

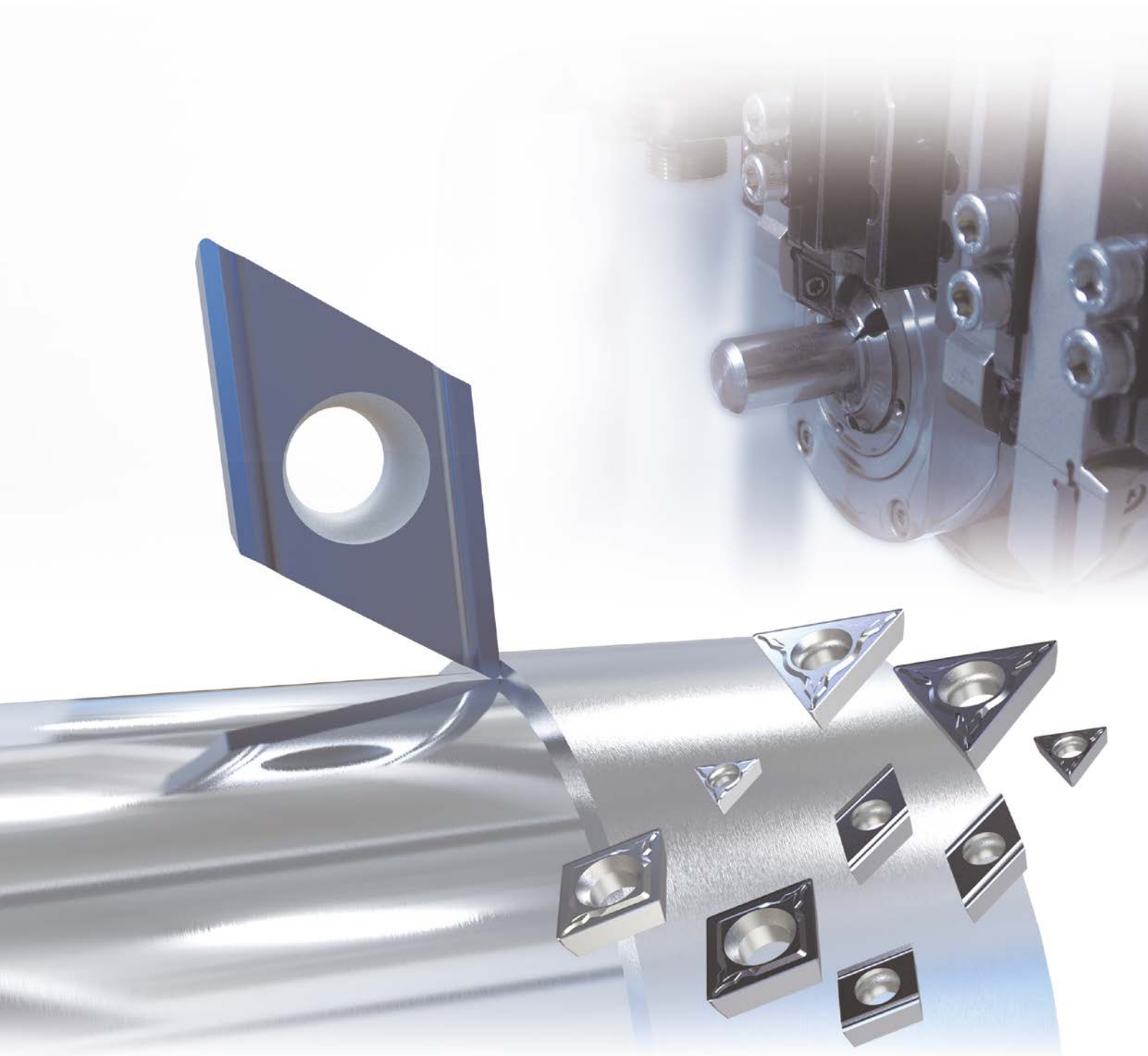
NEW

2026.10

B283E

MP/MX3115

EXCELLENT DIMENSIONAL STABILITY
PROVIDES TOP QUALITY COMPONENT SURFACES



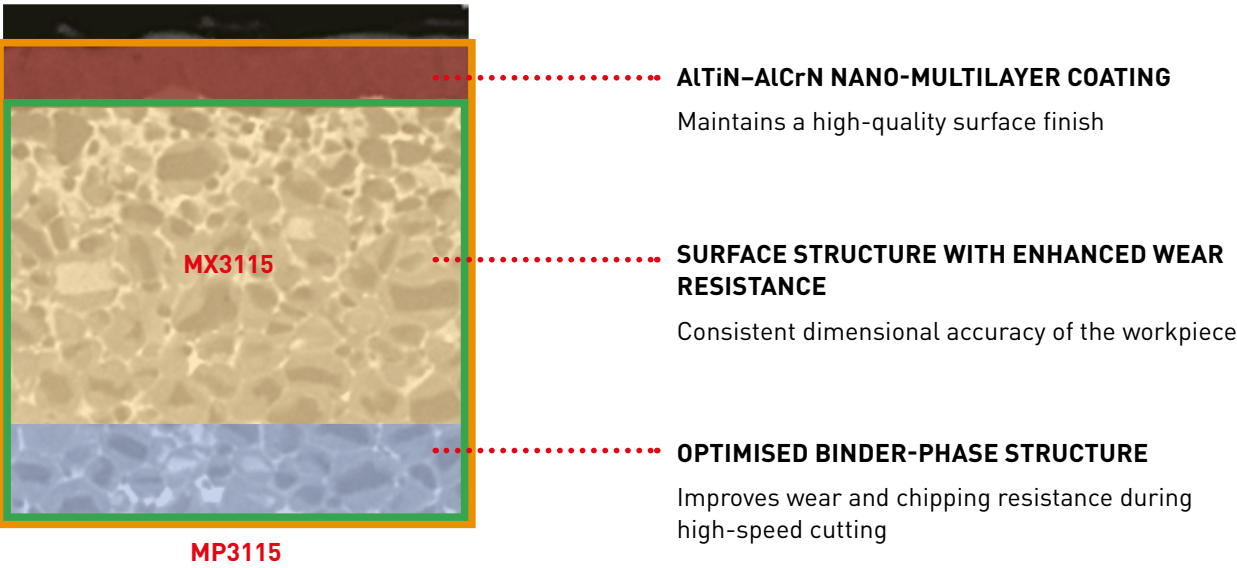
 **MITSUBISHI MATERIALS**

MP / MX3115

CERMET GRADE FOR TURNING STEEL

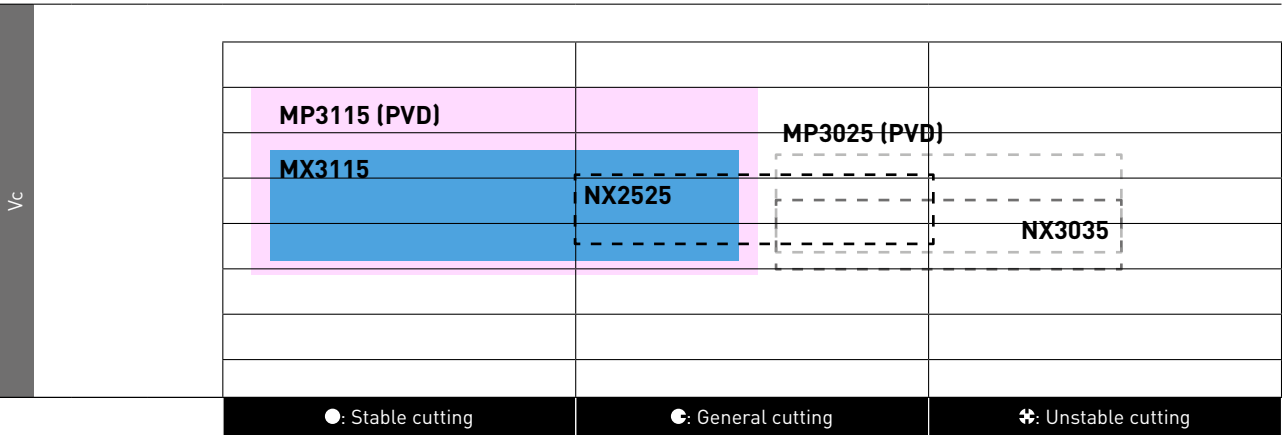
Through surface treatment and optimisation of the cermet structure, suppression of dimensional changes of the workpiece and consistency of the component surface finishes are achieved.

