

THE NEW VALUE FRONTIER

京瓷 创造新价值



钢加工用智能断屑槽 P 系列
Chipbreaker for Steel Cutting

钢加工用智能断屑槽 P 系列

For Steel Cutting P Series Chipbreakers

半精加工~粗加工用PG断屑槽登场!

完成钢加工用智能断屑槽

P PP/PQ/PG三重奏!

PG chipbreaker for medium and rough turning newly added to the P series for steel turning

钢加工用智能断屑槽 P 系列

精加工用

PP 断屑槽

PP Chipbreaker for Finishing

精加工~半精加工用

PQ 断屑槽

PQ Chipbreaker for Finishing to Medium

NEW

半精加工~粗加工用

PG 断屑槽

PG Chipbreaker for Medium to Roughing

切屑处理改善

Chip control improved

半精加工~粗加工用(高进给)

PT 断屑槽

PT chipbreaker for Medium to Roughing (High Feed)

粗加工用

PH 断屑槽

PH chipbreaker for Roughing

ADVANCING PRODUCTIVITY

致力于生产效率提高的京瓷

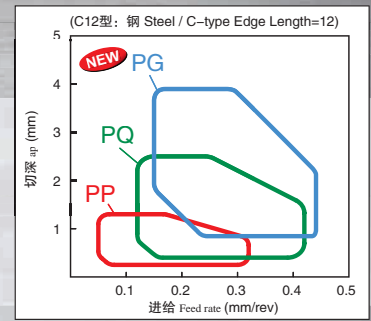
钢加工用 智能断屑槽

P 系列

P Series Chipbreakers for Steel Machining

PP/PQ/PG三重奏、在钢加工中发挥威力!

PP/PQ/PG Chipbreaker changes steel machining



钢加工用 智能断屑槽 P 系列

精加工用
For Finishing

改善小切深、高进给加工时的阻塞、咬刀
Solution for chip entanglement in small ap or high feed machining

PP 断屑槽

PP Chipbreaker

精加工~半精加工
For Finishing-Medium

高进给时抑制阻塞和阻力的增大
Prevents chip entanglement and reduces cutting force at high feed cutting

PQ 断屑槽

PQ Chipbreaker

NEW **半精加工~粗加工用**
For Medium-Roughing

广泛的切削处理领域实现稳定加工
Stable machining with wide chip control range

PG 断屑槽

PG Chipbreaker

半精加工~粗加工用PG断屑槽登场!

P 完成 PP/PQ/PG 三重奏!

PG chipbreaker for medium and rough turning newly added to the P series for steel turning

1. 广泛的切屑处理领域

Wide chip control range

适应广泛的切削条件

Applicable to various cutting conditions

2. 高进给条件下也能稳定加工

Stable at high feed rate

抑制切屑阻塞、可提高进给

Control chip clogging and increase the feed rate

3. 与CA5系列组合实现长寿命

Long tool life in combination with CA5 series

P 与 P 系列组合发挥威力

Special insert grades for best combination with P series

钢加工用CVD涂层

CVD Coated Grade for Steel

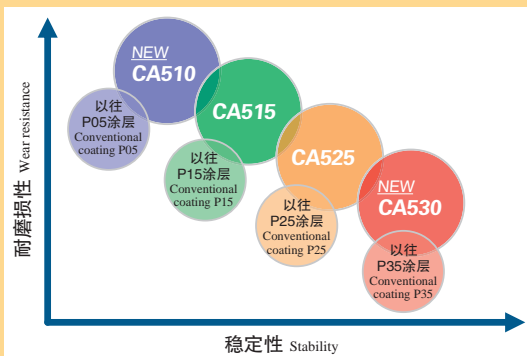
CA5系列 CA5 Series

高速、长寿命 CA510
High speed and longer tool life

连续~轻断续 CA515
Continuous to light interrupted machining

通用 CA525
General use

强断续、高进给 CA530
Heavy interrupted cutting and high feed rate



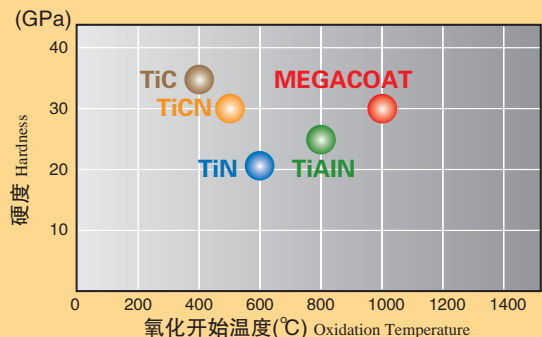
MEGACOAT金属陶瓷

MEGACOAT Cermet

PV7025

以高温稳定性和表面平滑性实现精美的精加工面

Combination of smooth surface finish with oxidation resistance at high temperatures



