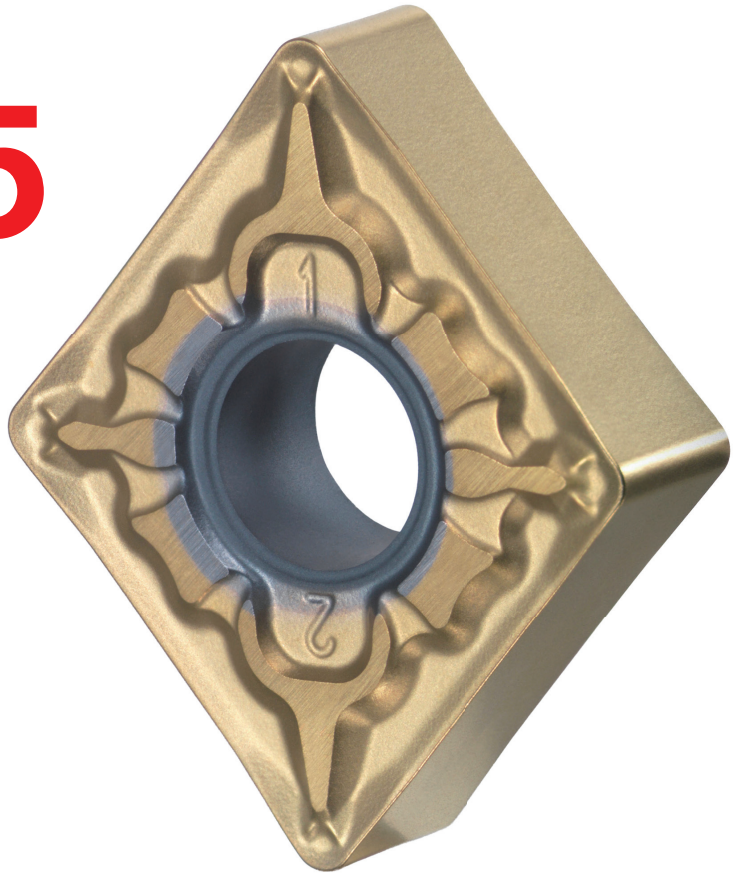
MITSUBISHI MATERIALS

MP3025

PVD COATED CERMET GRADE FOR STEEL



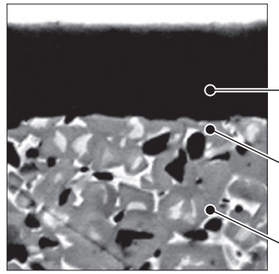
TOOL NEWS **B194A**

PVD coated Cermet grade for steel

MP3025

MP3025 has excellent flank wear and fracture resistance.

Due to the improved adhesion strength of the smooth substrate surface, MP3025 gives excellent surface finishes, ideal for mass production of small parts.



Ti-compound PVD coating provides excellent wear and welding resistance.

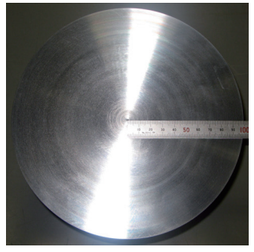
Substrate surface provides excellent adhesion strength for the coating layer.

Substrate with superior fracture and thermal shock resistance.

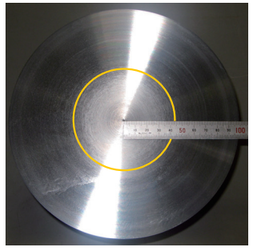
High quality finishes at low speeds.

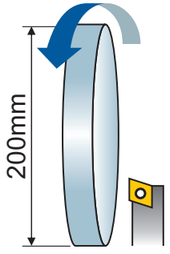
MP3025 produces better surface finishes at low cutting speeds than competitors PVD cermet grades.

MP3025



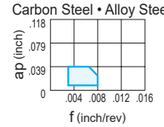
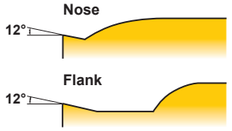
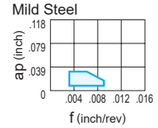
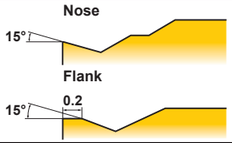
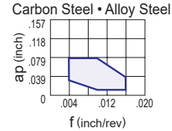
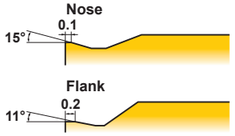
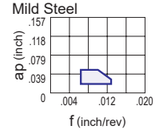
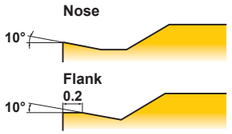
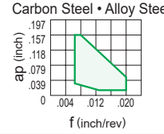
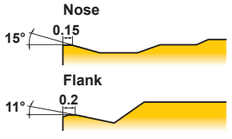
Conventional



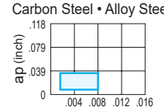
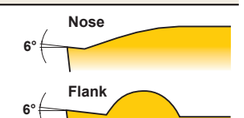
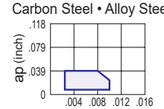
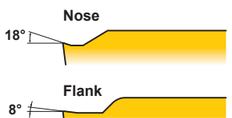
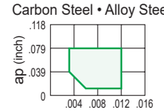
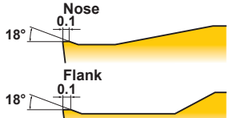


<Cutting condition>
Work piece : AISI 1025
Revolution : n=398 RPM
(Outer: vc=820 SFM)
Depth of cut : ap=.060 inch
Feed : f=.006 IPR
Wet cutting

Breaker system for steel cutting (Negative inserts)

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	M	**FH** 	**First recommendation for finishing carbon steel, alloy steel and stainless steel** Double sided chipbreaker. Stable chip control even at small depths of cut.	Carbon Steel • Alloy Steel  
	M	**FY** 	**First recommendation for finishing mild steel** Double sided chipbreaker. Effectively controls adhesive chips. Suitable for mild steel finishing.	Mild Steel  
Light Cutting	M	**LP** 	**First recommendation for light cutting of carbon and alloy steel** Stable chip control in the light cutting range. The curved edge allows smooth chip discharge.	Carbon Steel • Alloy Steel  
	M	**SY** 	**First recommendation for light cutting of mild steel** Double sided chipbreaker. Effectively controls adhesive chips. Suitable for light cutting.	Mild Steel  
Medium Cutting	M	**MP** 	**First recommendation for medium cutting of carbon and alloy steel** Suitable for medium to light cutting. Breaker geometry suitable for copying and back turning. Cutting edge geometry for an optimum balance of sharpness and fracture resistance.	Carbon Steel • Alloy Steel  

Breaker system for steel cutting (Positive inserts)

Application	Tolerance	Breaker Name and Picture	Features	Cross Section Geometry
Finish Cutting	M	NEW **FP** 	**First recommendation for finish cutting of carbon and alloy steel** 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° **Positive Insert**	Carbon Steel • Alloy Steel  
Light Cutting	M	NEW **LP** 	**First recommendation for light cutting of carbon and alloy steel** 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° **Positive Insert**	Carbon Steel • Alloy Steel  
Medium Cutting	M	NEW **MP** 	**First recommendation for medium cutting of carbon and alloy steel** The flat land produces excellent wear resistance and superior fracture resistance. 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  