FEATURES OF THE NEW CERMET



CERMET GRADE FOR TURNING

Within the cermet grade range, suitable for high-speed cutting at $V_c = 150\text{--}350\text{ m/min}$.

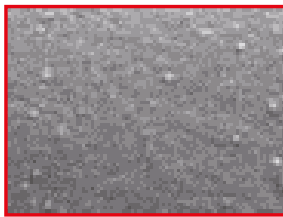


MP/MX3115

SURFACE-SMOOTHENED PVD COATING

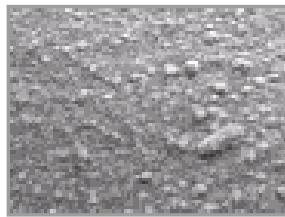
Suppression of droplet-derived defects during coating deposition enhances surface smoothness, preventing reactions and adhesion with the workpiece material and maintaining a high-quality finished surface.

SMOOTH SURFACE



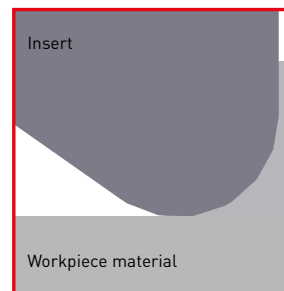
MP3115

DROPLET-INDUCED UNEVEN SURFACE



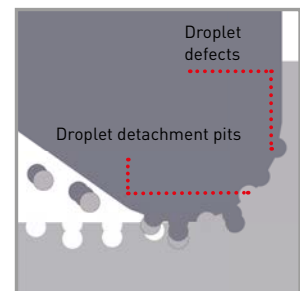
Conventional

HIGH-QUALITY FINISHED SURFACE



MP3115

UNEVENNESS TRANSFERRED TO WORKPIECE MATERIAL

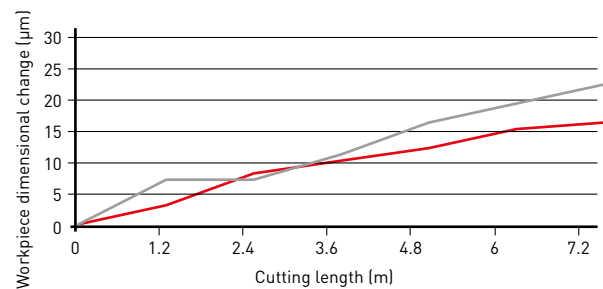


Conventional

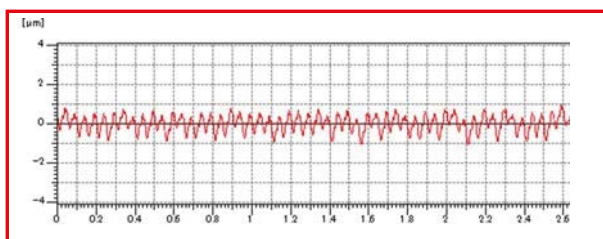
ALLOY STEEL S45C: WORKPIECE DIMENSIONAL CHANGE AND SURFACE ROUGHNESS COMPARISON

Compared with conventional products, surface roughness is improved by 1 μm (Rz) while initial workpiece dimensional change is reduced.

Tool	CCMT09T302-MP
Material	JIS S45C
Vc (m/min)	250
f (mm/rev)	0.05
ap (mm)	0.5
Cutting mode	Wet cutting

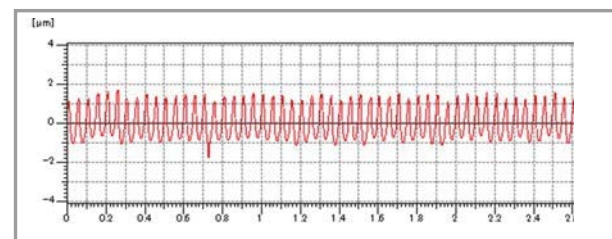


Rz = 1.8 μm



MP3115

Rz = 2.9 μm



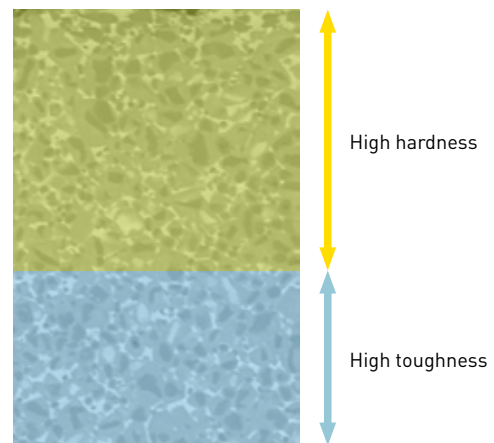
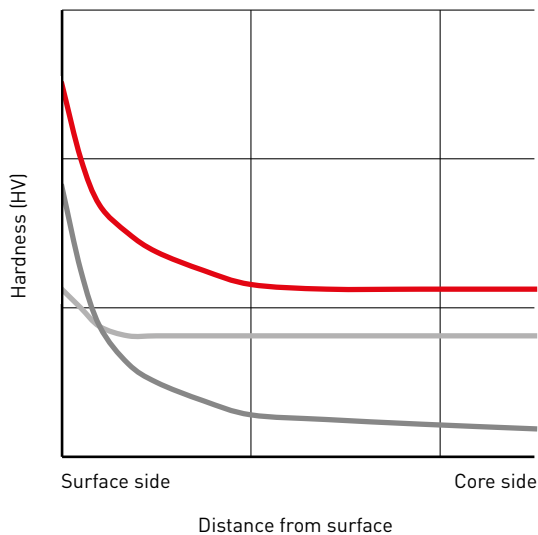
Conventional

■ : MP3115 ■ A : Conventional tool

MP/MX3115

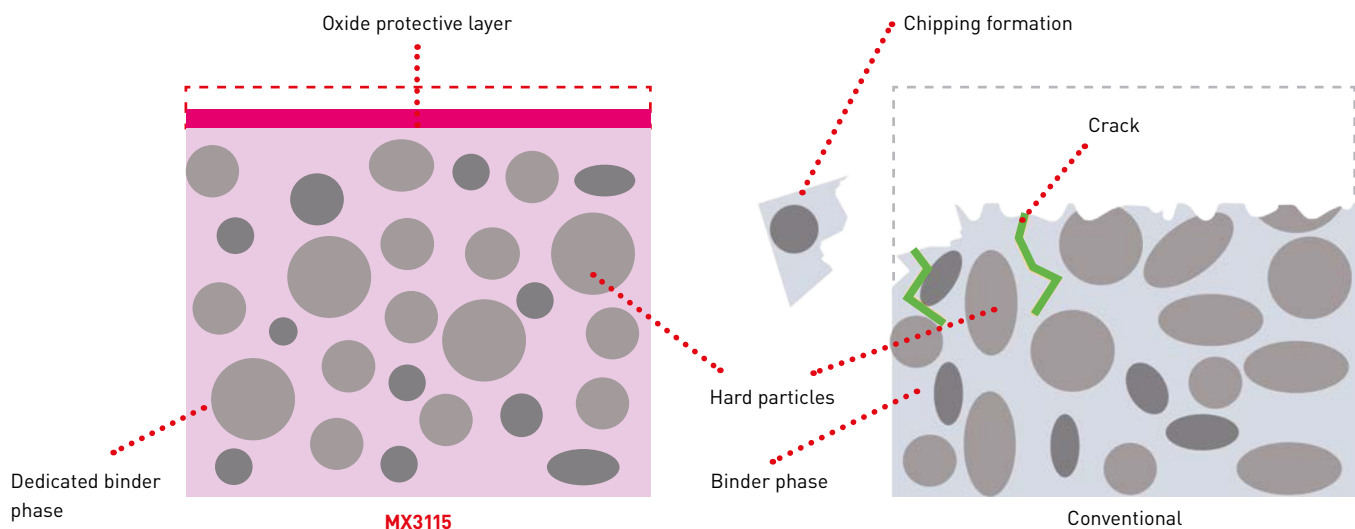
EXTREMELY HARD SURFACE, TOUGH CORE CERMET GRADE

For stable finishing operations, surface hardness is further enhanced, while the internal structure is optimised for toughness.



