interrupted Cutting		P30	NEW MC6035
		MC6035	P40	

MC6025

MULTI-FUNCTIONAL GRADE FOR STEELS

FEATURES

Ideal balance between wear and fracture resistance for a wide application area.

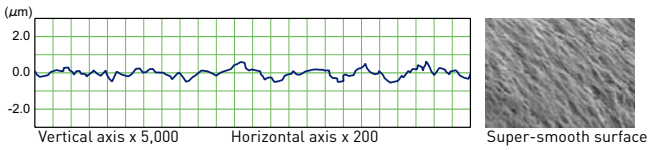


The coating layer that prevents flank wear and crater wear.
Improved coating surface increases welding resistance.
Prevents abnormal fracture and weld chipping.

COMPARISON OF COATING SURFACE ROUGHNESS

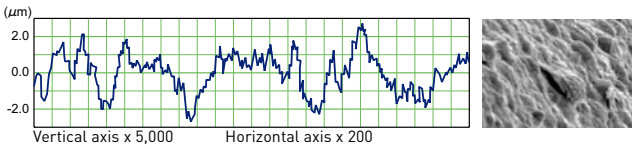
With an extremely smooth surface, the Black Super Even Coating provides improved surface roughness which results in excellent resistance against adhesion, abnormal damage and weld chipping.

MC6025



[Magnified photo]
Surface characteristics of the chip breaker.

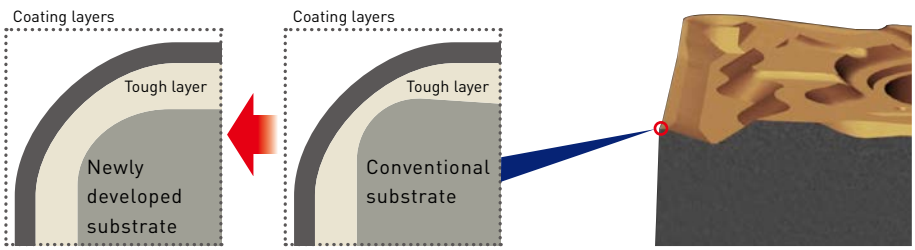
CONVENTIONAL



[Magnified photo]
Surface characteristics of the chip breaker.

SUBSTRATE WITH IMPROVED TOUGH LAYER

MC6025 ensures a tough edge layer that vastly reduces crack development and fracturing.

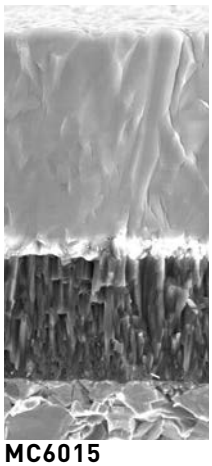


MC6015

FOR HIGH SPEED CUTTING

FEATURES

Provides outstanding wear resistance and durability for high speed cutting



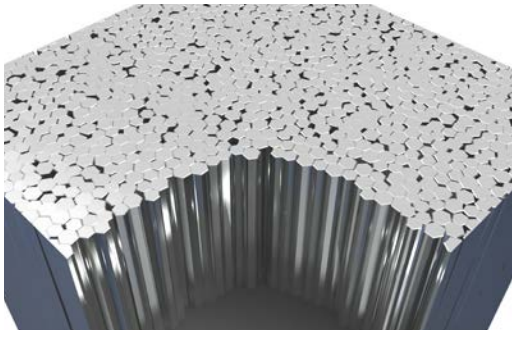
MC6015

Substantially better wear resistance can be achieved even at high temperatures due to the thickened Al_2O_3 layer.

NANO-TEXTURE COATING TECHNOLOGY

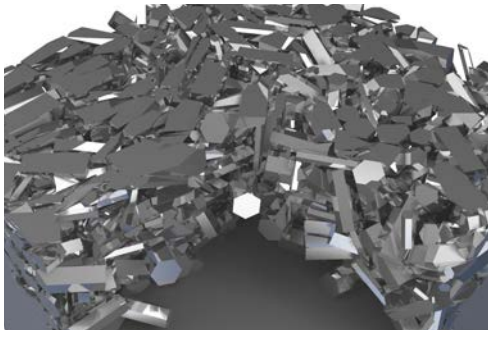
The optimised crystal growth, Nano-Texture coating technology gives outstanding wear and chipping resistance.