PVD coated Cermet grade for steel

MP3025

INSERTS

● Negative Inserts (With hole)

Shape	Order Number	(ISO) Number	Class	Stock MP3025	Dimensions (inch) D1	S1	Re	D2	Geometry
FH	**CNMG430.5FH**	**CNMG120402-FH**	M	●	.500	.187	.008	.203	
	431FH	**120404-FH**	M	●	.500	.187	.016	.203	
	432FH	**120408-FH**	M	●	.500	.187	.031	.203	
Finish Cutting									
FY	**CNMG431FY**	**CNMG120404-FY**	M	●	.500	.187	.016	.203	
	432FY	**120408-FY**	M	●	.500	.187	.031	.203	
Finish Cutting									
LP	**CNMG431LP**	**CNMG120404-LP**	M	●	.500	.187	.016	.203	
	432LP	**120408-LP**	M	●	.500	.187	.031	.203	
Light Cutting									
SW	**CNMG431SW**	**CNMG120404-SW**	M	●	.500	.187	.016	.203	
	432SW	**120408-SW**	M	●	.500	.187	.031	.203	
	433SW	**120412-SW**	M	●	.500	.187	.047	.203	
Light Cutting (Wiper)									
SY	**CNMG431SY**	**CNMG120404-SY**	M	●	.500	.187	.016	.203	
	432SY	**120408-SY**	M	●	.500	.187	.031	.203	
Light Cutting									
MP	**CNMG431MP**	**CNMG120404-MP**	M	●	.500	.187	.016	.203	
	432MP	**120408-MP**	M	●	.500	.187	.031	.203	
	433MP	**120412-MP**	M	●	.500	.187	.047	.203	
Medium Cutting									
Standard	**CNMG431**	**CNMG120404**	M	●	.500	.187	.016	.203	
	432	**120408**	M	●	.500	.187	.031	.203	
Medium Cutting									
FH	**DNMG430.5FH**	**DNMG150402-FH**	M	●	.500	.187	.008	.203	
	431FH	**150404-FH**	M	●	.500	.187	.016	.203	
	432FH	**150408-FH**	M	●	.500	.187	.031	.203	
	440.5FH	**150602-FH**	M	●	.500	.250	.008	.203	
	441FH	**150604-FH**	M	★	.500	.250	.016	.203	
Finish Cutting	**442FH**	**150608-FH**	M	★	.500	.250	.031	.203	

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

Shape	Order Number	(ISO) Number	Class	Stock MP3025	Dimensions (inch) D1	S1	Re	D2	Geometry
FY	**DNMG431FY**	**DNMG150404-FY**	M	●	.500	.187	.016	.203	
	432FY	**150408-FY**	M	●	.500	.187	.031	.203	
	441FY	**150604-FY**	M	★	.500	.250	.016	.203	
	442FY	**150608-FY**	M	★	.500	.250	.031	.203	
Finish Cutting									
LP	**DNMG331LP**	**DNMG110404-LP**	M	●	.375	.187	.016	.150	
	332LP	**110408-LP**	M	●	.375	.187	.031	.150	
	431LP	**150404-LP**	M	●	.500	.187	.016	.203	
	432LP	**150408-LP**	M	●	.500	.187	.031	.203	
	433LP	**150412-LP**	M	●	.500	.187	.047	.203	
	441LP	**150604-LP**	M	●	.500	.250	.016	.203	
Light Cutting	**442LP**	**150608-LP**	M	●	.500	.250	.031	.203	
SW	**DNMX431SW**	**DNMX150404-SW**	M	●	.500	.187	.016	.203	
	432SW	**150408-SW**	M	●	.500	.187	.031	.203	
	441SW	**150604-SW**	M	★	.500	.250	.016	.203	
	442SW	**150608-SW**	M	★	.500	.250	.031	.203	
Light Cutting (Wiper)									
SY	**DNMG431SY**	**DNMG150404-SY**	M	●	.500	.187	.016	.203	
	432SY	**150408-SY**	M	●	.500	.187	.031	.203	
	441SY	**150604-SY**	M	★	.500	.250	.016	.203	
	442SY	**150608-SY**	M	★	.500	.250	.031	.203	
Light Cutting									
MP	**DNMG431MP**	**DNMG150404-MP**	M	●	.500	.187	.016	.203	
	432MP	**150408-MP**	M	●	.500	.187	.031	.203	
	433MP	**150412-MP**	M	●	.500	.187	.047	.203	
	441MP	**150604-MP**	M	★	.500	.250	.016	.203	
	442MP	**150608-MP**	M	★	.500	.250	.031	.203	
Medium Cutting	**443MP**	**150612-MP**	M	★	.500	.250	.047	.203	
Standard	**DNMG431**	**DNMG150404**	M	●	.500	.187	.016	.203	
	432	**150408**	M	●	.500	.187	.031	.203	
	441	**150604**	M	●	.500	.250	.016	.203	
	442	**150608**	M	●	.500	.250	.031	.203	
Medium Cutting									
FH	**SNMG431FH**	**SNMG120404-FH**	M	●	.500	.187	.016	.203	
	432FH	**120408-FH**	M	●	.500	.187	.031	.203	
Finish Cutting									
LP	**SNMG431LP**	**SNMG120404-LP**	M	●	.500	.187	.016	.203	
	432LP	**120408-LP**	M	●	.500	.187	.031	.203	
Light Cutting									

PVD coated Cermet grade for steel

MP3025

INSERTS

● Negative Inserts (With hole)

Shape	Order Number	(ISO) Number	Class	Stock	Dimensions (inch)				Geometry
				MP3025	D1	S1	Re	D2	
SY	**SNMG432SY**	**SNMG120408-SY**	M	●	.500	.187	.031	.203	
Light Cutting									
MP	**SNMG431MP**	**SNMG120404-MP**	M	●	.500	.187	.016	.203	
	432MP	**120408-MP**	M	●	.500	.187	.031	.203	
	433MP	**120412-MP**	M	●	.500	.187	.047	.203	
Medium Cutting									
Standard	**SNMG321**	**SNMG090304**	M	●	.375	.125	.016	.150	
	322	**090308**	M	●	.375	.125	.031	.150	
	431	**120404**	M	●	.500	.187	.016	.203	
	432	**120408**	M	●	.500	.187	.031	.203	
Medium Cutting									
R/L	**SNGG431R**	**SNGG120404R**	G	●	.500	.187	.016	.203	
	432R	**120408R**	G	●	.500	.187	.031	.203	
	431L	**120404L**	G	●	.500	.187	.016	.203	
	432L	**120408L**	G	●	.500	.187	.031	.203	
Medium Cutting									
FH	**TNMG330.5FH**	**TNMG160402-FH**	M	●	.375	.187	.008	.150	
	331FH	**160404-FH**	M	●	.375	.187	.016	.150	
	332FH	**160408-FH**	M	●	.375	.187	.031	.150	
Finish Cutting									
FY	**TNMG331FY**	**TNMG160404-FY**	M	●	.375	.187	.016	.150	
	332FY	**160408-FY**	M	●	.375	.187	.031	.150	
Finish Cutting									
R/L-F	**TNGG330.5RF**	**TNGG160402R-F**	G	●	.375	.187	.008	.150	
	331RF	**160404R-F**	G	●	.375	.187	.016	.150	
	332RF	**160408R-F**	G	●	.375	.187	.031	.150	
	330.5LF	**160402L-F**	G	●	.375	.187	.008	.150	
	331LF	**160404L-F**	G	●	.375	.187	.016	.150	
Finish Cutting	**332LF**	**160408L-F**	G	●	.375	.187	.031	.150	
LP	**TNMG331LP**	**TNMG160404-LP**	M	●	.375	.187	.016	.150	
	332LP	**160408-LP**	M	●	.375	.187	.031	.150	
	333LP	**160412-LP**	M	●	.375	.187	.047	.150	
	432LP	**220408-LP**	M	●	.500	.187	.031	.203	
Light Cutting									

