

# 2016 切削工具

## CDBP CUTTING TOOLS

专业硬质合金切削工具制造商



PROFESSIONAL CARBIDE CUTTING TOOLS MANUFACTURE



成都邦普切削刀具股份有限公司  
Chengdu Bangpu Cutting Tools CO.,LTD



# 邦普刀具

## 放飞中国切削梦

### 公司简介

专注数控刀片，铸就国际品牌！成都邦普切削刀具股份有限公司是金属切削用硬质合金可转位刀片及其刀具，木材加工用硬质合金机夹刀片、排钻和铰链钻的专业制造厂家。

公司拥有可倾式球磨机、喷雾制粒塔、CNC电动自压机、低压真空烧结炉、周边磨床、数控成型工具磨床、全自动钝化机、CVD和PVD涂覆炉、高速铣床、电火花机、慢走丝线切割机、线性检测仪、磁饱和仪、斯丽磁力机、金相显微镜等一条从发达国家引进的硬质合金数控刀片生产线，年产2000多万片，并通过了ISO9001国际质量体系认证。

公司的产品已批量出口欧美、东南亚、中东等地区，共有3大类：

- 1、铝材、铸铁、不锈钢、各种钢材等金属切削专用车、铣、切断切槽、钻铰等硬质合金和金属陶瓷厚膜复合涂层可转位刀片及其刀具，以及焊接刀片；
- 2、机夹木工刀片、木工排钻、直刀、铰链钻和精密木工刨刀等硬质合金木工刀具；
- 3、刀垫、金刚石和CBN刀具用基体、矿用球齿、板材、棒材、拉丝模、冲压模等其它硬质合金制品；

我们还可根据您的来图来样定制各种硬质合金制品。

坚韧之邦，普惠天下！我们将一如既往地为您提供最满意的产品和服务！



### COMPANY Introduction

Concentrate on CNC Inserts, accomplish International brands! Chengdu Bangpu Cutting Tools Co., Ltd is a professional carbide products manufacturer which produces carbide Indexable Inserts, cutting tools, woodworking reversible Inserts, hinge boring bits and dowel drill bits.

Chengdu Bangpu Alloy Materials Co., Ltd owns an imported production line from developed countries like Swiss, Germany, etc, including Ball Grinding Mill, Spray granulation tower, CNC automotive pressing machine, low pressure vacuum sintering furnace, CNC Grinding Machines, CNC forming Tool Grinding Machine, Automatic Chamfering machine, CVD and PVD coating furnace, high-speed milling machine, EDM machine, WEDM-LS, Linear detector, Sigma meter, Coercive force machine, Metalloscope, etc., with annual output twenty million pieces, and has passed the ISO 9001 International quality system certification.

Our company's products have been exported to Europe, America, Southeast Asia, Middle East and other regions, our main products have three categories:

- 1, Milling and Turning inserts for processing aluminum, cast iron, stainless steel, a variety of steel and other metals, grooving inserts, drilling and milling inserts, cermet indexable inserts with thick-film multi-layer coating, tool holders, brazing inserts.
- 2, The indexable woodworking inserts, woodworking dowel drill bits, hinge boring bits, high precision planer, etc.
- 3, Inserts shim, diamond and CBN substrate, mining ball gear, blanks, rod, wire drawing dies, punching dies and other carbide products.

We can customize all kinds of cemented carbides products according to your drawings and samples.

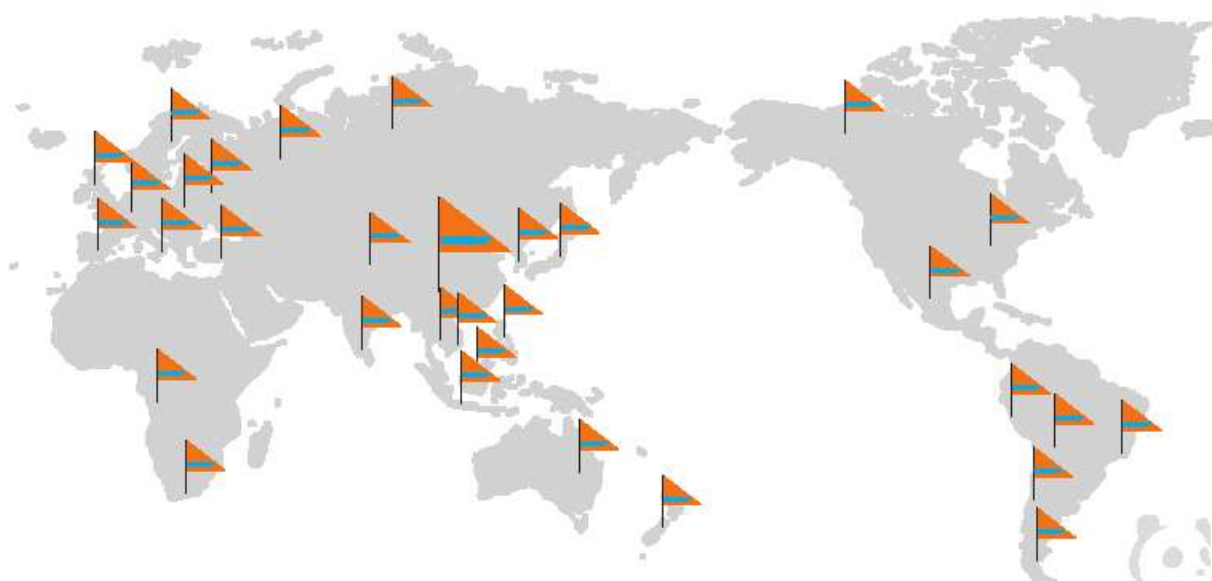
Tenacious state, widely benefit the world! We will always provide you our best products and service!





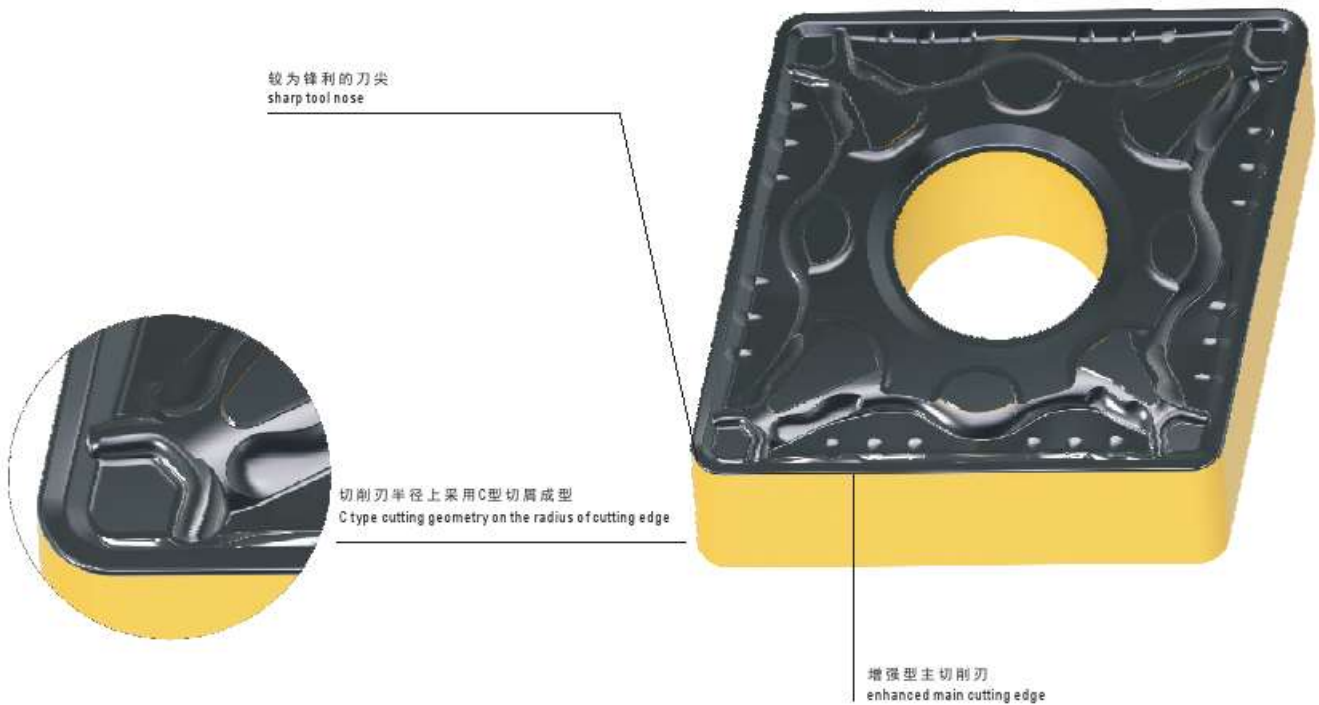
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# 邦普FW\MD\RA\RB

## 全面提升钢件加工性能



可转位刀片槽型-MD  
indexable inserts geometry-MD

### MD 槽型

- 钢件半精加工通用槽型
- general geometry for semi-finishing machining on steel
- 增强型主切削刃
- enhanced main cutting edge
- 主切削刃增强型设计可以在大进给和高进给率情况下进行半精加工
- inserts can be used in semi-finishing machining with bigger cutting depth and bigger feed rate
- $a_{pmax}: 8mm, f_{max}: 0.6mm$
- C型切屑成型
- C type cutting geometry
- 即使是在切深较小且加工余量波动较大的情况下, 仍能实现完美的断屑
- perfect working under small cutting depth and unstable allowance machining
- 轮廓加工没有任何断屑问题
- without any problem in contour machining
- $a_{pmin}: 0.4mm, f_{min}: 0.1mm$
- 基本形状: CNMG、DNMG、SNMG、TNMG、WNMG
- basic type CNMG, DNMG, SNMG, TNMG, WNMG

### 应用 application

- 与原先的半精加工刀片相比, 具有更广泛的应用领域, 通用性更强
- with better working range
- 在加工余量波动幅度很大的情况下仍然能实现非常高效的加工
- high performance under unstable allowance machining
- 典型零件: 钢制轮轴、毂和齿轮等
- typical work piece: steel wheel and hub, gear

### 优势 advantage:

- 因采用了C型切屑成型而实现了完美的断屑, 从而保证了切屑能轻易排出
- perfect chip breaking performance with C type geometry, chips will be easily peel off
- 减小了生产中槽型的多样化, 因为MD槽型可涵盖较大的应用范围
- larger working range makes fewer geometry types
- 较为锋利的刀尖, 增强型主切削刃, 结合耐磨的涂层牌号获得最佳的生产效率
- sharp tool nose, enhanced main cutting edge, providing best work performance combine with good wear resistance coat grade





# 邦普全新推出钢加工系列

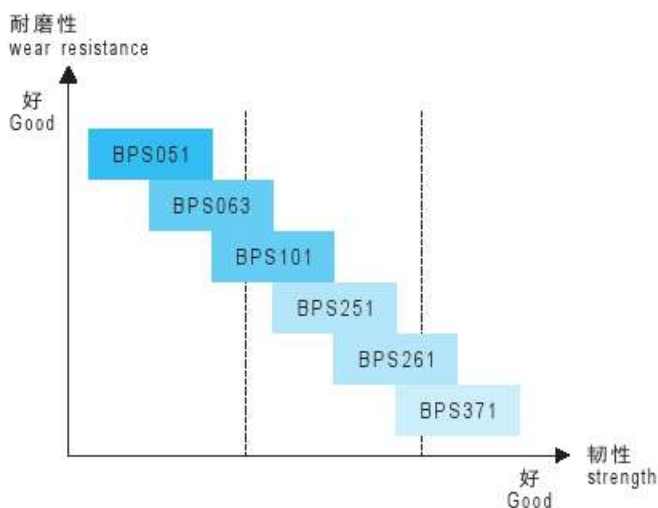
## 提高钢车削时的生产效率

### CDBP Newest steel processing inserts

### Better performance for steel processing

产品扩展  
2015

加工条件



半精加工 semi-finishing

汽车变速箱零件 automobile gearbox spare parts

工件材料 work piece: 27MnCr5JV(锻件)  
 可转位刀片 inserts type: CNMG 120408-MD  
 刀具材料 grade: BPS 101  
 主偏角 entering angle: 75



切削参数 cutting data

切削速度 speed	350m/min
进给 feed rate	0.35-1.0mm/圈 0.35~1.00mm/rev
切深 cutting depth	3mm

备注: 非常优良的断屑



+20%  
使用寿命

采用了双槽/C型切屑成型而实现完美的断屑  
 perfect chip break performance with double chip breaker/  
 C type geometry



ap: 3mm, f:0.35mm



# RA 槽型

## 重切削加工领域

### RA geometry

### heavy cutting machining

#### 可转位刀片

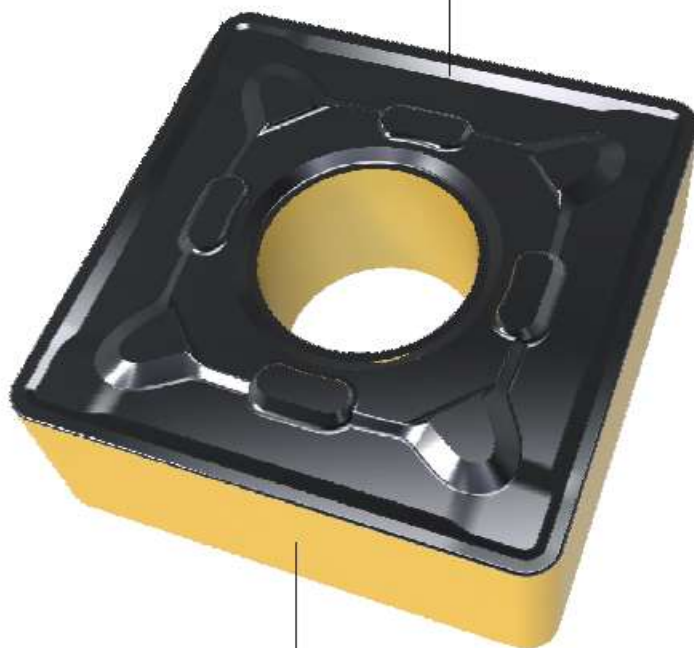
- 高强度刀尖在强断续及黑皮加工中发挥威力
- Suitable for heavy interrupted cutting and for workpiece with scale due to strong cutting edge
- 宽幅、浅底断屑槽设计即使在高进给条件下也能顺利进行切屑处理
- Smooth chip control by wide and shallow chipbreaker design
- 正角刀尖抑制凹坑磨损
- Prevents crater wear by positive land on insert corner
- 基本形状: C、S和T
- 推荐牌号: BPS101、BPS251、BPS371,
- 用于钢和铸铁切削加工



#### 应用 application

- 加工余量不同的锻件, 以及“第一刀”加工
- Cutting Different Margin Forgings, and "First Cutting" Machining
- 在重工业中经常出现的铸件砂皮
- Castings surface sand in heavy industry
- 以最大的进给量进行重切削粗加工
- Maximum feed rate in rough heavy cutting
- 车床使用最大驱动功率, 以实现最高加工效率
- Lathe can use maximum power to ensure maximum processing efficiency
- 典型的加工零件: 船用曲轴、发电机轴、列车车轮等
- Typical machining parts: Crankshaft for ship, Generator shaft, Train wheels, and so on

高强度加宽刃带-  
提高稳定性  
high strength widen cutting edge  
-better stability



直切削刃设计-  
最大刀片厚度  
streight cutting edge design  
biggest thickness of inserts

RA槽型

#### 优势 Advantages:

- 带台阶的负型保护倒角降低了切削力, 从而实现更长的刀刃寿命
- Negative chamfer with steps reduces the cutting force, extend the lifetime of the cutting edge
- 极为坚韧的BPS371切削牌号, 可在极限条件防止可转位刀片断裂, 从而节省刀具成本
- Strong Grade BPS 371 can be used in bad conditions, Blade won't broken, can save your machining cost.
- 切削引导设计可减小摩擦面积, 从而降低加工温度-提高刀刃寿命
- This kind of chip breaker can reduce friction area, Thus reducing the processing temperature, increase blade life.





## RA断屑区域 RA chip breaker application

- RA槽型最适于在锻件上进行困难的粗加工。
- 它覆盖了为通用粗加工而设计的RB槽型以下的应用领域。
- 这样，仅用这两种槽型便能满足整个粗加工应用范围的要求。
- RA chip breaker is better use for forgings hard rough cutting.
- RA cover all the cutting area below RB chip breaker, RB is the interchangeable chip breaker for rough machining, so the RA and RB can meet all the requirements of rough cutting.



RA基本形状C型 C type inserts with RA chip breaker

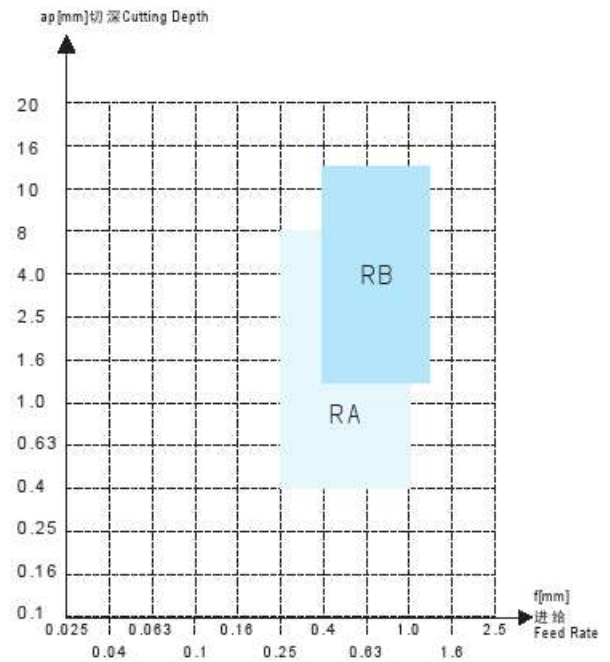


RA基本形状S型 S type inserts with RA chip breaker



RA基本形状T型 R type inserts with RA chip breaker

## 加工条件 Cutting Condition



### 钢铁行业用轧辊 Roll use in steel industry

#### 粗加工 Rough cutting

工件材料 Working materials: 42CrMo4  
 可转位刀片 CNC carbide inserts: SNMG190824-RA  
 刀具材料 Grade: BPS251  
 主偏角 Entering Angle: 75

#### 切削参数 Cutting Data

	竞争产品 Competitors	邦普 RA CDBP RA
$V_c$	80m/min	80m/min
$f$	1.0mm	1.0mm
$a_p$	6-8mm	6-8mm

#### 每个切削刃的刀具寿命比较 [min] Every cutting edge life time compare:



#### 备注 Remarks:

可转位刀片无断裂-刀具寿命可达1小时以上。

CNC carbide inserts life time can be more than 1 hours without split.

使用邦普BPS251刀具材料拥有更好的安全性和刀具寿命，获得最佳的生产效率。

BPS251 make the cutting edge have better life time and security, can obtain best production efficiency.

# 邦普RB

CDBP RB chip breaker

重切削粗加工领域

Heavy machining roughing cutting applications

带台阶的负型保护倒角  
-提高稳定性  
Negative chamfer with steps to improve stability



切屑导向设计  
-降低摩擦  
Reduce friction cutting design



弯曲的切削刃  
Curved cutting edge

## 可转位刀片槽型RB

CNC carbide inserts chip breaker-RB

RB槽型 RB chip breaker

- 用于重切削粗加工的单面可转位刀片
- Heavy machining single face rough cutting CNC carbide inserts
- 稳定的切削刃设计,带台阶的保护倒角
- Stability cutting edge design,negative chamfer with steps
- 切削引导设计减小摩擦
- Reduce friction cutting design
- 弯曲的切削刃
- 较低的切削力
- low cutting force
- 大切深状况排屑仍然顺畅
- high feed rate with perfect chip break performance
- 功率 求低,可用于功率较小的车床
- Low power requirements,can be used in low power lathe
- 基本形状:C、S和T
- Basic Type; C, S and T
- 邦普切削材质: BPS101、BPS251和BPS371,用于钢和铸铁切削加工
- CDBP Grade recommend: BPS101, BPS251 and BPS371 better use for Steel and Cast Iron cutting.

应用 Applications:

- 与原先的粗加工刀片相比,具有更广泛的应用领域,不仅涵盖了重切削粗加工,而且还能在最后切削时毫无问题地通过车削进行轮廓精加工
- Compare with before rough cutting inserts,it have a widely applications,not only use for heavy machining roug cutting,but also better use for turning contour finishing.
- 锻件粗加工,如风力涡轮机、发电机轴等的轴承内外圈
- Forgings rough cutting,such as the bearing's inner and outer rings of Wind turbine or generator shaft.
- 在加工余量波动幅度很大的情况下仍然能实现非常高效的加工
- It also can achieve high efficient processing,when cutting depth have big fluctuations

优势 Advantages:

- 圆弧刀刃的低抵抗设计
- Low cutting force by curved cutting edge design
- 正角刀尖抑制凹坑磨损
- Prevents crater wear by positive land on insert corner
- 2段凸起有效防止溶着,减少对凸起部的负荷
- Prevents adhesion by 2-steps dots and reduces load on dots

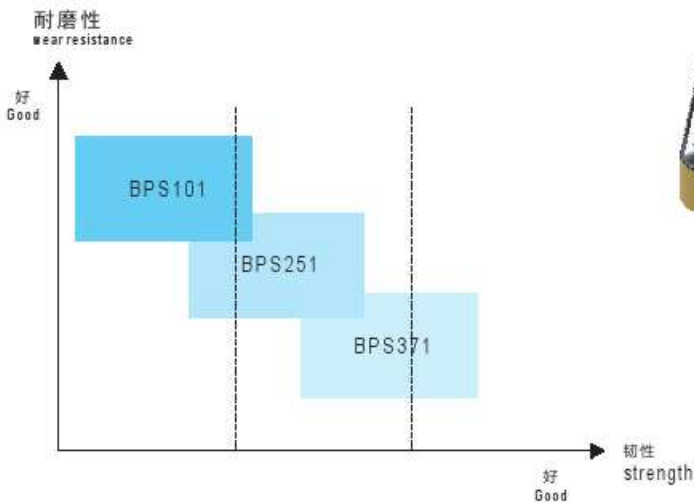




# 邦普重型切削- 提高钢车削生产效率 CDBP heavy cutting To improve the steel turning production efficiency



加工条件  
Cutting Condition



## 粗加工 Rough Cutting 风力发电机法兰盘 Wind turbine flange

工件材料 Q345E+Z25  
Cutting Materials:  
可转位刀片 CNMM 190624-RB  
CNC carbide inserts item:  
刀具材料 BPS 251  
Grade:  
主偏角 95  
Entering Angle:

切削参数 Cutting Data:

切削速度 Speed:	90-120m/min
进给 Feed Rate	0.9~1.1mm/rev
切深 Cutting Depth:	7-14mm

备注: 优良的断屑, 更高的寿命  
Remarks: perfect chip break performance, long life time.