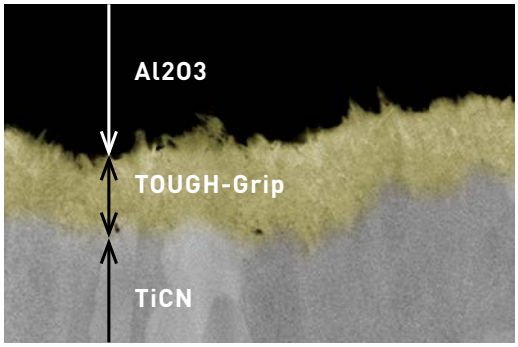
Nano-Texture coating image



Optimised crystal growth condition

Conventional coating image





Coating layers with strength and toughness

TOUGH-Grip

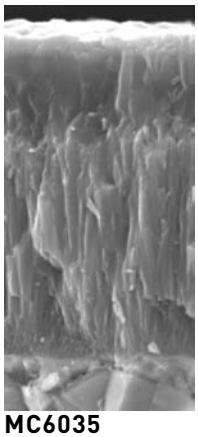
The interface between the layers is controlled at the nano level, allowing the TOUGH Grip layer extremely high levels of adhesion to prevent delamination.

MC6035 NEW

FOR INTERRUPTED AND LOWER SPEED CUTTING

FEATURES

Provides increased reliability during interrupted cutting



MC6035

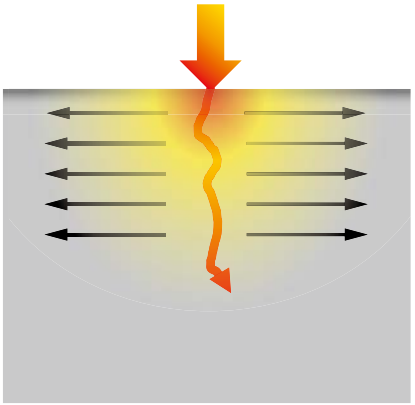
A smooth coating surface provides excellent welding resistance. The thickened TiCN layer also achieves superior wear resistance for extra stability.

PREVENTION OF ABNORMAL FRACTURING

By alleviating tensile stress in the coating layer, crack development caused by impact stresses are prevented during interrupted cutting.

Impact stress during interrupted cutting

Tensile stress

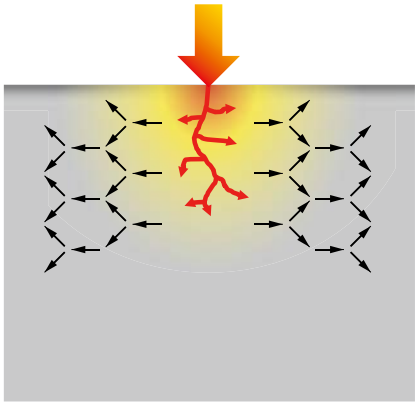


CONVENTIONAL COATING

Conventional products can fracture during interrupted cutting due to the transmission of tensile stresses deep into the coating layer.

Impact stress druing interrupted cutting

Tensile stress

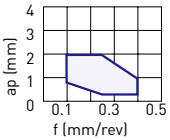
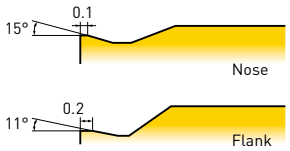
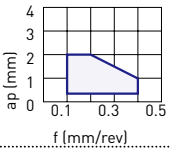
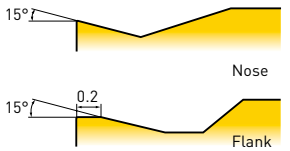
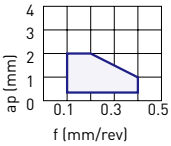
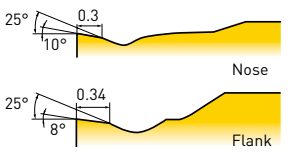
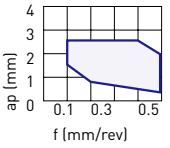
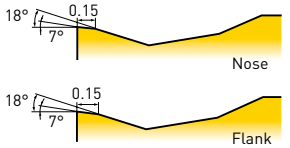
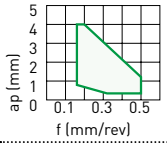
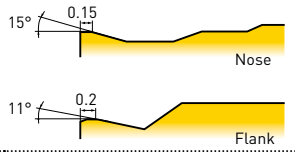
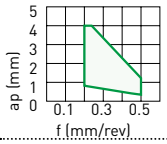
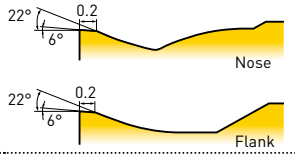
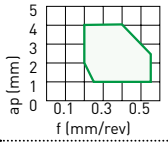
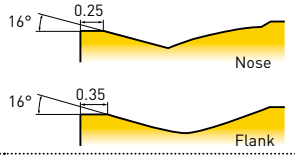
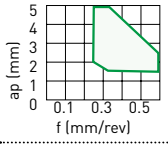
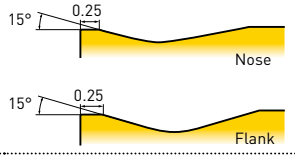
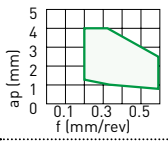
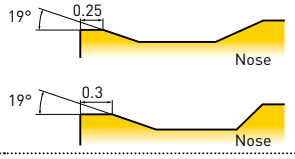
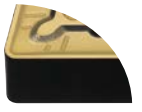
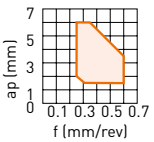
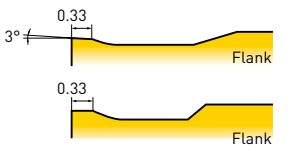


MC6035

MC6035 has succeeded in alleviating tensile stresses in the coating layer. This helps to prevent crack development during interrupted cutting.