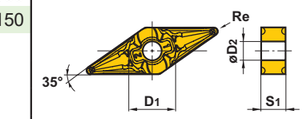
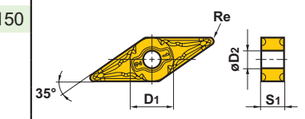
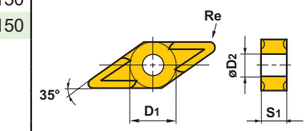
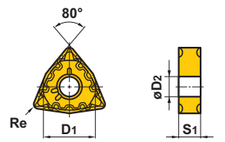
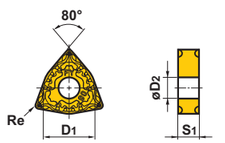
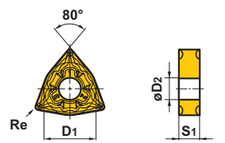
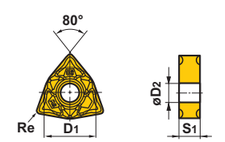
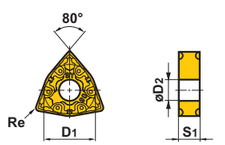
● : Inventory maintained.

Shape	Order Number	(ISO) Number	Class	Stock	Dimensions (inch)				Geometry
				MP3025	D1	S1	Re	D2	
SW	**TNMX331SW**	**TNMX160404-SW**	M	●	.375	.187	.016	.150	
	332SW	**160408-SW**	M	●	.375	.187	.031	.150	
Light Cutting (Wiper)									
SY	**TNMG331SY**	**TNMG160404-SY**	M	●	.375	.187	.016	.150	
	332SY	**160408-SY**	M	●	.375	.187	.031	.150	
Light Cutting									
R/L-K	**TNGG330.5RK**	**TNGG160402R-K**	G	●	.375	.187	.008	.150	
	331RK	**160404R-K**	G	●	.375	.187	.016	.150	
	332RK	**160408R-K**	G	●	.375	.187	.031	.150	
	330.5LK	**160402L-K**	G	●	.375	.187	.008	.150	
	331LK	**160404L-K**	G	●	.375	.187	.016	.150	
Light Cutting	**332LK**	**160408L-K**	G	●	.375	.187	.031	.150	
MP	**TNMG331MP**	**TNMG160404-MP**	M	●	.375	.187	.016	.150	
	332MP	**160408-MP**	M	●	.375	.187	.031	.150	
	333MP	**160412-MP**	M	●	.375	.187	.047	.150	
Medium Cutting									
Standard	**TNMG331**	**TNMG160404**	M	●	.375	.187	.016	.150	
	332	**160408**	M	●	.375	.187	.031	.150	
Medium Cutting									
R/L	**TNGG330.5R**	**TNGG160402R**	G	●	.375	.187	.008	.150	
	331R	**160404R**	G	●	.375	.187	.016	.150	
	332R	**160408R**	G	●	.375	.187	.031	.150	
	330.5L	**160402L**	G	●	.375	.187	.008	.150	
	331L	**160404L**	G	●	.375	.187	.016	.150	
Medium Cutting	**332L**	**160408L**	G	●	.375	.187	.031	.150	
FH	**VNMG330.5FH**	**VNMG160402-FH**	M	●	.375	.187	.008	.150	
	331FH	**160404-FH**	M	●	.375	.187	.016	.150	
	332FH	**160408-FH**	M	●	.375	.187	.031	.150	
Finish Cutting									
R/L-F	**VNGG330.5RF**	**VNGG160402R-F**	G	●	.375	.187	.008	.150	
	331RF	**160404R-F**	G	●	.375	.187	.016	.150	
	330.5LF	**160402L-F**	G	●	.375	.187	.008	.150	
	331LF	**160404L-F**	G	●	.375	.187	.016	.150	
Finish Cutting									

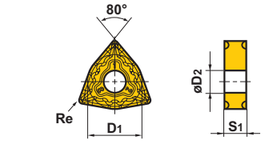
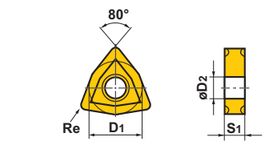
MP3025

INSERTS

● Negative Inserts (With hole)

Shape	Order Number	(ISO) Number	Class	Stock MP3025	Dimensions (inch) D1	S1	Re	D2	Geometry
LP	**VNMG331LP**	**VNMG160404-LP**	M	●	.375	.187	.016	.150	
	332LP	**160408-LP**	M	●	.375	.187	.031	.150	
 Light Cutting									
MP	**VNMG331MP**	**VNMG160404-MP**	M	●	.375	.187	.016	.150	
	332MP	**160408-MP**	M	●	.375	.187	.031	.150	
 Medium Cutting									
Standard	**VNMG331**	**VNMG160404**	M	●	.375	.187	.016	.150	
	332	**160408**	M	●	.375	.187	.031	.150	
 Medium Cutting									
FH	**WNMG431FH**	**WNMG080404-FH**	M	●	.500	.187	.016	.203	
	432FH	**080408-FH**	M	●	.500	.187	.031	.203	
 Finish Cutting									
FY	**WNMG431FY**	**WNMG080404-FY**	M	●	.500	.187	.016	.203	
	432FY	**080408-FY**	M	●	.500	.187	.031	.203	
 Finish Cutting									
LP	**WNMG32.51LP**	**WNMG06T304-LP**	M	●	.375	.156	.016	.150	
	32.52LP	**06T308-LP**	M	●	.375	.156	.031	.150	
	331LP	**060404-LP**	M	●	.375	.187	.016	.150	
	332LP	**060408-LP**	M	●	.375	.187	.031	.150	
	431LP	**080404-LP**	M	●	.500	.187	.016	.203	
 Light Cutting	**432LP**	**080408-LP**	M	●	.500	.187	.031	.203	
SW	**WNMG331SW**	**WNMG060404-SW**	M	●	.375	.187	.016	.150	
	332SW	**060408-SW**	M	●	.375	.187	.031	.150	
	431SW	**080404-SW**	M	●	.500	.187	.016	.203	
	432SW	**080408-SW**	M	●	.500	.187	.031	.203	
 Light Cutting (Wiper)	**433SW**	**080412-SW**	M	●	.500	.187	.047	.203	
SY	**WNMG431SY**	**WNMG080404-SY**	M	●	.500	.187	.016	.203	
	432SY	**080408-SY**	M	●	.500	.187	.031	.203	
 Light Cutting									

● : Inventory maintained.