NEW

半精加工~粗加工用
For Medium-Roughing

广泛的切屑处理领域实现稳定加工 Stable machining with wide chip control range

PG 断屑槽 PG chipbreaker



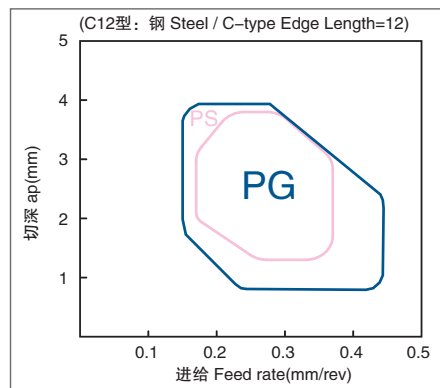
■ 特长 Features

● 确保刀刃锋利度与强度均衡、实现稳定加工

Stable machining with good balance of edge sharpness and strength

● 改善高进给加工时阻塞与咬屑、确保在广泛领域中低进给领域也能有良好的切屑处理

Prevent chip clogging at high feed rate. Good chip control at low feed rate.

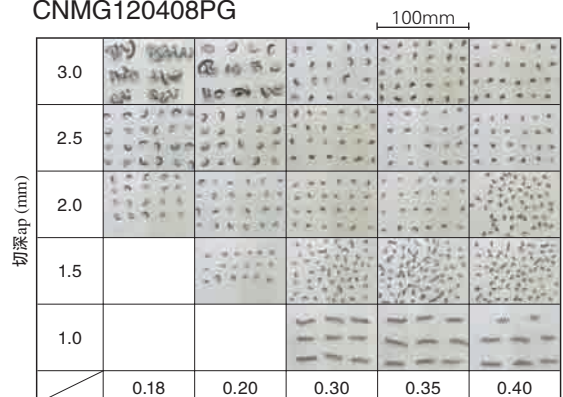


PG

SCM435

Vc=200m/min WET

CNMG120408PG



进给 f (mm/rev)

复合刀锋(Hybrid Land)

平面+正面的2段构造、确保
锋利度与强度均衡
Good balance of sharpness and
strength due to double structure of
flat and positive land design

阶梯立起(Step Wall)

高进给中防止阻塞
Prevent chip clogging at high feed rate

双凸点(Twin Dots)

低进给中提高切屑处理抑制月牙洼
磨损
Improve chip control at low feed rate
Control crater wear

平坦区 (断屑区)

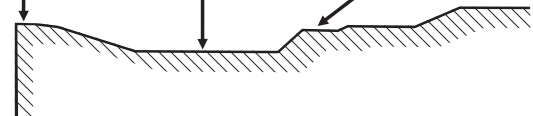
Flat part (Breaking area)

阶梯立起 (高进给时防止阻塞)

Step (Wall)
(Prevent chip clogging at high feed rate)

复合刀锋 (锋利度与强度均衡)

Hybrid land
(Balance of sharpness and strength)



■ 加工案例 Case Studies

SCM435 (Alloy steel)	
<ul style="list-style-type: none"> 连接器 Joint Vc=280m/min ap=3.0mm f=0.25mm/rev 湿式 Wet CNMG120408PG 	
CA525	400个以上/刀尖 400more than pcs/edge
其他公司CVD涂层A Competitor A (CVD Coated)	350个/刀尖 3-8pcs/edge
<p>CA525与其他公司CVD涂层相比，加工数量提高了1.2倍以上。 CA525 shows 1.2 times longer tool life compare to Competitor A's CVD.</p> <p>切屑稳定、抑制毛刺。加工面良好 PG Chipbreaker stabilized the chip condition and prevented burr formation. Good surface finish.</p> <p>(根据用户评价)Evaluation by the user</p>	