每片加工零件数量比较  
Each inserts processing workpiece quantity compare



**+50%**  
使用寿命



采用了双槽/C型切屑成型而  
实现完美的断屑  
perfect chip break performance with  
double chip breaker/C type geometry



ap: 10mm, f:1.0mm



# 邦普SL、LHC和SN-

## 三种专门用于高温合金的新槽型

### CDBP SL、LHC and SN chip breaker

### New chip breaker specifically for heat-resistant alloys



#### 应用 Applications:

##### LHC/SN 槽型 LHC/SN chip breaker

- 加工耐热合金 (例如Inconel718、Waspalloy)
- Cutting heat-resistant alloys (such as Inconel718, Waspalloy)
- 应用于航空和航天工业 (例如涡轮机体、涡轮盘)
- Used in aviation and aerospace industry (such as turbo body, turbine disc).
- 石油和天然气工业的测量仪器
- Oil and Gas Industry Measuring instruments
- 化学工业的阀门和泵零件
- Chemical industry valves and pumps parts
- 扩展应用于ISO S材料, 例如钴基和镍基耐热合金
- Widely use for ISO S type materials, such as Cobalt-based and nickel based heat-resistant alloys

##### SL/LHC 槽型 SL/LH chip breaker

- 精加工
- 锋利的切削刃, 切削力低, 低切削力的轻切削槽型, 在加工耐高温的合金时产生的热量较少
- Sharp cutting edge, low cutting force, light cutting chip breaker, fewer calories when cutting heat-resistant alloys.
- 断屑性良好-避免切屑损伤
- Perfect chip break performance
- Avoid cutting damage
- 基本形状C、D、T、V、W
- Basic Type: C, D, T, V, W

##### SN 槽型 SN chip breaker

- 半精加工
- Semi-finishing
- 锋利的刃口, 具有一定强度的韧带, 适合加工高强度的ISO S类材料
- Sharp cutting edge with strong cutting edge, suitable for cutting high strength ISO S type materials
- 在铸造高温合金的断续加工中也有不错的表现
- Perfect performance for Intermittent processing cast superalloy.
- 基本形状C、D、S、W
- Basic Type: C, D, S, W

#### 优势 Advantages:

- 切削力小, 能够可靠地加工不稳定的部件 (例如涡轮机壳), 并且在加工耐高温的合金时产生的热量较少
- Low cutting force, can be reliably processing unstable parts (such as turbine housing), fewer calories when cutting heat-resistant alloys.
- 采用最新技术的PVD氧化铝刀具材料BPG118和BPG318具有耐高温涂层, 可用于更高的切削速度
- BPG118 and BPG318 use the newest technical PVD coated materials (Al<sub>2</sub>O<sub>3</sub>), With high temperature resistance coating, can be used for high cutting speed.
- LH和SN槽型能将刀具寿命提高到150%
- LH and SN chip breaker will extend inserts 150% lifetime compare with before.



SL可转位刀片: 精加工  
SL CNC carbide inserts: Finishing

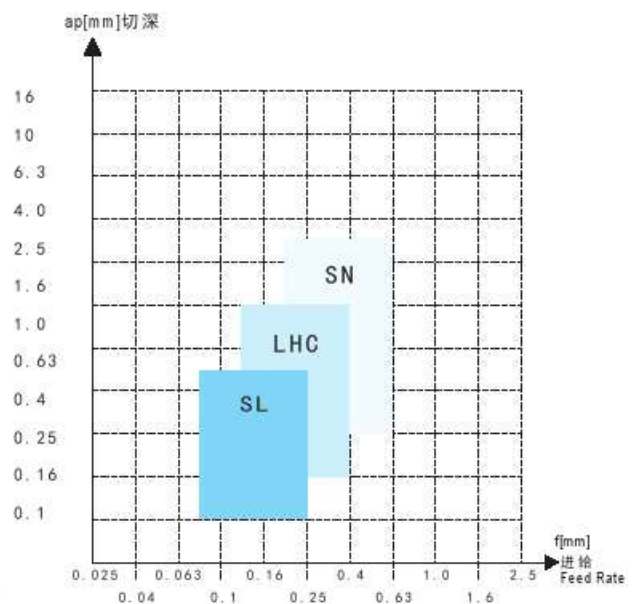


LHC可转位刀片: 精加工及半精加工  
LHC CNC carbide inserts: Finishing



SN可转位刀片: 半精加工  
SN CNC carbide inserts: Se-mi Finishing

#### 加工条件 Cutting condition:





## \_ISO车刀 ISO Turning Inserts

# 邦普 BPG118、BPG218和BPG318-

稳定、可靠、独特

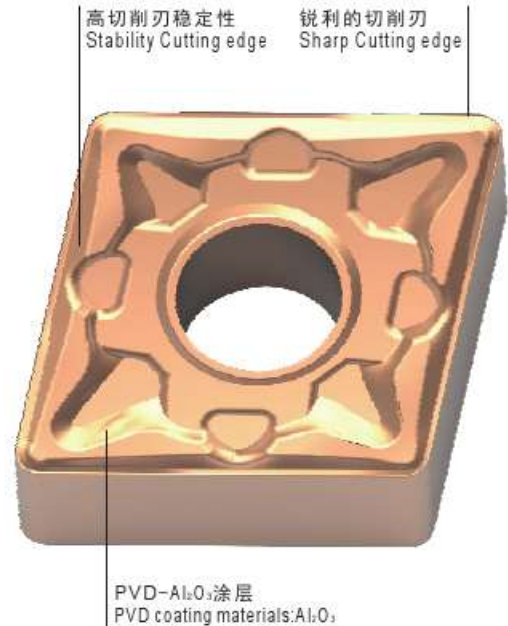
CDBP BPG118,BPG218,BPG318 Stable,Reliable,Unique

采用全球最新技术，成功地以PVD涂层处理技术将氧化铝 ( $Al_2O_3$ )附着到硬质合金可转位刀片上。

Using the world's latest technology,Successful combine  $Al_2O_3$  with CNC carbide inserts

### 刀具材料 Inserts Materials

- 由于采用了PVD氧化铝，因此与此前的所有PVD涂层相比，提高了耐磨性和耐高温性
- Use PVD  $Al_2O_3$  coating,compare with before PVD coating,the inserts's wear resistance and heat resistance improved.
- 由于PVD涂层的镀膜温度低，因而具有最高的工艺可靠性
- As PVD coating temperature is low,so the crafts reliable.
- 由于采用了先进工艺，因此具有非常平滑的前刀面和锋利的切屑刃
- Use advanced technology,The blade has a smooth rake face and sharp cutting edge.
- 出色的韧性，良好的耐磨性
- Perfect strength and better wear resistance.



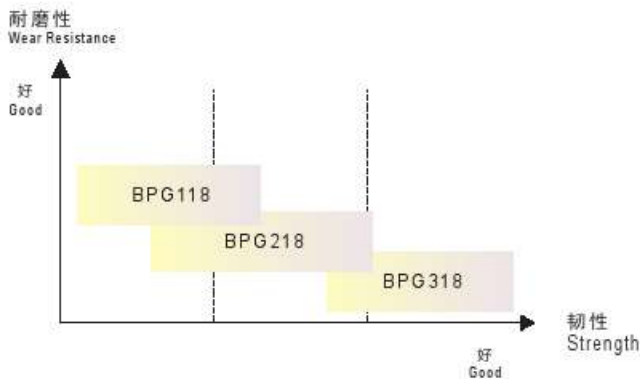
### 优势 Advantages:

- 由于采用了超细颗粒基材，并结合了氧化铝涂层，因此具有前所未有的工艺可靠性
- Use ultrafine particle substrates combine with  $Al_2O_3$  coating,leads the reliable crafts.
- 由于采用了耐高温的 $Al_2O_3$ 涂层而具有最好的热硬度，从而具有更高的耐磨性
- Use heat-resistance  $Al_2O_3$  coating has best hot hardness,so it has better wear resistance.
- 锋利的切屑刃-采用了PVD涂层-确保加工零件无毛，并减少积屑瘤的产生
- Sharp cutting edge with PVD coating,to ensure the workpiece don't have glitches,also reduce the built-up edge.

### 加工条件 Cutting Condition

邦普 BPG118/BPG218/BPG318  
CDBP BPG118/BPG218/BPG318

槽型: SN  
Chip Breaker: SN



面铣刀和台阶铣刀 Face milling and shoulder milling

# 邦普面铣系列

Face milling inserts

通用铣刀-经济且高效

Universal Milling inserts-economical and efficient



G2.5动平 高精度模块式或整体式刀体；  
采用等截面设计，可承担较大扭矩；  
德国SFS螺钉，保障可靠安装；  
刀柄尺寸有30、40和50；  
刀头直径有 $\phi 16$ 、 $\phi 20$ 、 $\phi 25$ 和 $\phi 32$ ；

G2.5 dynamic balancing high precision modular or integral cutter body  
Uniform cross section design, it can bear significant torque fluctuations.  
Germany SFS screws to ensure reliable installations.  
Holder shank size: 30mm, 40mm and 50mm;  
Cutter diameter:  $\phi 16$ ,  $\phi 20$ ,  $\phi 25$  and  $\phi 32$ ;

各类铝合金高速铣削用可转位刀片

All kinds of high speed milling aluminum alloy with indexable insert



特殊螺旋刃口设计，保障切削轻快；  
特别前后刀面设计，保障断屑及切削；  
高效切削，线速度600-1400m  
刃口特别处理，切深1.0mm-3.0mm；  
特别铝合金高速铣削，品质一流。

Special spiral cutting edge design to ensure the cutting light;  
Special design of the front and back cutting surfaces to help chip breaking and cutting;  
High efficiency cutting, linear velocity: 600-1400m;  
Cutting edge special treatment, cutting depth 1.0mm-3.0mm;  
Special aluminum alloy high speed milling, Top quality.



HNGX... 面铣刀

-六边形，负型刀片  
-每个可转位刀片有12个切削刃，实现刀片  
最大经济性  
-结构上带有平面修光刃

Face milling

-Hexagon, Negative Inserts

-Each inserts have twelve cutting edge,  
to achieve maximum use.

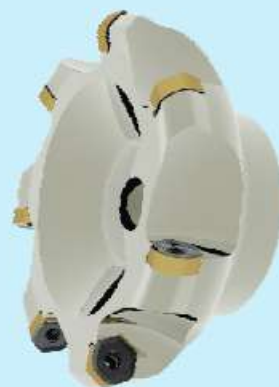
-Design with wiper

## 加工实例

Processing example

机床: HM 635  
Machine tool  
刀柄: HSK-A100  
Inserts Shank  
功率: 15kw  
Power

Vc	226m/min
N	900min
Vf	0.24mm/min
ae	62.8mm
ap	2.5mm



HNGX面铣刀系列

-直径40-200mm

-主偏角45°

-用于面铣、粗铣

HNGX Face milling

-Dia: 40-200mm

-Entering Angle: 45°

-Use for face milling  
and rough milling

某进口产品 加工29件  
Competitors  
邦普 BPS411 加工35件  
CDBP BPS411

0 30 50

+20%  
使用寿命



# 邦普面铣系列-

## 通用铣刀-经济且高效

Face milling inserts

Universal Milling inserts-economical and efficient

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Material recommended										
		L.C	S	d	r	CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade			
						BPG122	BPS321	BPS411	BPG108	BPG05B	BPG20B	BPG25B	BPG30B	BU10	BU810	
	ONGX080608-L	20.2	6.00	5.3	0.8										☆	★
	ONGX080608-F	20.2	6.00	5.3	0.8	☆			★	★						
	ONGX080608-M	20.2	6.00	5.3	0.8		☆	★	☆		☆	☆				
	ONGX080608-R	20.2	6.00	5.3	0.8		☆	★				☆	☆			

加工用途		BPS321	BPS411	BPG05B	BPG20B	BPG30A	BU810
	<b>P:钢</b>	★	★	★	★	☆	
	<b>M:不锈钢</b>		☆	★	★	★	
	<b>K:铸铁</b>		★		☆		★
	<b>N:有色金属</b>						★



### SA45\*\*刀盘系列

45度主偏角，  
特殊的刀体处理使加工更可靠。  
刀片提供多种材质和槽型，  
应对各种材料的粗精加工。





# 邦普全新推出切槽系列

## 应用推荐

Grooving series.

Better performance in Grooving and parting.

**带主偏角切断系列**

MGGN\*\*~6D/30B  
W2-6  
T:10-28

**单头大直径切断系列**

BP\*\*  
W2-5  
 $\Phi D_{max}$ :35-125

**全新拓展精加工槽型**

MGMN\*\*~L/G  
W2-6  
T:10-28

**超精加工及有色金属系列**

MGMN\*\*~LH  
W2-6  
T:10-28

**全新拓展通用槽型**

MGMN\*\*~H/M  
W2-6  
T:10-28

**仿形车削、圆弧槽**

MRMN\*\*~M  
W2-6  
T:10-28

**全新端面切槽系列**

GRIP\*\*~M  
W3-5  
T<sub>max</sub>:12-22  
 $\Phi D_{max}$ :25-800

详见P145



# 邦普全新推出切槽系列

提高切槽切断的生产效率

Grooving series.

Better performance in Grooving and parting.



-更加优秀的槽型

Better Geometry.

-配合出色的材质

Good Substrate.

-为用户提供更经济

More Efficiency.

-更高性价比的切槽切断系列

Higher cost performance.

LH-专为超精加工及有色金属加工设计

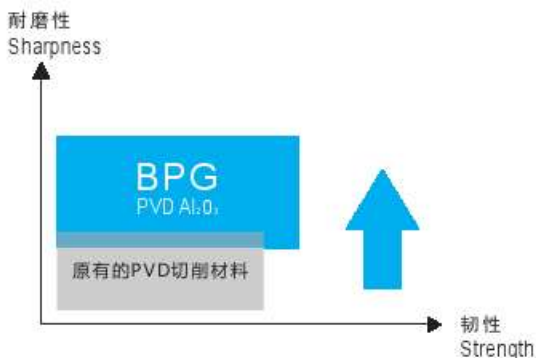
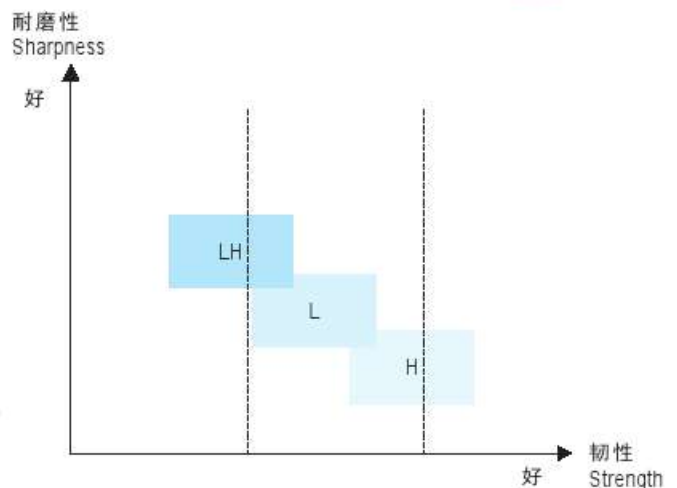
LH-For Superfinishing also for nonferrous metals.

L-锋利的刃口减小加工阻力，适用于精加工

L-Sharp cutting edge reducing the resistance in machining. For finishing.

H-较强韧的刃口设计，适用于中等到精加工

H-With strong cutting edge good for medium to roughing machining.



半精加工  
皮带轮

工件材料: HT250  
可转位刀片: MGMN 300-L  
刀具材料: BPG 20B



加工前



加工后

切削参数

切削速度	195m/min
进给	0.35-1.0mm/圈 0.35~0.15mm/rev

备注: 非常优良的断屑



+120%  
使用寿命





## A 材质 Materials

**A1** 涂层材质特性  
Coating grades properties overview ..... 015

**A2** 硬质合金牌号材料特性  
Features of cemented carbide overview ..... 025

**A3** 金属陶瓷材质特性  
Features overview of cermet ..... 027

**A4** 牌号推荐一览表  
Recommended grade overview for carbide insert ..... 028






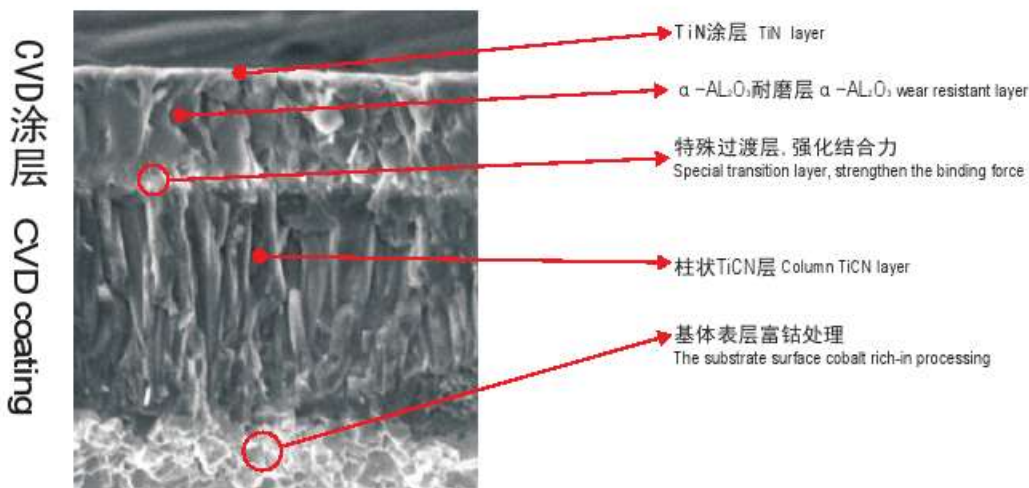




A1 涂层材质特性 Coating grades properties overview

A1-1 车削牌号 TURNING K

牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPC102	K10-K20	黑 Black 	CVD涂层硬质合金，在硬基体上涂有光滑的耐磨涂层，能够耐受苛刻的间断切削工况。用于铸铁低到中等切削速度的粗加工。 CVD-coated cemented carbide, the hard substrate coated with a smooth and wear-resistant coating, can bear harsh intermittent cutting conditions. Universal grade for all cast iron roughing cutting at low to medium speed.
BPC102A	K15-K25	黑 Black 	CVD涂层硬质合金牌号，在硬度、韧性兼备的梯度烧结基体上涂有耐磨涂层。灰口和球墨铸铁的低到中等切削速度加工。在湿和干式加工中的安全性。 CVD-coated cemented carbide grades, thick abrasion resistant coating on the high intensity gradient sintered base. Machining of gray and ductile iron at low to medium cutting speed. Security in wet and dry machining.
BPC132	K15-K35	黑 Black 	CVD涂层硬质合金牌号。WC-Co较高强度的基体与TiN/TiCN/Al <sub>2</sub> O <sub>3</sub> 厚膜结构化学涂层的结合，尤其适合于灰口铸铁、球墨铸铁的车削加工。 CVD coating carbide grade. It combines WC-Co high strength matrix and TiN/TiCN/Al <sub>2</sub> O <sub>3</sub> thick chemical coating, especially suitable for turning of gray iron, ductile cast iron





## A1 涂层材质特性 Coating grades properties overview

### A1-2 车削牌号 TURNING P

牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPS051	P05(P01-P10)	黑/黄 Black/yellow 	CVD涂层牌号:在稳定工况下对钢材进行精加工时,可获得高金属去除率。 出色的耐月牙洼磨损和抗塑性变形能力。推荐用于稳定工况。湿式和干式加工。 CVD coated grade: stable conditions for steel finishing can obtain high metal removal rate. Excellent resistance to crater wear and plastic deformation resistance. Recommended for stable conditions. Wet and dry processing.
BPS101	P15(P10-P20)	黑/黄 Black/yellow 	CVD涂层硬质合金牌号,在硬度、韧性兼备的梯度烧结基体上涂有耐磨涂层,承受高温。 用于钢和钢铸件的精加工到半精加工,连续切削到轻的间断切削。 灰口和球墨铸铁的低到中等切削速度加工。 硬材料连续切削到轻型间断切削的精加工到粗加工。湿式和干式加工。 CVD coated carbide grade, wear-resistance materials coated on the gradient sintered substrate which has both good hardness, toughness. Can bear high temperatures. For steel and steel castings finishing to roughing processing, Continue cutting to light interrupted cutting. Machining of gray and ductile iron at low to medium cutting speed. For hard materials continuous cutting and light interrupted cutting from finishing to roughing. Wet and dry processing.
BPS153	K15(K10-K20)	黄 Yellow 	
BPS251	P20(P15-P30)	黑/黄 Black/yellow 	梯度合金基体涂覆厚膜耐磨CVD牌号。通用性广的牌号。 适于钢和铸钢件上的精加工到粗加工连续切削以及间断切削。不锈钢材料连续切削和间断切削。 CVD coated carbide grade, Universal grade, suitable for steel and cast steel continuous cutting and interrupted cutting finishing to roughing. Grades with a wide range of applications. Stainless steel continuous cutting and interrupted cutting.
BPS253	M15(M10-M20)	黄 Yellow 	
BPS371	P30(P25-P40)	黑/黄 Black/yellow 	CVD涂层硬质合金牌号,高强度合金基体上厚膜耐磨涂层。在恶劣工况下加工钢和铸钢件。 刃线安全性,用于高金属去除率的间断切削。 CVD coated carbide grade, high-strength alloy substrate with thick wear-resistant coating. Machining steel and cast steel in bad conditions. Edge line security for interrupted cutting high metal removal rate.
BPS373		黄 Yellow 	





## A1 涂层材质特性 Coating grades properties overview

### A1-3 车削牌号 TURNING M

牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPG05B	M10(M05-M15)	青灰黑 Cyan-blue gray dark 	具有很高的热硬度和良好的抗塑性变形能力, 适用于高速切削条件下, 奥氏体不锈钢、淬硬钢、碳钢的精加工。 With high hot hardness and good resistance to plastic deformation. Suitable for high speed cutting and finishing process of austenitic stainless steel, quenched steel and carbon steel
BPG20B	M25(M10-M30)	青灰黑 Cyan-blue gray dark 	PVD涂层微晶粒硬质合金。使用中等到低切削速度, 进行各种不锈钢的精加工。要出色的刃口强度和高表面质量时, 可提供完美的平顺切削。很高的耐热冲击性能。适用于轻型间断切削。 PVD coated micro-grain carbide. Use for a variety of stainless steel finishing at medium to low cutting speed. When need excellent edge strength and high surface quality, provide the perfect ride cutting. A high thermal shock resistance. Suitable for light interrupted cuts.
BPG25B	M35(M25-M40)	青灰黑 Cyan-blue gray dark 	PVD涂层硬质合金牌号。WC-Co耐冲击的硬质合金基体与含Si的TiAlN纳米涂层的结合, 表层具有极高的纳米硬度, 尤其适合于碳钢、不锈钢通用型的车、铣削加工。 PVD coating carbide grades. WC-Co impact resistant cemented carbide matrix and TiAlN containing Si nano coating combination, the surface has a very high nano hardness, especially suitable for turning and milling of carbon steel, stainless steel.
BPG30C	M35(M 25-M 40)	青灰黑 Cyan-blue gray dark 	PVD涂层硬质合金。用于以低至中等切削速度进行奥氏体不锈钢和双相不锈钢的半精加工到粗加工。很高的耐热冲击性能。非常适合快速间断切削。 PVD coated carbide. For austenitic stainless steels and duplex stainless steel semi-finishing to roughing at low to medium cutting speed. High thermal shock resistance. Ideal for quickly interrupted cutting.

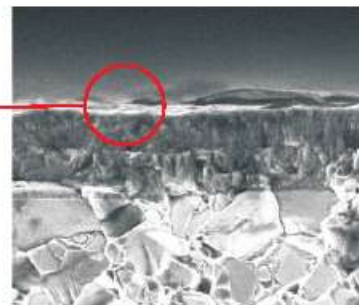
涂层材质: TiAlN  
Coating materials: TiAlN

涂层显微硬度: HV3200  
Coating microhardness: HV3200

涂层温度: 400-500°C, 对超细合金基体没有影响  
Coating temperature: 450-480°C, without effect on ultra-grained alloy substrate.

涂层失效温度: 900°C, 高耐热  
Coating failure temperature: 900°C, high heat resistance.

涂层后仍能保证刃口锋利  
Guarantee the sharp cutting edge after coating.



