

THE NEW VALUE FRONTIER



难削材加工用工具

Cutting tools for Difficult-to-cut material

实现了难削材的稳定、长寿命加工

For stable cutting and long tool life of difficult-to-cut material

耐热合金用 For Heat Resistant Alloy

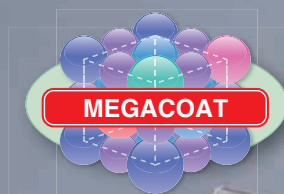
PR13系列

PR13 series

(PR13⁰⁵/PR13¹⁰/PR13²⁵)

用途 镍基耐热合金、铁基耐热合金
钴基耐热合金、析出硬化系不锈钢

Application Nickel base heat resistant alloy, Iron base heat resistant alloy
Cobalt base heat resistant alloy, Precipitation hardening stainless steels



钛合金用 For Titanium alloy

SW系列

SW series

(SW05/SW10/SW25)

ADVANCING PRODUCTIVITY

致力于生产效率提高的京瓷

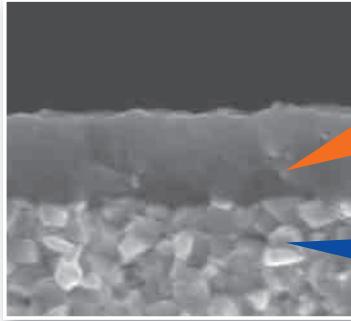
PR13⁰⁵/13¹⁰/13²⁵

MEGACOAT实现长寿命(PR13系列)

Long tool life by MEGACOAT technology

卓越的耐磨耗性、耐热性

Excellent wear resistance and heat resistance

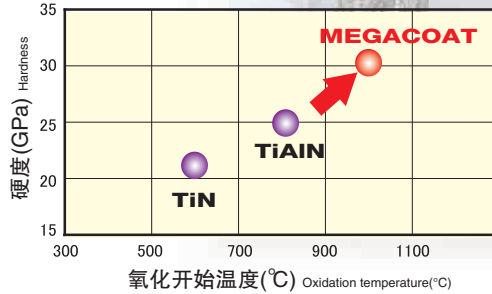


MEGACOAT

高硬度、卓越的抗氧化性
平滑的表面
High hardness and oxidation resistance, smooth surface

特殊硬质合金母材

Special carbide substrate



高硬度、高耐热性的MEGACOAT,实现高速、稳定加工以及刀具的长寿命化。

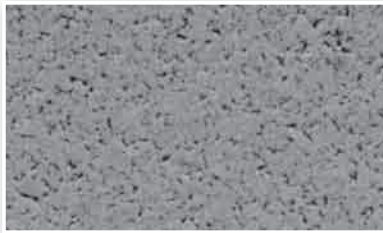
MEGACOAT, with high hardness and oxidation resistance, realizes stable machining at high speed and long tool life.

特殊硬质合金母材

Special carbide substrate

抗崩损、稳定加工

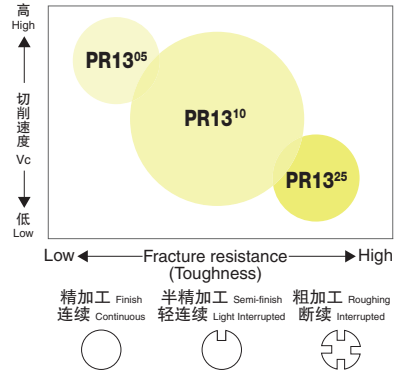
Fracture resistance, Stabilization



均一粒子使耐热冲击性良好、高硬度持续性

Superior heat shock resistance and high hardness stability by uniform grain

材质	用途
Insert Grades	Application
PR13 ⁰⁵	连续、精加工用材质 Continuous / Finishing
PR13 ¹⁰	第一推荐材质 First recommendation
PR13 ²⁵	断续、粗加工用材质 Interrupted / Roughing