■ 耐磨损性比较

<切削条件>
SCM435 Vc=300m/min ap=2.0 mm
f=0.3mm/rev Wet

Wear resistance comparison

切削时间(分) Cutting Time (min)	14分 min	20分 min	26分 min
CNMG120408PG (CA525)			
其他公司产品B Competitor B			崩损不可继续 Stop cutting due to facture
其他公司产品C Competitor C			崩损不可继续 Stop cutting due to facture

(当社比较)(Internal evaluation)

PP 断屑槽 PP chipbreaker



■ 特长 Features

● 3段智能突点构造在钢精加工中可对应低进给~高进给的广泛进给领域

3-step Smart Dot Structure applicable to a wide range of feed rate in steel finishing

● 流畅的锥度设计切刃降低切削阻力

Smooth Taper Cutting Edge reduces cutting force

● 刀尖角R(rε)0.2 ~ 1.2系列

Corner-R(rε)0.2mm-1.2mm are available

流畅的锥度设计切刃
降低切削阻力
Smooth Taper Cutting Edge
Reduced Cutting Force

3段智能凸点构造

根据进给范围三种不同的凸点发生作用，进行切屑处理

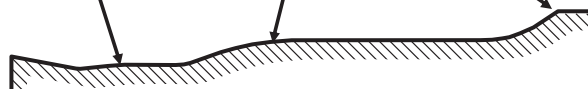
3-step Smart Dot Structure
The 3 different dots provide smooth chip evacuation in a wide range of feed rate

· 根据加工条件、作用位置的变化
Each dot functions according to the cutting conditions

第1段
小切深、低进给
1st Dot
Small ap and low feed rate

第2段
主要领域
2nd Dot
General use range

第3段
大切深、高进给
3rd Dot
Large ap and high feed rate

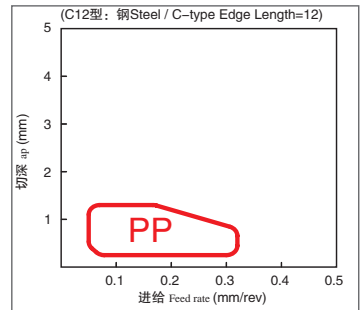
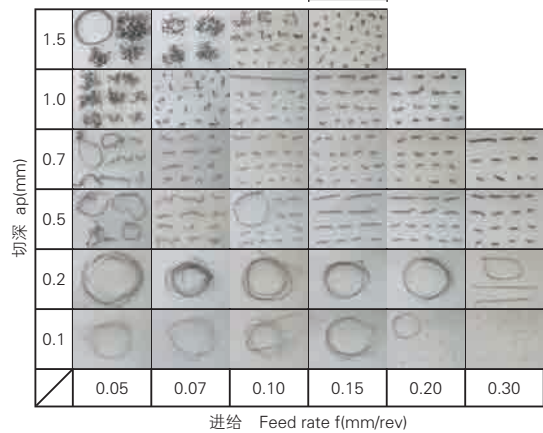


PP

SCM435

Vc=200m/min WET

CNMG120404PP



■ 加工案例(切屑处理比较)

Case Studies (Chip Control Comparison)

汽车零部件(SCM420)
Automotive part

其他公司产品D Competitor D

PP断屑槽 PP Chipbreaker

CNMG120408PP
Vc=350m/min
ap=0.3mm
f=0.3mm/rev
Wet

改善工件的切屑缠绕、实现稳定加工
Reduced defective rate and stable cutting due to less chip entanglement
(根据用户评价)Evaluation by the user

汽车零部件(SCr420H)
Automotive part

其他公司产品E Competitor E

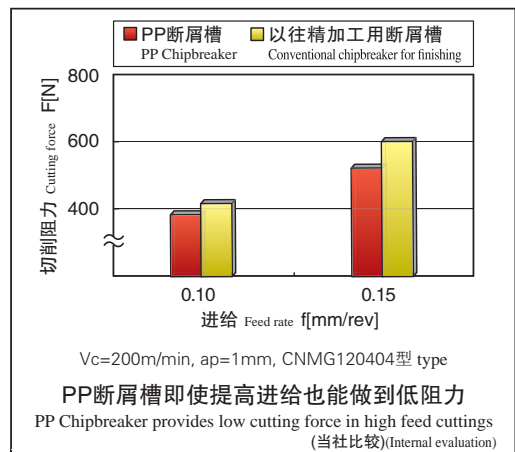
PP断屑槽 PP Chipbreaker

CNMG120408PP
Vc=200m/min
ap=0.2~0.3mm
f=0.2~0.3mm/rev
Wet

改善工件的切屑缠绕、实现稳定加工
Reduced defective rate and stable cutting due to less chip entanglement
(根据用户评价)Evaluation by the user