PREVENTS SUDDEN CUTTING EDGE FAILURE

Protective oxide layer formed during cutting suppresses oxidation-related wear, while a dedicated binder phase inhibits crack growth and improves chipping resistance.



■ : MX3115 ■ A ■ B : Conventional tool

MP/MX3115

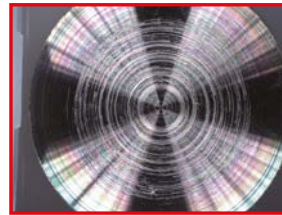
CUTTING PERFORMANCE

ALLOY STEEL S45C: COMPARISON OF WORKPIECE SURFACE APPEARANCE IN FACING WET CUTTING

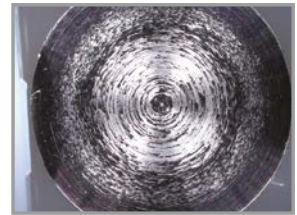
Even at the centre of the low-speed cutting region, smooth, high-hardness surface suppresses adhesion and maintains high-quality surface finishes.

Tool	DCMT11T302-FP
Material	JIS S45C $\phi 12$ mm
Vc (m/min)	250
f (mm/rev)	0.02
ap (mm)	0.2
Cutting mode	Wet cutting

AFTER MACHINING 100 PIECES



MP3115

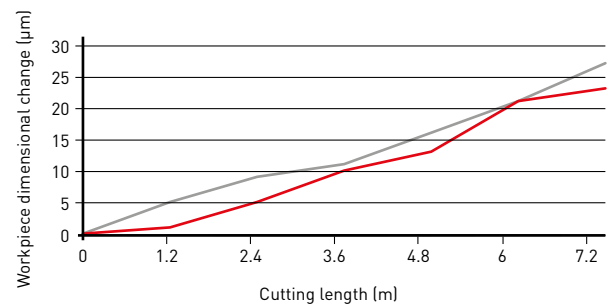


Conventional

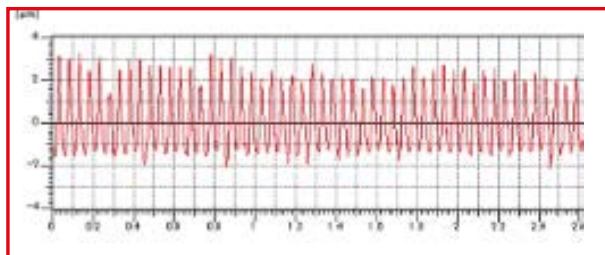
ALLOY STEEL S45C: WORKPIECE DIMENSIONAL CHANGE AND SURFACE ROUGHNESS COMPARISON

Even without coating, cermet shows small workpiece dimensional change and good surface roughness.

Tool	CCMT09T302-MP
Material	JIS S45C
Vc (m/min)	250
f (mm/rev)	0.05
ap (mm)	0.5
Cutting mode	Wet cutting

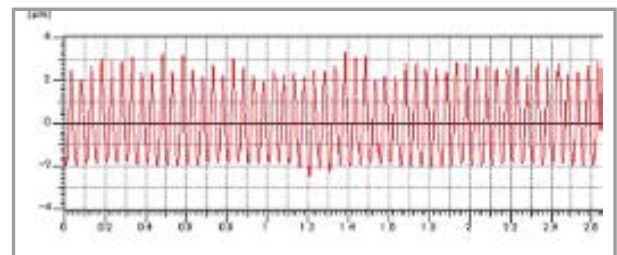


Rz = 4.9 μm



MX3115

Rz = 5.3 μm

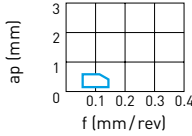


Conventional

MP/MX3115

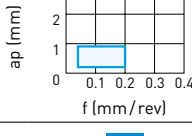
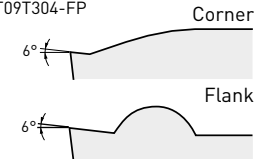
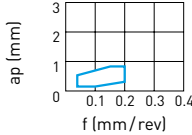
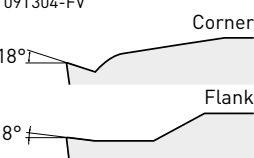
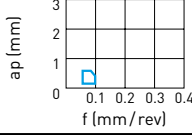
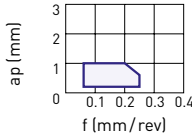
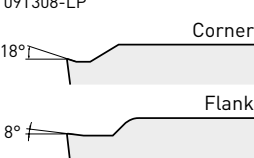
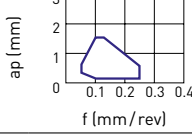
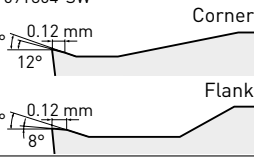
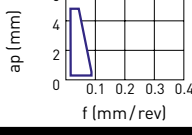
CERMET GRADE FOR TURNING STEEL

NEGATIVE INSERTS (WITH HOLE)

Tolerance	Features	Cross section geometry
FINISH CUTTING		
G	 CHIPBREAKER FOR FINISHING Lead chipbreaker controls chip flow. Sharp cutting edge gives a good surface finish. R/L-F	P TNGG160404R-F  

1/1

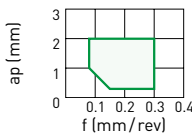
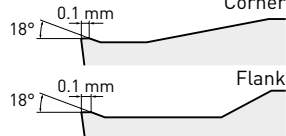
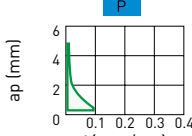
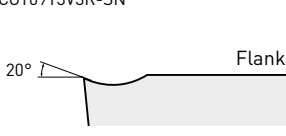
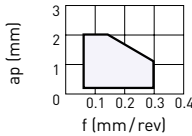
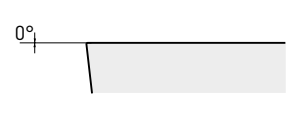
POSITIVE INSERTS (WITH HOLE)

Tolerance	Features	Cross section geometry
FINISH CUTTING		
M	 FIRST RECOMMENDATION FOR FINISHING CARBON STEEL, ALLOY STEEL AND MILD STEEL Chipbreaker protrusion at the corner tip controls chips even at small depths of cut. Maintains the edge strength at the corner and prevents sudden fractures. FP	P CCMT09T304-FP  
	 ALTERNATIVE CHIPBREAKER FOR FINISHING CARBON STEEL, ALLOY STEEL, MILD STEEL AND STAINLESS STEEL Suitable for low depths of cut and low feed rates. Sharp cutting edge and low resistance design achieve excellent cutting performance. FV	P CCMT09T304-FV  
E	 CHIPBREAKER FOR FINISHING Lead chipbreaker controls chip flow. Sharp cutting edge gives a good surface finish. R/L-SRF	P DCET11T301ML-SRF  
LIGHT CUTTING		
M	 FIRST RECOMMENDATION FOR LIGHT CUTTING OF CARBON STEEL, ALLOY STEEL AND MILD STEEL Sharp cutting edge due to a large rake angle. Prevents welding of the insert and controls white turbidity of the surface finish. Chipbreaker protrusion suitable for depth of cut area achieves a wide range of chip control. LP	P M S CCMT09T308-LP  
	 WIPER INSERT FOR LIGHT CUTTING OF CARBON STEEL, ALLOY STEEL, MILD STEEL AND STAINLESS STEEL In comparison to conventional chipbreakers, the surface finish is maintained even if the feed per revolution is doubled. Positive land improves sharpness. SW	P CCMT09T304-SW  
E	 CHIPBREAKER FOR LIGHT CUTTING OF AUTOMATIC LATHE MACHINING A parallel chipbreaker. Excellent chip control at low feed rates. R/L-SS	P CCET09T302R-SS  