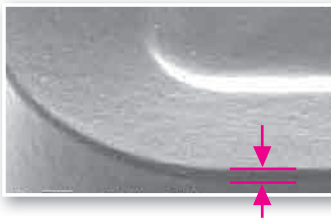


新刀尖形成FET※技术(PR13系列、SW系列共通) ※FET: 良好刀尖处理

New edge preparation (PR13 series, SW series) ※FET: Fine Edge Treatment

低阻力抗振刀

Low cutting force reduces chattering

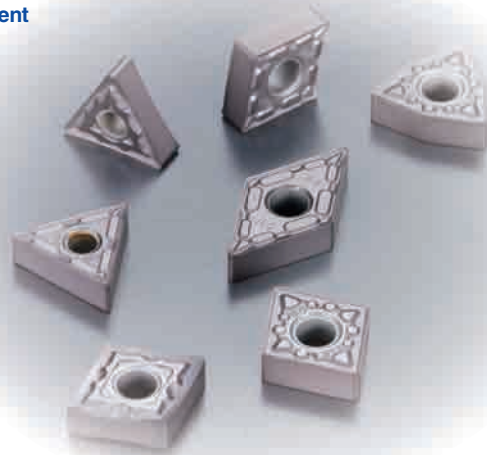


大前角以及小微调R珩磨,控制毛刺及境界磨损。工件的加工面良好。

Large rake angle and small radius honing controls burr and notching and improves finished surface.

FET技术使刀尖可调控

Cutting edge condition by FET technology



PR13系列性能评价

Cutting Performance Evaluation of PR13 series

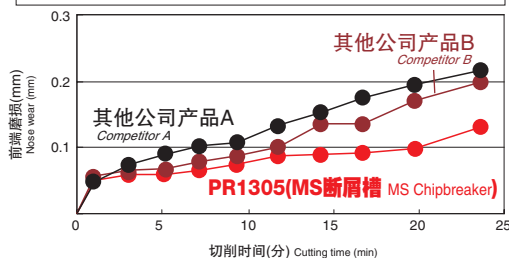
卓越的耐磨耗性

Excellent wear resistance

· 耐磨耗性比较(镍铬合金718)

In-house cutting test(Inconel718) 公司内评价 Internal evaluation

切削条件 Condition: Vc=45m/min, ap=0.25mm, f=0.15mm/rev., wet, 外圆连续 Continuous (External), CNMG120408型 Type



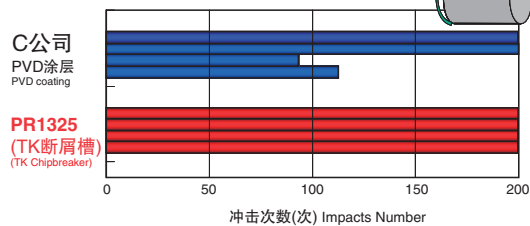
抗崩损性良好

High fracture resistance

· 抗崩损比较(镍铬合金718)

Cutting capability (Inconel718) 公司内评价 Internal evaluation

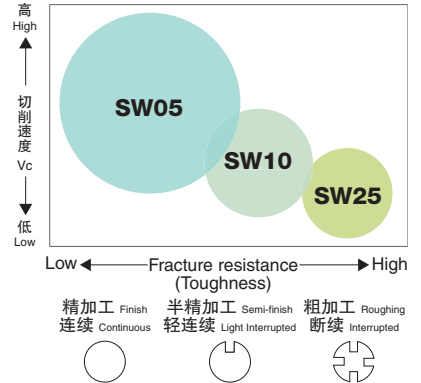
切削条件 Condition: Vc=30m/min, ap=0.25mm, f=0.15mm/rev., wet Inconel718(带2根槽), 外圆断续加工 Interrupted (External), CNMG120408型 Type



SW05/SW10/SW25

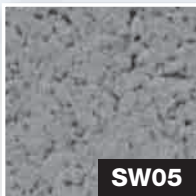
以卓越的耐磨耗性，
实现了长寿命化。
Good wear resistance and
long tool life

材质 Insert Grades	用途 Application
SW05	第一推荐材质 First recommendation
SW10	注重刀尖强度 Tough cutting edge
SW25	断续、粗加工用材质 Interrupted / Roughing



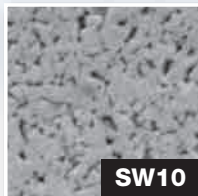
※SW10, SW25为非标材质对应。
SW10 and SW25 are available as custom order product.

特殊硬质合金母材 Special carbide substrate



SW05

适用于高温特性、热传导卓越的特殊硬质合金实现高耐磨耗性高速精加工~半精加工用
Special carbide with high temperature property and thermal conductivity. Improved wear resistance.
High speed finishing to medium cutting.



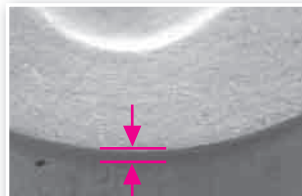
SW10

实现高温特性与高强度的特殊硬质合金抗振刀性提高轻断续、黑皮加工用
Special carbide with high temperature property and strength. Improved chipping resistance.
Light interrupted cut, material with scale, etc.