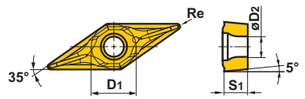
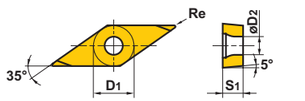
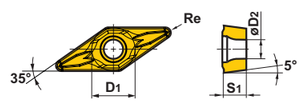
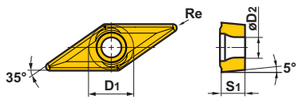
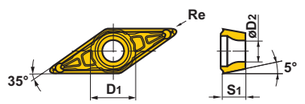
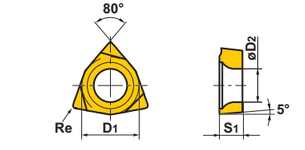
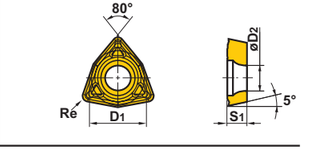
Shape	Order Number	(ISO) Number	Class	Stock MP3025	Dimensions (inch) D1	S1	Re	D2	Geometry
MP	**WNMG431MP**	**WNMG080404-MP**	M	●	.500	.187	.016	.203	
	432MP	**080408-MP**	M	●	.500	.187	.031	.203	
	433MP	**080412-MP**	M	●	.500	.187	.047	.203	
 Medium Cutting									
Standard	**WNMG431**	**WNMG080404**	M	●	.500	.187	.016	.203	
	432	**080408**	M	●	.500	.187	.031	.203	
 Medium Cutting									

PVD coated Cermet grade for steel

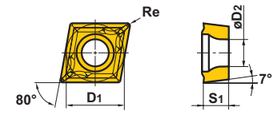
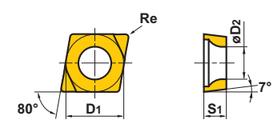
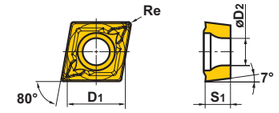
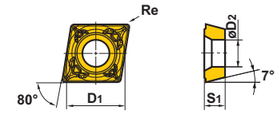
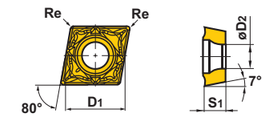
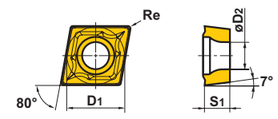
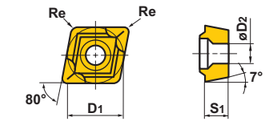
MP3025

INSERTS

● 5° Positive Inserts (With hole)

Shape	Order Number	(ISO) Number	Class	Stock MP3025	Dimensions (inch) D1	S1	Re	D2	Geometry
NEW FP	VBMT220.5FP	VBMT110302-FP	M	●	.250	.125	.008	.115	
	221FP	110304-FP	M	●	.250	.125	.016	.115	
	222FP	110308-FP	M	●	.250	.125	.031	.115	
	331FP	160404-FP	M	●	.375	.187	.016	.178	
	332FP	160408-FP	M	●	.375	.187	.031	.178	
Finish Cutting									
R/L-F	VBGT220.5RF	VBGT110302R-F	G	●	.250	.125	.008	.115	
	220.5LF	110302L-F	G	●	.250	.125	.008	.115	
									
Finish Cutting									
NEW LP	VBMT221LP	VBMT110304-LP	M	●	.250	.125	.016	.115	
	222LP	110308-LP	M	●	.250	.125	.031	.115	
	331LP	160404-LP	M	●	.375	.187	.016	.178	
	332LP	160408-LP	M	●	.375	.187	.031	.178	
Light Cutting									
NEW MP	VBMT331MP	VBMT160404-MP	M	●	.375	.187	.016	.178	
	332MP	160408-MP	M	●	.375	.187	.031	.178	
									
Medium Cutting									
MV	VBMT221MV	VBMT110304-MV	M	●	.250	.125	.016	.115	
	222MV	110308-MV	M	●	.250	.125	.031	.115	
	331MV	160404-MV	M	●	.375	.187	.016	.178	
	332MV	160408-MV	M	●	.375	.187	.031	.178	
Medium Cutting									
R/L-F	WBGT1.210.5LF	WBGT020102L-F	G	●	.156	.063	.008	.091	
	1.211LF	020104L-F	G	●	.156	.063	.016	.091	
	1.51.50.5LF	L30202L-F	G	●	.187	.094	.008	.091	
	1.51.51LF	L30204L-F	G	●	.187	.094	.016	.091	
Finish Cutting									
R/L-MV	WBMT1.51.50.5RMV	WBMTL30202L-MV	M	●	.187	.094	.008	.091	
	1.51.50.5LMV	L30202R-MV	M	●	.187	.094	.008	.091	
	1.51.51RMV	L30204L-MV	M	●	.187	.094	.016	.091	
	1.51.51LMV	L30204R-MV	M	●	.187	.094	.016	.091	
Medium Cutting									

● 7° Positive Inserts (With hole)

Shape	Order Number	(ISO) Number	Class	Stock MP3025	Dimensions (inch) D1	S1	Re	D2	Geometry
NEW FP	CCMT21.50.5FP	CCMT060202-FP	M	●	.250	.094	.008	.110	
	21.51FP	060204-FP	M	●	.250	.094	.016	.110	
	32.50.5FP	09T302-FP	M	●	.375	.156	.008	.173	
	32.51FP	09T304-FP	M	●	.375	.156	.016	.173	
	32.52FP	09T308-FP	M	●	.375	.156	.031	.173	
Finish Cutting									
L-F	CCGT03S102L-F	CCGT03S102L-F	G	●	.156	.055	.008	.079	
	03S104L-F	03S104L-F	G	●	.156	.055	.016	.079	
	04T002L-F	04T002L-F	G	●	.187	.070	.008	.094	
	04T004L-F	04T004L-F	G	●	.187	.070	.016	.094	
Finish Cutting									
NEW LP	CCMT21.51LP	CCMT060204-LP	M	●	.250	.094	.016	.110	
	21.52LP	060208-LP	M	●	.250	.094	.031	.110	
	32.51LP	09T304-LP	M	●	.375	.156	.016	.173	
	32.52LP	09T308-LP	M	●	.375	.156	.031	.173	
Light Cutting									
SV	CCMH21.50.5SV	CCMH060202-SV	M	●	.250	.094	.008	.110	
	21.51SV	060204-SV	M	●	.250	.094	.016	.110	
									
Light Cutting									
SW	CCMT21.50.5SW	CCMT060202-SW	M	●	.250	.094	.008	.110	
	21.51SW	060204-SW	M	●	.250	.094	.016	.110	
	32.50.5SW	09T302-SW	M	●	.375	.156	.008	.173	
	32.51SW	09T304-SW	M	●	.375	.156	.016	.173	
Light Cutting (Wiper)									
NEW MP	CCMT21.51MP	CCMT060204-MP	M	●	.250	.094	.016	.110	
	21.52MP	060208-MP	M	●	.250	.094	.031	.110	
	32.51MP	09T304-MP	M	●	.375	.156	.016	.173	
	32.52MP	09T308-MP	M	●	.375	.156	.031	.173	
	431MP	120404-MP	M	●	.500	.187	.016	.217	
	432MP	120408-MP	M	●	.500	.187	.031	.217	
Medium Cutting	433MP	120412-MP		●	.500	.187	.047	.217	
Standard	CCMT21.50.5	CCMT060202	M	●	.250	.094	.008	.110	
	21.51	060204	M	●	.250	.094	.016	.110	
	2.521	080304	M	●	.313	.125	.016	.110	
	32.50.5	09T302	M	●	.375	.156	.008	.173	
	32.51	09T304	M	●	.375	.156	.016	.173	
	32.52	09T308	M	●	.375	.156	.031	.173	
	431	120404	M	●	.500	.187	.016	.217	
Medium Cutting	432	120408	M	●	.500	.187	.031	.217	

● : Inventory maintained.