1/1

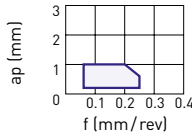
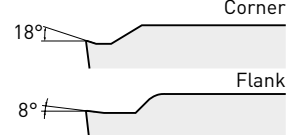
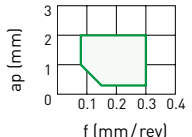
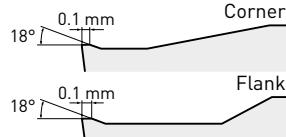
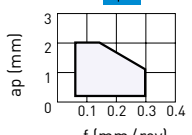
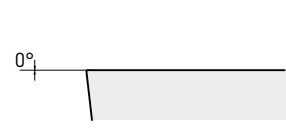
MP/MX3115 – CERMET GRADE FOR TURNING STEEL

POSITIVE INSERTS (WITH HOLE)

Tolerance		Features		Cross section geometry
MEDIUM CUTTING				
M		FIRST RECOMMENDATION FOR MEDIUM CUTTING OF CARBON STEEL, ALLOY STEEL AND MILD STEEL Good balance of wear resistance and fracture resistance because of the flat land cutting edge. A wide chip pocket controls increasing of the cutting resistance and reduces vibration and chip jamming even at large depths of cut.		CCMT09T308-MP 
G		CHIPBREAKER FOR MEDIUM CUTTING OF AUTOMATIC LATHE MACHINING A parallel chipbreaker for excellent chip control at low to medium feed rates.		CCGT09T3V3R-SN 
STRONG CUTTING EDGE				
G		HIGH EDGE STRENGTH CHIPBREAKER For CNC and manual lathes, effective at moderately high cutting speeds and feed rates of approximately 0.1 mm, where reinforced edge strength demonstrates its effectiveness.		TPGT160308 

1/1

POSITIVE INSERTS (WITHOUT HOLE)

Tolerance		Features		Cross section geometry
LIGHT CUTTING				
M		FIRST RECOMMENDATION FOR LIGHT CUTTING OF CARBON STEEL, ALLOY STEEL AND MILD STEEL Sharp cutting edge due to a large rake angle. Prevents welding of the insert and controls white turbidity of the surface finish. Chipbreaker protrusion suitable for depth of cut area achieves a wide range of chip control.		TPMR160308-LP 
MEDIUM CUTTING				
M		FIRST RECOMMENDATION FOR MEDIUM CUTTING OF CARBON STEEL, ALLOY STEEL AND MILD STEEL Good balance of wear resistance and fracture resistance because of the flat land cutting edge. A wide chip pocket controls increasing of the cutting resistance and reduces vibration and chip jamming even at large depths of cut.		TPMR160308-MP 
STRONG CUTTING EDGE				
G		HIGH EDGE STRENGTH CHIPBREAKER For CNC and manual lathes at moderately high cutting speeds and feed rates of approximately 0.1 mm, where reinforced edge strength demonstrates its effectiveness.		TPGN160308 

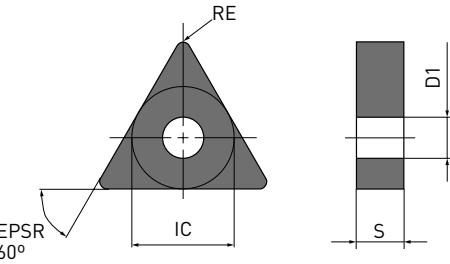
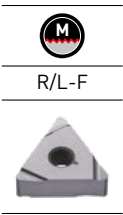
1/1

MP / MX3115

NEGATIVE INSERTS (WITH HOLE)

G Class

TNGG



Order number	F L M R H	MP3115	MX3115	IC	S	RE	D1
TNGG160402R-F	F	●	●	9.525	4.76	0.2	3.81
TNGG160402L-F	F	●	●	9.525	4.76	0.2	3.81
TNGG160404R-F	F	●	●	9.525	4.76	0.4	3.81
TNGG160404L-F	F	●	●	9.525	4.76	0.4	3.81
TNGG160408R-F	F	●	●	9.525	4.76	0.8	3.81
TNGG160408L-F	F	●	●	9.525	4.76	0.8	3.81

1/1

[10 inserts in one case]

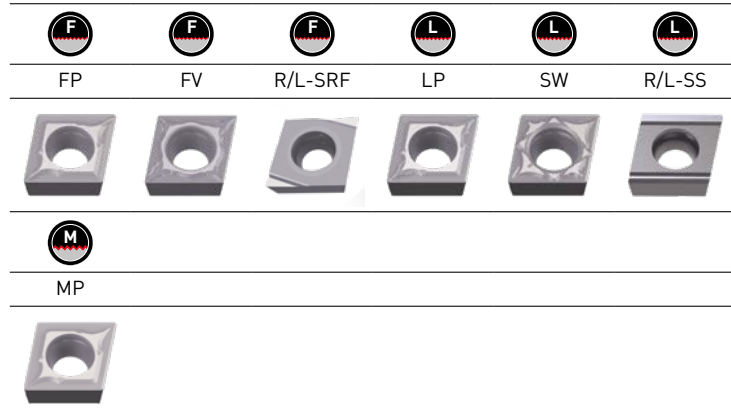
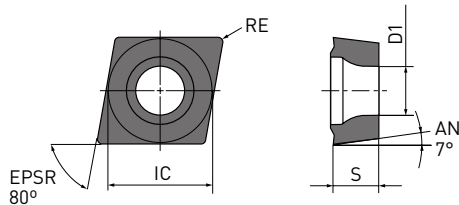


MP / MX3115

7° POSITIVE INSERTS (WITH HOLE)

E Class, G Class, M Class

CCMT, CCET, CCGT



Order number		MP3115	MX3115	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
CCMT060202-FV	F	●	●	6.35	2.38	0.2	2.8
CCMT060204-FV	F	●	●	6.35	2.38	0.4	2.8
CCMT09T302-FV	F	●	●	9.525	3.97	0.2	4.4
CCMT09T304-FV	F	●	●	9.525	3.97	0.4	4.4
CCET03S101MR-SRF*	F	●		3.97	1.39	0.1	2.0
CCET03S101ML-SRF*	F	●		3.97	1.39	0.1	2.0
CCET03S102MR-SRF*	F	●		3.97	1.39	0.2	2.0
CCET03S102ML-SRF*	F	●		3.97	1.39	0.2	2.0
CCET03S104MR-SRF*	F	●		3.97	1.39	0.4	2.0
CCET03S104ML-SRF*	F	●		3.97	1.39	0.4	2.0
CCET04T001MR-SRF*	F	●		4.76	1.79	0.1	2.4
CCET04T001ML-SRF*	F	●		4.76	1.79	0.1	2.4
CCET04T002MR-SRF*	F	●		4.76	1.79	0.2	2.4
CCET04T002ML-SRF*	F	●		4.76	1.79	0.2	2.4
CCET04T004MR-SRF*	F	●		4.76	1.79	0.4	2.4
CCET04T004ML-SRF*	F	●		4.76	1.79	0.4	2.4
CCMT060202-LP	L	●	●	6.35	2.38	0.2	2.8
CCMT060204-LP	L	●	●	6.35	2.38	0.4	2.8
CCMT09T302-LP	L	●	●	9.525	3.97	0.2	4.4
CCMT09T304-LP	L	●	●	9.525	3.97	0.4	4.4
CCMT09T308-LP	L	●	●	9.525	3.97	0.8	4.4
CCMT060202-SW	L	●	●	6.35	2.38	0.2	2.8
CCMT060204-SW	L	●	●	6.35	2.38	0.4	2.8
CCMT060208-SW	L	●	●	6.35	2.38	0.8	2.8
CCMT09T302-SW	L	●	●	9.525	3.97	0.2	4.4
CCMT09T304-SW	L	●	●	9.525	3.97	0.4	4.4
CCMT09T308-SW	L	●	●	9.525	3.97	0.8	4.4

1/2

(10 inserts in one case)

* Diameter of inscribed circle is special. (For Micro-Dex)
 ● : Inventory maintained. ★ : Inventory maintained in Japan.

