



PR015S

Insert Grade for Machining Hardened Material



Provides Long Tool Life and Stable Machining in Hardened Material

Excellent Thermal Properties Reduce Notch Wear

Improved Wear Resistance with MEGACOAT HARD Coating

Stable Machining with Tough Edge GH Chipbreaker

MEW

90° Milling Cutter



LOMU10/15 Type

MFPN66

66° Milling Cutter



PNMU09 Type

MFPN45

45° Milling Cutter



PNMU12 Type

MFSN88

88° Milling Cutter



SNMU13 Type

MFWN

90° Milling Cutter



WNMU08 Type

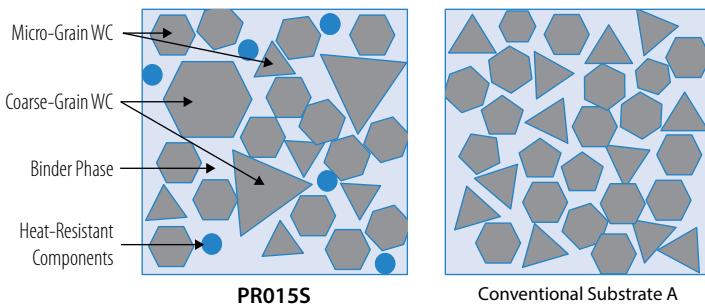
PR015S

Insert Grade for Machining Hardened Metal

Provides Long Tool Life and Stable Machining in Hardened Material

Excellent Thermal Properties and Improved Wear Resistance with MEGACOAT HARD Coating

1 Improved thermal properties reduce sudden fracturing and decrease notch wear

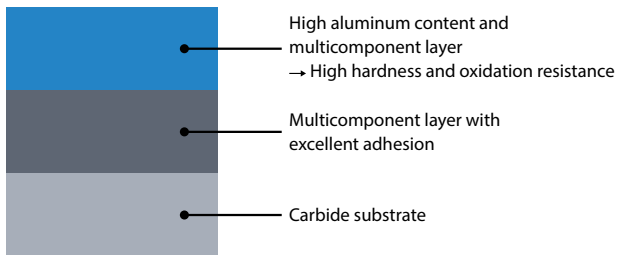


Improved thermal conductivity by optimum distribution of WC coarse grains

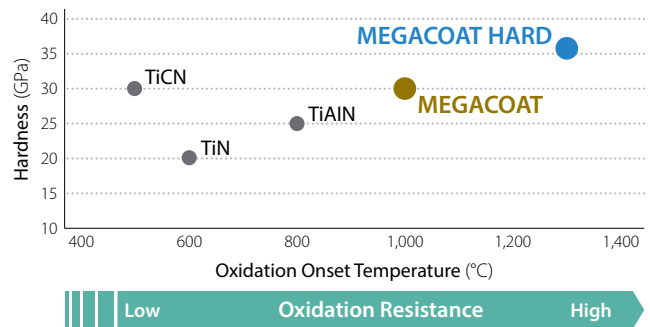
Resists heat concentration at the cutting edge to promote stable machining

2 Improved wear resistance with MEGACOAT HARD coating

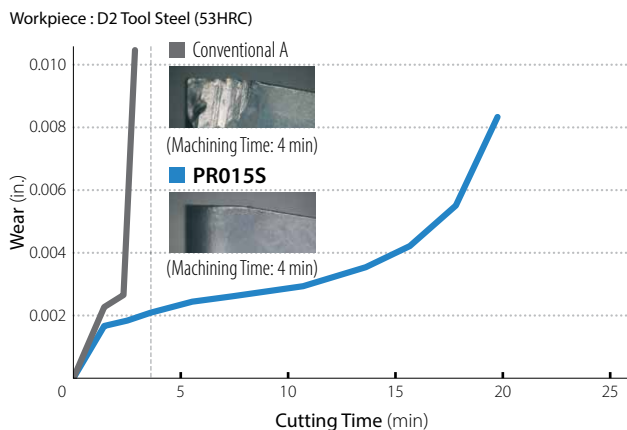
MEGACOAT HARD: High hardness and high heat-resistant PVD layer