SW25

组成、组织最适化的强韧性硬质合金角材、偏心工件等的强断续加工用
Tough carbide with optimized structure.
Heavy interrupted cut of blocks and eccentric materials.

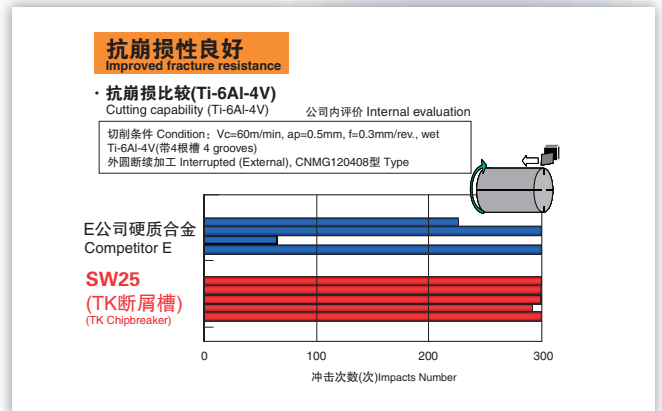
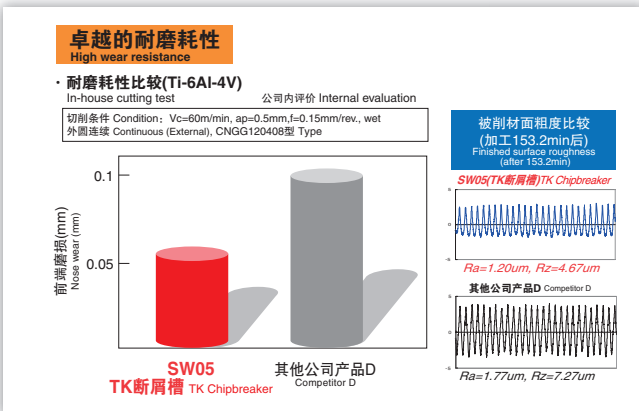


新刀尖形成FET技术下的切刃状态
Cutting edge condition by FET Technology



SW系列性能评价

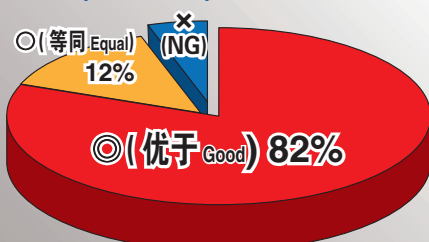
Cutting Performance Evaluation of SW series



PR13系列性能评价

PR13 series, Evaluation by the user

与其他公司产品的加工比较(客户评价)
Comparison with competitors (User evaluation)



82%优于其他公司产品、94%等同以上
82% Good evaluation and 94% More than Equal evaluation

材质选择

Insert Grades selection

被削材 Material	切削领域 Cutting range	材质 Insert Grades
镍基耐热合金(镍铬合金718等) 铁基耐热合金(A286等) 钴基耐热合金(S816, 钨铬钴合金等) 析出硬化系不锈钢(SUS630等) Nickel base heat resistant alloy (Inconel718, etc.) Iron base heat resistant alloy (A286, etc.) Cobalt base heat resistant alloy (S816, Stellite, etc.) Precipitation hardening stainless steels (SUS630 etc.)	精加工 Finishing	PR1305
	半精~粗 Medium-Roughing	PR1310
	粗加工 Roughing	PR1325
钛合金(Ti-6Al-4V等) Titanium alloy (Ti-6Al-4V etc.)	精加工 Finishing	SW05
	半精~粗 Medium-Roughing	SW05

※SW10, SW25为非标材质对应。 SW10 and SW25 are available as custom order product.