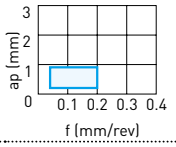
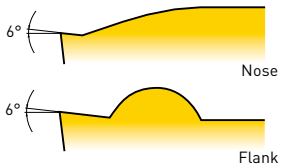
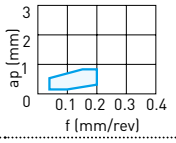
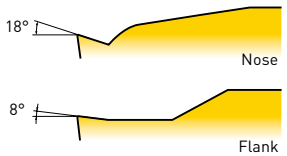
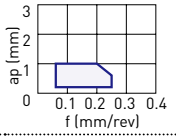
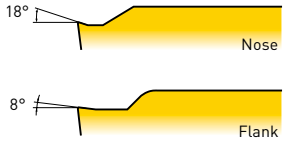
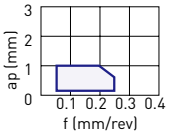
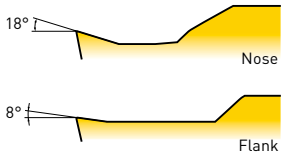
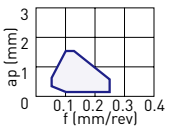
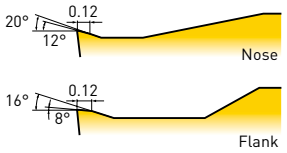
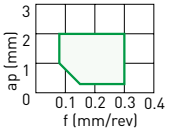
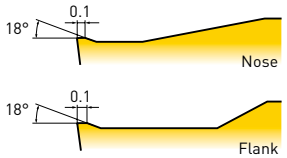
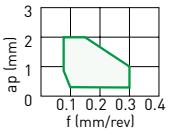
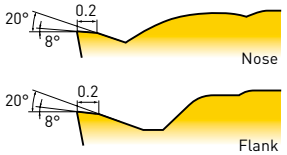
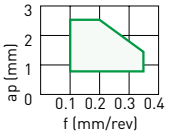
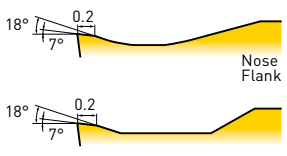
NEGATIVE INSERTS

CHIP BREAKER SYSTEM FOR STEEL

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Light Cutting	M	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.	 
		SH 	Alternative chipbreaker 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 workpieces in the 160–250HB range.	 
		SA 	Alternative chipbreaker 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 workpieces in the 200–300HB range.	 
		SW 	Wiper insert for light cutting of carbon and alloy steels. The wiper allows up to two times higher feed. Wiper design for increased productivity and improved surface finish.	 
Medium Cutting	M	MP 	First recommendation for medium cutting of carbon and alloy steels. Suitable for medium to light cutting. Breaker geometry suitable for copying and back turning.	 
		MA 	Alternative chipbreaker 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.	 
		MH 	First recommendation for rough cutting of mild steel. Alternative chipbreaker for medium cutting of carbon and alloy steels. Flat land offers high edge strength.	 
		Standard 	First recommendation for medium cutting of cast iron Alternative chipbreaker for medium cutting of carbon and alloy steels. Flat land offers high edge strength.	 
		MW 	Wiper insert for medium cutting of carbon and alloy steels The wiper allows up to two times higher feed. A wide chip pocket prevents chip jamming.	 
Rough Cutting	M	RP 	First recommendation for rough cutting of carbon and alloy steels. For interrupted cuts and removing of scale. Good balance of cutting edge strength and low cutting resistance because of a suitable rake angle.	 

POSITIVE INSERTS

CHIP BREAKER SYSTEM FOR STEEL

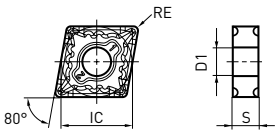
Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry	
Finish Cutting	M	FP 	First recommendation for finish cutting of carbon and alloy steels. The protuberance at the tip of the breaker controls chips even at small depths of cut. Corner strength is maintained to prevent abnormal fracturing. 5° 7°		
	M	FV NEW 	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 achieve excellent cutting performance. 7°		
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. Optimised breaker realises a wide range of chip control. 5° 7°		
	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°		
	M	SW NEW 	Wiper insert for light cutting of carbon steel, alloy steel, mild steel. The wiper allows up to two times higher feed. Positive land improves sharpness. 7°		
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°		
	M	MV 	Medium cutting of carbon steel, alloy steel and mild steel. Double breakers in the rake face give a wide range of chip control. 5° 7° 11°		
	M	MW NEW 	Wiper insert for medium cutting of carbon steel, alloy steel and mild steel. The wiper allows up to two times higher feed. A wide chip pocket prevents chip jamming. 7°		