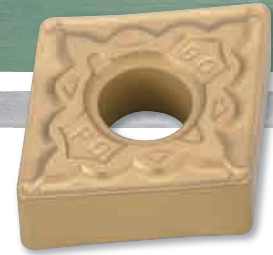
■ 切削阻力

Cutting Force



· MEGACOAT金属陶瓷和PP断屑槽提高精加工面
Improved surface Finish with MEGACOAT Cermet and PP Chipbreaker

PQ 断屑槽 PQ chipbreaker



■ 特长 Features

- 新设想的平坦区(断屑区)与缓和的2段凸起效果保证在精加工~半精加工的广泛进给领域实现稳定的切削处理

Stable chip control in a wide range of applications of medium to finishing due to newly developed "Flat Zone" (Braking Area) and 2-step rising smooth Smart Wall effect

- 前端设计的2突点, 实现外径/端面小切深/高进给加工时的切屑控制

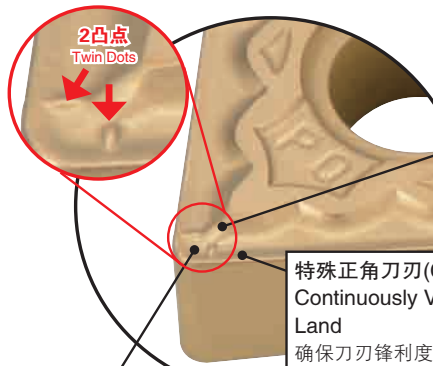
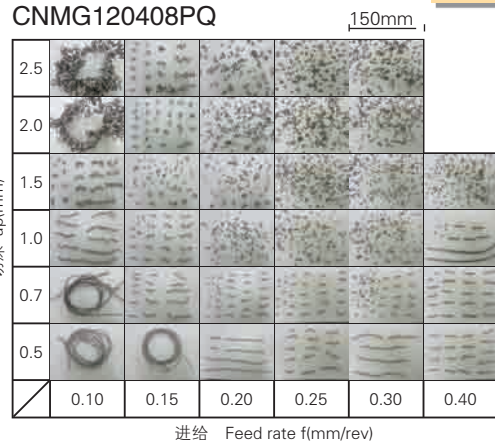
Twin dots on the edge tip provide smooth chip control at low ap/high feed turning and facing

- 确保了切削锋利度和切削强度的特殊正角刀片(CVL)

Specially Designed Positive Land with the well-balanced edge sharpness and toughness (CVL)

PQ

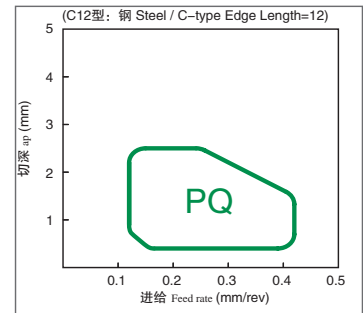
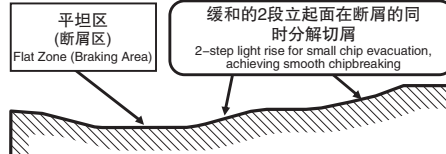
SCM435
Vc=200m/min WET



2段凸起效果(2段立起面)
可在广泛的领域进行切屑处理、抑制高进给时的突点损伤
2-step Smart Wall (2-step rising smooth surface)
Excellent chip control in a wide range of applications, preventing the dots from being damaged at high feed cuttings

特殊正角刀刃(CVL)
Continuously Variable Land
确保刀刃锋利度与强度均衡的正角刀刃
Specially Designed Positive Land
Positive land with the well-balanced combination of sharpness and toughness

· 断屑效果对应广泛的加工领域
Chipbraking efficiency for a wide range of applications



■ 加工案例(切屑处理比较)

Case Studies (Chip Control Comparison)

汽车零部件(S45C)
Automotive part

其他公司产品F Competitor F

PQ断屑槽 PQ Chipbreaker

DNMG150408PQ
Vc=200m/min
ap=0.5-1.2mm
f=0.3mm/rev
Wet

改善咬屑引起的崩损
Minimized fracture caused by chip entanglement
(根据用户评价)Evaluation by the user