断屑槽、材质的使用区分

Guide for tool selection

MQ断屑槽

MQ Chipbreaker

- 精~半精加工用断屑槽
From finishing to Medium
- 大前角、圆弧刀刃
Large rake angle, Circular edge line
- 低阻力保证良好的切屑处理
Low cutting force and Good chip control

MS断屑槽

MS Chipbreaker

- 半精~粗加工用 **第一推荐断屑槽**
from medium to roughing **First recommended chipbreaker**
- 正角刀片
Positive land
- 切刃锋利刀尖强化同时实现
Tough cutting edge
- 良好的切屑处理
Good chip control

MU断屑槽

MU Chipbreaker

- 半精~粗加工用断屑槽
From Medium to Roughing
- 大前角、低阻力
Large rake angle, Low cutting resistance
- 抑制境界磨损(损伤)与毛刺
Reduces notching & burrs
- 重视切刃锋利度
Sharpness oriented type

※高切深条件下, 比MS断屑槽更能提高刀尖强度。
Higher edge strength than MS chipbreaker at large ap cutting

TK断屑槽

TK Chipbreaker

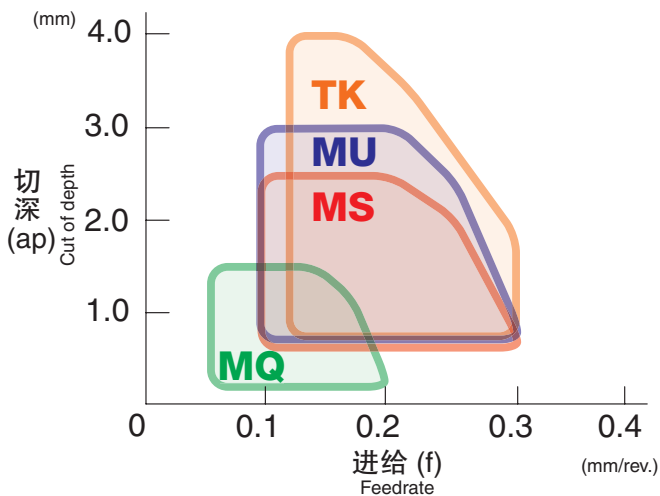
- 半精~粗加工用断屑槽
From Medium to Roughing
- 重视切屑排出性
Chip evacuation
- 切屑卷曲大
Large curled chip

刀片断屑槽的选择基准 Chipbreaker selection

(耐热合金/钛合金) Heat Resistant Alloy, Titanium Alloy

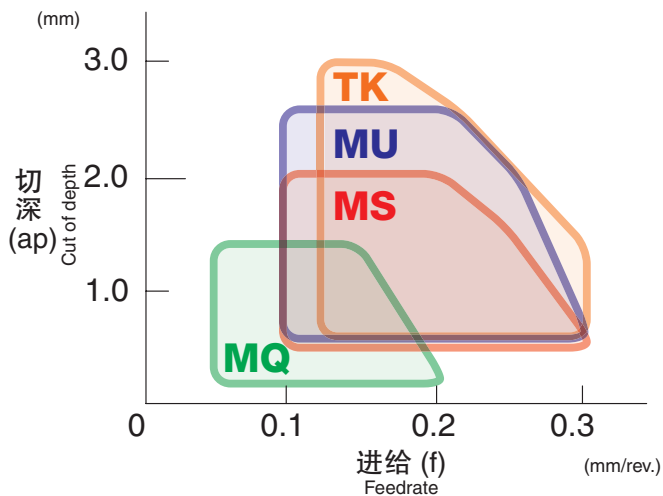
钛合金用SW系列

SW series for Titanium Alloy



耐热合金用PR13系列

PR13 series for heat resistant alloy



加工实例

Case Studies

镍铬合金718 Inconel718

- 环(航空零部件)
Ring (Aircraft Parts)
- Vc= 35m/min
- ap= 1.0mm
- f = 0.2mm/rev
- WET
- CNMG120408TK (PR1305)

PR1305	10个以上/刀角 more than 10pcs/edge	
其他公司涂层 F Competitor Coating F	10个/刀角 10pcs/edge	

· 与其他公司涂层F相比, 磨耗量小耐磨耗性良好。可延长工具寿命。
· Better wear resistance compared with Competitor F. Still applicable for the continued machining.

客户评价 Evaluation by the user

镍铬合金713 Inconel713

- 定子 Stator
- Vc= 40m/min
- ap= 0.5mm
- f = 0.2mm/rev
- WET
- WNMG080408MU (PR1310)

PR1310	30~40个/刀角 30-40pcs/edge	
其他公司涂层 G Competitor Coating G	15~20个/刀角 15-20pcs/edge	

· 与其他公司涂层G相比, 工具寿命提高2倍以上。
· Kyocera showed 2 times longer tool life than Competitor G.