MC6015/MC6025/MC6035

ISO INSERT SERIES FOR STEEL TURNING

NEGATIVE INSERTS (WITH HOLE)

M Class
CNMG
(MP Breaker)



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

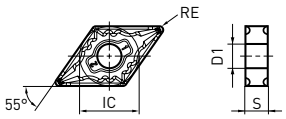
Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
CNMG120404-LP	L	●	●	●	12.7	4.76	0.4	5.16
CNMG120408-LP	L	●	●	●	12.7	4.76	0.8	5.16
CNMG120412-LP	L	●	●	●	12.7	4.76	1.2	5.16
CNMG120404-SH	L	★	★		12.7	4.76	0.4	5.16
CNMG120408-SH	L	★	★		12.7	4.76	0.8	5.16
CNMG120412-SH	L	★	★		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
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

Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
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

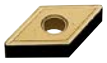
●: Inventory maintained. ★: Inventory maintained in Japan.

NEGATIVE INSERTS (WITH HOLE)

M Class
DNMG
(MP Breaker)



Light Cutting	Light Cutting	Light Cutting	Light Cutting	Medium Cutting
LP	SH	SA	SW	MP
				
			(Wiper)	

Medium Cutting	Medium Cutting	Medium Cutting	Medium Cutting	Rough Cutting
MA	MH	Standard	MW	RP
				
			(Wiper)	

Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
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
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

Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
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

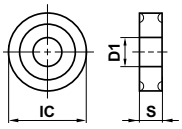
MC6015/MC6025/MC6035

ISO INSERT SERIES FOR STEEL TURNING

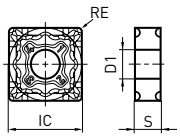
NEGATIVE INSERTS (WITH HOLE)

M Class

RNMG
(Standard)



SNMG
(MP Breaker)



Medium Cutting	Light Cutting	Medium Cutting	Medium Cutting
Standard	LP	MP	MA

Medium Cutting	Medium Cutting	Rough Cutting
MH	Standard	RP

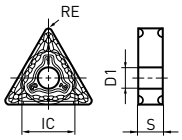
Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
RNMG120400	M	★	●		12.7	4.76	—	5.16
SNMG120404-LP	L	●	●	●	12.7	4.76	0.4	5.16
SNMG120408-LP	L	●	●	●	12.7	4.76	0.8	5.16
SNMG120412-LP	L	●	●	●	12.7	4.76	1.2	5.16
SNMG120404-MP	M	●	●	●	12.7	4.76	0.4	5.16
SNMG120408-MP	M	●	●	●	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	5.16

Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
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. ★: Inventory maintained in Japan.

NEGATIVE INSERTS (WITH HOLE)

M Class
TNMG
(MP Breaker)



Light Cutting	Light Cutting	Light Cutting	Light Cutting
LP	SH	SA	SW
			
			(Wiper)

Medium Cutting	Medium Cutting	Medium Cutting	Medium Cutting	Medium Cutting	Rough Cutting
MP	MA	MH	Standard	MW	RP
					
				(Wiper)	

Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
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
TNMX160404-SW	L	●			9.525	4.76	0.4	3.81
TNMX160408-SW	L	●			9.525	4.76	0.8	3.81
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

Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
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
TNMX160408-MW	M	●			9.525	4.76	0.8	3.81
TNMX160412-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

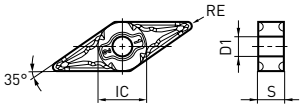
MC6015/MC6025/MC6035

ISO INSERT SERIES FOR STEEL TURNING

NEGATIVE INSERTS (WITH HOLE)

M Class

VNMG
(MP Breaker)



Light Cutting	Light Cutting	Light Cutting
LP	SH	SA

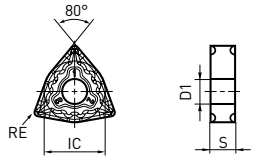
Medium Cutting	Medium Cutting	Medium Cutting	Medium Cutting
MP	MA	MH	Standard

Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
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
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. ★: Inventory maintained in Japan.