汽车零部件(S45C)
Automotive part

其他公司产品G Competitor G

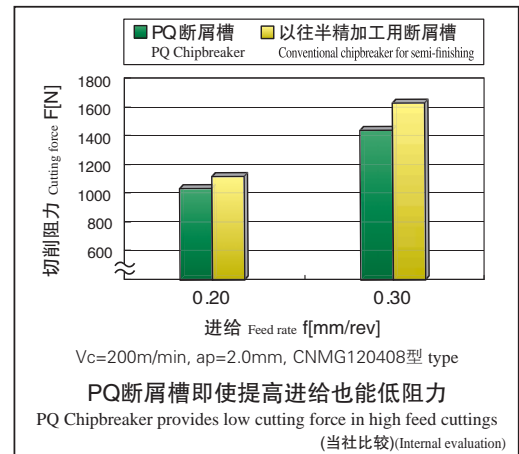
PQ断屑槽 PQ Chipbreaker

WNMG080408PQ
Vc=250m/min
ap=1.0mm
f=0.3mm/rev
Wet

虽然因缠绕刀塔引起机器短暂停顿, 但切屑被更细切断提高开动率
With Competitor G, chips were entangled in the turret and the process was paused frequently, but PQ Chipbreaker can chop chips into small pieces, improving the productivity
(根据用户评价)Evaluation by the user






■ 切削阻力

Cutting Force





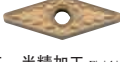



· CVD涂层CA系列和PQ断屑槽发挥长寿命
Long tool life with CVD Coating CA5 series and PQ Chipbreaker

■ 标准库存型号(PP断屑槽) PP chipbreaker Stock Items






形状 Shape	型号 Description	尺寸(mm)Dimension				金属陶瓷 Cermets		MEGACOAT金属陶瓷 MEGACOAT Cermet		CVD涂层 CVD Coated Carbide				
		内接圆径 I.C.	厚度 Thickness	孔径 Hole	刀角R (r _c) Corner-R (r _c)	TN6010	TN6020	PV7010	PV7025	CA510	CA515	CA525	CA530	
 精加工 Finishing	CNMG 120402PP	12.70	4.76	5.16	0.2	●	●	●	●	●	●	●	●	
	120404PP				0.4	●	●	●	●	●	●	●	●	●
	120408PP				0.8	●	●	●	●	●	●	●	●	●
	120412PP				1.2	●	●	●	●	●	●	●	●	●
 精加工 Finishing	DNMG 150402PP	12.70	4.76	5.16	0.2	●	●	●	●	●	●	●	●	
	150404PP				0.4	●	●	●	●	●	●	●	●	●
	150408PP				0.8	●	●	●	●	●	●	●	●	●
	150412PP				1.2	●	●	●	●	●	●	●	●	●
	DNMG 150602PP	12.70	6.35	5.16	0.2	●	●	●	●	●	●	●	●	
	150604PP				0.4	●	●	●	●	●	●	●	●	
	150608PP				0.8	●	●	●	●	●	●	●	●	
	150612PP				1.2	●	●	●	●	●	●	●	●	
 精加工 Finishing	TNMG 160402PP	9.525	4.76	3.81	0.2	●	●	●	●	●	●	●	●	
	160404PP				0.4	●	●	●	●	●	●	●	●	
	160408PP				0.8	●	●	●	●	●	●	●	●	
	160412PP				1.2	●	●	●	●	●	●	●	●	
 精加工 Finishing	VNMG 160402PP	9.525	4.76	3.81	0.2	●	●	●	●	●	●	●	●	
	160404PP				0.4	●	●	●	●	●	●	●	●	
	160408PP				0.8	●	●	●	●	●	●	●	●	
	160412PP				1.2	●	●	●	●	●	●	●	●	
 精加工 Finishing	WNMG 080402PP	12.70	4.76	5.16	0.2	●	●	●	●	●	●	●	●	
	080404PP				0.4	●	●	●	●	●	●	●	●	
	080408PP				0.8	●	●	●	●	●	●	●	●	
	080412PP				1.2	●	●	●	●	●	●	●	●	