客户评价 Evaluation by the user

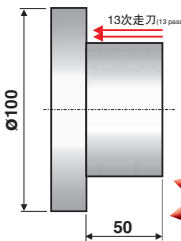
加工实例

Case Studies

镍铬铁合金A286(铁系耐热合金) Incoloy A286

- 轴肩衬套
Shoulder bush
- Vc= 70m/min
- ap= 1.5 mm
- f = 0.18mm/rev

WET
CNMG120408MS
(PR1310)



PR1310	3个/刀角 3 pcs/edge	Vc=70m/min
其他公司涂层 H Competitor Coating H	2个/刀角 2 pcs/edge	Vc=55m/min

[其他公司切削条件 Competitor cutting conditions]
Vc=55m/min

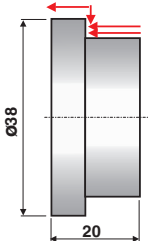
- 与其他公司涂层H相比, 加工数提高至1.5倍。
- 切削速度提高127%, 生产效率提高。
- Kyocera processed 1.5 times as many workpieces compared to Competitor H.
- Cutting speed increased 127%. Productivity improved.

客户评价 Evaluation by the user

镍铬合金718 Inconel718

- 连接器 Connector
- Vc= 53m/min
- ap= 2.0 mm
- f = 0.2mm/rev

WET
CNMG120408MS
(PR1310)



PR1310	7个/刀角 7 pcs/edge	Vc=53m/min
其他公司涂层 I Competitor Coating I	3个/刀角 3 pcs/edge	Vc=55m/min

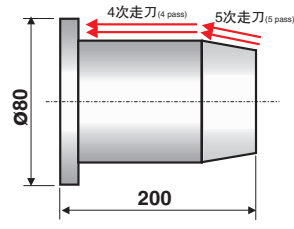
- 与其他公司涂层I相比, 工具寿命提高2倍以上。
- Kyocera showed 2 times longer tool life than Competitor I.

客户评价 Evaluation by the user

SUS 316L

- 喷嘴(航空零部件)
Nozzle (Aircraft Parts)
- Vc= 90m/min
- ap= 1.25mm~2mm
- f = 0.125mm/rev

WET
CNMG120408MU
(PR1310)



PR1310	5个以上/刀角 more than 5 pcs/edge	Vc=90m/min
其他公司涂层 J Competitor Coating J	1个/刀角 1 pcs/edge	Vc=55m/min

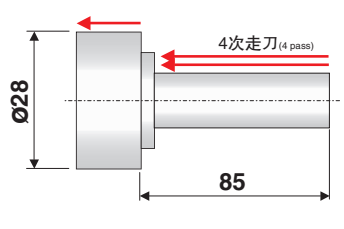
- 与其他公司涂层J相比, 工具寿命提高5倍以上。
- Kyocera showed 5 times longer tool life than Competitor J.

客户评价 Evaluation by the user

SUS 316L

- 阀 Valve
- Vc= 200m/min
- ap= ~2.5mm
- f = 0.25mm/rev

WET
CNMG120408MS
(PR1310)



PR1310	110~125个/刀角 110-125 pcs/edge	Vc=200m/min
其他公司涂层 K Competitor Coating K	60个/刀角 60 pcs/edge	Vc=55m/min

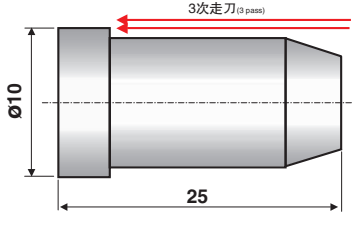
- 与其他公司涂层K相比, 工具寿命约提高2倍。
- Kyocera showed 2 times longer tool life than Competitor K.

客户评价 Evaluation by the user

镍铬合金625 Inconel625

- 航空零部件 Aircraft Parts
- Vc= 40m/min
- ap= 1.59mm
- f = 0.15mm/rev

WET
CNMG120408MS
(PR1310)



PR1310	8个/刀角 8 pcs/edge	Vc=40m/min
其他公司涂层 L Competitor Coating L	4~5个/刀角 4-5 pcs/edge	Vc=55m/min

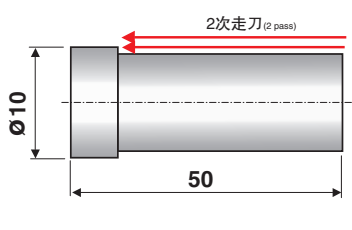
- 与其他公司涂层L相比, 工具寿命提高1.6~2倍。
- Kyocera showed 1.6 to 2 times longer tool life than Competitor L.

