

THE NEW VALUE FRONTIER



Insert Grade for Machining
Hardened Material

PR015S

Insert Grade for Machining Hardened Material

PR015S

NEW



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

High-Efficiency 90° Milling Cutter

MEW



LOMU10/15 Type

High-Efficiency 45° Milling Cutter

MFPN45



PNMU12 Type

Low Cutting Force 90° Milling Cutter

MFWN



WNMU08 Type

Highly Efficient Cutter with a 66° Cutting Edge Angle

MFPN66



PNMU09 Type

Highly Efficient Cutter with a 88° Cutting Edge Angle

MFSN88



SNMU13 Type

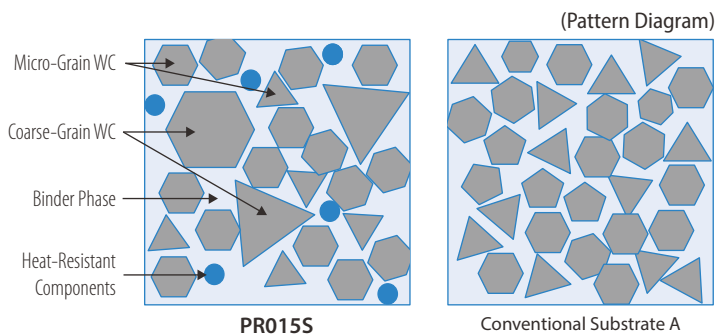
Insert Grade for Machining Hardened Material

PR015S

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 decreased notch wear



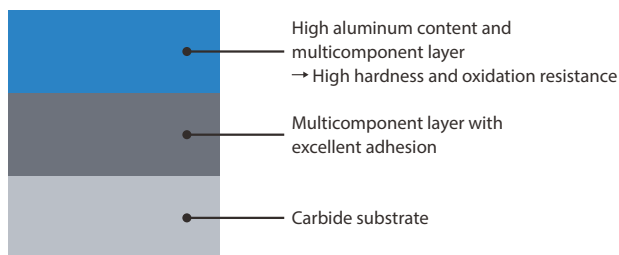
Improved thermal conductivity by optimum
distribution of WC coarse grains

Resists heat concentration at the cutting edge to
promote stable machining

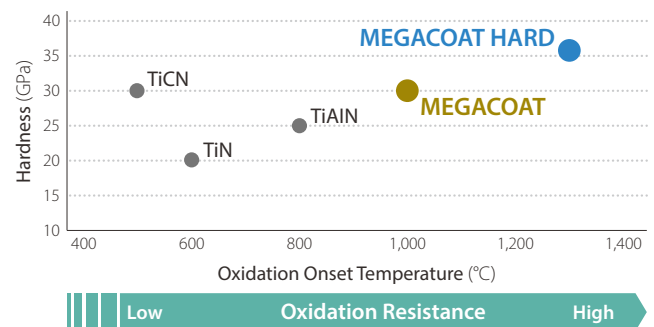
2

Improved wear resistance with MEGACOAT HARD coating

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



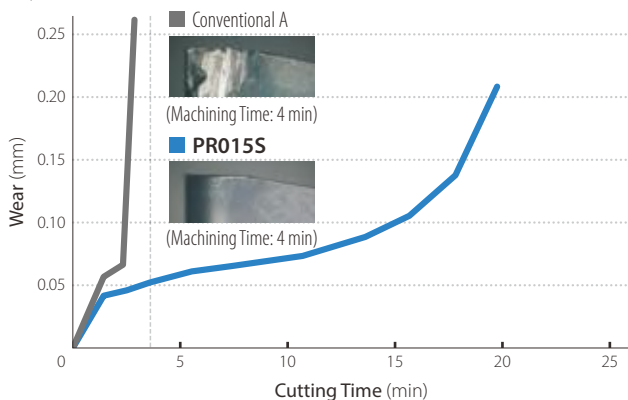
Coating Film Property (Internal Evaluation)



Excellent wear resistance with high-hardness and resists boundary damage
with improved thermal properties

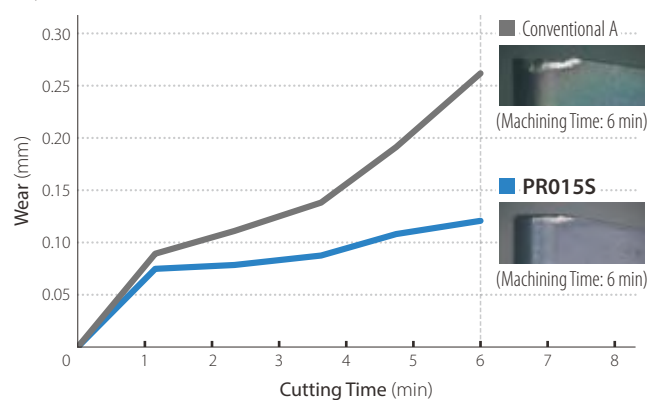
Wear Resistance Comparison (Internal Evaluation)

Workpiece : SKD61H (53HRC)



Cutting Conditions : $V_c=100\text{m/min}$, $a_p \times a_e=1.0\text{mm} \times 45\text{mm}$, $f_z=0.2\text{mm/t}$, Dry

Workpiece : SKD11H (60HRC)



Cutting Conditions : $V_c=100\text{m/min}$, $a_p \times a_e=1.0\text{mm} \times 10\text{mm}$, $f_z=0.05\text{mm/t}$, Dry

90°Milling with Double Sided 4-edge Inserts

MEW

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

Stock Items

Shape	Description	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 Stock



Face mills : $\phi 32 \sim \phi 80$
End mills : $\phi 16 \sim \phi 50$

Highly Efficient Cutter with a 66°Cutting Edge Angle

MFPN66

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

Stock Items

Shape	Description	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 Stock



Face mills : $\phi 50 \sim \phi 160$
End mills : $\phi 32, \phi 40$

45°Milling with Double Sided 10-edge Inserts

MFPN45

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

Stock Items

Shape	Description	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 Stock



Face mills : $\phi 63 \sim \phi 315$
End mills : $\phi 50, \phi 63, \phi 80$

Highly Efficient Cutter with a 88°Cutting Edge Angle

MFSN88

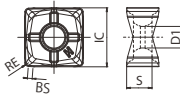
Economical Inserts with 8 Cutting Edges

Reduces Chattering with Low Cutting Force Design

Suitable for Shoulder Roughing

Cost Reduction in Approximately 90°Corner Cutting

Stock Items

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

● : Standard Stock



Face mills : $\phi 50 \sim \phi 160$

End mills : $\phi 32, \phi 40$

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

MFWN

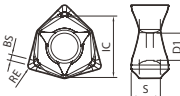
Economical Double-sided 6-edge Insert

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

● : Standard Stock



Face mills : $\phi 63 \sim \phi 250$

End mills : $\phi 50, \phi 63, \phi 80$

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

Recommended Cutting Conditions

(60HRC or less)

Description	fz (mm/t)	Cutting Speed (Vc : m/min)
LOMU 100408ER-GH	0.06~ 0.08 ~0.12	80~ 120 ~160
LOMU 150508ER-GH	0.08~ 0.15 ~0.22	80~ 120 ~160
PNMU 0905XNER-GH	0.1~ 0.2 ~0.3	80~ 100 ~120
PNMU 1205ANER-GH	0.1~ 0.25 ~0.35	80~ 100 ~120
SNMU 130508EN-GH	0.1~ 0.2 ~0.3	80~ 100 ~120
WNMU 080608EN-GH	0.1~ 0.2 ~0.3	80~ 100 ~120