NEGATIVE INSERTS (WITH HOLE)

M Class
WNMG
(MP Breaker)



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

Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
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
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

Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
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

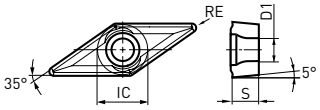
MC6015/MC6025/MC6035

ISO INSERT SERIES FOR STEEL TURNING

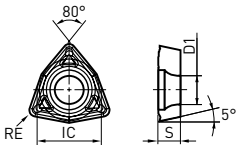
5° POSITIVE INSERTS (WITH HOLE)

M Class

VBMT
(MP Breaker)



WBMT
(MV Breaker)



Finish Cutting	Light Cutting	Medium Cutting	Medium Cutting
FP	LP	MP	MV

Medium Cutting

MV

Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
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

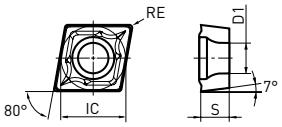
Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
VBMT110304-MV	M		●		6.35	3.18	0.4	2.9
VBMT110308-MV	M		●		6.35	3.18	0.8	2.9
VBMT160404-MV	M		●		9.525	4.76	0.4	4.4
VBMT160408-MV	M		●		9.525	4.76	0.8	4.4
WBMTL30202R-MV	M		●		4.76	2.38	0.2	2.3
WBMTL30202L-MV	M		●		4.76	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

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

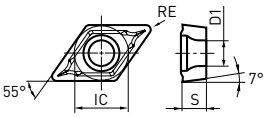
7° POSITIVE INSERTS (WITH HOLE)

M Class

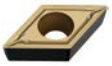
CCMT
(MP Breaker)



DCMT
(MP Breaker)



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

Medium Cutting	Finish Cutting	Light Cutting	Medium Cutting	Medium Cutting
MW	FP	LP	MP	MV
				
(Wiper)				

Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
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

Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
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
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

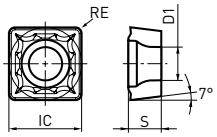
MC6015/MC6025/MC6035

ISO INSERT SERIES FOR STEEL TURNING

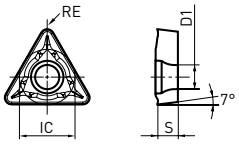
7° POSITIVE INSERTS (WITH HOLE)

M Class

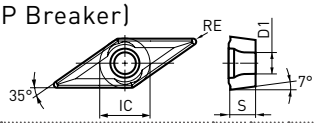
SCMT
(MP Breaker)



TCMT
(MP Breaker)



VCMT
(MP Breaker)



Finish Cutting	Light Cutting	Medium Cutting	Finish Cutting	Light Cutting	Medium Cutting
FP	LP	MP	FP	LP	MP

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

Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
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
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

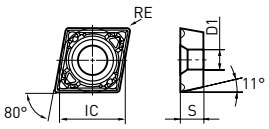
Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
VCMT110302-FP	F	●	●		6.35	3.18	0.2	2.8
VCMT110304-FP	F	●	●		6.35	3.18	0.4	2.8
VCMT160404-FP	F	●	●		9.525	4.76	0.4	4.4
VCMT160408-FP	F	●	●		9.525	4.76	0.8	4.4
VCMT080202-FV	F		●		4.76	2.38	0.2	2.4
VCMT080204-FV	F		●		4.76	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

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

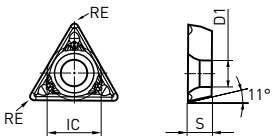
11° POSITIVE INSERTS (WITH HOLE)

M Class

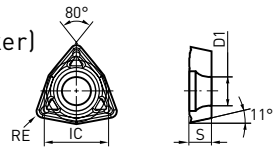
CPMH
(MP Breaker)



TPMH
(MP Breaker)



WPMT
(MV Breaker)



Light Cutting	Medium Cutting
SV	MV

Light Cutting	Medium Cutting	Medium Cutting
SV	MV	MV

Order Number	Cutting Area	Stock MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
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 MC6015	Stock MC6025	Stock MC6035 (NEW)	IC	S	RE	D1
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

CUTTING CONDITIONS

NEGATIVE INSERTS

NEGATIVE INSERTS (FOR EXTERNAL TURNING)

Work Material	Hardness	Cutting Range		Grade	Breaker	vc (m/min)	f (mm/rev)	ap (mm)
P Carbon and Alloy Steel	180–280HB	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

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

CUTTING CONDITIONS

POSITIVE INSERTS

5°/7°/11° POSITIVE INSERTS (FOR EXTERNAL TURNING)