客户评价 Evaluation by the user

镍铬合金718 Inconel718

- 横梁(角材) Square bar
- Vc= 20m/min
- ap= 1.25mm
- f = 0.24mm/rev

WET
CNMG120408MS
(PR1325)



PR1325	25个/刀角 25 pcs/edge	Vc=20m/min
其他公司涂层 M Competitor Coating M	6个/刀角 6 pcs/edge	Vc=55m/min

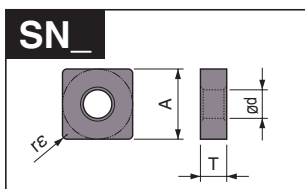
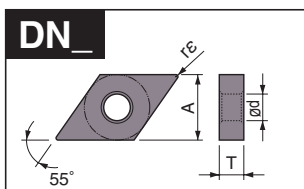
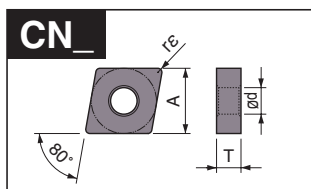
- 与其他公司涂层M相比, 工具寿命提高4倍以上。
- Kyocera showed 4 times longer tool life than Competitor M.

客户评价 Evaluation by the user

负角刀片

Negative

(mm)



型号 Description	A	T	ød
CN_1204_	12.70	4.76	5.16
CN_1606_	15.875	6.35	6.35
CN_1906_	19.05		7.94
DN_1504_	12.70	4.76	5.16
DN_1506_		6.35	
SN_1204_	12.70	4.76	
SN_1906_	19.05	6.35	7.94

● 标准库存型号 Stock items

形状 Shape	型号 Description	尺寸 (mm) Dimension	MEGACOAT			硬质合金 Carbide		
			re	PR1305	PR1310	PR1325	SW05	SW10
精加工 ~ 半精加工 Finishing-Medium	CNMG 120404MQ	0.4	●	●	●	●		
	120408MQ	0.8	●	●	●	●		
半精加工 ~ 粗加工 Medium-Roughing	CNMG 120404MS	0.4	●	●	●	●		
	120408MS	0.8	●	●	●	●		
	120412MS	1.2	●	●	●	●		
	120416MS	1.6	●	●	●	●		
半精加工 ~ 粗加工 Medium-Roughing	CNMG 120404MU	0.4	●	●	●	●		
	120408MU	0.8	●	●	●	●		
	CNMG 160608MU	0.8		●	●			
	160612MU	1.2		●	●			
	160616MU	1.6		●	●			
半精加工 ~ 粗加工 Medium-Roughing	CNMG 190612MU	1.2		●	●			
	190616MU	1.6		●	●			
半精加工 ~ 粗加工 Medium-Roughing	CNMG 120404TK	0.4	●	●	●			
	120408TK	0.8	●	●	●			
半精加工 ~ 粗加工 锋利刀尖 Medium-Roughing / Sharp Edge	CNGG 120404TK	0.4	●	●		●		
	120408TK	0.8	●	●		●		
精加工 Finishing	DNMG 150404MQ	0.4	●	●	●	●		
	150408MQ	0.8	●	●	●	●		
	DNMG 150604MQ	0.4	●	●	●	●		
	150608MQ	0.8	●	●	●	●		

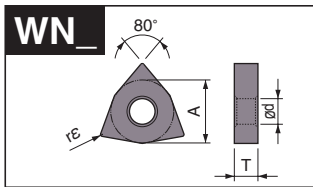
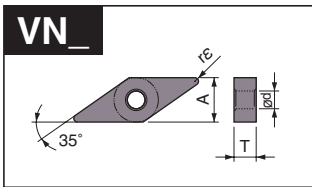
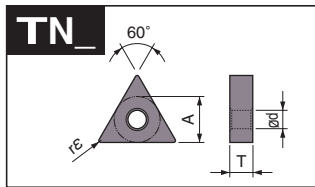
Available as custom order product
应对非标准材质