■ 标准库存型号(PQ断屑槽) PQ chipbreaker Stock Items

形状 Shape	型号 Description	尺寸(mm)Dimension				金属陶瓷 Cermets		MEGACOAT金属陶瓷 MEGACOAT Cermet		CVD涂层 CVD Coated Carbide			
		内接圆径 I.C.	厚度 Thickness	孔径 Hole	刀角R (r _c) Corner-R (r _c)	TN6010	TN6020	PV7010	PV7025	CA510	CA515	CA525	CA530
 精加工~半精加工 Finishing-Medium	CNMG 120404PQ	12.70	4.76	5.16	0.4	●	●	●	●	●	●	●	●
	120408PQ				0.8	●	●	●	●	●	●	●	●
	120412PQ				1.2	●	●	●	●	●	●	●	●
 精加工~半精加工 Finishing-Medium	DNMG 150404PQ	12.70	4.76	5.16	0.4	●	●	●	●	●	●	●	●
	150408PQ				0.8	●	●	●	●	●	●	●	●
	150412PQ				1.2	●	●	●	●	●	●	●	●
	DNMG 150604PQ	12.70	6.35	5.16	0.4	●	●	●	●	●	●	●	●
	150608PQ				0.8	●	●	●	●	●	●	●	●
	150612PQ				1.2	●	●	●	●	●	●	●	●
 精加工~半精加工 Finishing-Medium	SNMG 120404PQ	12.70	4.76	5.16	0.4	●	●	●	●	●	●	●	●
	120408PQ				0.8	●	●	●	●	●	●	●	●
	120412PQ				1.2	●	●	●	●	●	●	●	●
 精加工~半精加工 Finishing-Medium	TNMG 160404PQ	9.525	4.76	3.81	0.4	●	●	●	●	●	●	●	●
	160408PQ				0.8	●	●	●	●	●	●	●	●
	160412PQ				1.2	●	●	●	●	●	●	●	●
 精加工~半精加工 Finishing-Medium	VNMG 160404PQ	9.525	4.76	3.81	0.4	●	●	●	●	●	●	●	●
	160408PQ				0.8	●	●	●	●	●	●	●	●
	160412PQ				1.2	●	●	●	●	●	●	●	●
 精加工~半精加工 Finishing-Medium	WNMG 080404PQ	12.70	4.76	5.16	0.4	●	●	●	●	●	●	●	●
	080408PQ				0.8	●	●	●	●	●	●	●	●
	080412PQ				1.2	●	●	●	●	●	●	●	●

●: 标准库存
●: Standard Stock

NEW ■ 标准库存型号(PG断屑槽) PG chipbreaker Stock Items

形状 Shape	型号 Description	尺寸(mm)Dimension				CVD涂层 CVD Coated Carbide			
		内接圆径 I.C.	厚度 Thickness	孔径 Hole	刀角R(re) Corner-R(rr)	CA510	CA515	CA525	CA530
 半精加工~粗加工 Medium-Roughing	CNMG 120404PG	12.70	4.76	5.16	0.4	●	●	●	●
	120408PG				0.8	●	●	●	●
	120412PG				1.2	●	●	●	●
	120416PG				1.6	●	●	●	●
 半精加工~粗加工 Medium-Roughing	DNMG 150404PG	12.70	4.76	5.16	0.4	●	●	●	●
	150408PG				0.8	●	●	●	●
	150412PG				1.2	●	●	●	●
	150416PG				1.6	●	●	●	●
	DNMG 150604PG	12.70	6.35	5.16	0.4	●	●	●	●
	150608PG				0.8	●	●	●	●
	150612PG				1.2	●	●	●	●
	150616PG				1.6	●	●	●	●
 半精加工~粗加工 Medium-Roughing	SNMG 120408PG	12.70	4.76	5.16	0.8	●	●	●	●
	120412PG				1.2	●	●	●	●
	120416PG				1.6	●	●	●	●
 半精加工~粗加工 Medium-Roughing	TNMG 160404PG	9.525	4.76	3.81	0.4	●	●	●	●
	160408PG				0.8	●	●	●	●
	160412PG				1.2	●	●	●	●
 半精加工~粗加工 Medium-Roughing	WNMG 080404PG	12.70	4.76	5.16	0.4	●	●	●	●
	080408PG				0.8	●	●	●	●
	080412PG				1.2	●	●	●	●
	080416PG				1.6	●	●	●	●