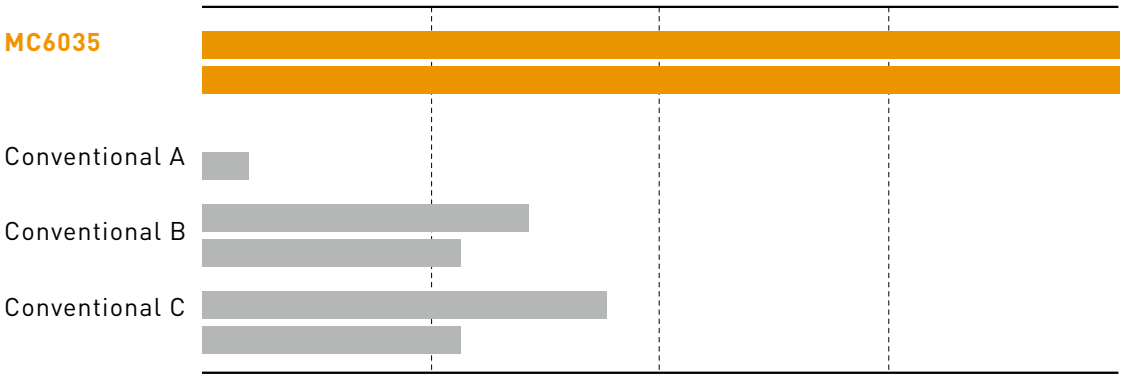
Work Material	Hardness	Cutting Range		Grade	Breaker	vc (m/min)	f (mm/rev)	ap (mm)
P Mild Steel	≤180HB	Finish Cutting	General Cutting	MC6015	FP,FV	250–425	0.04–0.20	0.20–0.90
			Unstable Cutting	MC6025	FP,FV	250–405	0.04–0.20	0.20–0.90
		Light Cutting	General Cutting	MC6015	LP	250–425	0.06–0.25	0.20–1.00
			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	180–280HB	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	280–350HB	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.
Please verify the recommended conditions for each boring bar as cutting conditions for internal machining will vary depending on the length of overhang and required surface finish.

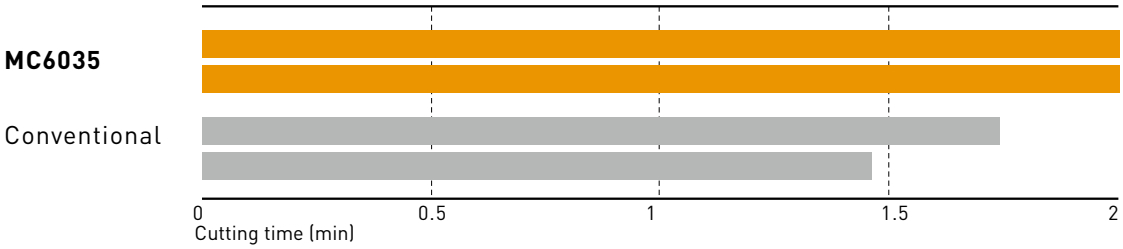
CUTTING PERFORMANCE

INTERRUPTED MACHINING OF ALLOY STEEL

f=0.3 mm/rev



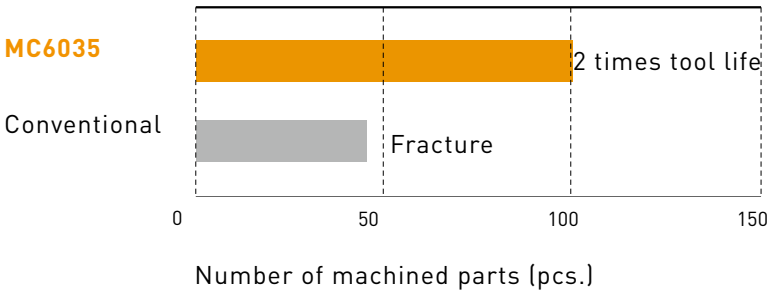
f=0.335 mm/rev



Insert (Grade)	CNMG120408-◯◯
Workpiece	36CrNiMo4
Cutting Speed (m/min)	100
Depth of Cut (mm)	3 mm
Cutting mode	Dry Cutting
Results	Compared with conventional inserts MC6035 achieves more than double tool life and steady production under interrupted cutting condition while machining alloy steel

INTERRUPTED MACHINING OF DIN C55

Up to 320 workpieces machined without abnormal fracturing.



Insert (Grade)	WNMG080412-◯◯
Workpiece	DIN C55
Cutting Speed (m/min)	100
Feed (mm/rev)	0.3
Depth of Cut (mm)	1.2 mm
Cutting mode	Dry Cutting
Results	Generally interrupted cutting suffers from abnormal fracturing of the insert. The extraordinary toughness of MC6035 increases tool life avoiding brakeage. This results in double tool life