MP/MX3115 – 7° POSITIVE INSERTS (WITH HOLE)

Order number		MP3115	MX3115	IC	S	RE	D1
CCET060201MR-SS	L	●		6.35	2.38	0.1	2.8
CCET060201ML-SS	L	●		6.35	2.38	0.1	2.8
CCET060202MR-SS	L	●		6.35	2.38	0.2	2.8
CCET060202ML-SS	L	●		6.35	2.38	0.2	2.8
CCET060204MR-SS	L	●		6.35	2.38	0.4	2.8
CCET060204ML-SS	L	●		6.35	2.38	0.4	2.8
CCET09T301MR-SS	L	●		9.525	3.97	0.1	4.4
CCET09T301ML-SS	L	●		9.525	3.97	0.1	4.4
CCET09T302MR-SS	L	●		9.525	3.97	0.2	4.4
CCET09T302ML-SS	L	●		9.525	3.97	0.2	4.4
CCET09T304MR-SS	L	●		9.525	3.97	0.4	4.4
CCET09T304ML-SS	L	●		9.525	3.97	0.4	4.4
CCMT060202-MP	M	●	●	6.35	2.38	0.2	2.8
CCMT060204-MP	M	●	●	6.35	2.38	0.4	2.8
CCMT09T302-MP	M	●	●	9.525	3.97	0.2	4.4
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
CCGT060201-MP	M	●		6.35	2.38	0.1	2.8
CCGT060202-MP	M	●		6.35	2.38	0.2	2.8
CCGT060204-MP	M	●		6.35	2.38	0.4	2.8
CCGT09T301-MP	M	●		9.525	3.97	0.1	4.4
CCGT09T302-MP	M	●		9.525	3.97	0.2	4.4
CCGT09T304-MP	M	●		9.525	3.97	0.4	4.4

2/2

(10 inserts in one case)

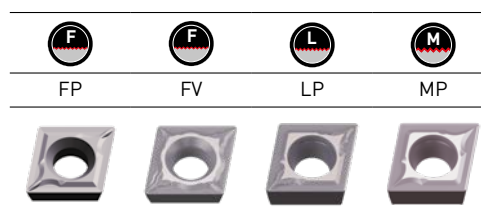
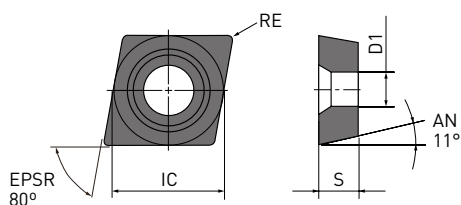


MP / MX3115

11° POSITIVE INSERTS (WITH HOLE)

M Class

CPMH



Order number		MP3115	MX3115	IC	S	RE	D1
CPMH080202-FP	F	★	●	7.94	2.38	0.2	3.5
CPMH080204-FP	F	★	●	7.94	2.38	0.4	3.5
CPMH090302-FP	F	★	●	9.525	3.18	0.2	4.6
CPMH090304-FP	F	★	●	9.525	3.18	0.4	4.6
CPMH090308-FP	F	★	●	9.525	3.18	0.8	4.6
CPMH080204-FV	F	★	●	7.94	2.38	0.4	3.5
CPMH090304-FV	F	★	●	9.525	3.18	0.4	4.6
CPMH090308-FV	F	★	●	9.525	3.18	0.8	4.6
CPMH080204-LP	L	★	●	7.94	2.38	0.4	3.5
CPMH080208-LP	L	★	●	7.94	2.38	0.8	3.5
CPMH090304-LP	L	★	●	9.525	3.18	0.4	4.6
CPMH090308-LP	L	★	●	9.525	3.18	0.8	4.6
CPMH080204-MP	M	★	●	7.94	2.38	0.4	3.5
CPMH080208-MP	M	★	●	7.94	2.38	0.8	3.5
CPMH090304-MP	M	★	●	9.525	3.18	0.4	4.6
CPMH090308-MP	M	★	●	9.525	3.18	0.8	4.6

1/1

[10 inserts in one case]

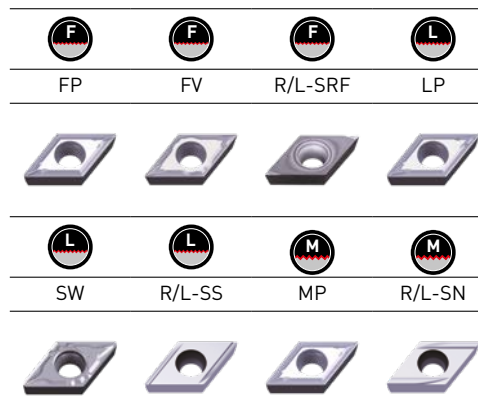
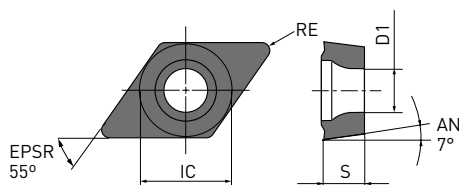


MP / MX3115

7° POSITIVE INSERTS (WITH HOLE)

E Class, G Class, M Class

DCMT, DCET, DCGT, DCMX



Order number		MP3115	MX3115	IC	S	RE	D1
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
DCMT070202-FV	F	●	●	6.35	2.38	0.2	2.8
DCMT070204-FV	F	●	●	6.35	2.38	0.4	2.8
DCMT11T304-FV	F	●	●	9.525	3.97	0.4	4.4
DCMT11T308-FV	F	●	●	9.525	3.97	0.8	4.4
DCET070201MR-SRF	F	●	●	6.35	2.38	0.1	2.8
DCET070201ML-SRF	F	●	●	6.35	2.38	0.1	2.8
DCET070202MR-SRF	F	●	●	6.35	2.38	0.2	2.8
DCET070202ML-SRF	F	●	●	6.35	2.38	0.2	2.8
DCET070204MR-SRF	F	●	●	6.35	2.38	0.4	2.8
DCET070204ML-SRF	F	●	●	6.35	2.38	0.4	2.8
DCET11T301MR-SRF	F	●	●	9.525	3.97	0.1	4.4
DCET11T301ML-SRF	F	●	●	9.525	3.97	0.1	4.4
DCET11T302MR-SRF	F	●	●	9.525	3.97	0.2	4.4
DCET11T302ML-SRF	F	●	●	9.525	3.97	0.2	4.4
DCET11T304MR-SRF	F	●	●	9.525	3.97	0.4	4.4
DCET11T304ML-SRF	F	●	●	9.525	3.97	0.4	4.4
DCMT070202-LP	L	●	●	6.35	2.38	0.2	2.8
DCMT070204-LP	L	●	●	6.35	2.38	0.4	2.8
DCMT070208-LP	L	●	●	6.35	2.38	0.8	2.8
DCMT11T302-LP	L	●	●	9.525	3.97	0.2	4.4
DCMT11T304-LP	L	●	●	9.525	3.97	0.4	4.4
DCMT11T308-LP	L	●	●	9.525	3.97	0.8	4.4
DCMX070202-SW	L	●	●	6.35	2.38	0.2	2.8
DCMX070204-SW	L	●	●	6.35	2.38	0.4	2.8
DCMX070208-SW	L	●	●	6.35	2.38	0.8	2.8
DCMX11T302-SW	L	●	●	9.525	3.97	0.2	4.4
DCMX11T304-SW	L	●	●	9.525	3.97	0.4	4.4
DCMX11T308-SW	L	●	●	9.525	3.97	0.8	4.4

1/2

[10 inserts in one case]



MP/MX3115 – 7° POSITIVE INSERTS (WITH HOLE)