PVD涂层 PVD coating





## A1 涂层材质特性 Coating grades properties overview

### A1-4 车削牌号 TURNING S

A  
Materials

牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPG118	S05-S15	紫黄 Purple yellow 	PVD涂层硬质合金牌号, 用于耐热优质合金的中等速度铣削。 具有良好的抗积屑瘤和抗塑性变形能力。 PVD coated carbide grade for medium-speed milling of heat resistant alloys. With good ability to avoid built-up edge and good resistance to plastic deformation capacity.
BPG218	S15(S15-S30)	紫黄 Purple yellow 	PVD涂层硬质合金牌号, 具有良好的抗积屑瘤和抗塑性变形能力。 用于不稳定工况, 如长切削刃、切屑堵塞、深台肩和立铣、长悬伸、车铣工序等; 不锈钢的轻型铣削; 结合周边磨削刀片, 用于粘性和加工硬化材料; 耐热优质合金的中等速度铣削; 淬硬零件的低进给和中速铣削。 PVD coated carbide grade have good ability to avoid built-up edge and good resistance to plastic deformation capacity. For unstable conditions, such as long cutting edge, clogging, deep shoulder milling, long overhang, milling processes. Light milling of stainless steel; combine grinding blade for viscous and hardening materials; moderate speed milling of heat resistant alloys; hardened parts milling at low feed and medium-speed.
BPG318	S25(S20-S30)	紫黄 Purple yellow 	PVD涂层超细晶粒硬质合金, 可提供锋利的切削作用和出色的切削刃韧性, 良好的抗沟槽磨损和热冲击能力。用于低进给量或低切削速度碳钢精加工。中等到低切削速度的各种不锈钢的精加工, 也适用于轻型间断切削。耐热优质合金的低速加工, 或轻型间断切削。 适用于短接触时间的一般加工工序及有很高强度要求或要锋利切削刃的工序。 PVD coated micro-grain carbide. Can provide a sharp cutting action and excellent toughness of the cutting edge, a good anti-the grooves wear and thermal shock resistance. For carbon steel finishing at low feed rate or low cutting speed. a variety of stainless steel finishing at low to medium cutting speed, but also suitable for light interrupted cutting. Low-speed machining of heat resistant alloys, or light interrupted cuts. General short contact time processing step and high strength requirements of sharp cutting edges processing step.

### 车削牌号 TURNING N

牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPU109	N10(N01-N15)	金属色	DLC涂层, 涂层可显著降低积屑瘤, 从而获得更高表面质量。适于铝、镁、铜、黄铜、塑料等的精加工到粗加工。 DLC coating color, the coating can reduce BUE, obtain higher surface quality. Suitable for aluminum, magnesium, copper, brass, plastic finishing to roughing processing.
BU810	N10(N01-N15)	金属色	<b>亚微米晶粒, 适用于加工有色金属的连续和间断切削精加工。</b> <b>Sub-micron grain, suitable for the continuous and interrupted finishing of non-ferrous metal</b>
BU813	N10(N10-N30)	金属色	WC-Co硬质合金牌号, 具有较高的硬度和强度, 适合于有色金属的车削加工, 也可用于涂层的基体材料。 WC - Co in cemented carbide grade, It has excellent hardness and strength, suitable for turning of non-ferrous metal and can also be used for coating substrate materials.





## A1 涂层材质特性 Coating grades properties overview

### A1-5 铣削牌号 MILLING K

牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPG05B	K10(K05-K15)	青灰黑 Cyan-blue gray dark 	具有很高的热硬度和良好的抗塑性变形能力。适用于高速切削条件下，奥氏体不锈钢、淬硬钢、碳钢的精加工。 With high hot hardness and good resistance to plastic deformation. Suitable for high speed cutting and finishing process of austenitic stainless steel, quenched steel and carbon steel
BPG108	K05-K15	紫黄 Purple yellow 	PVD涂层硬质合金牌号，用于湿工况下灰口铸铁和球墨铸铁的中到粗加工铣削。在中等到高切削速度下，具有可预期刀具寿命。 PVD coated carbide grade for gray cast iron and ductile iron medium to rough milling in wet conditions. In the medium to high cutting speeds, can predictor the tool-life.
BPC122	K15(K10-K25)	黑 Black 	CVD涂层硬质合金，在硬基体上涂有光滑的耐磨涂层，能够耐受苛刻的间断切削工况。用于铸铁低到中等切削速度的粗加工。 CVD-coated cemented carbide, the hard substrate coated with a smooth and wear-resistant coating, can bear harsh intermittent cutting conditions. Universal grade for all cast iron roughing cutting at low to medium speed.
BPS321	K30(K25-K35)	黑/黄 Black/yellow 	CVD涂层硬质合金牌号，用于在要求高韧性的工况下以低速进行的中等负荷和重载加工。 Coated carbide grade for toughness demanding operating conditions to work at low speed, medium load and reload processing.
BPS411	K30(K25-K35)	黑/黄 Black/yellow 	CVD涂层硬质合金牌号。耐冲击、高强度的硬质合金基体与TiN/TiCN/Al <sub>2</sub> O <sub>3</sub> /TiN化学涂层的结合，尤其适合于碳钢、不锈钢中等-重载的铣削加工。 "CVD coating carbide grades. Resistance to impact, high strength cemented carbide matrix and TiN/TiCN/Al <sub>2</sub> O <sub>3</sub> /TiN chemical coating combination, especially suitable for carbon steel, stainless steel medium-heavy milling."





## A1 涂层材质特性 Coating grades properties overview

### A1-6 铣削牌号 MILLING P

A  
Materials

牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPG05B	P05(P01-P15)	青灰黑 Cyan-blue gray dark 	具有很高的热硬度和良好的抗塑性变形能力。适用于高速切削条件下，奥氏体不锈钢、淬硬钢、碳钢的精加工。 With high hot hardness and good resistance to plastic deformation. Suitable for high speed cutting and finishing process of austenitic stainless steel, quenched steel and carbon steel
BPG20B	P15(P10-P20)	青灰黑 Cyan-blue gray dark 	PVD涂层微晶粒硬质合金。使用中等到低切削速度，进行各种不锈钢的精加工。要出色的刃口强度和高表面质量时，可提供完美的平顺切削。很高的耐热冲击性能。适用于轻型间断切削。 PVD coated micro-grain carbide. Use for a variety of stainless steel finishing at medium to low cutting speed. When need excellent edge strength and high surface quality, provide the perfect ride cutting. A high thermal shock resistance. Suitable for light interrupted cuts.
BPG25B	M35(M25-M40)	青灰黑 Cyan-blue gray dark 	PVD涂层硬质合金牌号。WC-Co耐冲击的硬质合金基体与含Si的TiAlN纳米涂层的结合，表层具有极高的纳米硬度，尤其适合于碳钢、不锈钢通用型的车、铣削加工。 PVD coating carbide grades. WC-Co impact resistant cemented carbide matrix and TiAlN containing Si nano coating combination, the surface has a very high nano hardness, especially suitable for turning and milling of carbon steel, stainless steel.
BPG308	P20(P15-P30)	紫黄 Purple yellow 	PVD涂层硬质合金牌号，例如长切削刃、切屑堵塞、深台肩和立铣、长悬伸、车铣工序等。可作为韧性工序的备用选择。结合周边磨削刀片，首选用于粘性材料，例如低碳钢。 PVD coated carbide grade, for example, the long cutting edge, clogging, deep shoulder milling, long overhang, milling processes. or an alternative of toughness processes. Combining the peripheral-edge grinding blade, preferred for viscous material, such as low carbon steel.
BPS321 BPS322	P30(P25-P40)	黑/黄 Black/yellow  黑 Black 	高强度基体与AL2O3涂层结合，适于钢及铸铁的铣削加工。 High-strength matrix combined with AL2O3 coating suitable for steel and cast iron milling.
BPS411 BPS412	P40(P35-P50)	黑/黄 Black/yellow  黑 Black 	CVD涂层硬质合金牌号。耐冲击、高强度的硬质合金基体与TiN/TiCN/AL2O3/TiN化学涂层的结合，尤其适合于碳钢、不锈钢中等-重载的铣削加工。 "CVD coating carbide grades. Resistance to impact, high strength cemented carbide matrix and TiN/TiCN/AL2O3/TiN chemical coating combination, especially suitable for carbon steel, stainless steel medium-heavy milling."







## A1 涂层材质特性 Coating grades properties overview

### A1-7 铣削牌号 MILLING M

牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPG05B	M10(M05-M15)	青灰黑 Cyan-blue gray dark 	PVD涂层牌号具有很高的热硬度和良好的抗塑性变形能力. 适用于高速切削条件下, 奥氏体不锈钢、淬硬钢、碳钢的精加工。 With high hot hardness and good resistance to plastic deformation. Suitable for high speed cutting and finishing process of austenitic stainless steel, quenched steel and carbon steel
BPG20B	M15(M10-M25)	青灰黑 Cyan-blue gray dark 	PVD涂层硬质合金牌号, 用于不锈钢的轻型铣削。结合周边磨削刀片, 首选用于粘性和加工硬化材料。 PVD coated carbide grade for light milling of stainless steel. Combine grinding blade preferred for viscous and work hardening materials.
BPG30B	M25(M15-M30)	青灰黑 Cyan-blue gray dark 	PVD涂层硬质合金牌号, 用于中到高速的不锈钢(主要为奥氏体型)铣削。结合正前角槽形, 也适用于耐热材料和钛合金。 PVD coated carbide grade for medium to high-speed stainless steel (austenitic) milling. Combined with positive rake angle trough also applies to the heat-resistant materials and titanium alloys.
BPG25B	M35(M25-M40)	青灰黑 Cyan-blue gray dark 	PVD涂层硬质合金牌号。WC-Co耐冲击的硬质合金基体与含Si的TiAlN纳米涂层的结合, 表层具有极高的纳米硬度, 尤其适合于碳钢、不锈钢通用型的车、铣削加工。 PVD coating carbide grades. WC-Co impact resistant cemented carbide matrix and TiAlN containing Si nano coating combination, the surface has a very high nano hardness, especially suitable for turning and milling of carbon steel, stainless steel.
BPS411	M40(M30-M40)	黑/黄 Black/yellow 	CVD涂层硬质合金牌号。耐冲击、高强度的硬质合金基体与TiN/TiCN/AL2O3/TiN化学涂层的结合, 尤其适合于碳钢、不锈钢中等-重载的铣削加工。 "CVD coating carbide grades. Resistance to impact, high strength cemented carbide matrix and TiN/TiCN/AL2O3/TiN chemical coating combination, especially suitable for carbon steel, stainless steel medium-heavy milling;"








## A1 涂层材质特性 Coating grades properties overview

A1-8 铣削牌号 MILLING S

A

材  
质  
Materials

牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPG05B	S10(S05-S10)	青灰黑 Cyan-blue gray dark 	PVD涂层硬质合金牌号，用于极佳工况下的钛铣削。在高切削速度下具有出色的耐磨性。对失稳和振动敏感。 PVD coated carbide grade, for the excellent working conditions titanium milling. Has excellent abrasion resistance at high cutting speeds. Instability and vibration sensitive.
BPG20B	S15(S15-S30)	青灰黑 Cyan-blue gray dark 	PVD涂层硬质合金牌号，用于耐热优质合金的中等速度铣削。具有良好的抗积屑瘤和抗塑性变形能力。 PVD coated carbide grade for medium-speed milling of heat resistant alloys. With good ability to avoid built-up edge and good resistance to plastic deformation capacity.
BPG30C	S30(S30-S40)	青灰黑 Cyan-blue gray dark 	涂层硬质合金牌号，用于耐热铝铸件的铣削。 Coated carbide grade for heat-resistant aluminum castings milling.

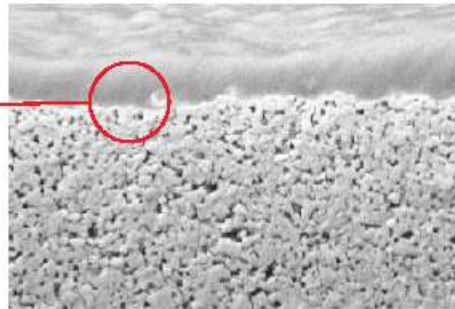
涂层材质: TiAlN  
Coating materials: TiAlN

涂层显微硬度: HV3200  
Coating microhardness: HV3200

涂层温度: 400-500°C, 对超细合金基体没有影响  
Coating temperature: 450-480°C, without effect on ultra-grained alloy substrate.

涂层失效温度: 900°C, 高耐热  
Coating failure temperature: 900°C, high heat resistance.

涂层后仍能保证刃口锋利  
Guarantee the sharp cutting edge after coating.



PVD涂层  
PVD coating





## A1 涂层材质特性 Coating grades properties overview

A1-9 车削涂层牌号分类及推荐 ISO packet turning

ISO类别 ISO classification	ISO分组 ISO packet	加工类别 Processing category	涂层牌号 Coating grade	表面颜色 Surface color	基体性能 Substrate properties			涂层类别 Coating type	涂层描述 Coating description	厚度 Thickness	推荐切削速度 Recommended cutting speed (m/min)
					密度 (g/cm <sup>3</sup> )	硬度 (HRA)	韧性 (kgf/cm <sup>2</sup> )				
K	K05-K10	精加工 Finishing	BPC132	黑色 Black	14.9	91.6	2500	MT-CVD	TiCN-Al <sub>2</sub> O <sub>3</sub>	厚膜 Thick film	300 (200-400)
	K10-K20	半精加工 Semi finishing	BPC102	黑色 Black	14.9	91.3	2000	MT-CVD	TiCN-Al <sub>2</sub> O <sub>3</sub>	厚膜 Thick film	250 (180-300)
	K10-K20	半精加工 Semi finishing	BPC102A	黑色 Black	14.9	90.5	2000	MT-CVD	TiCN-Al <sub>2</sub> O <sub>3</sub>	厚膜 Thick film	250 (180-300)
M	M01-M10	精加工 Finishing	BPG05B	青灰黑 Cyan-blue gray dark	14.9	92.5	3000	PVD	TiAlN	薄膜 Film	120 (100-150)
	M10-M20	半精加工 Semi finishing	BPG20B	青灰黑 Cyan-blue gray dark	14.4	91.3	2500	PVD	TiAlN	厚膜 Thick film	120 (100-150)
	M20-M35	粗加工 Rough machining	BPG25B	青灰黑 Cyan-blue gray dark	14.5	90.5	2200	PVD	TiAlN	薄膜 Film	120 (100-150)
	M30-M40	粗加工 Rough machining	BPG30C	青灰黑 Cyan-blue gray dark	14.2	90	2800	PVD	TiAlN	薄膜 Film	120 (100-150)
P	P01-P15	精加工 Finishing	BPS051	黄黑色 Black/yellow	13.9	92	2000	MT-CVD/CVD	TiCN-Al <sub>2</sub> O <sub>3</sub>	厚膜 Thick film	250 (180-300)
	P10-P20	精加工 Finishing	BPS101	黄黑色 Black/yellow	13.7	91.4	2000	MT-CVD/CVD	TiCN-Al <sub>2</sub> O <sub>3</sub>	厚膜 Thick film	250 (180-300)
	P20-P30	半精加工 Semi finishing	BPS251	黄黑色 Black/yellow	13.6	91	2200	MT-CVD/CVD	TiCN-Al <sub>2</sub> O <sub>3</sub>	厚膜 Thick film	220 (160-280)
	P25-P35	粗加工 Rough machining	BPS371	黄黑色 Black/yellow	13.6	91	2500	MT-CVD/CVD	TiCN-Al <sub>2</sub> O <sub>3</sub>	厚膜 Thick film	130 (100-240)
S	S01-S10	精加工 Finishing	BPG118	紫黄 Purple yellow	14.9	92.5	2800	PVD	TiAlN + TiN	薄膜 Film	60 (40-90)
	S10-S20	半精加工 Semi finishing	BPG218	紫黄 Purple yellow	14.4	91.4	3000	PVD	TiAlN + TiN	薄膜 Film	50 (30-70)
	S20-S30	粗加工 Rough machining	BPG318	紫黄 Purple yellow	14.4	91.4	2500	PVD	TiAlN + TiN	薄膜 Film	30 (20-60)
N	N01-N10	精加工 Finishing	BU810	金属色	14.9	92.5	3000				
	N10-N20	精加工 Finishing	BU813	金属色	14.9	91.4	2500				







## A1 涂层材质特性 Coating grades properties overview

A1-10 铣削涂层牌号分类及推荐 ISO packet MILLING

A

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Materials

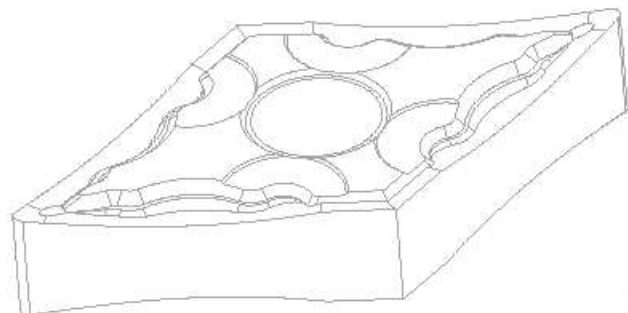
ISO类别 ISO classification	ISO分组 ISO packet	加工类别 Processing category	涂层牌号 Coating grade	表面颜色 Surface color	基材性能 Substrate properties			涂层类别 Coating type	涂层描述 Coating description	厚度 Thickness	推荐切削速度 Recommended cutting speed (m/min)
					密度 (g/cm <sup>3</sup> )	硬度 (HRA)	弹性模量 (GPa)				
K	K10-K20	精加工 Finishing	BPG108	紫黄 Purple yellow	14.9	93	2500	PVD	TiAlN	薄膜 Film	300 (200-400)
	K10-K20	半精加工 Semi finishing	BPC122	黑色 Black	14.8	91.4	2000	MT-CVD	TiCN-AL <sub>2</sub> O <sub>3</sub>	薄膜 Film	250 (180-300)
	K20-K30	半精加工 Semi finishing	BPC132	黑色 Black	14.9	91.6	2500	MT-CVD	TiCN-AL <sub>2</sub> O <sub>3</sub>	厚膜 Thick film	300 (200-400)
	K30-K40	粗加工 Rough machining	BPS411	黑色 / 黄色 Black / yellow	14.2	89.5	3000	MT-CVD	TiCN-AL <sub>2</sub> O <sub>3</sub>	薄膜 Film	120 (100-150)
M	M05-M10	精加工 Finishing	BPG05B	青灰黑 Cyan-blue gray dark	14.9	92.5	3000	PVD	TiAlN	薄膜 Film	150 (120-200)
	M20-M30	半精加工 Semi finishing	BPG20B	青灰黑 Cyan-blue gray dark	14.4	91.8	2900	PVD	TiAlN	薄膜 Film	120 (100-150)
	M20-M30	半精加工 Semi finishing	BPG30B	青灰黑 Cyan-blue gray dark	14.4	91.4	2900	PVD	TiAlN	薄膜 Film	120 (100-150)
	M30-M40	粗加工 Rough machining	BPS411	黑色 / 黄色 Black / yellow	14.2	89.5	2900	MT-CVD	TiCN-AL <sub>2</sub> O <sub>3</sub>	薄膜 Film	120 (100-150)
P	M05-M10	精加工 Finishing	BPG05B	青灰黑 Cyan-blue gray dark	14.9	92.5	3000	PVD	TiAlN	薄膜 Film	250 (180-300)
	M20-M30	半精加工 Semi finishing	BPG20B	青灰黑 Cyan-blue gray dark	14.5	91.8	2900	PVD	TiAlN	薄膜 Film	220 (160-280)
	P20-P30	半精加工 Semi finishing	BPG30B	紫黄 Purple yellow	14.5	91.8	2900	PVD	TiAlN + TiN	薄膜 Film	150 (120-200)
	P25-P35	半精加工 Semi finishing	BPG25B	青灰黑 Cyan-blue gray dark	14.5	90	2000	PVD	TiAlN	薄膜 Film	120 (100-150)
	P30-P40	粗加工 Rough machining	BPS321	黑色 / 黄色 Black / yellow	14.5	90	2000	MT-CVD	TiCN-AL <sub>2</sub> O <sub>3</sub>	薄膜 Film	120 (100-150)
	P30-P40	粗加工 Rough machining	BPS411	黑色 / 黄色 Black / yellow	14.2	89.5	3000	MT-CVD	TiCN-AL <sub>2</sub> O <sub>3</sub>	薄膜 Film	120 (100-150)





## A2 硬质合金牌号材料特性 Features overview of cemented carbide


	牌号 Grade	ISO分类 ISO classification	密度 Density (g/cm <sup>3</sup> )	硬度 Hardness HRA	抗弯强度 Bending strength (N/mm <sup>2</sup> )	使用性能及用途 Usage and performance
	BP20	P20-P25 M20	12.3	≥91.5	1810	红硬性高, 具有很高的抗热震性和抗热膨胀变形能力, 适用刚合金结构钢、合金工具钢和高锰钢、不锈钢的加工。 Excellent in red hardness, anti-heat crack, anti deformation. Suitable for processing the structural alloy steel, alloy tool steel, high manganese steel and stainless steel
	BP35	P30-P40	12.7	≥91.0	2220	红硬性高, 并具有良好很高的抗热震性和高的使用强度, 是通用性良好的牌号, 适用于钢及铸件的粗加工 Excellent in red hardness and thermal deformation, high strength, common grade. Suitable for the roughing of steel, cast iron
	BU810	K05-K15	14.8	92.8	3000	亚微米晶粒, 适用于加工有色金属的连续和间断切削精加工。 Sub-micron grain, suitable for the continuous and interrupted finishing of non-ferrous metal
	BU820	K10-K25	14.4	91.8	3500	亚微米晶粒, 适用于各种铣刀及孔加工刀具。 Sub-micron grain, suitable for the milling and drilling tools
	BK20UF	K15-K25	14.7	92.3	2600	超细晶粒合金, 耐磨性好, 使用强度高, 适用于各种高硬冷硬铸铁、堆焊喷焊等高耐磨材料, 硬橡胶、硬纸板及有色金属的半精加工和精加工。 Ultra-fine grain alloy, good wear resistance and high strength, suitable for the semi-finishing, finishing of abrasive materials (like high-hard, chilled-hard cast iron, piled welding, spray welding hard rubber, card board and non-ferrous metal), hard rubber, cardboard and non-ferrous metal
	B245	K25-K30	14.4	91.5	2800	PVD涂层基体牌号, WC-Co硬质合金牌号, 具有较高的硬度和强度, 较适合于有冲击的加工场合。 Substrate grade for PVD coating, WC-Co cemented carbide grades, it has excellent hardness and strength, more suitable for the impact processing.
	BU813	K10-K20	14.9	91.5	2500	WC-Co硬质合金牌号, 具有较高的硬度和强度, 适合于有色金属的车削加工, 也可用于涂层的基体材料。 WC-Co cemented carbide grade, it has excellent hardness and strength, suitable for turning of non-ferrous metal and can also be used for coating substrate materials.