CONVENTIONAL

45 Workpieces
VB = Breakage

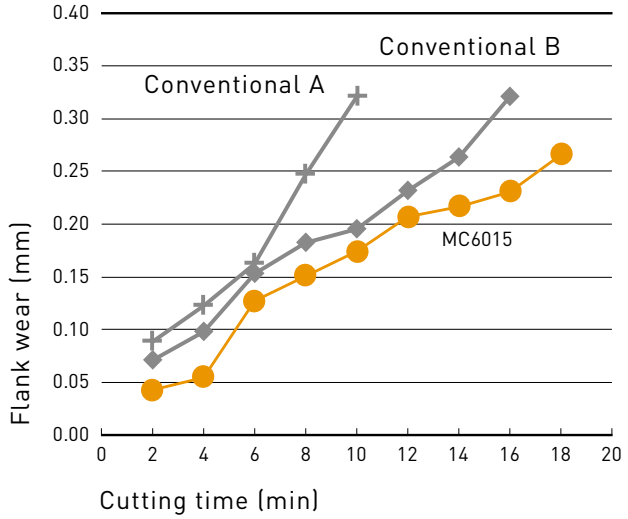
MC6035

100 Workpieces
VB = 0.19 mm

CUTTING PERFORMANCE

CONTINUOUS CUTTING OF BEARING STEEL

MC6015



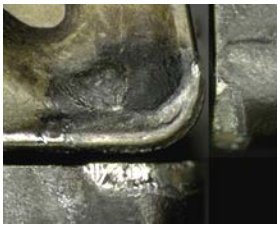
MC6015

Cutting time: 18 min

CONVENTIONAL A

Cutting time: 10 min

CONVENTIONAL B



Cutting time: 16 min

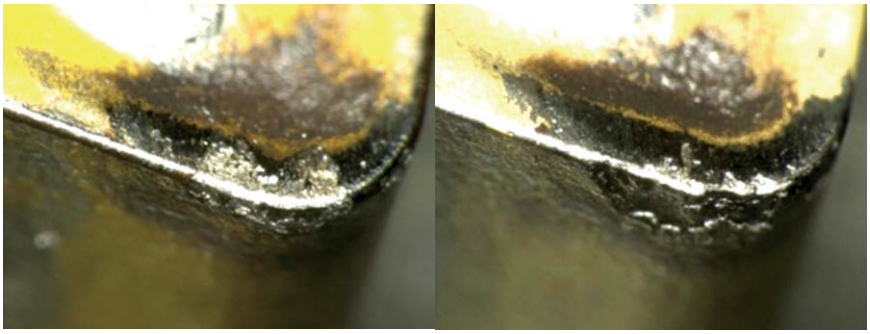
Insert (Grade)	CNMG120408-◯◯
Workpiece	DIN 100Cr6
Cutting Speed (m/min)	300
Feed (mm/rev)	0.3
Depth of Cut (mm)	1.25mm
Cutting mode	Wet Cutting
Results	The high speed machining of bearing steel succumbs quick flank wear at the cutting edge. The features of MC6015 show long tool life by minimized flank wear

PERFORMANCE EVALUATION DURING INTERRUPTED MACHINING OF DIN 41CRMO4

Provides outstanding fracture resistance and prevents crack development

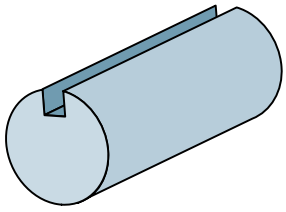
MC6025

CONVENTIONAL ISO-P20 EQUIVALENT



* Cutting edge after 3000 impacts

Insert (Grade)	CNMG120408-◯◯
Workpiece	DIN 41CrMo4
Cutting Speed (m/min)	200
Feed (mm/rev)	0.25
Depth of Cut (mm)	1.5mm
Cutting mode	Wet Cutting
Results	During light interrupted machining of alloy steel such as 41CrMo4 cracks can occur to the cutting edge. The performance of MC6025 shows reliable machining without crack development in comparison to competitive insert grades

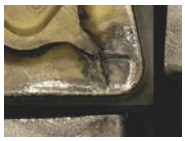


APPLICATION EXAMPLE

Light longitudinal turning of case hardened steel under wet condition.

Insert (Grade)	**CNMG120408-SH MC6015**	**COMPETITOR**
Workpiece	DIN 18CrMo4 (External turning)	
Cutting Speed (m/min)	350	250
Feed (mm/rev)	0.4	0.4
Depth of Cut (mm)	2.0 – 3.0	2.0 – 3.0
Cutting mode	Wet cutting	Wet cutting
Results	The high performance grade MC6015 used higher cutting speed and gave double tool life.	

COMPETITOR



300 Workpieces
VB = 0.3 mm

MC6015-SH

535 Workpieces
VB = 0.24 mm

APPLICATION EXAMPLE

Longitudinal cutting and facing of tool steel under wet condition

Insert (Grade)	**TNMG160404-LP**	**COMPETITOR**
Workpiece	DIN C105U (External, Face turning)	
Cutting Speed (m/min)	170	170
Feed (mm/rev)	0.15	0.15
Depth of Cut (mm)	0.15	0.15
Cutting mode	Wet cutting	Wet cutting
Results	MC6015 produced a good surface finish and provided longer tool life.	

COMPETITOR

75 Workpieces
VB = 0.25 mm

MC6015-LP

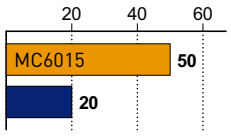
90 Workpieces
VB = 0.24 mm

APPLICATION EXAMPLE

Longitudinal cutting and facing of carbon steel under wet condition

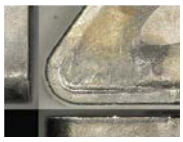
Insert (Grade)	**DNMG150408-RP**	**COMPETITOR**
Workpiece	DIN Ck45 (External turning)	
Cutting Speed (m/min)	200	200
Feed (mm/rev)	0.25	0.25
Depth of Cut (mm)	3.0	3.0
Cutting mode	Wet cutting	Wet cutting
Results	MC6015 is resistant to sudden fracturing and could achieve 2.5 times longer tool life.	