Order number		MP3115	MX3115	IC	S	RE	D1
DCET070201MR-SS	L	●		6.35	2.38	0.1	2.8
DCET070201ML-SS	L	●		6.35	2.38	0.1	2.8
DCET070202MR-SS	L	●		6.35	2.38	0.2	2.8
DCET070202ML-SS	L	●		6.35	2.38	0.2	2.8
DCET11T301MR-SS	L	●		9.525	3.97	0.1	4.4
DCET11T301ML-SS	L	●		9.525	3.97	0.1	4.4
DCET11T302MR-SS	L	●		9.525	3.97	0.2	4.4
DCET11T302ML-SS	L	●		9.525	3.97	0.2	4.4
DCET11T304MR-SS	L	●		9.525	3.97	0.4	4.4
DCET11T304ML-SS	L	●		9.525	3.97	0.4	4.4
DCMT070202-MP	M	●	●	6.35	2.38	0.2	2.8
DCMT070204-MP	M	●	●	6.35	2.38	0.4	2.8
DCMT070208-MP	M	●	●	6.35	2.38	0.8	2.8
DCMT11T302-MP	M	●	●	9.525	3.97	0.2	4.4
DCMT11T304-MP	M	●	●	9.525	3.97	0.4	4.4
DCMT11T308-MP	M	●	●	9.525	3.97	0.8	4.4
DCGT070201-MP	M	●		6.35	2.38	0.1	2.8
DCGT070202-MP	M	●		6.35	2.38	0.2	2.8
DCGT070204-MP	M	●		6.35	2.38	0.4	2.8
DCGT11T301-MP	M	●		9.525	3.97	0.1	4.4
DCGT11T302-MP	M	●		9.525	3.97	0.2	4.4
DCGT11T304-MP	M	●		9.525	3.97	0.4	4.4
DCET11T301MR-SN	M	●		9.525	3.97		4.4
DCET11T301ML-SN	M	●		9.525	3.97		4.4
DCET11T302MR-SN	M	●		9.525	3.97		4.4
DCET11T302ML-SN	M	●		9.525	3.97		4.4
DCET11T304MR-SN	M	●		9.525	3.97		4.4
DCET11T304ML-SN	M	●		9.525	3.97		4.4

2/2

(10 inserts in one case)

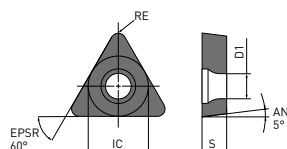


MP/MX3115

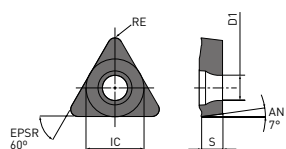
5°, 7°, 11° POSITIVE INSERTS (WITH HOLE)

G Class, M Class

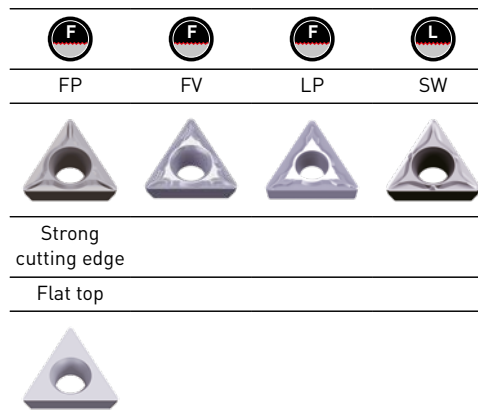
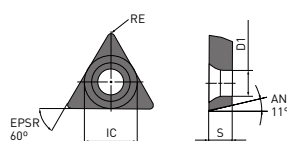
TBMT



TCMT, TCMX



TPMH, TPMX, TPGB



Order number		MP3115	MX3115	IC	S	RE	D1
TBMT060102-FV	F	★	●	3.97	1.59	0.2	2.3
TBMT060104-FV	F	★	●	3.97	1.59	0.4	2.3
TCMT090202-LP	L	●	●	5.56	2.38	0.2	2.5
TCMT090204-LP	L	●	●	5.56	2.38	0.4	2.5
TCMT110202-LP	L	●	●	6.35	2.38	0.2	2.8
TCMT110204-LP	L	●	●	6.35	2.38	0.4	2.8
TCMT110208-LP	L	●	●	6.35	2.38	0.8	2.8
TCMX090204-SW	L	●	●	5.56	2.38	0.4	2.5
TCMX110204-SW	L	●	●	6.35	2.38	0.4	2.8
TPMH090202-FP	F	★	●	5.56	2.38	0.2	2.9
TPMH090204-FP	F	★	●	5.56	2.38	0.4	2.9
TPMH110302-FP	F	★	●	6.35	3.18	0.2	3.4
TPMH110304-FP	F	★	●	6.35	3.18	0.4	3.4
TPMH110308-FP	F	★	●	6.35	3.18	0.8	3.4
TPMH080202-FV	F	●	●	4.76	2.38	0.2	2.4
TPMH080204-FV	F	●	●	4.76	2.38	0.4	2.4
TPMH090202-FV	F	★	●	5.56	2.38	0.2	2.9
TPMH090204-FV	F	★	●	5.56	2.38	0.4	2.9
TPMH110304-FV	F	★	●	6.35	3.18	0.4	3.4
TPMH110308-FV	F	★	●	6.35	3.18	0.8	3.4
TPMH160304-FV	F	★	●	9.525	3.18	0.4	4.4
TPMH090202-LP	L	★	●	5.56	2.38	0.2	2.9
TPMH090204-LP	L	★	●	5.56	2.38	0.4	2.9
TPMH110302-LP	L	★	●	6.35	3.18	0.2	3.4
TPMH110304-LP	L	★	●	6.35	3.18	0.4	3.4
TPMH110308-LP	L	★	●	6.35	3.18	0.8	3.4
TPMH160302-LP	L	★	●	9.525	3.18	0.2	4.4
TPMH160304-LP	L	★	●	9.525	3.18	0.4	4.4

1/2

(10 inserts in one case)

17 

MP/MX3115 – 5°, 7°, 11° POSITIVE INSERTS (WITH HOLE)

Order number		MP3115	MX3115	IC	S	RE	D1
TPMH160308-LP	L	★	●	9.525	3.18	0.8	4.4
TPMX090202-SW	L	★	●	5.56	2.38	0.2	2.9
TPMX090204-SW	L	★	●	5.56	2.38	0.4	2.9
TPMX090208-SW	L	★	●	5.56	2.38	0.8	2.9
TPMX110302-SW	L	★	●	6.35	3.18	0.2	3.4
TPMX110304-SW	L	★	●	6.35	3.18	0.4	3.4
TPMX110308-SW	L	★	●	6.35	3.18	0.8	3.4
TPGB110201		●		6.35	2.38	0.1	3.7
TPGB110202		●		6.35	2.38	0.2	3.7
TPGB110204		●		6.35	2.38	0.4	3.7
TPGB160304		●		9.525	3.18	0.4	4.4
TPGB160308		●		9.525	3.18	0.8	4.4
2/2							

(10 inserts in one case)

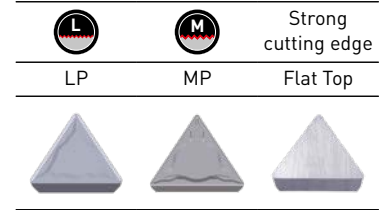
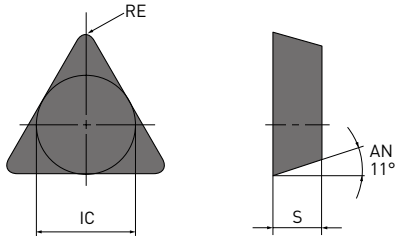


MP / MX3115

11° POSITIVE INSERTS (WITHOUT HOLE)

G Class, M Class

TPMR, TPGN



Order number		MP3115	MX3115	IC	S	RE	D1
TPMR160304-LP	L	●	●	9.525	3.18	0.4	
TPMR160308-LP	L	●	●	9.525	3.18	0.8	
TPMR110304-MP	M	●	●	6.35	3.18	0.4	
TPMR110308-MP	M	●	●	6.35	3.18	0.8	
TPMR160304-MP	M	●	●	9.525	3.18	0.4	
TPMR160308-MP	M	●	●	9.525	3.18	0.8	
TPGN110302		●		6.35	3.18	0.2	
TPGN110304		●		6.35	3.18	0.4	
TPGN110308		●		6.35	3.18	0.8	
TPGN160304		●		9.525	3.18	0.4	
TPGN160308		●		9.525	3.18	0.8	

1/1

[10 inserts in one case]



MP/MX3115

RECOMMENDED CUTTING CONDITIONS

NEGATIVE INSERTS (FOR EXTERNAL TURNING)

Material		Properties	Conditions		Grade		Vc	f	ap
P	Mild steel	≤180 HB		F	MP3115	R/L-F	285 – 410	0.05 – 0.12	0.10 – 0.50
				F	MX3115	R/L-F	270 – 360	0.05 – 0.12	0.10 – 0.50
	Carbon and alloy steel	180 – 280 HB		F	MP3115	R/L-F	210 – 305	0.05 – 0.12	0.10 – 0.50
				F	MX3115	R/L-F	200 – 265	0.05 – 0.12	0.10 – 0.50
		280 – 350HB		F	MP3115	R/L-F	145 – 215	0.05 – 0.12	0.10 – 0.50
				F	MX3115	R/L-F	140 – 190	0.05 – 0.12	0.10 – 0.50