形状 Shape	型号 Description	尺寸 (mm) Dimension	MEGACOAT			硬质合金 Carbide		
			re	PR1305	PR1310	PR1325	SW05	SW10
半精加工 ~ 粗加工 Medium-Roughing	DNMG 150404MS	0.4	●	●	●	●		
	150408MS	0.8	●	●	●	●		
	150412MS	1.2	●	●	●	●		
	150612MS	1.2	●	●	●			
半精加工 ~ 粗加工 Medium-Roughing	DNMG 150604MS	0.4	●	●	●			
	150608MS	0.8	●	●	●			
	150612MS	1.2	●	●	●			
	150616MS	1.6	●	●	●			
半精加工 ~ 粗加工 Medium-Roughing	DNMG 150404MU	0.4	●	●	●	●		
	150408MU	0.8	●	●	●	●		
	DNMG 150604MU	0.4	●	●	●	●		
	150608MU	0.8	●	●	●	●		
半精加工 ~ 粗加工 Medium-Roughing	DNMG 150404TK	0.4	●	●	●			
	150408TK	0.8	●	●	●			
	DNMG 150604TK	0.4	●	●	●			
	150608TK	0.8	●	●	●			
半精加工 ~ 粗加工 锋利刀尖 Medium-Roughing / Sharp Edge	DNGG 150404TK	0.4	●	●		●		
	150408TK	0.8	●	●		●		
	DNGG 150604TK	0.4	●	●		●		
	150608TK	0.8	●	●		●		
精加工 ~ 半精加工 Finishing-Medium	SNMG 120404MQ	0.4	●	●	●	●		
	120408MQ	0.8	●	●	●	●		
半精加工 ~ 粗加工 Medium-Roughing	SNMG 120404MS	0.4	●	●	●	●		
	120408MS	0.8	●	●	●	●		
	120412MS	1.2	●	●	●	●		
	120416MS	1.6	●	●	●			
半精加工 ~ 粗加工 Medium-Roughing	SNMG 190612MU	1.2		●	●			
	190616MU	1.6		●	●			

Available as custom order product
应对非标准材质

● : 标准库存 ● : Std Stock

负角刀片 Negative



型号 Description	A	T	ød
TN_1604_	9.525	4.76	3.81
VN_1604_			3.81
WN_0804_	12.70		5.16

● 标准库存型号 Stock items

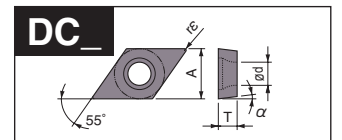
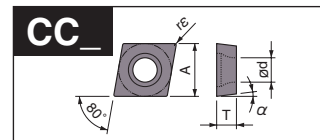
形状 Shape	型号 Description	尺寸 (mm) Dimension	MEGACOAT			硬质合金 Carbide		
		re	PR1305	PR1310	PR1325	SW05	SW10	SW25
精加工 ~ 半精加工 Finishing-Medium	TNMG 160404MQ	0.4	●	●	●	●		
	160408MQ	0.8	●	●	●	●		
半精加工 ~ 粗加工 Medium-Roughing	TNMG 160404MS	0.4	●	●	●	●		
	160408MS	0.8	●	●	●	●		
	160412MS	1.2	●	●	●	●		
半精加工 ~ 粗加工 Medium-Roughing	TNMG 160404MU	0.4	●	●	●	●		
	160408MU	0.8	●	●	●	●		
半精加工 ~ 粗加工 锋利刀尖 Medium-Roughing / Sharp Edge	TNGG 160404TK	0.4	●	●		●		
	160408TK	0.8	●	●		●		
精加工 Finishing	VNMG 160404MQ	0.4	●	●	●	●		
	160408MQ	0.8	●	●	●	●		
半精加工 ~ 粗加工 Medium-Roughing	VNMG 160404MS	0.4	●	●	●	●		
	160408MS	0.8	●	●	●	●		
	160412MS	1.2	●	●	●	●		
半精加工 ~ 粗加工 Medium-Roughing	VNMG 160404MU	0.4	●	●	●	●		
	160408MU	0.8	●	●	●	●		
精加工 ~ 半精加工 Finishing-Medium	WNMG 080404MQ	0.4	●	●	●	●		
	080408MQ	0.8	●	●	●	●		
半精加工 ~ 粗加工 Medium-Roughing	WNMG 080404MS	0.4	●	●	●	●		
	080408MS	0.8	●	●	●	●		
	080412MS	1.2	●	●	●	●		
	080412MS	1.2	●	●	●	●		

Available as custom order product
应对非标材质
应对非标材质

形状 Shape	型号 Description	尺寸 (mm) Dimension	MEGACOAT			硬质合金 Carbide		
		re	PR1305	PR1310	PR1325	SW05	SW10	SW25
半精加工 ~ 粗加工 Medium-Roughing	WNMG 080404MU	0.4	●	●	●	●		
	080408MU	0.8	●	●	●	●		
半精加工 ~ 粗加工 Medium-Roughing	WNMG 080404TK	0.4	●	●	●			
	080408TK	0.8	●	●	●			
半精加工 ~ 粗加工 锋利刀尖 Medium-Roughing / Sharp Edge	WNGG 080404TK	0.4	●	●		●		
	080408TK	0.8	●	●		●		