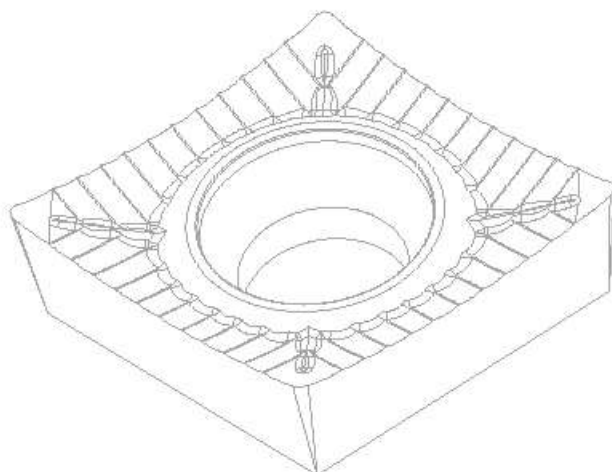







## A2 硬质合金牌号材料特性 Features overview of cemented carbide

	牌号 Grade	ISO分类 ISO classification	密度 Density (g/cm <sup>3</sup> )	抗弯强度 Bending strength (N/mm <sup>2</sup> )	硬度 Hardness HRA	使用性能及用途 Usage and performance
	YG6	K15-K20	14.6~15.06	2060	90.5-91.5	耐磨性较高、抗冲击和震动较好。适用铸铁、有色金属及合金、非金属材料中等切削速度的半精加工和精加工。 High wear resistance, good resistance to shock and vibration. Application of cast iron, non-ferrous metals and alloys, non-metallic materials medium cutting speed for semi-finishing and finishing.
	YG8	K30	14.6~14.85	2520	89.5-90.5	使用强度高, 抗冲击、抗震性好, 但耐磨性和允许的切削速度较低。适于铸铁、有色金属及合金、非金属材料低速的粗加工。The use of high strength, impact resistance, good shock resistance, but wear resistance and allows the cutting speed is low. For cast iron, non-ferrous metals and alloys, non-metallic materials low speed roughing.
	YT5	P30	12.7~13.1	2200	89.5-90.5	具有较好的强度、抗冲击性及热震性; 适于碳素钢与合金钢的粗加工。 High strength, impact resistance and thermal shock resistance; suitable for carbon and alloy steel rough machining.
	YT14	P20	11.2~11.6	1750	91.5-92.5	使用强度高, 抗冲击、抗震性好, 适于碳素钢与合金钢的精加工、半精加工。 The use of high strength, impact resistance, good shock resistance, suitable for carbon and alloy steel finishing, semi finishing.
	YT16	P10	11.1~11.6	1660	92-93.2	耐磨性较好。适用于钢、铸钢、合金钢等的精加工、半精加工。 Good wear resistance. Suitable for steel, cast steel, alloy steel finishing, semi finishing.
	YW1	M10	13.5~13.7	1710	82-83	红硬性较好, 能承受一定的冲击负荷, 是通用性较好的合金。适用于耐热钢、高锰钢、不锈钢等难加工钢材的加工, 也适用于普通钢和铸铁的加工。Good red hardness, it can withstand a certain degree of impact load, is general better alloy. Suitable for heat resistant steel, high manganese steel, stainless steel and other hard processing steel processing, applicable to ordinary steel and iron processing.
	YW2	M20	13.35~13.55	1880	91.5-92.5	耐磨性较好, 使用强度高, 能承受较大的冲击负荷。适用于耐热钢、高锰钢、不锈钢及高级合金钢等的粗加工、半精加工, 也适于普通钢和铸铁。Good wear resistance, the use of higher strength, can bear larger impact load. Suitable for heat resistant steel, high manganese steel, stainless steel and high alloy steel roughing, semi-finishing, and is also suitable for ordinary steel and cast iron.





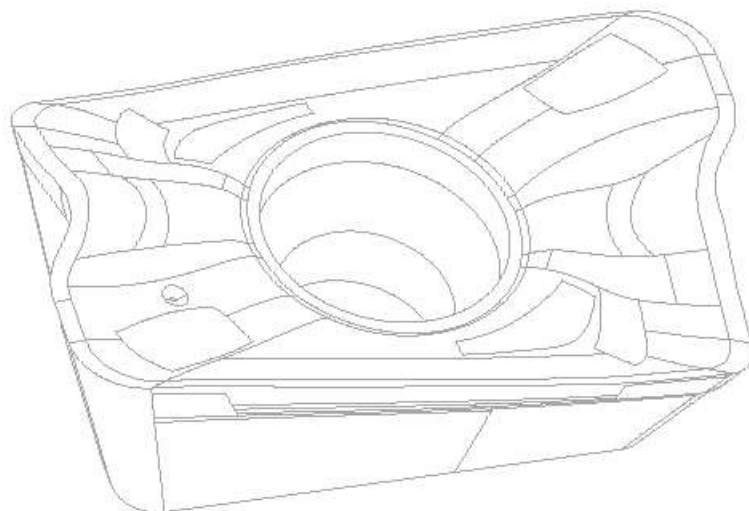
### A3 金属陶瓷材质特性 Features overview of cermet

	ISO分类 ISO classification	K05-K20 P10-P30 M10-M30
	密度 Density (g/cm <sup>3</sup> )	6.1-7.2
	硬度 Hardness HRA	>91
	抗弯强度 Bending strength (N/mm <sup>2</sup> )	>2000
	使用性能及用途 Usage and performance	适用于钢、不锈钢半精加工、精加工 Suitable for the finishing ,semi-finishing of stainless steel

BN201

	ISO分类 ISO classification	K01-K10 P01~P20 M01-M20
	密度 Density (g/cm <sup>3</sup> )	6.5-7.2
	硬度 Hardness HRA	>92
	抗弯强度 Bending strength (N/mm <sup>2</sup> )	>1600
	使用性能及用途 Usage and performance	适用于钢、不锈钢半精加工、精加工 Suitable for the finishing ,semi-finishing of stainless steel

BN301





## A4 牌号推荐一览表 Recommended grade overview for carbide insert

ISO分组 ISO Standard	P钢 Steel					M不锈钢 Stainless steel					K铸铁 Cast iron				N有色金属 Non-ferrous metals				S耐热合金 Heat Resistant alloys		
	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	ND1	N10	N20	S01	S10	S20	
CVD涂层 CVD coating	BPS051		BPS101	BP S251	BP S371							BPC252									
						BPG05B	BPG08B	BPG20B	BPG25B	BPG30B									BPG118		BPG218
PVD涂层 PVD coating			BPG00A																		
金属陶瓷 Cermet						BN001				BN001											
硬质合金 Cemented carbide											BK10										
CVD涂层 CVD coating																					
PVD涂层 PVD coating																					
硬质合金 Cemented carbide																					
	普通车削 General turning										切屑切槽 Chipbreaker										





ISO分組 ISO Standard	P鋼 Steel					M不銹鋼 Stainless steel					K鑄鐵 Cast iron					N有色金属 Non-ferrous metals					S耐熱合金 Heat Resistant alloys		
	P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	S01	S10	S20			
CVD涂层 CVD coating			BP S321							BP S411													
PVD涂层 PVD coating						BP G05B																	
金属陶瓷 Cermet																							
硬质合金 Cemented carbide																							

铣削 Milling





# B 车削刀具 Cutting tools



























































## B 普通车削 General turning

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## B1-1 车削刀片一览表 Turning inserts overview













































B  
普通车削  
General Turning

钢的精加工 Finishing of steel	 P52页	 P52页	 P52页	 P52页	 P52页	 P52页	
	CNMG**FW	DNMG**FW	SNMG**FW	TNMG**FW	VNMG**FW	WNMG**FW	
	 P53页	 P53页	 P53页	 P53页	 P53页	 P53页	
	CCMT**FW	DCMT**FW	SCMT**FW	TCMT**FW	VBMT**FW	VCMT**FW	
	 P54页	 P54页	 P54页	 P54页			
	CNGG**LR-S	DNGG**LR-S	TNGG**LR-S	VNGG**LR-S			
	 P55页	 P55页	 P55页				
	CCGT**LR-S	CCGT**LR-S	DCET**LR-S				
	 P56页	 P56页	 P56页	 P56页	 P56页	 P56页	 P56页
	DCGT**LR-S	DPET**LR-S	SCGT**LR-S	SPGH**LR-S	SPGT**LR-S	TCGT**LR-S	TPGH
 P57页	 P57页	 P57页	 P57页				
TPGR**L-S	TPET**L-S	TPGX**L-S	VBET**L-S				
 P58页	 P58页	 P58页	 P58页	 P58页	 P58页	 P58页	
VBGT**LR-S	VCGT**LR-S	VDGX**LR-S	VPET**LR-S	WPGT**LR-S	DCET**LR-E	TNGG**LR-E	
钢的半精加工 Semi Finishing of steel	 P59页	 P59页	 P59页	 P59页	 P59页	 P59页	
	CNMG**MD	DNMG**MD	SNMG**MD	TNMG**MD	VNMG**MD	WNMG**MD	
	 P61页	 P61页	 P61页	 P61页	 P61页	 P61页	
	CNMG**MA	DNMG**MA	SNMG**MA	TNMG**MA	VNMG**MA	WNMG**MA	
	 P62页	 P62页	 P62页	 P62页	 P62页	 P62页	 P62页
	CNMG**TM	DNMG**TM	TNMG**TM	VNMG**TM	WNMG**TM	VNMG**UX	WNMG**UX





## B1-1 车削刀片一览表 Turning inserts overview











































钢的半精加工 Semi Finishing of steel	 P63页 CNCMG**U	 P63页 DNMG**U	 P63页 SNMG**U	 P63页 TNMG**U	 P63页 VNMG**U	 P63页 WNMG**U		
	 P64页 SNMG**LR-N	 P64页 SNGG**LR-N	 P64页 TNGG**LR-N	 P64页 VNGG**LR-N	 P64页 WNGG**LR-N			
	 P65页 CNGG**LR-H	 P65页 DNGG**LR-H	 P65页 VNGG**LR-H					
	 P66页 CCMT**MD	 P66页 DCMT**MD	 P66页 SCMT**MD	 P66页 TCMT**MD	 P66页 VCMT**MD	 P66页 RCMT**MOE-R*		
	 P68页 CPMH**LR-N	 P68页 DCGT**LR-N	 P68页 TPGH**LR-N	 P68页 VBGT**LR-N	 P68页 WPGT**LR-N			
	 P69页 CCET**LR-E	 P69页 CCGT**LR-E	 P69页 SPGT**LR-E	 P69页 TPET**LR-E	 P69页 TCGT**LR-E	 P69页 DCET**LR-E		
	 P70页 CNCM**RA	 P70页 DNMG**RA	 P70页 SNMG**RA	 P70页 TNMG**RA	 P70页 WNMG**RA			
	 P71页 CNMM**RB	 P71页 SNMM**RB	 P71页 TNMM**RB					
 P72页 CCMT**RA	 P72页 DCMT**RA	 P72页 SCMT**RA	 P72页 TCMT**RA	 P72页 RCGT**HP				
钢、铸铁的粗加工 Rough machining of steel, cast iron								



## B1-1 车削刀片一览表 Turning inserts overview

















































B

普通车削  
General Turning

不锈钢的精加工 Finishing of stainless steel	 P74页	 P74页	 P74页	 P74页	 P74页	 P74页		
	CCMT**FW	DCMT**FW	SCMT**FW	TCMT**FW	VBMT**FW	VCMT**FW		
	 P75页	 P75页	 P75页	 P75页				
CCMT**MX	DCMT**MV	TCMT**MX	VBMT**MX					
 P76页	 P76页	 P76页	 P76页	 P76页	 P76页			
CNMG**E-LH	DNMG**E-LH	SNMG**E-LH	TNMG**E-LH	VNMG**E-LH	CNMG**E-LH			
不锈钢的半精加工 Semi-finishing of stainless steel	 P77页	 P77页	 P77页	 P77页	 P77页			
	CCMT**MD	DCMT**MD	SCMT**MD	TCMT**MD	VCMT**MD			
	 P78页	 P78页	 P78页	 P78页	 P78页	 P78页		
CNMG**MA	DNMG**MA	SNMG**MA	TNMG**MA	VNMG**MA	WNMG**MA			
 P79页	 P79页	 P79页						
CNMG**SA	TNMG**SA	WNMG**SA						
耐合金精加工 Finishing of Heat Resistant alloys	 P81页	 P81页	 P81页	 P81页	 P81页	 P81页		
	CCGT**SL	DCGT**SL	SCGT**SL	TCGT**SL	VCGT**SL	VBGT**SL		
耐合金半精加工及半精加工 The semi-Finishing of Heat Resistant alloys	 P82页	 P82页	 P82页	 P82页	 P82页	 P82页		
	CNGG**E-LHC	DNNG**E-LHC	SNGG**E-LHC	TNNG**E-LHC	VNNG**E-LHC	WNNG**E-LHC		



## B1-1 车削刀片一览表 Turning inserts overview



































耐热合金半精加工及粗加工 The heat resistant alloys semi-finishing and roughing process	 P83页	 P83页	 P83页	 P83页	 P83页	 P83页	
	CNMG**SN	DNMG**SN	SNMG**SN	TNMG**SN	VNMG**SN	WNMG**SN	
铝的加工 Aluminum processing	 P85页	 P85页	 P85页	 P85页	 P85页	 P85页	 P85页
	CCGT**LHC	DCGT**LHC	SCGT**LHC	TCGT**LHC	VBGT**LHC	VCGT**LHC	RCGT**LHC
	 P87页	 P87页	 P87页	 P87页	 P87页		
	CCGT**LH2	DCGT**LH2	TCGT**LH2	VCGT**LH2	VPGT**LH2		
	 P88页	 P88页	 P88页	 P88页			
	CCGT**LZC	DCGT**LZC	TCGT**LZC	VCGT**LZC			
	 P89页	 P89页	 P89页	 P89页	 P89页	 P89页	
	CNGG**LHC	DNGG**LHC	SNGG**LHC	TNGG**LHC	VNGG**LHC	WNGG**LHC	
	 P92页	 P92页	 P92页	 P92页	 P92页	 P92页	 P93页
	CNMG**LH	DNMG**LH	SNMG**LH	TNMG**LH	VNMG**LH	WNMG**LH	SEKT**AFFN-LH2
	 P93页	 P93页	 P93页	 P93页	 P170页	 P197页	 P197页
	APKT**T4PDR-LHC	APKT**PDR-G2C	APEX**FR-LHC	APKT**FR-LHC	ADGT1135**PDR-LHC	ADGT1504**PDR-LHC	ADGT1904**LHC
	 P94页	 P94页	 P94页	 P94页	 P94页	 P94页	
GDM4840-LHC	GIPAT YZ-35V-1.2-LHC	GIP600E-3.00-LHC	MRGN	VCGT	VPGT		





## B1-1车削刀片一览表 Turning inserts overview

### B 普通车削 General Turning

铸铁的精加工 Finishing of cast iron	 P96页	 P96页	 P96页	 P96页	 P96页		
	CNMG**CX	DNMG**CX	SNMG**CX	TNMG**CX	WNMG**CX		
铸铁的半精加工 The semi-Finishing of cast iron	 P97页	 P97页	 P97页	 P97页	 P97页	 P97页	
	CNMG**CQ	DNMG**CQ	SNMG**CQ	TNMG**CQ	WNMG**CQ	VNMG**CQ	
	 P98页	 P98页	 P98页	 P98页	 P98页	 P98页	
	CNMG**U	DNMG**U	SNMG**U	TNMG**U	VNMG**U	WNMG**U	
铸铁的粗加工 Rough machining of cast iron	 P99页	 P99页	 P99页	 P99页			
	CNMG**GH	DNMG**GH	TNMG**GH	WNMG**GH			
	 P100页	 P100页	 P100页	 P100页	 P100页		
	CNMA**	DNMA**	SNMA**	TNMA**	WNMA**		
扒皮刀 Peeling Inserts	 P102页	 P102页	 P102页				
	LPUC	LNUC	XNGX				
	 P102页	 P102页					
	LNGF	LNGF					
仿形车刀 Turning inserts for profile	 P103页	 P103页					
	KNUX	KNUX					
	 P103页						
	KNUX						



## B1-2 车削刀片槽型说明 Description of chipbreaker

### A 负角刀片 Negative Inserts

ISO 分类	断屑槽 Chip breaker	推荐切削用量 Recommended cutting parameter	刃口形状 Cutting edge shape	刀片外形和槽型特点 Chipbreaker features
P	FW 	$a_p=0.15-1.5 \text{ mm}$ $f_n=0.07-0.5 \text{ mm/r}$	<p>刀尖部分</p> <p>主切削刃部分</p>	<p>用于钢精加工车削；For steel finishing turning.</p> <p>在钢件加工中，切屑控制能力好于其他槽型 Cutting control ability is better than other chipbreakers in steel process</p> <p>工序：纵向车削、车端面、背车和仿形切削 Operations: longitudinal cutting, facing, back-turning and profiling.</p> <p>优势：轻切削槽型、低切削力、适合加工细长轴、薄壁和不稳定夹紧零件。与耐磨牌号组合以活动更佳生产效率。Advantages: light cutting geometry, low cutting forces suitable for slender Shafts, thin walled and unstably clamped components. This chipbreaker matches with wear-resisting. Grade will be better.</p> <p>局限性：切削深度和进给范围。Limitations: depth of cut and feed range.</p> <p>典型零件：轮轴、齿轮，优先考虑的是优良的表面质量。Components typically: axles, gears where good surface finish is a priority.</p>
P	MD 	$a_p=0.2-8.6 \text{ mm}$ $f_n=0.1-0.65 \text{ mm/r}$	<p>刀尖部分</p> <p>主切削刃部分</p>	<p>用于半精加工车削；For medium turning.</p> <p>对于钢具有宽广的应用范围。With broad applied range for steel.</p> <p>工序：纵向切削、车端面和仿形切削。Operations: longitudinal cutting, facing and profiling</p> <p>优势：可靠性和通用性强，并实现了无故障切削。与耐磨牌号组合能获得更好的生产效率。Advantages: High reliability and universality with fault-free cutting. This chipbreaker matches with wear-resisting. Grade will be better.</p> <p>典型零件：钢制轮轴、毂和齿轮等。Components typically: axles, hubs, gears, etc in steel.</p>
P M	MA 	$a_p=0.2-6.0 \text{ mm}$ $f_n=0.15-0.5 \text{ mm/r}$	<p>刀尖部分</p> <p>主切削刃部分</p>	<p>用于半精加工车削。For semi-finishing turning.</p> <p>应用于钢和铸铁的中型切削。For semi-finishing of steel and cast iron;</p> <p>工序：车削、车端面和仿形车削。Operations: Turning, facing and profiling.</p> <p>优势：适合通用领域。正棱边形刃形，切削锋利性高。Advantages: Suitable for general field. Positive edge shape of blade, performance of Sharp cutting.</p> <p>典型零件：普通钢件和铸铁件。Typical parts: Ordinary steel parts and cast iron parts.</p>
P K	U 	$a_p=0.25-4.0 \text{ mm}$ $f_n=0.15-0.5 \text{ mm/r}$	<p>刀尖部分</p> <p>主切削刃部分</p>	<p>用于半精到精加工车削；For semi-finishing to finishing turning.</p> <p>对于铸铁加工具有广泛的应用 With broad applied range for cast iron.</p> <p>工序：车削、车端面。Operations: turning, facing.</p> <p>优势：刃口强度高，阻力低，排屑流畅，与更耐磨的涂层牌号可获得更佳的生产效率。Advantages: high cutting edge hardness, low cutting resistance force, easy chip-flow. Combined with more abrasive grade can get better efficiency.</p> <p>局限性：对铸件、锻造硬皮以及间断切削敏感。Limitations: Sensitive to casting, forging and discontinuous cutting.</p> <p>典型零件：普通铸铁零件。Typical parts: pieces of cast iron.</p>





## B1-2 车削刀片槽型说明 Description of chipbreaker

### A 负角刀片 Negative Inserts

ISO 分类	断屑槽 Chip breaker	推荐切削用量 Recommended cutting parameter	刃口形状 Cutting edge shape	刀片外形和槽型特点 Chipbreaker features
P	 <p>TM</p>	$a_p=0.15-4.5 \text{ mm}$ $f_n=0.2-0.5 \text{ mm/r}$	<p>刀尖部分</p>  <p>主切削刃部分</p> 	<p>用于半精加工车削； For semi-finishing machining.            适用于钢的半精加工； For semi finishing turning Of steel.            工序：车削、车端面 and 仿形车削 Operations: turning, facing, profiling.            优势：通用性强，排屑流畅，刀尖旁独特形状的突起和大前角，使断屑槽保持锋利的切削性能和低切削应力。 Advantages: High universality, easy chip-flow, special bulge close to the nose radius and big rake angle generate the cutting ability and low cutting force of chipbreaker            局限性：切削深度和进给速度受限。 Limitations: the depth of cutting and feed.            典型零件：普通钢件 Typical parts: ordinary steel parts.</p> 
P	 <p>RA</p>	$a_p=0.7-15 \text{ mm}$ $f_n=0.2-1 \text{ mm/r}$	<p>刀尖部分</p>  <p>主切削刃部分</p> 	<p>用于粗加工车削。 For rough turning.            加工钢和不锈钢时具有高金属去除率。 With high metal removal rate when process steel and stainless steel.            工序：纵向切削、车端面和仿形切削。 Operations: longitudinal turning, facing and profiling            优势：通用功能，具有较高的粗加工能力，可提供良好的加工经济性。 Advantages: High universality, with high roughing process ability.            局限性：切削刃过载的风险，当使用杠杆夹紧型的刀柄并应用高切削参数的时候，有刀片在刀片座移动的风险。 Limitations: risk of overloading cutting edge, risk of insert movement in seat at high cutting data when used with lever-type toolholder.            典型零件：轮轴、毂和齿轮等。 Components typically: axles, hubs, gears, etc. in steel.</p> 
P	 <p>RB 单面</p>	$a_p=0.7-15 \text{ mm}$ $f_n=0.2-1 \text{ mm/r}$		<p>用于粗加工车削。 For rough turning.            加工钢和不锈钢时具有高金属去除率。            With high removal rate in steel with double and single sided insert alternatives.            优势：通用功能，具有较高的粗加工能力，可提供良好的加工经济性。 Advantages: universal capability, double-sided insert geometry with high Roughing capability contributing towards good machining economy.            典型零件：轮轴、风电法兰和齿轮等。 Components typically: axles, flange, gears, etc.</p> 
M S N	 <p>LH</p>	$a_p=0.08-3.5 \text{ mm}$ $f_n=0.1-0.4 \text{ mm/r}$	<p>刀尖部分</p>  <p>主切削刃部分</p> 	<p>用于精加工车削； Used for finish turning;            适用于不锈钢精加工和铝合金等金属材料加工 Suitable for stainless steel and non-ferrous metals such as aluminum alloy materials processing.            工序：车削、车端面； Operations: turning and facing;            优势：具有低切削力的轻切削槽形可靠性和通用性强，实现了无故障切削。 Advantages: with a lower cutting force light cutting groove, reliability and versatility, achieved without fault cutting;            局限性：在进给率和切削深度方面应用范围受限 Limitations: the feed rate and cutting depth limitation of application scope;            典型零件：铝合金零件。 Typical parts: aluminum alloy parts.</p> 