MP3025

INSERTS

● 7° Positive Inserts (With hole)

Shape	Order Number	(ISO) Number	Class	Stock MP3025	Dimensions (inch) D1	S1	Re	D2	Geometry
MV	**CCMH21.50.5MV**	**CCMH060202-MV**	M	●	.250	.094	.008	.110	
	21.51MV	**060204-MV**	M	●	.250	.094	.016	.110	
Medium Cutting									
MW	**CCMT21.51MW**	**CCMT060204-MW**	M	●	.250	.094	.008	.110	
	21.52MW	**060208-MW**	M	●	.250	.094	.016	.110	
	32.51MW	**09T304-MW**	M	●	.375	.156	.008	.173	
	32.52MW	**09T308-MW**	M	●	.375	.156	.016	.173	
Medium Cutting (Wiper)									
NEW **FP**	**DCMT21.50.5FP**	**DCMT070202-FP**	M	●	.250	.094	.008	.110	
	21.51FP	**070204-FP**	M	●	.250	.094	.016	.110	
	32.50.5FP	**11T302-FP**	M	●	.375	.156	.008	.173	
	32.51FP	**11T304-FP**	M	●	.375	.156	.016	.173	
	32.52FP	**11T308-FP**	M	●	.375	.156	.031	.173	
Finish Cutting									
NEW **LP**	**DCMT21.51LP**	**DCMT070204-LP**	M	●	.250	.094	.016	.110	
	21.52LP	**070208-LP**	M	●	.250	.094	.031	.110	
	32.51LP	**11T304-LP**	M	●	.375	.156	.016	.173	
	32.52LP	**11T308-LP**	M	●	.375	.156	.031	.173	
Light Cutting									
NEW **MP**	**DCMT21.51MP**	**DCMT070204-MP**	M	●	.250	.094	.016	.110	
	21.52MP	**070208-MP**	M	●	.250	.094	.031	.110	
	32.51MP	**11T304-MP**	M	●	.375	.156	.016	.173	
	32.52MP	**11T308-MP**	M	●	.375	.156	.031	.173	
	431MP	**150404-MP**	M	●	.500	.187	.016	.217	
Medium Cutting	**432MP**	**150408-MP**	M	●	.500	.187	.031	.217	
Standard	**DCMT21.50.5**	**DCMT070202**	M	●	.250	.094	.008	.110	
	21.51	**070204**	M	●	.250	.094	.016	.110	
	21.52	**070208**	M	●	.250	.094	.031	.110	
	32.50.5	**11T302**	M	●	.375	.156	.008	.173	
	32.51	**11T304**	M	●	.375	.156	.016	.173	
	32.52	**11T308**	M	●	.375	.156	.031	.173	
	431	**150404**	M	●	.500	.187	.016	.217	
Medium Cutting	**432**	**150408**	M	●	.500	.187	.031	.217	
MV	**DCMT21.50.5MV**	**DCMT070202-MV**	M	●	.250	.094	.008	.110	
	21.51MV	**070204-MV**	M	●	.250	.094	.016	.110	
	21.52MV	**070208-MV**	M	●	.250	.094	.031	.110	
	32.50.5MV	**11T302-MV**	M	●	.375	.156	.008	.173	
	32.51MV	**11T304-MV**	M	●	.375	.156	.016	.173	
Medium Cutting	**32.52MV**	**11T308-MV**	M	●	.375	.156	.031	.173	

Shape	Order Number	(ISO) Number	Class	Stock MP3025	Dimensions (inch) D1	S1	Re	D2	Geometry
Standard	**RCMT0602M0**	**RCMT0602M0**	M	●	.236	.094	-	.110	
	0803M0	**0803M0**	M	●	.315	.125	-	.134	
Medium Cutting									
Standard	**RCMX1003M0**	**RCMX1003M0**	M	●	.394	.125	-	.142	
	1204M0	**1204M0**	M	●	.472	.187	-	.165	
Medium Cutting									
NEW **FP**	**SCMT32.51FP**	**SCMT09T304-FP**	M	●	.375	.156	.016	.173	
	32.52FP	**09T308-FP**	M	●	.375	.156	.031	.173	
Finish Cutting									
NEW **LP**	**SCMT32.51LP**	**SCMT09T304-LP**	M	●	.375	.156	.016	.173	
	32.52LP	**09T308-LP**	M	●	.375	.156	.031	.173	
Light Cutting									
NEW **MP**	**SCMT32.51MP**	**SCMT09T304-MP**	M	●	.375	.156	.016	.173	
	32.52MP	**09T308-MP**	M	●	.375	.156	.031	.173	
	431MP	**120404-MP**	M	●	.500	.187	.016	.217	
Medium Cutting	**432MP**	**120408-MP**	M	●	.500	.187	.031	.217	
Standard	**SCMT32.51**	**SCMT09T304**	M	●	.375	.156	.016	.173	
	32.52	**09T308**	M	●	.375	.156	.031	.173	
	431	**120404**	M	●	.500	.187	.016	.217	
Medium Cutting	**432**	**120408**	M	●	.500	.187	.031	.217	
NEW **FP**	**TCMT1.81.50.5FP**	**TCMT090202-FP**	M	●	.219	.094	.008	.098	
	1.81.51FP	**090204-FP**	M	●	.219	.094	.016	.098	
	21.50.5FP	**110202-FP**	M	●	.250	.094	.008	.110	
	21.51FP	**110204-FP**	M	●	.250	.094	.016	.110	
	32.51FP	**16T304-FP**	M	●	.375	.156	.016	.173	
Finish Cutting									

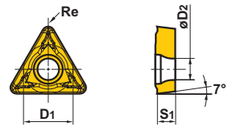
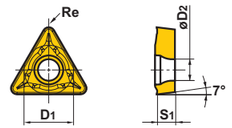
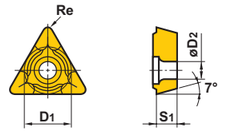
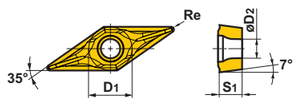
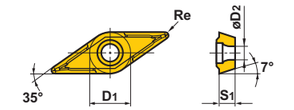
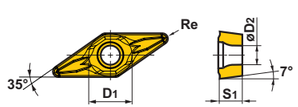
● : Inventory maintained.