Available as custom order product
应对非标材质
应对非标材质

正角刀片 Positive



型号 Description	A	T	ød	α
CC_09T3_	9.525	3.97	4.4	7°
DC_0702_	6.35	2.38	2.8	
DC_11T3_	9.525	3.97	4.4	

● 标准库存型号 Stock items

形状 Shape	型号 Description	尺寸 (mm) Dimension	MEGACOAT			硬质合金 Carbide		
		re	PR1305	PR1310	PR1325	SW05	SW10	SW25
精加工 ~ 半精加工 Finishing-Medium	CCMT 09T304MQ	0.4	●	●	●	●		
	09T308MQ	0.8	●	●	●	●		
精加工 ~ 半精加工 Finishing-Medium	DCMT 070202MQ	0.2	●	●	●	●		
	070204MQ	0.4	●	●	●	●		
精加工 ~ 半精加工 Finishing-Medium	DCMT 11T304MQ	0.4	●	●	●	●		
	11T308MQ	0.8	●	●	●	●		

● : 标准库存 ● : Std Stock

推荐切削条件

Recommended Cutting Conditions

[切深表示半径切深的值] ap indicates radius

被削材 Material	切削领域 Cutting range	推荐材质 Recommended insert grades	推荐断屑槽 Recommended chipbreaker	下限 - 推荐 - 上限 Lower Limit - Recommendation - Upper Limit		
				Vc (m/min)	ap (mm)	f (mm/rev.)
镍基耐热合金 (镍铬合金718等) Nickel base heat resistant alloy (Inconel718, etc.)	精加工 Finishing	PR1305	MQ	45-55-80	0.2-0.5-1.0	0.05-0.1-0.2
	半精加工 ~ 粗加工 Medium-Roughing	PR1310	MS/MU	40-45-60	0.5-1.0-2.0	0.1-0.15-0.25
	粗加工 Roughing	PR1325	TK	35-40-50	1.0-1.5-3.5	0.1-0.2-0.3
铁基耐热合金 (A286等) Iron base heat resistant alloy (A286, etc.)	精加工 Finishing	PR1305	MQ	50-70-90	0.2-0.5-1.0	0.05-0.1-0.2
	半精加工 ~ 粗加工 Medium-Roughing	PR1310	MS/MU	45-55-70	0.5-1.0-2.0	0.1-0.15-0.25
	粗加工 Roughing	PR1325	TK	40-45-55	1.0-1.5-3.5	0.1-0.2-0.3
钴基耐热合金 (S816, 钨铬钴合金等) Cobalt base heat resistant alloy (S816, Stellite, etc.)	精加工 Finishing	PR1305	MQ	40-50-70	0.2-0.5-1.0	0.05-0.1-0.2
	半精加工 ~ 粗加工 Medium-Roughing	PR1310	MS/MU	35-40-55	0.5-1.0-2.0	0.1-0.15-0.25
	粗加工 Roughing	PR1325	TK	30-35-45	1.0-1.5-3.0	0.1-0.2-0.3
析出硬化系不锈钢 (SUS630等) Precipitation hardening stainless steels (SUS630 etc.)	精加工 Finishing	PR1305	MQ	100-140-180	0.2-0.5-1.5	0.05-0.1-0.2
	半精加工 ~ 粗加工 Medium-Roughing	PR1310	MS/MU	80-120-155	0.5-1.0-2.5	0.15-0.2-0.3
	粗加工 Roughing	PR1325	TK	60-80-100	1.0-2.0-4.0	0.15-0.2-0.35
钛合金 (Ti-6Al-4V等) Titanium alloy (Ti-6Al-4V etc.)	精加工 Finishing	SW05	MQ	40-70-100	0.2-0.5-1.0	0.05-0.1-0.2
	半精加工 ~ 粗加工 Medium-Roughing	SW05	MS/MU/TK	40-60-80	0.5-1.0-4.0	0.15-0.2-0.3

工具形状以CNMG120408为基准。 Conditions based on CNMG120408 type insert

切削工具相关咨询

400-650-6400-5

● 受理时间 8:45-11:45 · 12:45-17:30
● 周六、日以及法定节假日期间不受理业务。

※个人信息的使用: 回答用户咨询问题, 提高服务品质, 提供产品信息。
※咨询时, 请确认电话号码的正确性。



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