## B1-2 车削刀片槽型说明 Description of chipbreaker


### A 负角刀片 Negative Inserts

ISO 分类	断屑槽 Chip breaker	推荐切削用量 Recommended cutting parameter	刃口形状 Cutting edge shape	刀片外形和槽型特点 Chipbreaker features
S	SN 	$a_p=0.05-4.5 \text{ mm}$ $f_n=0.12-0.65 \text{ mm/r}$	<p>刀尖部分</p>  <p>主切削刃部分</p> 	<p>用于半精加工车削；For semi-finishing turning.</p> <p>对于耐热合金/钛合金具有宽广的应用范围。widely used for Resistance alloy/titanium alloy.</p> <p>工序：纵向车削、车端面和仿形切削。Operations: longitudinal turning, facing and profiling</p> <p>优势：可靠，并实现了无故障切削。加工不锈钢的通用槽型。Advantages: reliable giving problem-free machining general chipbreaker for stainless steel.</p> <p>局限性：可能会受铸件、锻件硬皮以及间断切削的影响。Limitations: can be affected by casting and forging skin as well as Intermittent cuts.</p> 
K	CX 	$a_p=0.15-2.0 \text{ mm}$ $f_n=0.08-0.30 \text{ mm/r}$	<p>刀尖部分</p>  <p>主切削刃部分</p> 	<p>用于精加工车削。For finish turning;</p> <p>灰口和球墨铸铁。Gray and nodular cast iron.</p> <p>工序：纵向车削、车端面和仿形切削。Operations: Longitudinal Turning facing and profiling.</p> <p>优势：具有低切削力的轻切削槽形，对于对振动敏感的零件和不稳定夹紧的零件加工有许多优点。当车削通孔时，可提供更高和更一致的工件质量。</p> <p>Advantages: Light cutting groove with lower cutting force. Have many advantages for the machining of parts vibration sensitive and unstable clamping. When turning the through hole, can provide a higher and more consistent quality of workpiece.</p> <p>局限性：切削深度和进给。Limitations: The depth of cutting and feed.</p> <p>典型零件：普通铸铁零件。Typical parts: Ordinary parts of cast iron.</p> 
K	CQ 	$a_p=0.2-6.0 \text{ mm}$ $f_n=0.15-0.50 \text{ mm/r}$	<p>刀尖部分</p>  <p>主切削刃部分</p> 	<p>用于半精加工车削。For semi-finish turning;</p> <p>灰口和球墨铸铁。Gray and nodular cast iron.</p> <p>工序：纵向车削、车端面和仿形切削。Operations: Longitudinal Turning facing and profiling.</p> <p>优势：可靠并实现了无故障切削。Advantages: Reliable giving trouble-free machining.</p> <p>局限性：在间断切削时切削刃强度偏低。Limitations: Lower strength of Cutting edge in the intermittent cutting.</p> <p>典型零件：普通铸铁零件。Typical parts: Ordinary parts of cast iron.</p> 
K	GH 	$a_p=1.0-8.0 \text{ mm}$ $f_n=0.3-0.85 \text{ mm/r}$	<p>刀尖部分</p>  <p>主切削刃部分</p> 	<p>用于粗加工。For rough turning.</p> <p>灰口和球墨铸铁。Gray and nodular cast iron.</p> <p>工序：车削、车端面和仿形切削。Operations: Turning facing and profiling.</p> <p>优势：宽广的铸铁粗加工范围，提供了良好的加工经济性。Advantages: A wide range of rough machining of cast iron, provides good economy of machining.</p> <p>典型零件：铸铁件。Typical parts: Parts of cast iron.</p> 



## B1-2 车削刀片槽型说明 Description of chipbreaker

### A 负角刀片 Negative Inserts

ISO 分类	断屑槽 Chip breaker	推荐切削用量 Recommended cutting parameter	刃口形状 Cutting edge shape	刀片外形和槽型特点 Chipbreaker features
K	无槽 No slot 	$ap=0.2-12.0 \text{ mm}$ $fn=0.1-1.19 \text{ mm/r}$	刀尖部分 $0^\circ$  主切削刃部分 $0^\circ$ 	无槽 用于粗加工车削。For rough turning. 用于加工灰口和球墨铸铁。For grey and nodular cast-iron. 工序：纵向车削、车端面 and 一定程度的仿形切削。Operations: longitudinal turning, facing and to some extent profiling. 优势：宽广的粗加工应用范围。Advantages: broad application range for roughing. 局限性：会生成较高的径向切削力，可能影响零件和夹紧。Limitations: can generate high radial cutting forces which may effect component and clamping. 典型零件：普通铸铁零件。Components typically: cast-iron components in general. 
P	KNUX 	$ap=1-6 \text{ mm}$ $fn=0.2-0.7 \text{ mm/r}$		工序：仿形车削、车削。用于钢、不锈钢的精和半精加工。 典型零件：轴轮、薄壁、轮毂等。 优势：轻切削槽型、低切削力，适用于加工细长轴、薄壁和不稳定夹紧零件。低进给小切深是，切屑控制能力好。 For fine to medium turning of steel and stainless steel. Operations: Profiling turning and turning. For finishing and semi-finishing of steel and stainless steel Typical parts: arbor wheel, thin wall and wheel. Advantages: light cutting chip breaker, low cutting forces, suitable for processing slender shafts, thin wall and unstable clamped components. 

B

普通车削  
General Turning



## B1-2 车削刀片槽型说明 Description of chipbreaker

### A 负角刀片 Negative Inserts

ISO 分类	断屑槽 Chip breaker	推荐切削用量 Recommended cutting parameter	刃口形状 Cutting edge shape	刀片外形和槽型特点 Chipbreaker features
P	E 	$ap=0.08-2.6\text{ mm}$ $fn=0.1-0.25\text{ mm/r}$	<p>刀尖部分</p> <p>主切削刃部分</p>	<p>用于精加工车削。For finish machining. 适用于钢的精加工车削。Apply to steel finish machining. 工序：车削、车端面。Operations: turning, facing. 优势：刃口锋利，抗粘附性强，加工尺寸精度高、表面质量好，排屑流畅 Advantage: a sharp edge, resistance to strong adhesion, processing size and high precision, good surface quality, smooth chip removal. 典型零件：普通钢件。Typical parts: ordinary steel parts.</p>
P	N 	$ap=0.3-1.2\text{ mm}$ $fn=0.03-0.18\text{ mm/r}$	<p>刀尖部分</p> <p>主切削刃部分</p>	<p>工序：车削、车端面。Operations: turning, facing. 适用于钢的精加工、半精加工车削。 Apply to steel semi finish machining, finish machining. 优势：刃口强度高，抗粘附性强，加工尺寸精度高、表面质量好，排屑流畅。 Edge: edge tough, resistant to strong adhesion, processing size and high precision, good surface quality, smooth chip removal. 局限性：一般只适用于普通钢件的一般加工。 Limitations: generally used only for steel parts general machining. 典型零件：普通钢件。Typical parts: ordinary steel parts.</p>
K	A 	$ap=0.08-3.2\text{ mm}$ $fn=0.18-0.38\text{ mm/r}$	<p>刀尖部分</p> <p>主切削刃部分</p>	<p>用于半精加工、精加工车削。For semi-finishing machining, finish machining. 适用于铸铁零件的半精加工、精加工车削。 Used for semi-finishing and finishing of cast iron parts. 工序：车削、车端面。Operations: turning, facing. 优势：刃口强悍，平缓的槽型提供了良好的容屑范围，排屑流畅，抗粘附性强，加工是能够保证表面质量和精度。Strong cutting edge, flat chip breaker with good chip space, smooth chip removal, high adhesion-resisting. Make sure the cutting surface quality and precision. 局限性：多用于铸铁零件加工。Limitations: used for processing of cast iron parts. 典型零件：普通铸铁零件。Typical parts: pieces of cast iron.</p>
N	S 	$ap=0.06-2.0\text{ mm}$ $fn=0.05-0.2\text{ mm/r}$	<p>刀尖部分</p> <p>主切削刃部分</p>	<p>用于精加工、半精加工车削。For finishing, semi finish turning. 对有色金属和普通钢件有广泛的应用范围。 Wide application range for non-ferrous metal and steel 工序：车削、仿形车削。Operations: cutting, copying turning. 优势：刃口锋利，切削阻力小，排屑流畅，具有良好的切屑控制力，可获得更高表面光洁度。Advantage: a sharp edge, small cutting resistance, smooth chip removal, with good chip control force, has wide application range. 典型零件：普通钢件、有色金属零件。Typical parts: ordinary steel, non-ferrous metal parts.</p>





## B1-2 车削刀片槽型说明 Description of chipbreaker

### B 正角刀片 Positive Inserts

ISO 分类	断屑槽 Chip breaker	推荐切削用量 Recommended cutting parameter	刃口形状 Cutting edge shape	刀片外形和槽型特点 Chipbreaker features
P	<b>N</b> 	$a_p=0.06-3.6$ mm $f_n=0.2-0.36$ mm/r	刀尖部分  主切削刃部分 	适用于钢的半精加工、精加工车削。 Apply to steel semi finish machining, finish machining 工序：车削、车端面。Operations: turning, facing. 优势：刃口强悍，抗粘附性强，加工尺寸精度高、表面质量好，排屑流畅 Advantages: high toughness of cutting edge, high adhesion-resisting, high accuracy of processing size, good surface quality and smooth chip removal. 局限性：一般只用于普通钢件的一般加工。Limitations: generally used only for ordinary steel parts general machining. 典型零件：普通钢件。Typical parts: ordinary steel parts.
P	<b>E</b> 	$a_p=0.08-2.6$ mm $f_n=0.1-0.25$ mm/r	刀尖部分  主切削刃部分 	用于半精加工、精加工车削。For semi-finishing machining, finish machining. 适用于钢的半精加工。Apply to steel semi finishing. 工序：车削、车端面。Operations: turning, facing. 优势：刃口锋利，抗粘附性强，加工尺寸精度高、表面质量好，排屑流畅 Advantages: high toughness of cutting edge, high adhesion-resisting, high accuracy of processing size, good surface quality and smooth chip removal. 局限性：切削深度和进给速度。Limitations: the cutting depth and feed rate. 典型零件：普通钢件。Typical parts: ordinary steel parts.
P	<b>H</b> 	$a_p=0.08-3.2$ mm $f_n=0.1-0.3$ mm/r	刀尖部分  主切削刃部分 	适用于钢的精加工、半精加工。Apply to steel finishing, semi finish turning. 工序：车削、车端面和仿形车削。Operations: turning, facing and copying turning. 优势：通槽提供了良好的切削范围，切削阻力小，刃口锋利，排屑流畅，具有良好的加工尺寸精度和表面质量，更适合仿形加工。provided good range, small cutting resistance, sharp blade, smooth chip removal, has good processing dimensional accuracy and surface quality. 局限性：切削速度。Limitations: the cutting speed. 典型零件：普通钢件。Typical parts: common steel.
N	<b>S</b> 	钢： $a_p=0.06-2.3$ mm $f_n=0.05-0.18$ mm/r  有色金属： $a_p=0.08-2.5$ mm $f_n=0.06-0.2$ mm/r	刀尖部分  主切削刃部分 	用于精加工、半精加工车削；For finishing, semi finish turning; 对有色金属和低碳钢有广泛的应用范围 Wide application range for ordinary steel and low carbon steel. 工序：车削、仿形车削；Operations: turning, copying turning; 优势：刃口锋利，切削阻力小，排屑流畅，具有良好的切屑控制力，可获得更高的表面光洁度。Advantage: a sharp edge, small cutting resistance, smooth chip removal, with good chip control force, has wide application range; 局限性：刃口有过载风险，切削深度和进给速度受限。Limitations: cutting edge has overload risk, cutting depth and feed rate restriction; 典型零件：普通钢件、有色金属零件。Typical parts: ordinary steel, non-ferrous metal parts.

B

普通车削  
General Turning



## B1-2 车削刀片槽型说明 Description of chipbreaker

### B 正角刀片 Positive Inserts

ISO 分类	断屑槽 Chip breaker	推荐切削用量 Recommended cutting parameter	刃口形状 Cutting edge shape	刀片外形和槽型特点 Chipbreaker features
P M	FW 	$a_p=0.15-2.0$ mm $f_n=0.01-0.3$ mm/r	<p>刀尖部分</p>  <p>主切削刃部分</p> 	<p>用于精加工车削。For finishing turning.</p> <p>在钢、不锈钢、铸铁加工中，切屑控制能力好于其他槽形。with good chip control above all in steel, stainless steel, grey and nodular cast-iron.</p> <p>工序：车削、车端面仿形切削和背车加工。Operations: turning, facing, profiling and back-facing.</p> <p>优点：正前角的轻型切削槽形可产生低切削力，适合于加工细长轴、薄壁零件或不稳定夹紧零件。Advantages: Light cutting chip breaker with low cutting force. Suitable for processing slender shaft, thin-walled parts and unstable clamped parts.</p> <p>局限性：切削深度和进给。Limitations: depth of cut and feed.</p> <p>典型零件：轮轴、轴、毂和齿轮，优先考虑表面质量的零件。 Typical parts: shaft, wheel and gear hub</p> 
P M	MD 	$a_p=0.2-4.5$ mm $f_n=0.1-0.35$ mm/r	<p>刀尖部分</p>  <p>主切削刃部分</p> 	<p>用于半精加工车削。For medium-duty turning.</p> <p>对于钢件、不锈钢、铸铁应用非常广泛。With broad capability for steel, stainless steel, grey and nodular cast-iron.</p> <p>工序：车削、车端面和仿形切削。Operations: turning, facing and profiling.</p> <p>优点：通用性强、可靠并且无故障切削。Advantages: high universality, reliable and problem-free cutting</p> <p>局限性：切削深度和进给，切削刃过载的风险。Limitations: depth of cut and feed, risk of overloading the cutting edge.</p> <p>典型零件：轮轴、轴、毂和齿轮。Components typically: axles, shafts, hubs, gears, etc.</p> 
P	R 	$a_p=0.15-12.8$ mm $f_n=0.05-3.5$ mm/r	<p>刀尖部分</p>  <p>主切削刃部分</p> 	<p>用于半精加工车削。For semi-finishing turning.</p> <p>适用于钢、不锈钢和铸铁加工。Used for steel, stainless steel and cast-iron.</p> <p>工序：端面、外圆和仿形加工。Operations: turning, facing and profiling.</p> <p>优点：具有高可靠性。Advantages: high reliability.</p> <p>局限性：通过圆刀片进行断屑。Limitations: chip breaking via round insert.</p> <p>典型零件：轴、轮轴等。Components typically: shafts, axles, etc.</p> 
P	RA 	$a_p=0.2-14.5$ mm $f_n=0.1-1.2$ mm/r	<p>刀尖部分</p>  <p>主切削刃部分</p> 	<p>用于粗加工车削。For rough turning.</p> <p>加工钢时具有高金属去除率。With high removal rate in steel, stainless steel, grey and nodular cast-iron.</p> <p>工序：端面、外圆和仿形加工。Operations: turning, facing and profiling.</p> <p>优点：通用。正前角槽型可提供良好的粗加工能力和金属去除率与最小振动趋势之间的平衡。Advantages: all-round, positive geometry giving good roughing capability with good balance between high removal rate and minimum vibration tendencies.</p> <p>局限性：切削深度和进给，切削刃过载的风险。Limitations: depth of cut and feed, risk of overloading the cutting edge.</p> <p>典型零件：轮轴、轴和齿轮等。Components typically: axles, shafts, hubs, gears, etc.</p> 





## B1-2 车削刀片槽型说明 Description of chipbreaker

### B 正角刀片 Positive inserts

ISO 分类	断屑槽 Chip breaker	推荐切削用量 Recommended cutting parameter	刃口形状 Cutting edge shape	刀片外形和槽型特点 Chipbreaker features
N	LH 	$a_p=0.1-5.0 \text{ mm}$ $f_n=0.03-0.5 \text{ mm/r}$	刀尖部分 $27.5^\circ$  主切削刃部分 $27.5^\circ$ 	用于通用车削加工。Used for finish turning. 铝合金和其他有色金属。Aluminum alloy and other non-ferrous metals. 工序：车削、车端面和仿形切削。Operations: turning, facing and copying cutting. 优点：开放的正前角槽形可在高切削速度下切削轻快。使用尽可能高的切削可获得更多的生产效率。速度高达(2500m/min)。Advantages: open positive rake angle groove in high cutting speed cutting light. Used as far as possible the high cutting speed (high2500m / min ) can obtain more production efficiency. 局限性：多用于有色金属材料加工。Limitations : used for nonferrous metal material processing. 典型零件：普通的铝材零件。Typical parts: ordinary aluminum parts. 
N	LH2 	$a_p=0.1-6.5 \text{ mm}$ $f_n=0.13-0.6 \text{ mm/r}$	刀尖部分 $21^\circ$  主切削刃部分 $21^\circ$ 	用于半精到粗车削加工。Used for finish turning. 铝合金和其他有色金属。Aluminum alloy and other non-ferrous metals. 工序：车削、车端面和仿形切削。Operations: turning, facing and copying cutting. 优点：开放的正前角槽形可在高切削速度下切削轻快。使用尽可能高的切削速度可获得更多的生产效率。Advantages: open positive rake angle groove in high cutting speed cutting light. Used as far as the high cutting speed can be obtained more production efficiency. 局限性：多用于有色金属材料加工。Limitations : used for nonferrous metal material processing. 典型零件：普通的铝材零件。Typical parts: ordinary aluminum parts. 
S	SL 	$a_p=0.06-1.7 \text{ mm}$ $f_n=0.03-0.3 \text{ mm/r}$	刀尖部分 $21^\circ$  主切削刃部分 $21^\circ$ 	用于精加工车削；Used for finish turning; 适用于耐热合金和钛合金等航空航天零件材料精加工 suitable for finishing machining of heat resistance alloy, titanium alloy and other aerospace parts 工序：车削、车端面；Operations: turning, facing; 优势：具有低切削力的轻切削槽形可靠性和通用性强，实现了无故障切削。 Advantages: Light cutting chip breaker with low cutting force. High reliability and universality. Problem free cutting . 局限性：在进给率和切削深度方面应用范围受限 Limitations: the feed rate and cutting depth limitation of application scope; 





## B1-3牌号与槽型推荐 Recommended grade and chipbreaker

**P** 钢加工 Process steel

	加工类型 Process type	断屑槽 Chip breaker	精度 Tolerance	槽型示意图 Chipbreaker diagram	推荐切削用量 Recommended cutting parameter	CVD涂层 CVD coating	PVD涂层 PVD coating
负前角刀片 Negative Angle blade before	精加工 Finishing	FW	M		$ap=0.3-1.5 \text{ mm}$ , $fn=0.07-0.5 \text{ mm/r}$	BPS051, BPS101	
		N	G		$ap=0.3-1.2 \text{ mm}$ , $fn=0.03-0.18 \text{ mm/r}$		BU810, BPG05B
		E	G		$ap=0.8-2.6 \text{ mm}$ , $fn=0.1-0.25 \text{ mm/r}$		BU810, BPG05B
		H	G		$ap=0.8-3.2 \text{ mm}$ , $fn=0.1-0.3 \text{ mm/r}$		BU810, BPG05B
		S	G		$ap=0.6-2.0 \text{ mm}$ , $fn=0.05-0.2 \text{ mm/r}$		BU810, BPG05B
	半精加工 Semi-finishing	TM	M		$ap=1.5-4.5 \text{ mm}$ , $fn=0.2-0.5 \text{ mm/r}$	BPS101, BPS251	BPG308
		MD	M		$ap=0.4-8.6 \text{ mm}$ , $fn=0.1-0.65 \text{ mm/r}$	BPS101, BPS251	BPG308
		MA	M		$ap=0.8-3.2 \text{ mm}$ , $fn=0.1-0.3 \text{ mm/r}$		BU810, BPG05B
		U	M		$ap=0.8-2.6 \text{ mm}$ , $fn=0.1-0.3 \text{ mm/r}$		BU810, BPG05B
		UX	M		$ap=0.8-3.2 \text{ mm}$ , $fn=0.1-0.3 \text{ mm/r}$		BU810, BPG05B
		S	G		$ap=0.6-2.0 \text{ mm}$ , $fn=0.05-0.2 \text{ mm/r}$		BU810, BPG05B
	粗加工 Rough finish	RA	M		$ap=0.7-15 \text{ mm}$ , $fn=0.2-1 \text{ mm/r}$	BPS373	
	正前角刀片 Is the former Angle blade	精加工 Finishing	N	G		$ap=0.3-1.2 \text{ mm}$ , $fn=0.03-0.18 \text{ mm/r}$	
H			G		$ap=0.8-3.2 \text{ mm}$ , $fn=0.1-0.3 \text{ mm/r}$		BU810, BPG05B
E			G		$ap=0.8-2.6 \text{ mm}$ , $fn=0.1-0.3 \text{ mm/r}$		BU810, BPG05B
S			G		$ap=0.6-2.0 \text{ mm}$ , $fn=0.05-0.2 \text{ mm/r}$		BU810, BPG05B
FW			M		$ap=0.5-2.0 \text{ mm}$ , $fn=0.01-0.3 \text{ mm/r}$	BPS051, BPS101	
半精加工 Semi-finishing		N	G		$ap=0.3-1.2 \text{ mm}$ , $fn=0.03-0.18 \text{ mm/r}$		
		MD	M		$ap=0.2-4.5 \text{ mm}$ , $fn=0.1-0.35 \text{ mm/r}$	BPS101, BPS251	BPG308
		R	M		$ap=0.5-12.8 \text{ mm}$	BPS101, BPS251	BPG308
粗加工 Rough finish		RA	M		$ap=0.2-4.5 \text{ mm}$ , $fn=0.1-0.35 \text{ mm/r}$	BPS373	

**B**

普通车削  
General Turning





## B1-3 牌号与槽型推荐 Recommended grade and chipbreaker

M 不锈钢加工 Process on stainless steel

ISO 分类分组	加工类型 Process type	断屑槽 Chip breaker	精度 Tolerance	槽型示意图 Chipbreaker diagram	推荐切削用量 Recommended cutting parameter	CVD涂层 CVD coating	PVD涂层 PVD coating
负前刀片 Negative Angle blade inserts	精加工 Finishing	LH	M		$a_p=0.8-3.5 \text{ mm}$ , $f_n=0.1-0.4 \text{ mm/r}$		BPG05B
		MX	M		$a_p=0.1-1.5 \text{ mm}$ , $f_n=0.05-0.4 \text{ mm/r}$		BPG05B
	半精加工 Semi-finishing	MD	M		$a_p=0.4-8.6 \text{ mm}$ , $f_n=0.1-0.65 \text{ mm/r}$		BPG20B、BPG25B
		MA	M		$a_p=0.5-8.5 \text{ mm}$ , $f_n=0.12-0.65 \text{ mm/r}$		BPG20B、BPG25B

B 普通车削  
General Turning

N 有色金属 Non-ferrous metals

负前刀片 Negative Angle blade inserts	加工类型 Process type	断屑槽 Chip breaker	精度 Tolerance	槽型示意图 Chipbreaker diagram	推荐切削用量 Recommended cutting parameter	硬质合金 Carbide grade
	精加工 Finishing	LH	M		$a_p=0.8-3.5 \text{ mm}$ , $f_n=0.1-0.4 \text{ mm/r}$	BU810 BU813
半精加工、精加工 Semi-finishing, finishing	S	G		$a_p=0.8-2.5 \text{ mm}$ , $f_n=0.06-0.2 \text{ mm/r}$	BU810	

正前刀片 In the former Angle blade	加工类型 Process type	断屑槽 Chip breaker	精度 Tolerance	槽型示意图 Chipbreaker diagram	推荐切削用量 Recommended cutting parameter	硬质合金 Carbide grade
	半精到粗车削加工 Semi-finishing, roughing turning	LH	G		$a_p=0.1-5.0 \text{ mm}$ , $f_n=0.03-0.5 \text{ mm/r}$	BU810 BU813
		LH2	G		$a_p=0.4-6.5 \text{ mm}$ , $f_n=0.13-0.6 \text{ mm/r}$	BU810 BU813
半精加工 Semi-finishing	S	G		$a_p=0.6-2.0 \text{ mm}$ , $f_n=0.05-0.2 \text{ mm/r}$	BU810	