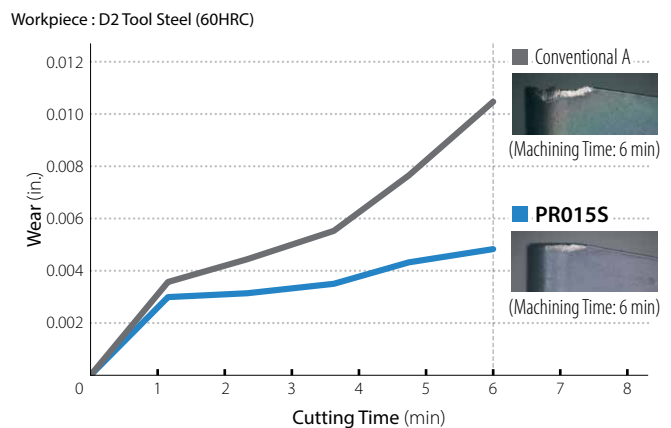
Coating Film Property (Internal Evaluation)



Wear Resistance Comparison (Internal Evaluation)



Cutting Conditions: $V_c = 330$ sfm, D.O.C. $x a_e = 0.039'' \times 1.772''$, $f_z = 0.008$ ipt, Dry



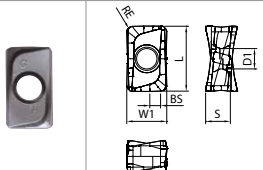
Cutting Conditions: $V_c = 330$ sfm, D.O.C. $x a_e = 0.039'' \times 0.394''$, $f_z = 0.002$ ipt, Dry

MEW

90° Milling with Double-Sided 4-edge Inserts

Low Cutting Forces Equivalent to Positive Inserts
Chattering Resistance for Excellent Surface Finish
Economical 4-edge Insert
Improved Toolholder Durability and Insert Installation Accuracy

Standard Items

Shape	Part Number	Dimensions (mm)						Grade	Applicable Toolholders
		W1	S	D1	L	BS	RE		
	LOMU 100408ER-GH	6.6	4.0	3.4	10.9	1.7	0.8	●	MEW...-10-...
	LOMU 150508ER-GH	9.2	5.6	4.8	15.7	1.8	0.8	●	MEW...-15-...

● : Standard Item



Face Mills : $\phi 32\text{mm} \sim \phi 80\text{mm}$,
 $\phi 1.50'' \sim \phi 4.00''$

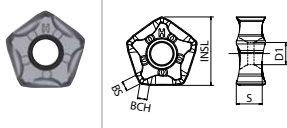
End Mills : $\phi 16\text{mm} \sim \phi 50\text{mm}$
 $\phi 0.625'' \sim \phi 1.50''$

MFPN66

High Efficiency Cutter with a 66° Cutting Edge Angle

Economical Inserts with 10 Cutting Edges
Reduces Chattering with Low Cutting Force Design
Reduces Cutting Costs when Machining Auto Parts
and Other General Purpose Machining Applications

Standard Items

Shape	Part Number	Dimensions (mm)					Grade	Applicable Toolholders
		INSL	S	D1	BCH	BS		
	PNMU 0905XNER-GH	14.6	5.56	4.7	2.0	2.0	●	MFPN66...