●: 标准库存
●: Standard Stock

■ 推荐切削条件 Recommended Cutting Condition

PP断屑槽 PP chipbreaker

被切削材 Workpiece Material	刀片 材质 Insert Grade	下限-推荐-上限 Min.-Recommendation-Max.		
		速度 Vc Cutting Speed Vc(m/min)	切深 ap	进给 f Feed rate f (mm/rev)
碳钢、合金钢 Carbon Steel/Alloy Steel	PV7010	210-270-380	0.2-0.5-1.5	0.04-0.16-0.28
	PV7025	190-270-370		
	TN6010	200-270-370		
	TN6020	190-270-360		
	CA510	190-280-360		
	CA515	160-260-340		
	CA525	150-240-320		
CA530	140-210-270			

PQ断屑槽 PQ chipbreaker

被切削材 Workpiece Material	刀片 材质 Insert Grade	下限-推荐-上限 Min.-Recommendation-Max.		
		速度 Vc Cutting Speed Vc(m/min)	切深 ap	进给 f Feed rate f (mm/rev)
碳钢、合金钢 Carbon Steel/Alloy Steel	PV7010	200-260-370	0.5-1.0-2.5	0.15-0.25-0.4
	PV7025	180-250-350		
	TN6010	190-260-360		
	TN6020	180-250-340		
	CA510	180-260-340		
	CA515	150-240-320		
	CA525	140-220-300		
CA530	130-190-250			

PG断屑槽 PG chipbreaker

被切削材 Workpiece Material	刀片 材质 Insert Grade	下限-推荐-上限 Min.-Recommendation-Max.		
		速度 Vc Cutting Speed Vc(m/min)	切深 ap	进给 f Feed rate f (mm/rev)
碳钢、合金钢 Carbon Steel/Alloy Steel	CA510	180-260-340	1.0-2.0-4.0	0.18-0.3-0.45
	CA515	150-240-320		
	CA525	140-220-300		
	CA530	120-180-250		

PT断屑槽 PT chipbreaker

被切削材 Workpiece Material	刀片 材质 Insert Grade	下限-推荐-上限 Min.-Recommendation-Max.		
		速度 Vc Cutting Speed Vc(m/min)	切深 ap	进给 f Feed rate f (mm/rev)
碳钢、合金钢 Carbon Steel/Alloy Steel	CA510	160-260-340	1.0-2.8-3.8	0.2-0.35-0.45
	CA515	150-240-320		
	CA525	140-220-300		
	CA530	120-180-250		

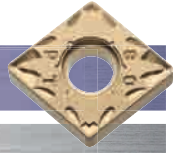
PH断屑槽 PH chipbreaker

被切削材 Workpiece Material	刀片 材质 Insert Grade	下限-推荐-上限 Min.-Recommendation-Max.		
		速度 Vc Cutting Speed Vc(m/min)	切深 ap	进给 f Feed rate f (mm/rev)
碳钢、合金钢 Carbon Steel/Alloy Steel	CA510	160-260-340	1.0-4.0-6.0	0.25-0.5-0.7
	CA515	150-240-320		
	CA525	140-220-300		
	CA530	120-180-250		

半精加工-粗加工用(高进给) For Medium-Roughing (High Feed)

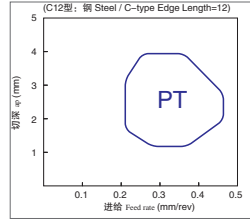
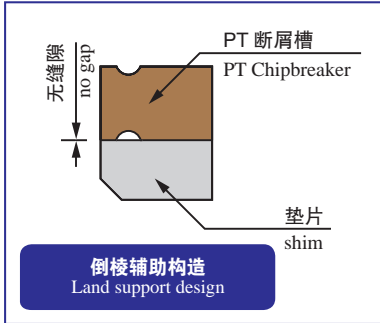
PT 断屑槽

PT chipbreaker



■ 特长 Features

- 重视稳定性与刀尖强度倒棱辅助构造的高进给断屑槽
High feed chipbreaker with land support design for better stability and edge strength