**K** 铸铁加工 Process on cast iron

	加工类型 Process type	断屑槽 Chip breaker	精度 Tolerance	槽型示意图 Chipbreaker diagram	推荐切削用量 Recommended cutting parameter	CVD涂层 CVD coating
负偏角刀片 Negative Angle blade before	精加工 Finishing	CX	M		$a_p=0.06-1.7\text{ mm}$ , $f_n=0.03-0.3\text{ mm/r}$	BPC132
	半精加工 Semi-finishing	CQ	M		$a_p=0.2-6.0\text{ mm}$ , $f_n=0.15-0.5\text{ mm/r}$	BPC132
		U	M		$a_p=1-4.0\text{ mm}$ , $f_n=0.15-0.5\text{ mm/r}$	BPC132
	粗加工 Rough finish	GH	M		$a_p=0.4-14\text{ mm}$ , $f_n=0.19-0.85\text{ mm/r}$	BPC132
		无槽 No slot	M		$a_p=0.2-12.0\text{ mm}$ , $f_n=0.1-1.19\text{ mm/r}$	BPC132







## B1-4 普通车削刀片命名规则 General turning Inserts code key

刀片形状 / 代号 Insert Shape/Code			公制 Metric				
代号 Code	有无孔 With/without hole	有无断屑槽 With/without chipbreaker	刀片前面 Section plane of insert	代号 Code	有无孔 With/without hole	有无断屑槽 With/without chipbreaker	刀片前面 Section plane of insert
	有 With	无 Without		N	无 Without	无 Without	
	有 With	无 Without		R	无 Without	单面 Single-side	
	有 With	无 Without		F	无 Without	双面 Double-side	
	有 With	无 Without		A	有 With	无 Without	
	有 With	无 Without		M	有 With	单面 Single-side	
	有 With	无 Without		G	有 With	双面 Double-side	
	有 With	双面 Double-side		X	—	—	特殊 Special
	有 With	无 Without		U	有 With	双面 Double-side	
	有 With	无 Without					
	有 With	无 Without					
	有 With	无 Without					
	有 With	无 Without					
	有 With	单面 Single-side					
	有 With	无 Without					
	有 With	无 Without					
	有 With	无 Without					
	有 With	无 Without					
其他 Others							
形状代号 Insert shape			断屑槽及夹固形式 Chipbreaker and clamping system				

# T N M G

主切削刃后角 Clearance angle of main cutting edge			
代号 Code	后角 Clearance angle	代号 Code	后角 Clearance angle
A		B	
C		D	
E		F	
G		N	
P		O	其他的后角 Other clearance angle

允许偏差 Allowed tolerance										
代号 Code	m允许偏差 (mm) tolerance range	内切圆 允许偏差 (mm) Inscribed circle tolerance (mm)	厚度S 允许偏差 (mm) Thickness S tolerance (mm)	(参考) 以超精度详细情况 (按形状、大小分) Referenced Details of H-class tolerance (Identified by shape and size) 刀具高度允许偏差 (mm) Nominal height tolerance (mm)						
A	±0.005	±0.025	±0.025	内切圆 Inscribed circle						
F	±0.005	±0.013	±0.025	6.35	±0.08	±0.08	±0.08	±0.11	±0.16	—
C	±0.013	±0.025	±0.025	8.525	±0.08	±0.08	±0.08	±0.11	±0.16	—
H	±0.013	±0.013	±0.025	12.7	±0.13	±0.13	±0.13	±0.15	—	—
E	±0.025	±0.025	±0.025	16.875	±0.15	±0.15	±0.15	±0.18	—	—
G	±0.025	±0.025	±0.13	19.05	±0.15	±0.15	±0.15	±0.18	—	—
J	±0.005	±0.05±0.13	±0.025	25.4	—	±0.18	—	—	—	—
K	±0.013	±0.06±0.13	±0.025	内切圆 $\phi$ .C 允许公差 (mm) Tolerance of inscribed circle						
L	±0.025	±0.05±0.13	±0.025	内切圆 Inscribed circle						
M	±0.06±0.18	±0.05±0.13	±0.13	6.35	±0.05	±0.05	±0.05	±0.05	±0.05	—
N	±0.06±0.18	±0.05±0.13	±0.025	9.625	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05
U	±0.13±0.38	±0.06±0.25	±0.13	12.7	±0.08	±0.08	±0.08	±0.08	—	±0.08
				15.875	±0.10	±0.10	±0.10	±0.10	—	±0.10
				19.05	±0.10	±0.10	±0.10	±0.10	—	±0.10
				25.4	—	±0.13	—	—	—	±0.13



## B1-4 普通车削刀片命名规则 General turning inserts code key

内切圆直径 (mm) Diameter of IC	刀片形状 Insert shape							
	C	D	R	S	T	V	W	K
3.97					06			
5.0			06					
6.66					09			
6.0			06					
6.35	06	07			11	11		
8.0			08					
9.525	09	11	09	09	18	18	08	16
10.0			10					
12.0			12					
12.7	12	15	12	12	22	22	08	
15.875	18	19	15	15	27		10	
18.0			18					
19.05	19		19	19	33			
20.0			20					
25.0			25					
25.4	25		25	25				
31.75			31					
32			32					

**切削刃长度 Length of cutting edge**

厚度指刀片底面与切削刃最高部分之间的高度  
Thickness is defined as height from bottom of insert to the highest part of cutting edge.

代号 Code	刀片厚度(mm) Insert thickness (mm)
00	0.79
T0	0.99
01	1.59
T1	1.98
02	2.98
T2	2.70
03	3.18
T3	3.97
04	4.78
T4	4.96
05	5.56
T5	5.95
06	6.36
T6	6.75
07	7.94
08	9.62
T9	9.72
11	11.11
12	12.70

**刀片厚度 Insert thickness**

22 04 08 - FW (ISO)

4 3 2 (inch)

内切圆 Inscribed circle	
代号 Code	内切圆直径(mm) Diameter of IC (mm)
2	6.35
3	9.525
4	12.7
5	15.875
6	19.05
8	25.4

厚度 Thickness	
代号 Code	厚度(mm) Thickness
2	3.18
3	4.78
4	6.36
5	7.94
6	9.62

刀尖圆弧半径 Nose radius	
代号 Code	刀尖圆弧半径(mm) Nose radius
0	0.2
1	0.4
2	0.8
3	1.2
4	1.6
5	2.0
6	2.4

刀尖圆弧代号 Nose radius Code	
代号 Code	刀尖圆弧半径(mm) Nose radius
00	无圆角(Nominal)
02	0.2
04	0.4
08	0.8
12	1.2
16	1.6
20	2.0
24	2.4
32	3.2
X	其他
Mo(公制) (Metric)	圆弧形刀片 Round insert

断屑槽型代号 Chipbreaker code			
FW	CX	FW	SL
MD	CQ	MX	LHC
TM	U	MD	SN
RA	GH	MA	LH

★ 厚度指刀片底面与切削刃最高部分之间的高度  
Thickness is defined as height from bottom of insert to the highest part of cutting edge.





## B1-5 钢加工刀片 Inserts for processing steel ..... 材质 Grades

**P** 钢加工 Process steel

**a** 涂层牌号 Grade for coating

牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPS051	P05(P01-P10)	黑/黄 Black/yellow 	CVD涂层牌号: 在稳定工况下对钢材进行精加工时, 可获得高金属去除率。 出色的耐月牙洼磨损和抗塑性变形能力。推荐用于稳定工况。湿式和干式加工。 CVD coated grade: stable conditions for steel finishing can obtain high metal removal rate. Excellent resistance to crater wear and plastic deformation resistance. Recommended for stable conditions. Wet and dry processing.
BPS101	P15(P10-P20)	黑/黄 Black/yellow 	CVD涂层硬质合金牌号, 在硬度、韧性兼备的梯度烧结基体上涂有耐磨涂层, 承受高温。 用于钢和钢铸件的精加工到半精加工, 连续切削到轻的间断切削。 灰口和球墨铸铁的低到中等切削速度加工。 硬材料连续切削到轻型间断切削的精加工到粗加工。湿式和干式加工。 CVD coated carbide grade, wear-resistance materials coated on the gradient sintered substrate which has both good hardness, toughness. Can bear high temperatures. For steel and steel castings finishing to roughing processing, Continue cutting to light interrupted cutting. Machining of gray and ductile iron at low to medium cutting speed. For hard materials continuous cutting and light interrupted cutting from finishing to roughing. Wet and dry processing.
BPS153	K15(K10-K20)	黄 Yellow 	
BPS251	P20(P15-P30)	黑/黄 Black/yellow 	梯度合金基体涂覆厚膜耐磨CVD牌号。通用性广的牌号。 适于钢和铸钢件上的精加工到粗加工连续切削以及间断切削。不锈钢材料连续切削和间断切削。 CVD coated carbide grade, Universal grade, suitable for steel and cast steel continuous cutting and interrupted cutting finishing to roughing. Grades with a wide range of applications. Stainless steel continuous cutting and interrupted cutting.
BPS253	M15(M10-M20)	黄 Yellow 	
BPS371	P30(P25-P40)	黑/黄 Black/yellow 	CVD涂层硬质合金牌号, 高强度合金基体上厚膜耐磨涂层。在恶劣工况下加工钢和铸钢件。 刃线安全性, 用于高金属去除率的间断切削。 CVD coated carbide grade, high-strength alloy substrate with thick wear-resistant coating. Machining steel and cast steel in bad conditions. Edge line security for interrupted cutting high metal removal rate.
BPS373		黄 Yellow 	

B  
普通车削  
General Turning







## B1-5 钢加工刀片 Inserts for processing steel ..... 材质 Grades

**P** 钢加工 Process steel

### b 金属陶瓷 Cermet

	牌号 Grade	ISO分类 ISO classification	密度 Density (g/cm <sup>3</sup> )	硬度 Hardness HRA	抗弯强度 Bending strength (N/mm <sup>2</sup> )	使用性能及用途 Usage and performance
	BN201	K01-K10 P01-P20 M01-M20	6.5~7.2	>92	>1800	适用于钢、不锈钢半精加工、精加工 Suitable for the finishing ,semi-finishing of stainless steel
	BN301	K05-K20 P10-P30 M10-M30	6.1~7.2	>91	>2000	适用于钢、不锈钢半精加工、精加工 Suitable for the finishing ,semi-finishing of stainless steel

### c 非涂层牌号 Grade for uncoating

	牌号 Grade	ISO分类 ISO classification	密度 Density (g/cm <sup>3</sup> )	硬度 Hardness HRA	抗弯强度 Bending strength (N/mm <sup>2</sup> )	使用性能及用途 Usage and performance
	YT5	P30	12.7~13.1	89.5~90.5	2200	具有较好的强度、抗冲击性及热震性；适于碳素钢与合金钢的粗加工。 High strength, impact resistance and thermal shock resistance; suitable for carbon and alloy steel rough machining.
	YT14	P20	11.2~11.8	91.5~92.5	1750	使用强度高, 抗冲击、抗震性好, 适于碳素钢与合金钢的精加工、半精加工。 The use of high strength, impact resistance, good shock resistance, suitable for carbon and alloy steel finishing, semi finishing.
	YT15	P10	11.1~11.5	92~93.2	1650	耐磨性较好, 适用于钢、铸钢、合金钢等的精加工、半精加工。 Good wear resistance. Suitable for steel, cast steel, alloy steel finishing, semi finishing.
	BP10	P05-P15	10.0~11.0	≥92.0	1760	红硬性高, 抗热震裂和抗热塑性变形能力强, 适用于钢和铸钢的精加工、半精加工。 Excellent in red hardness, anti-heat crack, anti-plastic deformation. Suitable for the finishing semi finishing of steel castiron .
	BP20	P20-P25 M20	12.3	≥91.5	1910	红硬性高, 具有很高的抗热震裂和抗热塑性变形能力, 适用于合金结构钢、合金工具钢和高锰钢、不锈钢的加工。 Excellent in red hardness, anti-heat crack, anti xiformation. Suitable for processing the structural alloy steel, alloy tool steel, high manganese steel and stainless steel
	BP25	P30-P40	12.7	≥91.0	2220	红硬性高, 并具有良好很高的抗热震性和高的使用强度。是通用性良好的牌号。适用于钢及铸钢的粗加工 Excellent in red hardness anti-thermal deformation . High strength. common grade. Suitable for the roughing of steel, castiron

B  
普通车削  
General Turning



# B1-5 钢加工负型刀片 Inserts for processing steel ..... 精加工 Finishing

Negative inserts

B  
General Turning  
普通车削

刀片基本形状 The basic shape of blade	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Grade recommended									
		φ1.C	S	φd	R	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic			
						BPS061	BPS101	BPS261	BPS371	BP02B	BP03B	BN001	BN001		
		CNMG	090304-FW	9.525	3.18	3.81	0.4	★	☆						
			090308-FW	9.525	3.18	3.81	0.8	★	☆						
			120404-FW	12.7	4.76	5.16	0.4	★	☆						
			120408-FW	12.7	4.76	5.16	0.8	★	☆						
			120412-FW	12.7	4.76	5.16	1.2	★	☆						
		DNMG	110404-FW	9.525	4.76	3.81	0.4	★	☆						
			110408-FW	9.525	4.76	3.81	0.8	★	☆						
			150404-FW	12.7	4.76	5.16	0.4	★	☆						
			150408-FW	12.7	4.76	5.16	0.8	★	☆						
			150604-FW	12.7	6.35	5.16	0.4	★	☆						
			150608-FW	12.7	6.35	5.16	0.8	★	☆						
		SNMG	120404-FW	12.7	4.76	5.16	0.4	★	☆						
			120408-FW	12.7	4.76	5.16	0.8	★	☆						
			120412-FW	12.7	4.76	5.16	1.2	★	☆						
		TNMG	160404-FW	9.525	4.76	3.81	0.4	★	☆						
			160408-FW	9.525	4.76	3.81	0.8	★	☆						
			160412-FW	9.525	4.76	3.81	1.2	★	☆						
			220404-FW	12.7	4.76	5.16	0.4	★	☆						
			220408-FW	12.7	4.76	5.16	0.8	★	☆						
		VNMG	160404-FW	9.525	4.76	3.81	0.4	★	☆						
			160408-FW	9.525	4.76	3.81	0.8	★	☆						
		WNMG	060404-FW	9.525	4.76	3.81	0.4	★	☆						
			060408-FW	9.525	4.76	3.81	0.8	★	☆						
			060412-FW	9.525	4.76	3.81	1.2	★	☆						
			080404-FW	12.7	4.76	5.16	0.4	★	☆						
			080408-FW	12.7	4.76	5.16	0.8	★	☆						
			080412-FW	12.7	4.76	5.16	1.2	★	☆						





B1-5 钢加工正型刀片 Inserts for processing steel ..... 精加工 Finishing  
Positive Inserts

刀片基本形状 The basic shape of inserts		型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended									
			Φ1.C	S	Φd	R	α	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic			
								BP5051	BP5101	BP5251	BP5371	BP605B	BP630B	BN001	BN001		
		060202-FW	6.35	2.38	2.8	0.2	7	☆	★								
		060204-FW	6.35	2.38	2.8	0.4	7	☆	★								
		060208-FW	6.35	2.38	2.8	0.8	7	☆	★								
		09T302-FW	9.525	3.97	4.4	0.2	7	☆	★								
		09T304-FW	9.525	3.97	4.4	0.4	7	☆	★								
		09T308-FW	9.525	3.97	4.4	0.8	7	☆	★								
		120408-FW	12.7	4.76	5.5	0.8	7	☆	★								
		070202-FW	6.35	2.38	2.8	0.2	7	☆	★								
		070204-FW	6.35	2.38	2.8	0.4	7	☆	★								
		11T302-FW	9.525	3.97	4.4	0.2	7	☆	★								
		11T304-FW	9.525	3.97	4.4	0.4	7	☆	★								
		11T308-FW	9.525	3.97	4.4	0.8	7	☆	★								
		09T304-FW	9.525	3.97	4.4	0.4	7	☆	★								
		09T308-FW	9.525	3.97	4.4	0.8	7	☆	★								
		090204-FW	5.56	2.38	2.5	0.4	7	☆	☆								
		090208-FW	5.56	2.38	2.5	0.8	7	☆	☆								
		110304-FW	6.35	3.18	2.8	0.4	7	☆	☆								
		110308-FW	6.35	3.18	2.8	0.8	7	☆	☆								
		110312-FW	6.35	3.18	2.8	1.2	7	☆	★								
		16T304-FW	9.525	3.97	4.4	0.4	7	☆	☆								
		16T308-FW	9.525	3.97	4.4	0.8	7	☆	☆								
		110304-FW	6.35	3.18	2.8	0.4	5	☆	☆								
		110308-FW	6.35	3.18	2.8	0.8	5	☆	☆								
		160404-FW	9.525	4.76	4.4	0.4	5	☆	★								
		160408-FW	9.525	4.76	4.4	0.8	5	☆	★								
		110304-FW	6.35	3.18	2.8	0.4	7	☆	☆								
		110308-FW	6.35	3.18	2.8	0.8	7	☆	☆								
		160404-FW	9.525	4.76	4.4	0.4	7	☆	☆								
		160408-FW	9.525	4.76	4.4	0.8	7	☆	☆								







B1-5 钢加工负型刀片 Inserts for processing steel ..... 精加工 Finishing  
Negative inserts

刀片基本形状 The basic shape of blade	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Grade recommended									
		Φ1C	S	Φd	R	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic		非涂层牌号 Uncoated grade	
						BP9261	BP9101	BP9261	BP9371	BP905B	BP6308	BN001	BN001	BU010	
	CNGG	090402LR-S	9.525	4.76	3.81	0.2								☆	★
		090404LR-S	9.525	4.76	3.81	0.4								☆	★
		090408LR-S	9.525	4.76	3.81	0.8								☆	★
	DNGG	110402LR-S	9.525	4.76	3.81	0.2								☆	★
		110404LR-S	9.525	4.76	3.81	0.4								☆	★
		110408LR-S	9.525	4.76	3.81	0.8								☆	★
	TNGG	110402LR-S	6.35	4.76	2.4	0.2								☆	★
		110404LR-S	6.35	4.76	2.4	0.4								☆	★
		110408LR-S	6.35	4.76	2.4	0.8								☆	★
		160402LR-S	9.525	4.76	3.81	0.2								☆	★
		160404LR-S	9.525	4.76	3.81	0.4								☆	★
		160408LR-S	9.525	4.76	3.81	0.8								☆	★
	WNGG	060402LR-S	9.525	4.76	3.81	0.2								☆	★
		060404LR-S	9.525	4.76	3.81	0.4								☆	★
		060408LR-S	9.525	4.76	3.81	0.8								☆	★

B  
普通车削  
General Turning





B1-5 钢加工正型刀片 Inserts for processing steel ..... 精加工 Finishing  
Positive Inserts

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended											
		φl.C	S	φd	R	α	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				金属陶瓷 ceramic		非涂层牌号 Uncoated grade	
							BPS3051	BPS101	BPS3251	BPS371	BP-GCB	BP-G308	BN01	BN01	BN01	BN01		
	CCGT	060202LR-S	6.35	2.38	2.8	0.2	7					☆	☆	☆		★		
		060204LR-S	6.35	2.38	2.8	0.4	7					☆	☆	☆		★		
		09T302LR-S	9.525	3.97	4.4	0.2	7					☆	☆	☆		★		
		09T304LR-S	9.525	3.97	4.4	0.4	7					☆	☆	☆		★		
		09T308LR-S	9.525	3.97	4.4	0.8	7					☆	☆	☆		★		
		120402LR-S	12.7	4.76	5.5	0.2	7					☆	☆	☆		★		
		120404LR-S	12.7	4.76	5.5	0.4	7					☆	☆	☆		★		
		120408LR-S	12.7	4.76	5.5	0.8	7					☆	☆	☆		★		
	CCGH	060202LR-S	6.35	2.38	2.8	0.2	7					☆	☆	☆		★		
		060204LR-S	6.35	2.38	2.8	0.4	7					☆	☆	☆		★		
	DCET	070201LR-S	6.35	2.38	2.8	0.1	7					☆	☆	☆		★		
		070202LR-S	6.35	2.38	2.8	0.2	7					☆	☆	☆		★		
		070204LR-S	6.35	2.38	2.8	0.4	7					☆	☆	☆		★		
		11T301LR-S	9.525	3.97	4.4	0.1	7					☆	☆	☆		★		
		11T302LR-S	9.525	3.97	4.4	0.2	7					☆	☆	☆		★		
		11T304LR-S	9.525	3.97	4.4	0.4	7					☆	☆	☆		★		

B  
普通车削  
General Turning





B1-5 钢加工正型刀片 Inserts for processing steel ..... 精加工 Finishing  
Positive Inserts

B  
普通车削  
General Turning

刀片基本形状 The basic shape of inserts		型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended								
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic		非涂层牌号 Uncoated grade
			$\phi$ LC	S	$\phi$ d	R	$\alpha$	BPS3051	BPS101	BPS3251	BPS371	BP-02B	BP-03B	BN301	BN301	BU310
		DCGT	070202LR-S	6.35	2.38	2.8	0.2	7					☆	☆	☆	★
			070204LR-S	6.35	2.38	2.8	0.4	7					☆	☆	☆	★
			11T302LR-S	9.525	3.97	4.4	0.2	7					☆	☆	☆	★
			11T304LR-S	9.525	3.97	4.4	0.4	7					☆	☆	☆	★
		DPET	070201LR-S	6.35	2.38	2.8	0.1	11					☆	☆	☆	★
			070202LR-S	6.35	2.38	2.8	0.2	11					☆	☆	☆	★
			11T301LR-S	9.525	3.97	4.4	0.1	11					☆	☆	☆	★
			11T302LR-S	9.525	3.97	4.4	0.2	11					☆	☆	☆	★
		SCGT	09T304LR-S	9.525	3.97	4.4	0.4	7					☆	☆	☆	★
			09T308LR-S	9.525	3.97	4.4	0.8	7					☆	☆	☆	★
		SPGH	090304LR-S	9.525	3.18	4.4	0.4	11					☆	☆	☆	★
			090308LR-S	9.525	3.18	4.4	0.8	11					☆	☆	☆	★
			120304LR-S	12.7	3.18	5.5	0.4	11					☆	☆	☆	★
			120308LR-S	12.7	3.18	5.5	0.8	11					☆	☆	☆	★
		SPGT	090304LR-S	9.525	3.18	4.4	0.4	11					☆	☆	☆	★
			090308LR-S	9.525	3.18	4.4	0.8	11					☆	☆	☆	★
			120304LR-S	12.7	3.18	5.5	0.4	11					☆	☆	☆	★
			120308LR-S	12.7	3.18	5.5	0.8	11					☆	☆	☆	★
		TCGT	110302LR-S	6.35	3.18	2.8	0.2	7					☆	☆	☆	★
			110304LR-S	6.35	3.18	2.8	0.4	7					☆	☆	☆	★
		TPGH	090202LR-S	5.56	2.38	2.5	0.2	11					☆	☆	☆	★
			090204LR-S	5.56	2.38	2.5	0.4	11					☆	☆	☆	★
			110202LR-S	6.35	2.38	3.4	0.2	11					☆	☆	☆	★
			110204LR-S	6.35	2.38	3.4	0.4	11					☆	☆	☆	★
			110302LR-S	6.35	3.18	3.4	0.2	11					☆	☆	☆	★
			110304LR-S	6.35	3.18	3.4	0.4	11					☆	☆	☆	★
			110308LR-S	6.35	3.18	3.4	0.8	11					☆	☆	☆	★
			160302LR-S	9.525	3.18	4.4	0.2	11					☆	☆	☆	★
			160304LR-S	9.525	3.18	4.4	0.4	11					☆	☆	☆	★
160308LR-S	9.525	3.18	4.4	0.8	11					☆	☆	☆	★			