● : Standard Item



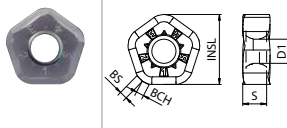
Face Mills : $\phi 50\text{mm} \sim \phi 160\text{mm}$
End Mills : $\phi 32\text{mm}$, $\phi 40\text{mm}$

MFPN45

45° Milling with Double-Sided 10-edge Inserts

Reduced Chattering with Low Cutting Force Design
Excellent Fracture Resistance
Economical Inserts with 10 Cutting Edges
Suppresses Fracturing with Dual Angle Edge Design

Standard Items

Shape	Part Number	Dimensions (mm)					Grade	Applicable Toolholders
		INSL	S	D1	BCH	BS		
	PNMU 1205ANER-GH	17.98	6.17	6.2	2.0	2.0	●	MFPN45...

● : Standard Item



Face Mills : $\phi 63\text{mm} \sim \phi 315\text{mm}$
 $\phi 2.00'' \sim \phi 10.00''$

End Mills : $\phi 50\text{mm}$, $\phi 63\text{mm}$, $\phi 80\text{mm}$
 $\phi 2.00'' \sim \phi 2.50'' \sim \phi 3.00''$

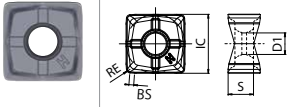
For more details on toolholders, see the KYOCERA general product catalog or product brochures

MFSN88

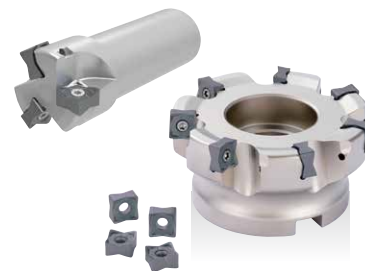
High Efficiency Cutter with a 88°Cutting Edge Angle

Economical Inserts with 8 Cutting Edges
Reduces Chattering with Low Cutting Force Design
Suitable for Shoulder Roughing
Cost Reduction in Approximately 90°Corner Cutting

Standard Items

Shape	Part Number	Dimensions (mm)					Grade	Applicable Toolholders
		IC	S	D1	BS	RE	PR015S	
	SNMU 130508EN-GH	13	5.51	4.7	1.0	0.8	●	MFSN88...

● : Standard Item



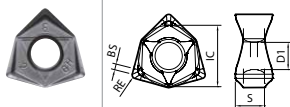
Face Mills : $\phi 50\text{mm} \sim \phi 160\text{mm}$
End Mills : $\phi 32\text{mm}, \phi 40\text{mm}$

MFWN

Double-sided 6-edge Insert, Low Cutting Force 90° Cutter

Economical Double-sided 6-edge Insert
Superior Fracture Resistance due to Thick Edge Design
Sharp Cutting with Lower Cutting Forces
Resistant to Chattering and Applicable to Long Overhang

Stock Items

Shape	Part Number	Dimensions (mm)					Grade	Applicable Toolholders
		IC	S	D1	BS	RE	PR015S	
	WNMU 080608EN-GH	14.02	6.65	6.2	1.3	0.8	●	MFWN90...

● : Standard Item



Face Mills : $\phi 63\text{mm} \sim \phi 250\text{mm}$
 $2.00" \sim 10.00"$
End Mills : $\phi 50\text{mm}, \phi 63\text{mm}, \phi 80\text{mm}$
 $2.00" \sim 2.50" \sim 3.00"$

For more details on toolholders, see the KYOCERA general product catalog or product brochures

Recommended Cutting Conditions

Part Number	fz (ipt)	Cutting Speed (Vc : sfm)
LOMU 100408ER-GH	0.002~ 0.003 ~0.005	200~ 260 ~330
LOMU 150508ER-GH	0.003~ 0.006 ~0.009	200~ 260 ~330
PNMU 0905XNER-GH	0.002~ 0.003 ~0.006	160~ 260 ~330
PNMU 1205ANER-GH	0.002~ 0.004 ~0.008	160~ 260 ~330
SNMU 130508EN-GH	0.004~ 0.008 ~0.012	160~ 260 ~330
WNMU 080608EN-GH	0.002~ 0.004 ~0.008	260~ 330 ~390

(60HRC or less)



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