粗加工用 For Roughing

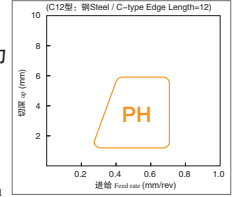
PH 断屑槽

PH chipbreaker



■ 特长 Features

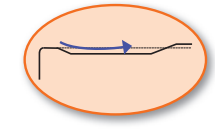
- 高切刃强度在强断续、黑皮工件加工时发挥威力
Suitable for heavy interrupted cutting and for workpiece with scale due to strong cutting edge
- 使用广泛的浅底断屑槽设计即使在高进给时也可进行顺利的切屑处理
Smooth chip control by wide and shallow chipbreaker design
- 刀尖部的正角倒棱抑制月牙洼磨损
Prevents crater wear by positive land on insert corner



广泛的断屑槽范围/浅断屑槽深度
Wide land design and shallow chipbreaker

刀尖部的正角倒棱
Positive land on insert corner
月牙洼磨损的抑制
Prevents crater wear

大倒棱面
Wide land design
高强度
High strength



■ 标准库存型号 Stock Items

形状 Shape	型号 Description	尺寸(mm) Dimension			CVD涂层 CVD Coated Carbide				
		内接 圆径 I.C.	厚度 Thickness	孔径 Hole	刀角R (rc) Corner-R (rc)	CA510	CA515	CA525	CA530
	CNMG 120408PT	12.70	4.76	5.16	0.8	●	●	●	●
	120412PT				1.2	●	●	●	●
	CNMG 160608PT	15.875	6.35	6.35	0.8	●	●	●	●
	160612PT				1.2	●	●	●	●
半精加工-粗加工、 高进给 Medium-Roughing High Feed	160616PT				1.6	●	●	●	●
		DNMG 150408PT	12.70	4.76	5.16	0.8	●	●	●
150412PT		1.2				●	●	●	●
DNMG 150608PT		12.70	6.35	5.16	0.8	●	●	●	●
150612PT					1.2	●	●	●	●
	SNMG 120408PT	12.70	4.76	5.16	0.8	●	●	●	●
	120412PT				1.2	●	●	●	●
	TNMG 160408PT	9.525	4.76	3.81	0.8	●	●	●	●
	160412PT				1.2	●	●	●	●
	WNMG 080408PT	12.70	4.76	5.16	0.8	●	●	●	●
	080412PT				1.2	●	●	●	●

●: 标准库存 ●: Standard Stock

■ 标准库存型号 Stock Items

形状 Shape	型号 Description	尺寸(mm) Dimension			CVD涂层 CVD Coated Carbide				
		内接 圆径 I.C.	厚度 Thickness	孔径 Hole	刀角R (rc) Corner-R (rc)	CA510	CA515	CA525	CA530
	CNMG 120408PH	12.70	4.76	5.16	0.8	●	●	●	●
	120412PH				1.2	●	●	●	●
	120416PH				1.6	●	●	●	●
	CNMG 160608PH	15.875	6.35	6.35	0.8	●	●	●	●
160612PH	1.2				●	●	●	●	
160616PH	1.6				●	●	●	●	
粗加工 Roughing	CNMG 190608PH	19.05	6.35	7.94	0.8	●	●	●	●
	190612PH				1.2	●	●	●	●
	190616PH				1.6	●	●	●	●
	190624PH	2.4	●	●	●	●			
	DNMG 150408PH	12.70	4.76	5.16	0.8	●	●	●	●
	150412PH				1.2	●	●	●	●
	150416PH				1.6	●	●	●	●
	DNMG 150608PH	12.70	6.35	5.16	0.8	●	●	●	●
150612PH	1.2				●	●	●	●	
150616PH	1.6				●	●	●	●	
	SNMG 120408PH	12.70	4.76	5.16	0.8	●	●	●	●
	120412PH				1.2	●	●	●	●
	120416PH				1.6	●	●	●	●
	SNMG 150612PH	15.875	6.35	6.35	1.2	●	●	●	●
150616PH	1.6				●	●	●	●	
190612PH	1.2				●	●	●	●	
190616PH	1.6	●	●	●	●				
	TNMG 160408PH	9.525	4.76	3.81	0.8	●	●	●	●
	160412PH				1.2	●	●	●	●
	160416PH				1.6	●	●	●	●
	TNMG 220408PH	12.70	4.76	5.16	0.8	●	●	●	●
220412PH	1.2				●	●	●	●	
220416PH	1.6				●	●	●	●	
	WNMG 080408PH	12.70	4.76	5.16	0.8	●	●	●	●
	080412PH				1.2	●	●	●	●

●: 标准库存 ●: Standard Stock

切削工具相关资讯

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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