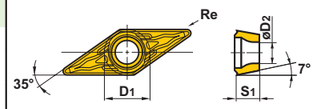
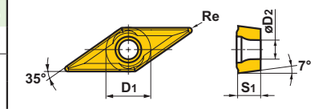
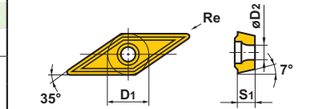
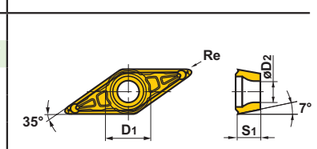
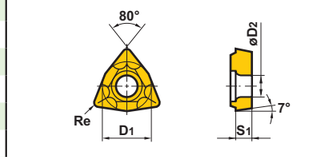
PVD coated Cermet grade for steel

MP3025

INSERTS

● 7° Positive Inserts (With hole)

Shape	Order Number	(ISO) Number	Class	Stock MP3025	Dimensions (inch) D1	S1	Re	D2	Geometry
NEW LP	TCMT1.81.51LP	TCMT090204-LP	M	●	.219	.094	.016	.098	
	1.81.52LP	090208-LP	M	●	.219	.094	.031	.098	
	21.51LP	110204-LP	M	●	.250	.094	.016	.110	
	21.52LP	110208-LP	M	●	.250	.094	.031	.110	
	32.51LP	16T304-LP	M	●	.375	.156	.016	.173	
Light Cutting	32.52LP	16T308-LP	M	●	.375	.156	.031	.173	
NEW MP	TCMT1.81.51MP	TCMT090204-MP	M	●	.219	.094	.016	.098	
	1.81.52MP	090208-MP	M	●	.219	.094	.031	.098	
	21.51MP	110204-MP	M	●	.250	.094	.016	.110	
	21.52MP	110208-MP	M	●	.250	.094	.031	.110	
	2.521MP	130304-MP	M	●	.313	.125	.016	.134	
	32.51MP	16T304-MP	M	●	.375	.156	.016	.173	
	32.52MP	16T308-MP	M	●	.375	.156	.031	.173	
Medium Cutting	32.53MP	16T312-MP	M	●	.375	.156	.047	.173	
Standard	TCMT1.51.51	TCMT080204	M	●	.187	.094	.016	.091	
	1.81.51	090204	M	●	.219	.094	.016	.098	
	21.50.5	110202	M	●	.250	.094	.008	.110	
	21.51	110204	M	●	.250	.094	.016	.110	
	21.52	110208	M	●	.250	.094	.031	.110	
	2.520.5	130302	M	●	.313	.125	.008	.134	
	2.521	130304	M	●	.313	.125	.016	.134	
	32.51	16T304	M	●	.375	.156	.016	.173	
Medium Cutting	32.52	16T308	M	●	.375	.156	.031	.173	
NEW FP	VCMT220.5FP	VCMT110302-FP	M	●	.250	.125	.008	.110	
	221FP	110304-FP	M	●	.250	.125	.016	.110	
	331FP	160404-FP	M	●	.375	.187	.016	.173	
	332FP	160408-FP	M	●	.375	.187	.031	.173	
Finish Cutting									
FV	VCMT1.51.50.5FV	VCMT080202-FV	M	●	.187	.094	.008	.097	
	1.51.51FV	080204-FV	M	●	.187	.094	.016	.097	
									
Finish Cutting									
NEW LP	VCMT221LP	VCMT110304-LP	M	●	.250	.125	.016	.110	
	222LP	110308-LP	M	●	.250	.125	.031	.110	
	331LP	160404-LP	M	●	.375	.187	.016	.173	
	332LP	160408-LP	M	●	.375	.187	.031	.173	
Light Cutting									

Shape	Order Number	(ISO) Number	Class	Stock MP3025	Dimensions (inch) D1	S1	Re	D2	Geometry
SV	VCMT1.51.50.5SV	VCMT080202-SV	M	●	.187	.094	.008	.097	
	1.51.51SV	080204-SV	M	●	.187	.094	.016	.097	
									
Light Cutting									
NEW MP	VCMT331MP	VCMT160404-MP	M	●	.375	.187	.016	.173	
	332MP	160408-MP	M	●	.375	.187	.031	.173	
	333MP	160412-MP	M	●	.375	.187	.047	.173	
Medium Cutting									
Standard	VCMT221	VCMT110304	M	●	.250	.125	.016	.110	
	331	160404	M	●	.375	.187	.016	.173	
	332	160408	M	●	.375	.187	.031	.173	
Medium Cutting									
MV	VCMT1.51.50.5MV	VCMT080202-MV	M	●	.187	.094	.008	.097	
	1.51.51MV	080204-MV	M	●	.187	.094	.016	.097	
									
Medium Cutting									
Standard	WCMT1.210.5	WCMT020102	M	●	.156	.063	.008	.091	
	1.211	020104	M	●	.156	.063	.016	.091	
	1.51.50.5	L30202	M	●	.187	.094	.008	.091	
	1.51.51	L30204	M	●	.187	.094	.016	.091	
	21.50.5	040202	M	●	.250	.094	.008	.110	
	21.51	040204	M	●	.250	.094	.016	.110	
	32.51	06T304	M	●	.375	.156	.016	.173	
Medium Cutting	32.52	06T308	M	●	.375	.156	.031	.173	

● : Inventory maintained.

MP3025

INSERTS

● 11° Positive Inserts (With hole)

Shape	Order Number	(ISO) Number	Class	Stock MP3025	Dimensions (inch) D1	S1	Re	D2	Geometry
FV	**CPMH2.51.50.5FV**	**CPMH080202-FV**	M	●	.313	.094	.008	.138	
	2.51.51FV	**080204-FV**	M	●	.313	.094	.016	.138	
	320.5FV	**090302-FV**	M	●	.375	.125	.008	.177	
	321FV	**090304-FV**	M	●	.375	.125	.016	.177	
	322FV	**090308-FV**	M	●	.375	.125	.031	.177	
Finish Cutting									
SV	**CPMH2.51.50.5SV**	**CPMH080202-SV**	M	●	.313	.094	.008	.138	
	2.51.51SV	**080204-SV**	M	●	.313	.094	.016	.138	
	320.5SV	**090302-SV**	M	●	.375	.125	.008	.177	
	321SV	**090304-SV**	M	●	.375	.125	.016	.177	
	322SV	**090308-SV**	M	●	.375	.125	.031	.177	
Light Cutting									
MV	**CPMH2.51.51MV**	**CPMH080204-MV**	M	●	.313	.094	.016	.138	
	2.51.52MV	**080208-MV**	M	●	.313	.094	.031	.138	
	321MV	**090304-MV**	M	●	.375	.125	.016	.177	
	322MV	**090308-MV**	M	●	.375	.125	.031	.177	
Medium Cutting									
FV	**TPMH1.51.50.5FV**	**TPMH080202-FV**	M	●	.187	.094	.008	.098	
	1.51.51FV	**080204-FV**	M	●	.187	.094	.016	.098	
	1.81.50.5FV	**090202-FV**	M	●	.219	.094	.008	.114	
	1.81.51FV	**090204-FV**	M	●	.219	.094	.016	.114	
	220.5FV	**110302-FV**	M	●	.250	.125	.008	.134	
	221FV	**110304-FV**	M	●	.250	.125	.016	.134	
	222FV	**110308-FV**	M	●	.250	.125	.031	.134	
	320.5FV	**160302-FV**	M	●	.375	.125	.008	.173	
	321FV	**160304-FV**	M	●	.375	.125	.016	.173	
Finish Cutting	**322FV**	**160308-FV**	M	●	.375	.125	.031	.173	
L-FS	**TPGH1.51.50.5LFS**	**TPGH080202L-FS**	G	●	.187	.094	.008	.098	
	1.51.51LFS	**080204L-FS**	G	●	.187	.094	.016	.098	
	1.81.50.5LFS	**090202L-FS**	G	●	.219	.094	.008	.114	
	1.81.51LFS	**090204L-FS**	G	●	.219	.094	.016	.114	
	220.5LFS	**110302L-FS**	G	●	.250	.125	.008	.134	
	221LFS	**110304L-FS**	G	●	.250	.125	.016	.134	
	321LFS	**160304L-FS**	G	●	.375	.125	.016	.173	
Finish Cutting	**322LFS**	**160308L-FS**	G	●	.375	.125	.031	.173	
SV	**TPMH1.51.50.5SV**	**TPMH080202-SV**	M	●	.187	.094	.008	.098	
	1.51.51SV	**080204-SV**	M	●	.187	.094	.016	.098	
	1.81.50.5SV	**090202-SV**	M	●	.219	.094	.008	.114	
	1.81.51SV	**090204-SV**	M	●	.219	.094	.016	.114	
	220.5SV	**110302-SV**	M	●	.250	.125	.008	.134	
	221SV	**110304-SV**	M	●	.250	.125	.016	.134	
	222SV	**110308-SV**	M	●	.250	.125	.031	.134	
	320.5SV	**160302-SV**	M	●	.375	.125	.008	.173	
	321SV	**160304-SV**	M	●	.375	.125	.016	.173	
Light Cutting	**322SV**	**160308-SV**	M	●	.375	.125	.031	.173	