1/1

1/1

7° POSITIVE INSERTS (FOR EXTERNAL TURNING)

Material	Properties	Conditions	F L M R H	Grade		Vc	f	ap	
P	Mild steel	≤180 HB		F	MP3115	FP, FV	285 – 410	0.04 – 0.20	0.20 – 0.90
					MX3115	FP, FV	270– 360	0.04 – 0.20	0.20 – 0.90
					MP3115	R/L-SRF	285 – 410	0.05 – 0.12	0.20 – 0.60
				L	MP3115	LP	285 – 410	0.06 – 0.25	0.20 – 1.00
					MX3115	LP	270– 360	0.06 – 0.25	0.20 – 1.00
					MP3115	R/L-SS	285 – 410	0.01 – 0.09	0.10 – 5.00
					MP3115	SW	285 – 410	0.06 – 0.24	0.20 – 1.50
					MX3115	SW	270– 360	0.06 – 0.24	0.20 – 1.50
					M	MP3115	MP	235 – 345	0.08 – 0.30
			MX3115	MP		225 – 300	0.08 – 0.30	0.30 – 2.00	
			MP3115	R/L-SN		235 – 345	0.01 – 0.10	0.10 – 5.00	
				F	MP3115	FP, FV	285 – 410	0.04 – 0.20	0.20 – 0.90
					MX3115	FP, FV	270– 360	0.04 – 0.20	0.20 – 0.90
					MP3115	FP, FV	210 – 305	0.04 – 0.20	0.20 – 0.90
				F	MX3115	FP, FV	200 – 265	0.04 – 0.20	0.20 – 0.90
					MP3115	R/L-SRF	210 – 305	0.05 – 0.12	0.20 – 0.60
					MP3115	LP	210 – 305	0.06 – 0.25	0.20 – 1.00
				L	MX3115	LP	200 – 265	0.06 – 0.25	0.20 – 1.00
		MP3115			R/L-SS	210 – 305	0.05 – 0.12	0.20 – 0.60	
		MP3115			SW	210 – 305	0.06 – 0.24	0.20 – 1.50	
		MX3115	SW		200 – 265	0.06 – 0.24	0.20 – 1.50		
		M	MP3115		MP	175 – 255	0.08 – 0.30	0.30 – 2.00	
			MX3115		MP	165 – 220	0.08 – 0.30	0.30 – 2.00	
			MP3115	R/L-SN	175 – 255	0.01 – 0.10	0.10 – 5.00		
			F	MP3115	FP, FV	210 – 305	0.04 – 0.20	0.20 – 0.90	
				MX3115	FP, FV	200 – 265	0.04 – 0.20	0.20 – 0.90	

1/1

1/1

MP/MX3115 - 7° POSITIVE INSERTS (FOR EXTERNAL TURNING)

Material	Properties	Conditions	F L M R H	Grade		Vc	f	ap	
P Carbon and alloy steel	≤180 HB			F	MP3115	FP, FV	145 – 215	0.04 – 0.20	0.20 – 0.90
					MX3115	FP, FV	140 – 190	0.04 – 0.20	0.20 – 0.90
					MP3115	R/L-SRF	145 – 215	0.05 – 0.12	0.20 – 0.60
					L	MP3115	LP	145 – 215	0.06 – 0.25
				MX3115		LP	140 – 190	0.06 – 0.25	0.20 – 1.00
					MP3115	R/L-SS	145 – 215	0.01 – 0.09	0.10 – 5.00
					MP3115	SW	145 – 215	0.06 – 0.24	0.20 – 1.50
					MX3115	SW	140 – 190	0.06 – 0.24	0.20 – 1.50
					M	MP3115	MP	120 – 180	0.08 – 0.30
				MX3115		MP	115 – 155	0.08 – 0.30	0.30 – 2.00
				MP3115	R/L-SN	120 – 180	0.01 – 0.10	0.10 – 5.00	
					F	MP3115	FP, FV	145 – 215	0.04 – 0.20
		MX3115	FP, FV			140 – 190	0.04 – 0.20	0.20 – 0.90	

1/1

1/1

11° POSITIVE INSERTS (FOR EXTERNAL TURNING)

Material		Properties	Conditions	F L M R H	Grade		Vc	f	ap			
Mild steel	≤180 HB		F	MP3115	FP, FV	285 – 410	0.04 – 0.20	0.20 – 0.90				
				MX3115	FP, FV	270 – 360	0.04 – 0.20	0.20 – 0.90				
				L	MP3115	LP	285 – 410	0.06 – 0.25	0.20 – 1.00			
					MX3115	LP	270 – 360	0.06 – 0.25	0.20 – 1.00			
					MP3115	SW	285 – 410	0.06 – 0.24	0.20 – 1.50			
					MX3115	SW	270 – 360	0.06 – 0.24	0.20 – 1.50			
			M	MP3115	MP	235 – 345	0.08 – 0.30	0.30 – 2.00				
				MX3115	MP	225 – 300	0.08 – 0.30	0.30 – 2.00				
				F	MP3115	FP, FV	285 – 410	0.04 – 0.20	0.20 – 0.90			
					MX3115	FP, FV	270 – 360	0.04 – 0.20	0.20 – 0.90			
				Carbon and alloy steel	180 – 280 HB		F	MP3115	FP, FV	210 – 305	0.04 – 0.20	0.20 – 0.90
								MX3115	FP, FV	200 – 265	0.04 – 0.20	0.20 – 0.90
L	MP3115	LP					210 – 305	0.06 – 0.25	0.20 – 1.00			
	MX3115	LP					200 – 265	0.06 – 0.25	0.20 – 1.00			
MP3115	SW	210 – 305	0.06 – 0.24				0.20 – 1.50					
	MX3115	SW	200 – 265				0.06 – 0.24	0.20 – 1.50				
Carbon and alloy steel	280 – 350HB		M	MP3115	MP	175 – 255	0.08 – 0.30	0.30 – 2.00				
				MX3115	MP	165 – 220	0.08 – 0.30	0.30 – 2.00				
				F	MP3115	FP, FV	210 – 305	0.04 – 0.20	0.20 – 0.90			
					MX3115	FP, FV	200 – 265	0.04 – 0.20	0.20 – 0.90			
			F	MP3115	FP, FV	145 – 215	0.04 – 0.20	0.20 – 0.90				
				MX3115	FP, FV	140 – 190	0.04 – 0.20	0.20 – 0.90				
				L	MP3115	LP	145 – 215	0.06 – 0.25	0.20 – 1.00			
					MX3115	LP	140 – 190	0.06 – 0.25	0.20 – 1.00			
				MP3115	SW	145 – 215	0.06 – 0.24	0.20 – 1.50				
					MX3115	SW	140 – 190	0.06 – 0.24	0.20 – 1.50			
			M	MP3115	MP	120 – 180	0.08 – 0.30	0.30 – 2.00				
				MX3115	MP	115 – 155	0.08 – 0.30	0.30 – 2.00				
F	MP3115	FP, FV		145 – 215	0.04 – 0.20	0.20 – 0.90						
	MX3115	FP, FV		140 – 190	0.04 – 0.20	0.20 – 0.90						

1/

1/1

MP / MX3115 – 5° 7° POSITIVE INSERTS (FOR INTERNAL TURNING)

Material		Properties	Conditions		Grade		Vc	f	ap
P	Mild steel	≤180 HB		F	MP3115	FV	285 – 410	0.04 – 0.20	0.20 –0.90
					MX3115	FV	270– 360	0.04 – 0.20	0.20 –0.90
				F	MP3115	FV	285 – 410	0.04 – 0.20	0.20 –0.90
					MX3115	FV	270– 360	0.04 – 0.20	0.20 –0.90
	Carbon and alloy steel	180 – 280 HB		F	MP3115	FV	210 – 305	0.04 – 0.20	0.20 –0.90
					MX3115	FV	200 – 265	0.04 – 0.20	0.20 –0.90
				F	MP3115	FV	210 – 305	0.04 – 0.20	0.20 –0.90
					MX3115	FV	200 – 265	0.04 – 0.20	0.20 –0.90
	Carbon and alloy steel	280 – 350HB		F	MP3115	FV	145 – 215	0.04 – 0.20	0.20 –0.90
					MX3115	FV	140 – 190	0.04 – 0.20	0.20 –0.90
				F	MP3115	FV	145 – 215	0.04 – 0.20	0.20 –0.90
					MX3115	FV	140 – 190	0.04 – 0.20	0.20 –0.90