B1-5 钢加工正型刀片 Inserts for processing steel ..... 精加工 Finishing  
Positive Inserts

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended								
		φL C	S	φd	R	α	CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic		非涂层牌号 Uncoated grade		
							BPS3051	BPS101	BPS3251	BPS371	BP-G05B	BP-G30B	BN301	BN301	BU310
	TPGR	090202LR-S	5.56	2.38		0.2	11					☆	☆	☆	★
		090204LR-S	5.56	2.38		0.4	11					☆	☆	☆	★
		090208LR-S	5.56	2.38		0.8	11					☆	☆	☆	★
	TPET	110301L-S	6.35	3.18	3.4	0.1	11					☆	☆	☆	★
		110302L-S	6.35	3.18	3.4	0.2	11					☆	☆	☆	★
	TPGX	090202L-S	5.56	2.38	2.5	0.2	11					☆	☆	☆	★
		090204L-S	5.56	2.38	2.5	0.4	11					☆	☆	☆	★
		090208L-S	5.56	2.38	2.5	0.8	11					☆	☆	☆	★
		110302L-S	6.35	3.18	3.4	0.2	11					☆	☆	☆	★
		110304L-S	6.35	3.18	3.4	0.4	11					☆	☆	☆	★
		110308L-S	6.35	3.18	3.4	0.8	11					☆	☆	☆	★
	VBET	110301L-S	6.35	3.18	2.8	0.1	5					☆	☆	☆	★
		110302L-S	6.35	3.18	2.8	0.2	5					☆	☆	☆	★

B  
General Turning  
普通车削





B1-5 钢加工正型刀片 Inserts for processing steel ..... 精加工 Finishing  
Positive Inserts

B  
普通车削  
General Turning

刀片基本形状 The basic shape of inserts		型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended							
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic	
			φl.C	S	φd	R	α	BPS3051	BPS101	BPS251	BPS371	BP-Q25B	BP-Q30B	BNQ01	BNQ01
	VBGT	110301LR-S	6.35	3.18	2.8	0.1	5					☆	☆	☆	★
		110302LR-S	6.35	3.18	2.8	0.2	5					☆	☆	☆	★
		110304LR-S	6.35	3.18	2.8	0.4	5					☆	☆	☆	★
		160402LR-S	9.525	4.76	4.4	0.2	5					☆	☆	☆	★
		160404LR-S	9.525	4.76	4.4	0.4	5					☆	☆	☆	★
	VCGT	160404LR-S	9.525	4.76	4.4	0.4	7					☆	☆	☆	★
		160408LR-S	9.525	4.76	4.4	0.8	7					☆	☆	☆	★
	VDGX	160302LR-S	9.525	3.18	4.4	0.2	15					☆	☆	☆	★
		160304LR-S	9.525	3.18	4.4	0.4	15					☆	☆	☆	★
	VPET	110301LR-S	6.35	3.18	2.8	0.1	11					☆	☆	☆	★
		110302LR-S	6.35	3.18	2.8	0.2	11					☆	☆	☆	★
	WPGT	060304LR-S	9.525	4.76	3.18	0.4	11					☆	☆	☆	★
		060308LR-S	9.525	4.76	3.18	0.8	11					☆	☆	☆	★
	DCET	070204LR-E	6.35	2.38	2.8	0.4	7					☆	☆	☆	★
		11T302LR-E	9.525	3.97	4.4	0.2	7					☆	☆	☆	★
		11T304LR-E	9.525	3.97	4.4	0.4	7					☆	☆	☆	★
	TNGG	160404LR-E	9.525	4.76	3.81	0.4	-					☆	☆	☆	★
		160408LR-E	9.525	4.76	3.81	0.8	-					☆	☆	☆	★



B1-5 钢加工负型刀片 Inserts for processing steel ..... 半精加工 Semi finishing

Negative inserts

刀片基本形状The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Grade recommended									
		φ1.C	S	φd	R	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic			
						BP9361	BP9301	BP9261	BP9371	BP935B	BP930B	BN001	BN001		
	CNMG	090304-MD	9.525	3.18	3.81	0.4	★	★	☆						
		090308-MD	9.525	3.18	3.81	0.8	★	★	☆						
		120404-MD	12.7	4.76	5.16	0.4	★	★	☆						
		120408-MD	12.7	4.76	5.16	0.8	★	★	☆						
		120412-MD	12.7	4.76	5.16	1.2	★	★	☆						
		160608-MD	15.875	6.35	6.35	0.8	★	★	☆						
		160612-MD	15.875	6.35	6.35	1.2	★	★	☆						
		190608-MD	19.05	6.35	7.93	0.8	★	★	☆						
		190612-MD	19.05	6.35	7.93	1.2	★	★	☆						
190616-MD	19.05	6.35	7.93	1.6	★	★	☆								
	DNMG	110404-MD	9.525	4.76	3.81	0.4	★	★	☆						
		110408-MD	9.525	4.76	3.81	0.8	★	★	☆						
		150404-MD	12.7	4.76	5.16	0.4	★	★	☆						
		150408-MD	12.7	4.76	5.16	0.8	★	★	☆						
		150412-MD	12.7	4.76	5.16	1.2	★	★	☆						
		150604-MD	12.7	6.35	5.16	0.4	★	★	☆						
		150608-MD	12.7	6.35	5.16	0.8	★	★	☆						
		150612-MD	12.7	6.35	5.16	1.2	★	★	☆						
	SNMG	090304-MD	9.525	3.18	3.81	0.4	★	★	☆						
		120404-MD	12.7	4.76	5.16	0.4	★	★	☆						
		120408-MD	12.7	4.76	5.16	0.8	★	★	☆						
		120412-MD	12.7	4.76	5.16	1.2	★	★	☆						
		150608-MD	15.875	6.35	6.35	0.8	★	★	☆						
		150612-MD	15.875	6.35	6.35	1.2	★	★	☆						
		190608-MD	19.05	6.35	7.93	0.8	★	★	☆						
		190612-MD	19.05	6.35	7.93	1.2	★	★	☆						
		190616-MD	19.05	6.35	7.93	1.6	★	★	☆						
	TNMG	160404-MD	9.525	4.76	3.81	0.4	★	★	☆						
		160408-MD	9.525	4.76	3.81	0.8	★	★	☆						
		160412-MD	9.525	4.76	3.81	1.2	★	★	☆						
		220404-MD	12.7	4.76	5.16	0.4	★	★	☆						
		220408-MD	12.7	4.76	5.16	0.8	★	★	☆						
		220412-MD	12.7	4.76	5.16	1.2	★	★	☆						

B  
General Turning  
普通车削







B1-5 钢加工负型刀片 Inserts for processing steel ..... 半精加工 Semi finishing

Negative inserts

B  
普通车削  
General Turning

刀片基本形状 The basic shape of inserts		型号 Type		基本尺寸 Dimension (mm)				材质推荐 Grade recommended							
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic	
				$\phi$ 1.C	S	$\phi$ d	R	BP9361	BP9101	BP9261	BP9371	BP605B	BP608	BN001	BN001
		VNMG	160404-MD	9.525	4.76	3.81	0.4		★	★	☆				
			160408-MD	9.525	4.76	3.81	0.8		★	★	☆				
			160412-MD	9.525	4.76	3.81	1.2		★	★	☆				
		WNMG	060404-MD	9.525	4.76	3.81	0.4		★	★	☆				
			060408-MD	9.525	4.76	3.81	0.8		★	★	☆				
			060412-MD	9.525	4.76	3.81	1.2		★	★	☆				
			080404-MD	12.7	4.76	5.16	0.4		★	★	☆				
			080408-MD	12.7	4.76	5.16	0.8		★	★	☆				
			080412-MD	12.7	4.76	5.16	1.2		★	★	☆				





B1-5 钢加工负型刀片 Inserts for processing steel ..... 半精加工 Semi finishing

Negative inserts

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Grade recommended												
		φC	S	φd	R	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic						
						BP9261	BP9101	BP9261	BP9371	BP605B	BP608B	BN001	BN001					
		CNMG	120404-MA	12.7	4.76	5.16	0.4		★	★	☆							
			120408-MA	12.7	4.76	5.16	0.8		★	★	☆							
			120412-MA	12.7	4.76	5.16	1.2		★	★	☆							
			160604-MA	15.875	6.35	6.35	0.4		☆	☆	☆							
			160608-MA	15.875	6.35	6.35	0.8		★	★	☆							
		DNMG	150404-MA	12.7	4.76	5.16	0.4		★	★	☆							
			150408-MA	12.7	4.76	5.16	0.8		★	★	☆							
			150604-MA	12.7	6.35	5.16	0.4		★	★	☆							
			150608-MA	12.7	6.35	5.16	0.8		★	★	☆							
		SNMG	120404-MA	12.7	4.76	5.16	0.4		☆	☆	☆							
			120408-MA	12.7	4.76	5.16	0.8		★	★	☆							
		TNMG	160404-MA	9.525	4.76	5.16	0.4		★	★	☆							
			160408-MA	9.525	4.76	5.16	0.8		★	★	☆							
			160412-MA	9.525	4.76	5.16	1.2		★	★	☆							
		VNMG	160404-MA	9.525	4.76	5.16	0.4		★	★	☆							
			160408-MA	9.525	4.76	5.16	0.8		★	★	☆							
		WNMG	080404-MA	12.7	4.76	5.16	0.4		★	★	☆							
			080408-MA	12.7	4.76	5.16	0.8		★	★	☆							





B1-5 钢加工负型刀片 Inserts for processing steel ..... 半精加工 Semi finishing  
 Negative inserts

B  
 普通车削  
 General Turning

刀片基本形状 The basic shape of inserts		型号 Type		基本尺寸 Dimension (mm)				材质推荐 Grade recommended								
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic		
				φ1.C	S	φd	R	BP9361	BP9371	BP9361	BP9371	BP605B	BP608	BN001	BN001	
		CNMG	120404-TM	12.7	4.76	5.16	0.4		★	★	☆					
			120408-TM	12.7	4.76	5.16	0.8		★	★	☆					
			120412-TM	12.7	4.76	5.16	1.2		★	★	☆					
		DNMG	150404-TM	12.7	4.76	5.16	0.4		★	★	☆					
			150408-TM	12.7	4.76	5.16	0.8		★	★	☆					
			150412-TM	12.7	4.76	5.16	1.2		★	★	☆					
			150604-TM	12.7	6.35	5.16	0.4		★	★	☆					
			150608-TM	12.7	6.35	5.16	0.8		★	★	☆					
		TNMG	160404-TM	9.525	4.76	3.81	0.4		★	★	☆					
			160408-TM	9.525	4.76	3.81	0.8		★	★	☆					
			160412-TM	9.525	4.76	3.81	1.2		★	★	☆					
			220404-TM	12.7	4.76	5.16	0.4		★	★	☆					
			220408-TM	12.7	4.76	5.16	0.8		★	★	☆					
		VNMG	160404-TM	9.525	4.76	3.81	0.4		★	★	☆					
			160408-TM	9.525	4.76	3.81	0.8		★	★	☆					
			160412-TM	9.525	4.76	3.81	1.2		★	★	☆					
		WNMG	080404-TM	12.7	4.76	5.16	0.4		★	★	☆					
			080408-TM	12.7	4.76	5.16	0.8		★	★	☆					
			080412-TM	12.7	4.76	5.16	1.2		★	★	☆					
		VNMG	160408-UX	9.525	4.76	3.81	0.8		★	★	☆					
			160412-UX	9.525	4.76	3.81	1.2		★	★	☆					
		WNMG	080408-UX	12.7	4.76	5.16	0.8		★	★	☆					
			080412-UX	12.7	4.76	5.16	1.2		★	★	☆					





B1-5 钢加工负型刀片 Inserts for processing steel ..... 半精加工 Semi finishing

Negative inserts

刀片基本形状 The basic shape of inserts		型号 Type		基本尺寸 Dimension (mm)				材质推荐 Grade recommended			
				φI.C	S	φd	R	CVD涂层牌号 CVD coating grade			
		BP5061	BP5101					BP5251	BP5371		
		CNMG	120404-U	12.7	4.76	5.16	0.4		☆	☆	
			120408-U	12.7	4.76	5.16	0.8		☆	★	
			120412-U	12.7	4.76	5.16	1.2		☆	☆	
			160604-U	15.875	6.35	6.35	0.4		☆	☆	
			160608-U	15.875	6.35	6.35	0.8		☆	★	
			160612-U	15.875	6.35	6.35	1.2		☆	☆	
		DNMG	150404-U	12.7	4.76	5.16	0.4		☆	☆	
			150408-U	12.7	4.76	5.16	0.8		☆	☆	
			150604-U	12.7	6.35	5.16	0.4		☆	☆	
			150608-U	12.7	6.35	5.16	0.8		☆	☆	
		SNMG	120404-U	12.7	4.76	5.16	0.4		☆	☆	
			120408-U	12.7	4.76	5.16	0.8		☆	☆	
			150608-U	15.875	6.35	5.16	0.8		☆	☆	
			150612-U	15.87	6.35	5.16	1.2		☆	☆	
		TNMG	160404-U	9.525	4.76	5.16	0.4		☆	☆	
			160408-U	9.525	4.76	5.16	0.8		☆	★	
			160412-U	9.525	4.76	5.16	1.2		☆	★	
		VNMG	160404-U	9.525	4.76	5.16	0.4		☆	☆	
			160408-U	9.525	4.76	5.16	0.8		☆	★	
			160412-U	9.525	4.76	5.16	1.2		☆	★	
		WNMG	080404-U	12.7	4.76	5.16	0.4		☆	☆	
			080408-U	12.7	4.76	5.16	0.8		☆	★	
			080412-U	12.7	4.76	5.16	1.2		☆	★	

B  
General Turning  
普通车削





B1-5 钢加工负型刀片 Inserts for processing steel ..... 半精加工 Semi finishing  
Negative inserts

B  
普通车削  
General Turning

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Grade recommended									
		φL/C	S	φd	R	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic		非涂层牌号 Uncoated grade	
						BPS061	BPS101	BPS281	BPS371	BP005B	BP030B	BN001	BN001	BU010	
	120404L/R-N	12.7	4.76	5.16	0.4					☆	☆	☆		★	
	120408L/R-N	12.7	4.76	5.16	0.8					☆	☆	☆		★	
										☆	☆	☆		★	
	090304L/R-N	9.525	3.18	3.81	0.4					☆	☆	☆		★	
	090308L/R-N	9.525	3.18	3.81	0.8					☆	☆	☆		★	
	120404L/R-N	12.7	4.76	5.16	0.4					☆	☆	☆		★	
	120408L/R-N	12.7	4.76	5.16	0.8					☆	☆	☆		★	
	110302L/R-N	6.35	3.18	2.4	0.2					☆	☆	☆		★	
	110304L/R-N	6.35	3.18	2.4	0.4					☆	☆	☆		★	
	110308L/R-N	6.35	3.18	2.4	0.8					☆	☆	☆		★	
	160304L/R-N	9.525	3.18	3.81	0.4					☆	☆	☆		★	
	160402L/R-N	9.525	4.76	3.81	0.2					☆	☆	☆		★	
	160404L/R-N	9.525	4.76	3.81	0.4					☆	☆	☆		★	
	160408L/R-N	9.525	4.76	3.81	0.8					☆	☆	☆		★	
	160412L/R-N	9.525	4.76	3.81	1.2					☆	☆	☆		★	
	160416L/R-N	9.525	4.76	3.81	1.6					☆	☆	☆		★	
	220404L/R-N	12.7	4.76	5.16	0.4					☆	☆	☆		★	
	220408L/R-N	12.7	4.76	5.16	0.8					☆	☆	☆		★	
	220412L/R-N	12.7	4.76	5.16	1.2					☆	☆	☆		★	
	110302L/R-N	6.35	3.18	2.4	0.2					☆	☆	☆		★	
	110304L/R-N	6.35	3.18	2.4	0.4					☆	☆	☆		★	
	160402L/R-N	9.525	4.76	3.81	0.2					☆	☆	☆		★	
	160404L/R-N	9.525	4.76	3.81	0.4					☆	☆	☆		★	
	060404L/R-N	9.525	4.76	3.81	0.4					☆	☆	☆		★	
	060408L/R-N	9.525	4.76	3.81	0.8					☆	☆	☆		★	





B1-5 钢加工负型刀片 Inserts for processing steel ..... 半精加工 Semi finishing

Negative inserts

刀片基本形状The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Grade recommended									
		Φ1.C	S	Φd	R	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic		非涂层牌号 Uncoated grade	
						BPS051	BPS101	BPS251	BPS371	BPG05B	BPG30B	BN001	BN001	BU010	
	CNGG	090404L/R-H	9.525	4.76	3.81	0.4					☆	☆	☆		★
		090408L/R-H	9.525	4.76	3.81	0.8					☆	☆	☆		★
		120404L/R-H	12.7	4.76	5.16	0.4					☆	☆	☆		★
		120408L/R-H	12.7	4.76	5.16	0.8					☆	☆	☆		★
	DNGG	110404L/R-H	9.525	4.76	3.81	0.4					☆	☆	☆		★
		110408L/R-H	9.525	4.76	3.81	0.8					☆	☆	☆		★
		150404L/R-H	12.7	4.76	5.16	0.4					☆	☆	☆		★
		150408L/R-H	12.7	4.76	5.16	0.8					☆	☆	☆		★
	WNGG	160402L/R-H	9.525	4.76	3.81	0.2					☆	☆	☆		★
		160404L/R-H	9.525	4.76	3.81	0.4					☆	☆	☆		★
		160408L/R-H	9.525	4.76	3.81	0.8					☆	☆	☆		★

B  
General Turning  
普通车削







B1-5 钢加工正型刀片 Inserts for processing steel ..... 半精加工 Semi finishing  
Positive Inserts

B  
普通车削  
General Turning

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended								
		Φ1.C	S	Φd	R	α	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic		
							BP0051	BP0101	BP0151	BP0371	BP005B	BP030B	BN001	BN001	
	060204-MD	6.35	2.38	2.8	0.4	7		★	★				☆		
	060208-MD	6.35	2.38	2.8	0.8	7		★	★				☆		
	09T302-MD	9.525	3.97	4.4	0.2	7		★	★				☆		
	09T304-MD	9.525	3.97	4.4	0.4	7		★	★				☆		
	09T308-MD	9.525	3.97	4.4	0.8	7		★	★				☆		
	120404-MD	12.7	4.76	5.5	0.4	7		★	★				☆		
	120408-MD	12.7	4.76	5.5	0.8	7		★	★				☆		
120412-MD	12.7	4.76	5.5	1.2	7		★	★				☆			
	070204-MD	6.35	2.38	2.8	0.4	7		★	★				☆		
	070208-MD	6.35	2.38	2.8	0.8	7		★	★				☆		
	11T302-MD	9.525	3.97	4.4	0.2	7		★	★				☆		
	11T304-MD	9.525	3.97	4.4	0.4	7		★	★				☆		
	11T308-MD	9.525	3.97	4.4	0.8	7		★	★				☆		
	11T312-MD	9.525	3.97	4.4	1.2	7		★	★				☆		
	09T302-MD	9.525	3.97	4.4	0.2	7		★	★				☆		
	09T304-MD	9.525	3.97	4.4	0.4	7		★	★				☆		
	09T308-MD	9.525	3.97	4.4	0.8	7		★	★				☆		
	09T312-MD	9.525	3.97	4.4	1.2	7		★	★				☆		
	120404-MD	12.7	4.76	5.5	0.4	7		★	★				☆		
	120408-MD	12.7	4.76	5.5	0.8	7		★	★				☆		
	120412-MD	12.7	4.76	5.5	1.2	7		★	★				☆		
	090204-MD	5.56	2.38	2.5	0.4	7		★	★				☆		
	090208-MD	5.56	2.38	2.5	0.8	7		★	★				☆		
	110304-MD	6.35	3.18	2.8	0.4	7		★	★				☆		
	110308-MD	6.35	3.18	2.8	0.8	7		★	★				☆		
	110312-MD	6.35	3.18	2.8	1.2	7		★	★				☆		
	16T304-MD	9.525	3.97	4.4	0.4	7		★	★				☆		
	16T308-MD	9.525	3.97	4.4	0.8	7		★	★				☆		
	16T312-MD	9.525	3.97	4.4	1.2	7		★	★				☆		





B1-5 钢加工正型刀片 Inserts for processing steel ..... 半精加工 Semi finishing  
Positive Inserts

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended							
		Φ1.C	S	Φd	R	α	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic	
							BPS051	BPS101	BPS151	BPS171	BPS05B	BPS08B	BN001	BN001
	VCMT	110304-MD	6.35	3.18	2.8	0.4	7	★	★			☆		
		110308-MD	6.35	3.18	2.8	0.8	7	★	★			☆		
		160404-MD	9.525	4.76	4.4	0.4	7	★	★			☆		
		160408-MD	9.525	4.76	4.4	0.8	7	★	★			☆		
	VBMT	110304-MD	6.35	3.18	2.8	0.4	5		☆	☆			☆	
		110308-MD	6.35	3.18	2.8	0.8	5		☆	☆			☆	
		160404-MD	9.525	4.76	4.4	0.4	5		★	★			☆	
		160408-MD	9.525	4.76	4.4	0.8	5		★	★			☆	
	RCMT	0803MOE-R1	8	2.38	3.3	-	7	★	★			☆		
		10T3MOE-R1	10	3.97	4.5	-	7	★	★			☆		
		1204MOE-R2	12	4.76	4.4	-	7	★	★			☆		
		1606MOE-R3	16	6.35	5.5	-	7	★	★			☆		
		2006MOE-R4	20	6.35	6.5	-	7	★	★			☆		

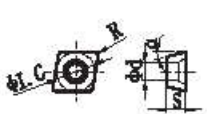
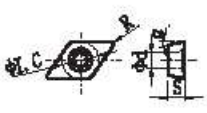
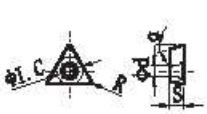


B  
General Turning  
普通车削





B1-5 钢加工正型刀片 Inserts for processing steel ..... 半精加工 Semi finishing  
Positive Inserts

B  
普通车削  
General Turning

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended									
		φl.C	S	φd	R	α	CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic		非涂层牌号 Uncoated grade			
							BPS3051	BPS101	BPS251	BPS371	BPG05B	BPG30B	BN01	BN01	BU810	
	CPMH	090304L/R-N	9.525	3.18	4.4	0.4	11					☆	☆	☆	★	
		090308L/R-N	9.525	3.18	4.4	0.8	11					☆	☆	☆	★	
													☆	☆	☆	★
													☆	☆	☆	★
	DCGT	070201L/R-N	6.35	2.38	2.8	0.1	7					☆	☆	☆	★	
		070202L/R-N	6.35	2.38	2.8	0.2	7					☆	☆	☆	★	
		11T301L/R-N	9.525	3.97	4.4	0.1	7					☆	☆	☆	★	
		11T302L/R-N	9.525	3.97	4.4	0.2	7					☆	☆	☆	★	
		11T304L/R-N	9.525	3.97	4.4	0.4	7					☆	☆	☆	★	
	TPGH	110302L/R-N	6.35	3.18	3.4	0.2	11					☆	☆	☆	★	
		110304L/R-N	6.35	3.18	3.4	0.4	11					☆	☆	☆	★	
		110308L/R-N	6.35	3.18	3.4	0.8	11					☆	☆	☆	★	
		160304L/R-N	9.525	3.18	4.4	0.4	11					☆	☆	☆	★	
		160308L/R-N	9.525	3.18	4.4	0.8	11					☆	☆	☆	★	
	VBGT	110301L/R-N	6.35	3.18	2.8	0.1	5					☆	☆	☆	★	
		110302L/R-N	6.35	3.18	2.8	0.2	5					☆	☆	☆	★	
		110304L/R-N	6.35	3.18	2.8	0.4	5					☆	☆	☆	★	
		110308L/R-N	6.35	3.18	2.8	0.8	5					☆	☆	☆	★	
		160402L/R-N	9.525	4.76	4.4	0.2	5					☆	☆	☆	★	
		160404L/R-N	9.525	4.76	4.4	0.4	5					☆	☆	☆	★	
		160408L/R-N	9.525	4.76	4.4	0.8	5					☆	☆	☆	★	
	WPGT	060304L/R-N	9.525	4.76	4.4	0.4	11					☆	☆	☆	★	
		060308L/R-N	9.525	4.76	4.4	0.8	11					☆	☆	☆	★	