Shape	Order Number	(ISO) Number	Class	Stock MP3025	Dimensions (inch) D1	S1	Re	D2	Geometry
MV	**TPMH1.51.50.5MV**	**TPMH080202-MV**	M	●	.187	.094	.008	.098	
	1.51.51MV	**080204-MV**	M	●	.187	.094	.016	.098	
	1.81.50.5MV	**090202-MV**	M	●	.219	.094	.008	.114	
	1.81.51MV	**090204-MV**	M	●	.219	.094	.016	.114	
	1.81.52MV	**090208-MV**	M	●	.219	.094	.031	.114	
	220.5MV	**110302-MV**	M	●	.250	.125	.008	.134	
	221MV	**110304-MV**	M	●	.250	.125	.016	.134	
	222MV	**110308-MV**	M	●	.250	.125	.031	.134	
	321MV	**160304-MV**	M	●	.375	.125	.016	.173	
Medium Cutting	**322MV**	**160308-MV**	M	●	.375	.125	.031	.173	
Standard	**TPMX221**	**TPMX110304**	M	●	.250	.125	.016	.138	
	222	**110308**	M	●	.250	.125	.031	.138	
Medium Cutting									
MV	**WPMT21.50.5MV**	**WPMT040202-MV**	M	●	.250	.094	.008	.110	
	21.51MV	**040204-MV**	M	●	.250	.094	.016	.110	
	321MV	**060304-MV**	M	●	.375	.125	.016	.173	
	322MV	**060308-MV**	M	●	.375	.125	.031	.173	
Medium Cutting									

● 11° Positive Inserts (Without hole)

Shape	Order Number	(ISO) Number	Class	Stock MP3025	Dimensions (inch) D1	S1	Re	D2	Geometry
Standard	**SPMR321**	**SPMR090304**	M	●	.375	.125	.016	-	
	322	**090308**	M	●	.375	.125	.031	-	
	421	**120304**	M	●	.500	.125	.016	-	
	422	**120308**	M	●	.500	.125	.031	-	
Light to Medium Cutting									
Standard	**TPMR1.81.50.5**	**TPMR090202**	M	●	.219	.094	.008	-	
	1.81.51	**090204**	M	●	.219	.094	.016	-	
	1.81.52	**090208**	M	●	.219	.094	.031	-	
	220.5	**110302**	M	●	.250	.125	.008	-	
	221	**110304**	M	●	.250	.125	.016	-	
	222	**110308**	M	●	.250	.125	.031	-	
	321	**160304**	M	●	.375	.125	.016	-	
	322	**160308**	M	●	.375	.125	.031	-	
Light to Medium Cutting	**323**	**160312**	M	●	.375	.125	.047	-	

● : Inventory maintained.

RECOMMENDED CUTTING CONDITIONS

Negative Inserts (External turning tools)

	Work Material	Hardness	Cutting Mode		Breaker	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)
P	Mild Steel (1010, 1018, 1020 etc.)	≤180HB	General Cutting	Finish Cutting	**FY**	900－1375	.003－.009	.008－.031
				Light Cutting	**SY**	820－1260	.006－.013	.020－.047
	Carbon Steel, Alloy Steel (1045, 4140 etc.)	180－280HB	Stable Cutting	Finish Cutting	**R/L-F**	690－1065	.002－.006	.004－.020
				Light Cutting	**LP**	640－965	.004－.016	.012－.079
				Light Cutting	**SW**	640－965	.004－.020	.012－.098
				Light Cutting	**R/L-K**	640－965	.003－.008	.012－.047
				Medium Cutting	**MP**	575－885	.006－.020	.012－.157
				Medium Cutting	**Standard**	575－885	.010－.024	.059－.197
				Medium Cutting	**R/L**	575－885	.006－.013	.016－.079
			General Cutting	Finish Cutting	**FH**	690－1065	.003－.008	.008－.039
				Medium Cutting	**LP**	640－965	.004－.016	.012－.079

7° Positive Inserts (SP Holder, External turning tools)

	Work Material	Hardness	Cutting Mode		Breaker	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)
P	Mild Steel (1010, 1018, 1020 etc.)	≤180HB	Stable Cutting	Finish Cutting	**R/L-F**	755－1150	.002－.005	.004－.059
				Light Cutting	**MV, Standard**	620－970	.003－.012	.012－.079
			General Cutting	Finish Cutting	**FP, FV**	755－1150	.002－.008	.008－.035
				Light Cutting	**LP**	755－1150	.002－.010	.008－.039
				Medium Cutting	**MP**	620－970	.003－.012	.012－.079
	Carbon Steel, Alloy Steel (1045, 4140 etc.)	180－280HB	Stable Cutting	Finish Cutting	**R/L-F**	560－850	.002－.005	.004－.020
				Light Cutting	**SV**	560－850	.002－.010	.008－.039
				Medium Cutting	**MV, Standard**	460－705	.003－.012	.012－.079
				Medium Cutting	**MW**	460－705	.004－.014	.031－.098
			General Cutting	Finish Cutting	**FP, FV**	560－850	.002－.008	.008－.035
				Light Cutting	**LP**	560－850	.002－.010	.008－.039
				Light Cutting	**SW**	560－850	.002－.009	.008－.059
				Medium Cutting	**MP**	460－705	.003－.012	.012－.079
	Carbon Steel, Alloy Steel (4340 etc.)	280－350HB	General Cutting	Medium Cutting	**MP**	330－510	.003－.012	.012－.079