COMPETITOR



Number of machined parts (pcs. /corner)

MC6015-SA



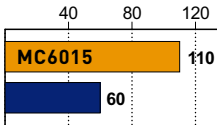
50 Workpieces
VB = 0.19 mm

APPLICATION EXAMPLE

External copy turning of carbon steel under wet condition

Insert (Grade)	**DNMG150408-RP**	**COMPETITOR**
Workpiece	DIN Ck45 (External copy turning)	
Cutting Speed (m/min)	200	200
Feed (mm/rev)	0.25	0.25
Depth of Cut (mm)	3.0	3.0
Cutting mode	Wet cutting	Wet cutting
Results	MC6015 is resistant to sudden fracturing and achieved 2.5 times longer tool life.	

COMPETITOR



Number of machined parts (pcs. /corner)

MC6015-SA

50 Workpieces
VB = 0.26 mm

APPLICATION EXAMPLE

Continuous longitudinal cutting and facing of carbon steel under wet condition

Insert (Grade)	**WNMG080408-MP**	**COMPETITOR**
Workpiece	DIN Ck55 (External, Face turning)	
Cutting Speed (m/min)	180(External)	200(Face machining)
Feed (mm/rev)	0.26(External)	0.27(Face machining)
Depth of Cut (mm)	1.0–2.0	1.0–2.0
Cutting mode	Wet cutting	Wet cutting
Results	MC6025 achieved longer tool life due to its excllent wear resistance	

COMPETITOR

120 Workpieces

MC6015-MP

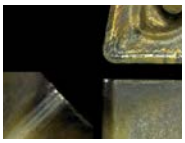
120 Workpieces

APPLICATION EXAMPLE

Continuous longitudinal cutting and facing of cold extrusion steel under wet condition

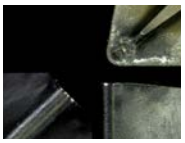
Insert (Grade)	**WNMG080404-LP**	**COMPETITOR**
Workpiece	DIN 41CrMo4 (External, Face turning)	
Cutting Speed (m/min)	140	140
Feed (mm/rev)	0.2-0.23	0.2-0.23
Depth of Cut (mm)	0.8-1.0	0.8-1.0
Cutting mode	Wet cutting	Wet cutting
Results	MC6025 achieved 2.6 times longer tool life.	

COMPETITOR



70 Workpieces

MC6015-LP



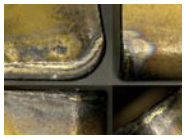
132 Workpieces

APPLICATION EXAMPLE

Continuous longitudinal cutting and facing of heat treatable steel under wet condition

Insert (Grade)	**CNMG120408-MP**	**COMPETITOR**
Workpiece	DIN 34CrMo4 (Face turning)	
Cutting Speed (m/min)	180	180
Feed (mm/rev)	0.25	0.25
Depth of Cut (mm)	2	2
Cutting mode	Wet cutting	Wet cutting
Results	MC6025 achieved longer tool life compared to a conventional insert due to its excellent chipping resistance.	

COMPETITOR



20 Workpieces

Fractured
after 25 Workpieces

MC6025-MP

20 Workpieces

Life extended
to 40 Workpieces.

APPLICATION EXAMPLE

Continuous longitudinal cutting and facing of heat treatable steel under wet condition

Insert (Grade)	**CNMG120408-MP**	**COMPETITOR**
Workpiece	DIN 15CrMo5 (External turning)	
Cutting Speed (m/min)	150	150
Feed (mm/rev)	0.25	0.25
Depth of Cut (mm)	1	1
Cutting mode	Wet cutting	Wet cutting
Results	MC6025 tool life was 3 times longer than conventional grades.	

COMPETITOR

Fractured after
machining 185 Workpieces

MC6035-MP

After machining
555 Workpieces

APPLICATION EXAMPLE

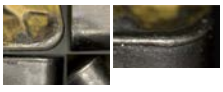
Continuous longitudinal cutting and facing of heat treatable steel under wet condition

Insert (Grade)	**WNMG080408-RP**	**COMPETITOR**
Workpiece	DIN 15CrMo5 (External, Face turning)	
Cutting Speed (m/min)	250	250
Feed (mm/rev)	0.25	0.25
Depth of Cut (mm)	2.2	2.2
Cutting mode	Wet cutting	Wet cutting
Results	MC6025 achieved 1.2 times longer tool life due to its excellent welding resistance.	

COMPETITOR

218 Workpieces

MC6035-RP



267 Workpieces

NOTES

NOTES

NOTES

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