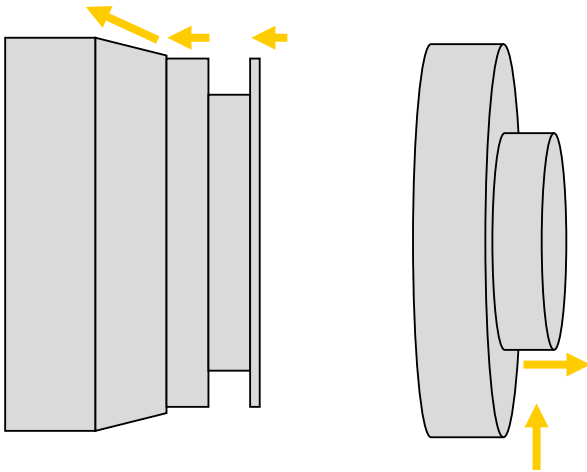
1/1

1/1

MP/MX3115

APPLICATION EXAMPLES

FRONT TURNING



WHEN MACHINING FREE-CUTTING STEEL SUM22, TOOL COMPENSATION WAS REDUCED BY 33%

AFTER MACHINING 1000 PIECES



MP3115

Tool offset amount:
X=46 μ m, Z=40 μ m



Conventional

Tool offset amount:
X=65 μ m, Z= 75 μ m

Tool	DCMT11T302-FP MP3115
Material	9SMn28 (1.0715)
Vc (m/min)	240
f (mm/rev)	0.05 – 0.07
ap (mm)	0.18
Cutting mode	Wet cutting

REDUCED CHIPPING AND WEAR WHEN MACHINING CARBON STEEL S43S2

AFTER MACHINING 7000 PIECES



MP3115



Conventional

Tool	DCMT11T302-FP MP3115
Material	C45
Vc (m/min)	180 – 200
f (mm/rev)	0.07
ap (mm)	0.18
Cutting mode	Wet cutting

SYMBOLS

 Recommended cutting conditions	MACHINING TYPE
NEW Completely new products or expansions released in the current Spring or Autumn product launch and are not included in the latest version of the General Catalogue.	 Roughing
NEW Products or expansions that have already been introduced in one of the previous Spring or Autumn product launches but are not included in the latest General Catalogue.	 Medium cutting
APPLICATION	 Light cutting
 Face milling	 Pre-finishing
 Chamfer milling	 Finishing
 Shoulder milling with R	 Fine-finishing
 Face milling close to a wall	TOOL MATERIAL
 Shoulder milling	 Ultra micro grain carbide Ultra micro grain carbide substrate material.
 Side milling	 Cubic boron nitride Mitsubishi Materials' original CBN material.
 Slot milling	 Ceramic For high speed efficient machining of super alloys due to the excellent high temperature strength property.
 Ramping	 High hardness powder metallurgy HSS High hardness powder metallurgy HSS substrate material.
 Pocket milling	 High grade high alloy HSS High grade high alloy HSS substrate material.
 Slot milling with R	 Cobalt high speed steel Cobalt high speed steel substrate material.
 Copy milling	 High speed steel High speed steel substrate material.
 T-Slot milling	

SYMBOLS

COATING



SMART MIRACLE coating

New smooth and dense coating technology for high efficiency milling of difficult to cut materials.



CRN coating

Newly developed CrN coating for Copper Electrodes machining.



Violet coating

Increased tool life of 2-3 times more than TiN coated products.



DP coating

New generation coating suitable for a wide range of materials.



MIRACLE coating

The original Miracle (Al,Ti)N coating. Also suitable for dry cutting.



[Al, Ti]N coating

[Al,Ti]N highly versatile application range.



[Al,Ti,Cr]N multi-layer coating

For carbon, alloy and hardened steels.



IMPACT MIRACLE coating

Single phase nano crystal coating technology has higher film hardness and heat resistance.



MIRACLE coating

The original MIRACLE (Al,Ti)N coating. Also suitable for dry cutting.



VFR coating

The [AlCrSi]N/[AlTiSi]N PVD multilayer coating is ideal for machining of extremely hard materials up to 70 HRC.



DLC coating

Hardness similar to CVD diamond coating achieved with high adhesion strength.



Diamond coating

Suitable for CFRP and CFRP-aluminium materials.



Diamond coating

Suitable for graphite machining.



Diamond coating

The original CVD diamond coating.



CVD Diamond coating

Unique multi-layer micro-grain diamond crystal control technology drastically improves wear resistance and smoothness.

CUTTING EDGE PROPERTIES



Sharp corner edge

Indicates the end mill has a sharp corner edge.



Gash land

Indicates the end mill cutting edge has a protective chamfer.



Rake angle



Helix angle

Indicates the helix angle of the end mill.



Point angle

Indicates the drill point angle.



Roughing flute geometry



Variable helix



Rounded gash



Corner angle

WEB THINNING



X type point geometry

X web thinning used at the drill point.



XR type point geometry

XR web thinning used at the drill point.



S type point geometry

Easy cutting geometry.



N type point geometry

Effective when the point web is thick.



Chipbreaker

SYMBOLS

TOLERANCES



Tolerance of taper angle
Indicates the tolerance of the taper angle.



R tolerance
Indicates the radial tolerance of a ball nose end mill.



R tolerance
Indicates the radial tolerance of the corner radius.



R tolerance
Indicates the radial tolerance of a cutter with a corner radius.



Outside diameter tolerance
Indicates the diameter tolerance of the end mill.



Peak tolerance
Indicates the tolerance for the end diameter.



Shank diameter tolerance



Shank diameter tolerance



Drill tolerance / diameter

COOLANT HOLES



External coolant



Internal coolant



Internal coolant



Centered, internal coolant hole



Radial, internal coolant holes



Internal coolant holes



Internal coolant holes

EUROPEAN SALES COMPANIES

GERMANY

MITSUBISHI MATERIALS TOOLS EUROPE GMBH
Comeniusstr. 2 . 40670 Meerbusch
Phone +49 2159 91890 . Fax +49 2159 918966
Email admin@mmchg.de

UK Office

MMC HARDMETAL UK LTD
1 Centurion Court, Centurion Way
Tamworth, B77 5PN
Phone +44 1827 312312
Email sales@mitsubishicarbide.co.uk

UK Deliveries / Returns

Unit 4 B5K Business Park, Quartz Close
Tamworth, B77 4GR

SPAIN

MITSUBISHI MATERIALS ESPAÑA, S.A.
Calle Emperador 2 . 46136 Museros / Valencia
Phone +34 96 1441711
Email comercial@mmevalencia.es

FRANCE

MMC METAL FRANCE S.A.R.L.
6, Rue Jacques Monod . 91400 Orsay
Phone +33 1 69 35 53 53 . Fax +33 1 69 35 53 50
Email mmfsales@mmc-metal-france.fr

POLAND

MMC HARDMETAL POLAND SP. Z O.O.
ul. Strzegomska 42B . 53-611 Wrocław . Millennium Tower II, 2 piętro, biuro nr 2.12
Phone +48 71335 1620 . Fax +48 71335 1621
Email sales@mitsubishicarbide.com.pl

ITALY

MMC ITALIA S.R.L.
Viale Certosa 144 . 20156 Milano
Phone +39 0293 77031 . Fax +39 0293 589093
Email info@mmc-italia.it

TURKEY

MITSUBISHI MATERIALS TOOLS EUROPE GMBH ALMANYA İZMİR MERKEZ ŞUBESİ
Adalet Mahallesi Anadolu Caddesi No: 41-1 . 15001 35530 Bayraklı / İzmir
Phone +90 232 5015000 . Fax +90 232 5015007
Email info@mmchg.com.tr

www.mmc-carbide.com

DISTRIBUTED BY:

┌

┐

└

┘