11° Positive Inserts (MC Holder, External turning tools)

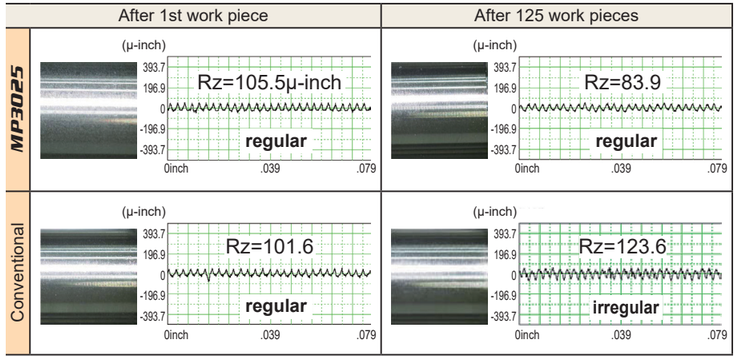
	Work Material	Hardness	Cutting Mode		Breaker	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)
P	Mild Steel (1010, 1018, 1020 etc.)	≤180HB	General Cutting	Light/Medium Cutting	**Standard**	620－965	.003－.012	.012－.079
	Carbon Steel, Alloy Steel (1045, 4140 etc.)	180－280HB	General Cutting	Light/Medium Cutting	**Standard**	460－705	.003－.012	.012－.079

5°/7° Positive Inserts (Boring bars)

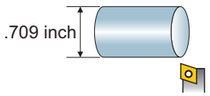
	Work Material	Hardness	Cutting Mode		Breaker	Cutting Speed (SFM)	Feed (IPR)	Depth of Cut (inch)
P	Mild Steel (1010, 1018, 1020 etc.)	≤180HB	General Cutting	Finish Cutting	**FP, FV**	755－1150	.002－.008	.008－.035
				Light Cutting	**LP**	755－1150	.002－.010	.008－.039
				Medium Cutting	**MP, MV, Standard**	620－970	.003－.012	.012－.079
	Carbon Steel, Alloy Steel (1045, 4140 etc.)	180－280HB	General Cutting	Finish Cutting	**FP**	560－850	.002－.008	.008－.035
				Light Cutting	**LP**	560－850	.002－.010	.008－.039
				Medium Cutting	**MP**	460－705	.003－.012	.012－.079
	Carbon Steel, Alloy Steel (4340 etc.)	280－350HB	General Cutting	Finish Cutting	**FP**	395－605	.002－.008	.008－.035
				Light Cutting	**LP**	395－605	.002－.010	.008－.039
				Medium Cutting	**MP**	330－510	.003－.012	.012－.079

*Recommended cutting conditions for 5°and 7°positive insert may vary depending on overhang.
Please refer to the recommended cutting conditions for the boring bar when boring.

Comparison of surface finishes

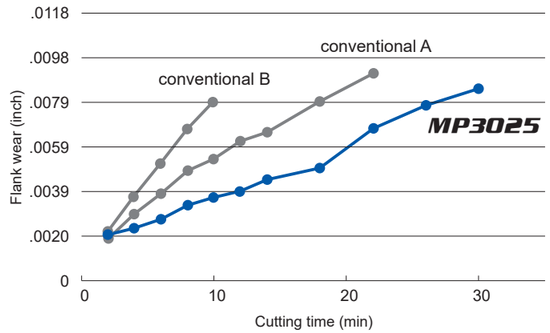


*MP3025 maintained a high quality surface finish through 125 components.



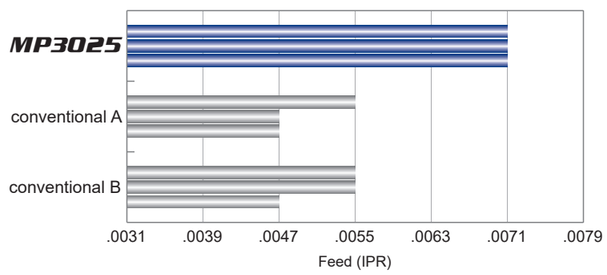
<Cutting condition>
Work piece : AISI 1045
Inserts : DCMT32.51
Cutting speed : vc=490 SFM
Depth of cut : ap=.039 inch
Feed : f=.003 IPR
Wet cutting

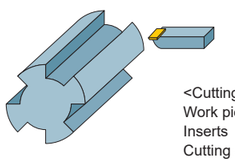
Wear resistance comparison



<Cutting condition>
Work piece : AISI 1045
Inserts : CNMG432-○○
Cutting speed : vc=820 SFM
Depth of cut : ap=.039 inch
Feed : f=.006 IPR
Wet cutting

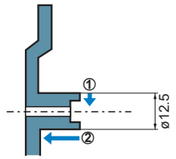
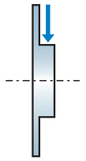
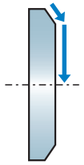
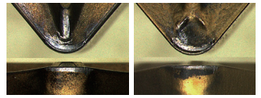
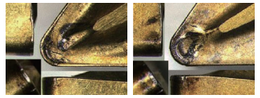
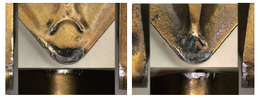
Fracture resistance comparison

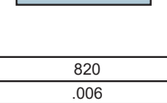
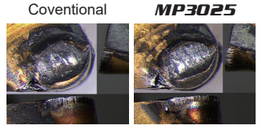




<Cutting condition>
Work piece : AISI 4140
Inserts : CNMG432-○○
Cutting speed : vc=655 SFM
Depth of cut : ap=.039 inch
Dry cutting

APPLICATION EXAMPLES

	Insert	WNMG432LP (MP3025)	DNMG431LP (MP3025)	WNMG432LP (MP3025)
	Work piece	Sprocket (ASTM A569) 	Motor parts (AISI 4130) 	ASTM A283 
Cutting Conditions	Cutting Speed (SFM)	320	655	655
Cutting Conditions	Feed (IPM)	.008	.005	.008
Cutting Conditions	Depth of Cut (inch)	.014	.012	.020
	Coolant	Wet cutting	Wet cutting	Dry cutting
	Results	Coventional MP3025  MP3025 has better wear resistance than conventional cermet and enables extended time between tool changes.	Coventional MP3025  MP3025 doubled tool life and the LP chip breaker allowed vibration free machining.	Coventional MP3025  MP3025 doubled tool life compared to conventional inserts during dry cutting machining.

	Insert	TNGG331LF (MP3025)
	Work piece	AISI 1045 
Cutting Conditions	Cutting Speed (SFM)	820
Cutting Conditions	Feed (IPM)	.006
Cutting Conditions	Depth of Cut (inch)	.020
	Coolant	Wet cutting
	Results	Coventional MP3025  Compared to conventional products, MP3025 displayed less wear, therefore extended tool life.

Memo

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FOR YOUR SAFETY

- Don't handle inserts and chips without gloves.
- Please machine within the recommended application range and exchange expired tools with new ones in advance of breakage.
- Please use safety covers and wear safety glasses.
- When using compounded cutting oils, please take fire precautions.
- When attaching inserts or spare parts, please use only the correct wrench or driver.
- When using rotating tools, please make a trial run to check run-out, vibration and abnormal sounds etc.

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