B1-5 钢加工正型刀片 Inserts for processing steel ..... 半精加工 Semi finishing  
Positive Inserts

刀片基本形状 The basic shape of inserts		型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended								
								CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic		非涂层牌号 Uncoated grade		
			φl.C	S	φd	R	a	BPS3051	BPS101	BPS251	BPS371	BPG05B	BPG30B	BN01	BN01	BU810
		CCET	060201LR-E	6.35	2.38	2.8	0.1	7					☆	☆	☆	★
			060202LR-E	6.35	2.38	2.8	0.2	7					☆	☆	☆	★
			060204LR-E	6.35	2.38	2.8	0.4	7					☆	☆	☆	★
			09T301LR-E	9.525	3.97	4.4	0.1	7					☆	☆	☆	★
			09T302LR-E	9.525	3.97	4.4	0.2	7					☆	☆	☆	★
			09T304LR-E	9.525	3.97	4.4	0.4	7					☆	☆	☆	★
		CCGT	060201LR-E	6.35	2.38	2.8	0.1	7					☆	☆	☆	★
			060202LR-E	6.35	2.38	2.8	0.2	7					☆	☆	☆	★
			060204LR-E	6.35	2.38	2.8	0.4	7					☆	☆	☆	★
			09T301LR-E	9.525	3.97	4.4	0.1	7					☆	☆	☆	★
			09T302LR-E	9.525	3.97	4.4	0.2	7					☆	☆	☆	★
			09T304LR-E	9.525	3.97	4.4	0.4	7					☆	☆	☆	★
		SPGT	090304LR-E	9.525	3.18	4.4	0.4	11					☆	☆	☆	★
			090308LR-E	9.525	3.18	4.4	0.8	11					☆	☆	☆	★
			120304LR-E	12.7	3.18	5.5	0.4	11					☆	☆	☆	★
			120308LR-E	12.7	3.18	5.5	0.8	11					☆	☆	☆	★
		TPET	110302LR-E	6.35	3.18	2.8	0.2	11					☆	☆	☆	★
		TCGT	110302LR-E	6.35	3.18	2.8	0.2	7					☆	☆	☆	★
		DCET	070202LR-H	6.35	2.38	2.8	0.2	7					☆	☆	☆	★
			070204LR-H	6.35	2.38	2.8	0.4	7					☆	☆	☆	★
			11T302LR-H	9.525	3.97	4.4	0.2	7					☆	☆	☆	★
			11T304LR-H	9.525	3.97	4.4	0.4	7					☆	☆	☆	★





B1-5 钢加工负型刀片 Inserts for processing steel .....粗加工 Rough machining  
Negative inserts

B  
普通车削  
General Turning

刀片基本形状The basic shape of blade	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Grade recommended								
		φI.C	S	φd	R	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		非涂层牌号 Uncoated grade		
						BP9361	BP9301	BP9351	BP9371	BP605B	BP608B	BN001	BN001	
	120408-RA	12.7	4.76	5.16	0.8		☆	★	☆					
	120412-RA	12.7	4.76	5.16	1.2		☆	★	☆					
	120416-RA	12.7	4.76	5.16	1.6		☆	☆	☆					
	160608-RA	15.875	6.35	6.35	0.8		☆	☆	☆					
	160612-RA	15.875	6.35	6.35	1.2		☆	☆	★					
	160616-RA	15.875	6.35	6.35	1.6		☆	☆	☆					
190612-RA	19.05	6.35	7.93	1.2		☆	☆	★						
	150408-RA	12.7	4.76	5.16	0.8		☆	☆	★					
	150412-RA	12.7	4.76	5.16	1.2		☆	☆	★					
	150416-RA	12.7	4.76	5.16	1.6		☆	☆	☆					
	150608-RA	12.7	6.35	5.16	0.8		☆	☆	★					
	150612-RA	12.7	6.35	5.16	1.2		☆	☆	★					
	150616-RA	12.7	6.35	5.16	1.6		☆	☆	☆					
	120408-RA	12.7	4.76	5.16	0.8		☆	★	☆					
	120412-RA	12.7	4.76	5.16	1.2		☆	★	☆					
	120416-RA	12.7	4.76	5.16	1.6		☆	☆	☆					
	150608-RA	15.875	6.35	6.35	0.8		☆	☆	★					
	150612-RA	15.875	6.35	6.35	1.2		☆	☆	★					
	150616-RA	15.875	6.35	6.35	1.6		☆	☆	★					
	190608-RA	19.05	6.35	7.93	0.8		☆	☆	★					
	190612-RA	19.05	6.35	7.93	1.2		☆	☆	★					
	190616-RA	19.05	6.35	7.93	1.6		☆	☆	☆					
190624-RA	19.05	6.35	7.93	2.4		☆	☆	☆						
	160408-RA	9.525	4.76	3.81	0.8		☆	★	☆					
	160412-RA	9.525	4.76	3.81	1.2		☆	★	☆					
	220408-RA	12.7	4.76	5.16	0.8		☆	☆	★					
	220412-RA	12.7	4.76	5.16	1.2		☆	☆	★					
	220416-RA	12.7	4.76	5.16	1.6		☆	☆	☆					
	060408-RA	9.525	4.76	3.81	0.8		☆	★	★					
	060412-RA	9.525	4.76	3.81	1.2		☆	★	★					
	080408-RA	12.7	4.76	5.16	0.8		☆	☆	★					
	080412-RA	12.7	4.76	5.16	1.2		☆	☆	★					
	080416-RA	12.7	4.76	5.16	1.6		☆	☆	☆					





B1-5 钢加工负型刀片 Inserts for processing steel .....粗加工 Rough machining

Negative inserts

刀片基本形状The basic shape of blade		型号 Type		基本尺寸 Dimension (mm)				材质推荐 Grade recommended							
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		非涂层牌号 Uncoated grade	
				$\phi$ 1.C	S	$\phi$ d	R	BP9361	BP9101	BP9251	BP9371	BP935B	BP938B	BN001	BN001
	CNMM	120408-RB	12.7	4.76	5.16	0.8			☆	☆					
		120412-RB	12.7	4.76	5.16	1.2			★	☆					
		120416-RB	12.7	4.76	5.16	1.6			☆	☆					
		160608-RB	15.875	6.35	6.35	0.8			☆	☆					
		160612-RB	15.875	6.35	6.35	1.2			☆	★					
		160616-RB	15.875	6.35	6.35	1.6			☆	★					
		190612-RB	19.05	6.35	7.93	1.2			☆	★					
		190616-RB	19.05	6.35	7.93	1.6			☆	★					
		190624-RB	19.05	6.35	7.93	2.4			☆	☆					
		250724-RB	25.4	7.94	9.12	2.4			☆	☆					
250924-RB	25.4	9.52	9.12	2.4			☆	☆							
	SNMM	120408-RB	12.7	4.76	5.16	0.8			☆	☆					
		120412-RB	12.7	4.76	5.16	1.2			☆	☆					
		120416-RB	12.7	4.76	5.16	1.6			☆	☆					
		150608-RB	15.875	6.35	6.35	0.8			☆	★					
		150612-RB	15.875	6.35	6.35	1.2			☆	★					
		150616-RB	15.875	6.35	6.35	1.6			☆	☆					
		190608-RB	19.05	6.35	7.93	0.8			☆	★					
		190612-RB	19.05	6.35	7.93	1.2			☆	★					
		190616-RB	19.05	6.35	7.93	1.6			☆	★					
		190624-RB	19.05	6.35	7.93	2.4			☆	★					
250724-RB	25.4	7.94	9.12	2.4			☆	★							
250924-RB	25.4	9.52	9.12	2.4			☆	★							
250932-RB	25.4	9.52	9.12	3.2			☆	☆							
	TNMM	160408-RB	9.525	4.76	3.81	0.8			★	☆					
		160412-RB	9.525	4.76	3.81	1.2			★	☆					
		220408-RB	12.7	4.76	5.16	0.8			☆	★					
		220412-RB	12.7	4.76	5.16	1.2			☆	★					
		220416-RB	12.7	4.76	5.16	1.6			☆	☆					







B1-5 钢加工正型刀片 Inserts for processing steel .....粗加工 Rough machining  
Positive Inserts

B  
普通车削  
General Turning

刀片基本形状 The basic shape of inserts		型号 Type		基本尺寸 Dimension (mm)					材质推荐 Grade recommended								
									CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade		非涂层牌号 Uncoated grade				
				$\phi 1.C$	S	$\phi d$	R	$\alpha$	BP0051	BP0101	BP0151	BP0171	BP005B	BP008B	BN001	BN001	
		CCMT	09T308-RA	9.525	3.97	4.4	0.8	7		★	★	☆					
			120408-RA	12.7	4.76	5.5	0.8	7		☆	★	☆					
			120412-RA	12.7	4.76	5.5	1.2	7		☆	★	☆					
		DCMT	11T308-RA	9.525	3.97	4.4	0.8	7		☆	★	☆					
		SCMT	120412-RA	12.7	4.76	5.5	1.2	7		☆	★	☆					
		TCMT	16T308-RA	9.525	3.97	4.4	0.8	7		☆	★	☆					
		RCGT	2006MOS-HP	20	6.35	6.5	-	7		★	★	☆					
			2507MOS-HP	25	7.94	7.2	-	7		★	★	☆					
			3209MOS-HP	32	9.525	9.5	-	7		★	★	☆					





## B1-6 不锈钢加工刀片 Inserts for processing stainless steel ..... 材质 Grades


**M** 不锈钢加工 Process on stainless steel

### a 涂层牌号 Grade for coating

牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPG05B	M10(M05-M15)	青灰黑 Cyan-blue gray dark 	具有很高的热硬度和良好的抗塑性变形能力, 适用于高速切削条件下, 奥氏体不锈钢、淬硬钢、碳钢的精加工。 With high hot hardness and good resistance to plastic deformation. Suitable for high speed cutting and finishing process of austenitic stainless steel, quenched steel and carbon steel
BPG20B	M25(M10-M30)	青灰黑 Cyan-blue gray dark 	PVD涂层微晶粒硬质合金。使用中等到低切削速度, 进行各种不锈钢的精加工。要出色的刃口强度和高表面质量时, 可提供完美的平顺切削。很高的耐热冲击性能。适用于轻型间断切削。 PVD coated micro-grain carbide. Use for a variety of stainless steel finishing at medium to low cutting speed. When need excellent edge strength and high surface quality, provide the perfect ride cutting. A high thermal shock resistance. Suitable for light interrupted cuts.
BPG25B	M35(M25-M40)	青灰黑 Cyan-blue gray dark 	PVD涂层硬质合金牌号。WC-Co耐冲击的硬质合金基体与含Si的TiAlN纳米涂层的结合, 表层具有极高的纳米硬度, 尤其适合于碳钢、不锈钢通用型的车、铣削加工。 PVD coating carbide grades. WC-Co impact resistant cemented carbide matrix and TiAlN containing Si nano coating combination, the surface has a very high nano hardness, especially suitable for turning and milling of carbon steel, stainless steel.
BPG30C	M35(M25-M40)	青灰黑 Cyan-blue gray dark 	PVD涂层硬质合金。用于以低至中等切削速度进行奥氏体不锈钢和双相不锈钢的半精加工到粗加工。很高的耐热冲击性能。非常适合快速间断切削。 PVD coated carbide. For austenitic stainless steels and duplex stainless steel semi-finishing to roughing at low to medium cutting speed. High thermal shock resistance. Ideal for quickly interrupted cutting.

**B**  
普通车削  
General Turning

### b 金属陶瓷 Cermet

	牌号 Grade	ISO分类 ISO classification	密度 Density (g/cm <sup>3</sup> )	硬度 Hardness HRA	抗弯强度 Bending strength (N/mm <sup>2</sup> )	使用性能及用途 Usage and performance
	BN201	M01-M20	6.5-7.2	>92	>1900	适用于钢、不锈钢半精加工、精加工 Suitable for the finishing, semi-finishing of stainless steel
	BN301	M10-M30	6.1-7.2	>91	>2000	适用于钢、不锈钢半精加工、精加工 Suitable for the finishing, semi-finishing of stainless steel





B1-6 不锈钢正型刀片 Inserts for processing stainless steel ..... 精加工 Finishing  
Positive Inserts

B  
普通车削  
General Turning

刀片基本形状 The basic shape of inserts		型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended										
			φL/C	S	φd	R	α	CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade		金属陶瓷 Cermets						
								BP051	BPS101	BP051	BP0571	BP055B	BP050B	BP050B	BP055B	BU810	BK110	
		CCMT	060202-FW	6.35	2.38	2.8	0.2	7					☆	★	☆			
			060204-FW	6.35	2.38	2.8	0.4	7						☆	★	☆		
			09T302-FW	9.525	3.97	4.4	0.2	7						☆	★	☆		
			09T304-FW	9.525	3.97	4.4	0.4	7						☆	★	☆		
			09T308-FW	9.525	3.97	4.4	0.8	7						☆	★	☆		
			120404-FW	12.7	4.76	5.5	0.4	7						☆	★	☆		
		DCMT	070202-FW	6.35	2.38	2.8	0.2	7					☆	★	☆			
			070204-FW	6.35	2.38	2.8	0.4	7						☆	★	☆		
			11T302-FW	9.525	3.97	4.4	0.2	7						☆	★	☆		
			11T304-FW	9.525	3.97	4.4	0.4	7						☆	★	☆		
			11T308-FW	9.525	3.97	4.4	0.8	7						☆	★	☆		
		SCMT	09T304-FW	9.525	3.18	4.4	0.4	7					☆	★	☆			
			09T308-FW	9.525	3.18	4.4	0.8	7						☆	★	☆		
			120404-FW	12.7	4.76	5.5	0.4	7						☆	★	☆		
			120408-FW	12.7	4.76	5.5	0.8	7						☆	★	☆		
			120412-FW	12.7	4.76	5.5	1.2	7						☆	★	☆		
		TCMT	090202-FW	5.56	2.38	2.5	0.2	7					☆	★	☆			
			090204-FW	5.56	2.38	2.5	0.4	7						☆	★	☆		
			110302-FW	6.35	3.18	2.8	0.2	7						☆	★	☆		
			110304-FW	6.35	3.18	2.8	0.4	7						☆	★	☆		
			110308-FW	6.35	3.18	2.8	0.8	7						☆	★	☆		
			16T304-FW	9.525	3.97	4.4	0.4	7						☆	★	☆		
		VBMT	110302-FW	6.35	3.18	2.8	0.2	5					☆	☆	☆			
			110304-FW	6.35	3.18	2.8	0.4	5						☆	☆	☆		
			110308-FW	6.35	3.18	2.8	0.8	5						☆	☆	☆		
			160402-FW	9.525	4.76	4.4	0.2	5						☆	★	☆		
			160404-FW	9.525	4.76	4.4	0.4	5						☆	★	☆		
			160408-FW	9.525	4.76	4.4	0.8	5						☆	★	☆		
		VCMT	110302-FW	6.35	3.18	2.8	0.2	7					☆	☆	☆			
			110304-FW	6.35	3.18	2.8	0.4	7						☆	☆	☆		
			110308-FW	6.35	3.18	2.8	0.8	7						☆	☆	☆		
			160402-FW	9.525	4.76	4.4	0.2	7						☆	☆	☆		
			160404-FW	9.525	4.76	4.4	0.4	7						☆	☆	☆		
			160408-FW	9.525	4.76	4.4	0.8	7						☆	☆	☆		







B1-6 不锈钢正型刀片 Inserts for processing stainless steel ..... 精加工 Finishing  
Positive Inserts

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended									
		φ1.C	S	φd	R	α	CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade		金属陶瓷 Cermets					
							BP051	BP010	BP051	BP071	BP055	BP008	BP008	BP055	BU010	BK110
	CCMT	060202-MX	6.35	2.38	2.8	0.2	7					☆	☆	☆		
		060204-MX	6.35	2.38	2.8	0.4	7					☆	★	☆		
		060206-MX	6.35	2.38	2.8	0.8	7					☆	★	☆		
		09T302-MX	9.525	3.97	4.4	0.2	7					☆	☆	☆		
		09T304-MX	9.525	3.97	4.4	0.4	7					☆	★	☆		
		09T306-MX	9.525	3.97	4.4	0.8	7					☆	★	☆		
		120404-MX	12.7	4.76	5.5	0.4	7					☆	☆	☆		
	DCMT	070202-MV	6.35	2.38	2.8	0.2	7					☆	☆	☆		
		070204-MV	6.35	2.38	2.8	0.4	7					☆	★	☆		
		11T302-MV	9.525	3.97	4.4	0.2	7					☆	☆	☆		
		11T304-MV	9.525	3.97	4.4	0.4	7					☆	★	☆		
		11T306-MV	9.525	3.97	4.4	0.8	7					☆	★	☆		
	TCMT	090202-MX	5.56	2.38	2.5	0.2	7					☆	★	☆		
		090204-MX	5.56	2.38	2.5	0.4	7					☆	★	☆		
		110302-MX	6.35	3.18	2.8	0.2	7					☆	★	☆		
		110304-MX	6.35	3.18	2.8	0.4	7					☆	★	☆		
		110306-MX	6.35	3.18	2.8	0.8	7					☆	☆	☆		
		16T304-MX	9.525	3.97	4.4	0.4	7					☆	★	☆		
		16T306-MX	9.525	3.97	4.4	0.8	7					☆	★	☆		
	VBMT	110302-MX	6.35	3.18	2.8	0.2	5					☆	☆	☆		
		110304-MX	6.35	3.18	2.8	0.4	5					☆	★	☆		
		110306-MX	6.35	3.18	2.8	0.8	5					☆	★	☆		
		160402-MX	9.525	4.76	4.4	0.2	5					☆	☆	☆		
		160404-MX	9.525	4.76	4.4	0.4	5					☆	★	☆		
		160406-MX	9.525	4.76	4.4	0.8	5					☆	★	☆		





# B1-6 不锈钢负型刀片 Inserts for processing stainless steel ..... 精加工 Finishing

## Negative inserts

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Grade recommended									
		φL/C	S	φd	R	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
						BPS051	BPS101	BPS251	BPS371	BP035B	BP030B	BP030B	BP035B	BU810	BK110
	CNMG	120402E-LH	12.7	4.76	5.16	0.2					☆	☆	☆		
		120404E-LH	12.7	4.76	5.16	0.4					★	☆	☆		
		120408E-LH	12.7	4.76	5.16	0.8					★	☆	☆		
	DNMG	150404E-LH	12.7	4.76	5.16	0.4					★	☆	☆		
		150408E-LH	12.7	4.76	5.16	0.8					★	☆	☆		
		150604E-LH	12.7	6.35	5.16	0.4					★	☆	☆		
		150608E-LH	12.7	6.35	5.16	0.8					★	☆	☆		
	SNMG	120404E-LH	12.7	4.76	5.16	0.4					★	☆	☆		
		120408E-LH	12.7	4.76	5.16	0.8					★	☆	☆		
		120412E-LH	12.7	4.76	5.16	1.2					★	☆	☆		
	TNMG	160404E-LH	9.525	4.76	3.81	0.4					★	☆	☆		
		160408E-LH	9.525	4.76	3.81	0.8					★	☆	☆		
		160412E-LH	9.525	4.76	3.81	1.2					★	☆	☆		
		220408E-LH	12.7	4.76	5.16	0.8					★	☆	☆		
	VNMG	160402E-LH	9.525	4.76	3.81	0.2					☆	☆	☆		
		160404E-LH	9.525	4.76	3.81	0.4					★	☆	☆		
		160408E-LH	9.525	4.76	3.81	0.8					★	☆	☆		
	WNMG	060404E-LH	9.525	4.76	3.81	0.4					★	☆	☆		
		060408E-LH	9.525	4.76	3.81	0.8					★	☆	☆		
		080404E-LH	12.7	4.76	5.16	0.4					★	☆	☆		
		080408E-LH	12.7	4.76	5.16	0.8					★	☆	☆		
		080412E-LH	12.7	4.76	5.16	1.2					★	☆	☆		

B  
普通车削  
General Turning



B1-6 不锈钢正型刀片 Inserts for processing stainless steel .....半精加工 Semi finishing  
Positive Inserts

刀片基本形状The basic shape of inserts		型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended									
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade			金属陶瓷 Cermet		
			$\phi$ LC	S	$\phi$ d	R	$\alpha$	BP051	BPS101	BP051	BP0571	BP0555	BP0508	BP0508	BP0555	BU810	BK110
	CCMT	060204-MD	6.35	2.38	2.8	0.4	7					☆	★	☆	☆		
		060208-MD	6.35	2.38	2.8	0.8	7					☆	★	☆	☆		
		09T302-MD	9.525	3.97	4.4	0.2	7					☆	★	☆	☆		
		09T304-MD	9.525	3.97	4.4	0.4	7					☆	★	☆	☆		
		09T308-MD	9.525	3.97	4.4	0.8	7					☆	★	☆	☆		
		120404-MD	12.7	4.76	5.5	0.4	7					☆	★	☆	☆		
		120408-MD	12.7	4.76	5.5	0.8	7					☆	★	☆	☆		
		120412-MD	12.7	4.76	5.5	1.2	7					☆	★	☆	☆		
	DCMT	070204-MD	6.35	2.38	2.8	0.4	7					☆	★	☆	☆		
		070208-MD	6.35	2.38	2.8	0.8	7					☆	★	☆	☆		
		11T302-MD	9.525	3.97	4.4	0.2	7					☆	★	☆	☆		
		11T304-MD	9.525	3.97	4.4	0.4	7					☆	★	☆	☆		
		11T308-MD	9.525	3.97	4.4	0.8	7					☆	★	☆	☆		
		11T312-MD	9.525	3.97	4.4	1.2	7					☆	★	☆	☆		
	SCMT	09T302-MD	9.525	3.97	4.4	0.2	7					☆	★	☆	☆		
		09T304-MD	9.525	3.97	4.4	0.4	7					☆	★	☆	☆		
		09T308-MD	9.525	3.97	4.4	0.8	7					☆	★	☆	☆		
		09T312-MD	9.525	3.97	4.4	1.2	7					☆	★	☆	☆		
		120404-MD	12.7	4.76	5.5	0.4	7					☆	★	☆	☆		
		120408-MD	12.7	4.76	5.5	0.8	7					☆	★	☆	☆		
		120412-MD	12.7	4.76	5.5	1.2	7					☆	★	☆	☆		
	TCMT	090204-MD	5.56	2.38	2.5	0.4	7					☆	★	☆	☆		
		090208-MD	5.56	2.38	2.5	0.8	7					☆	★	☆	☆		
		110304-MD	6.35	3.18	2.8	0.4	7					☆	★	☆	☆		
		110308-MD	6.35	3.18	2.8	0.8	7					☆	★	☆	☆		
		110312-MD	6.35	3.18	2.8	1.2	7					☆	★	☆	☆		
		16T304-MD	9.525	3.97	4.4	0.4	7					☆	★	☆	☆		
		16T308-MD	9.525	3.97	4.4	0.8	7					☆	★	☆	☆		
		16T312-MD	9.525	3.97	4.4	1.2	7					☆	★	☆	☆		
	VCMT	110304-MD	6.35	3.18	2.8	0.4	7					☆	★	☆	☆		
		110308-MD	6.35	3.18	2.8	0.8	7					☆	★	☆	☆		
		160404-MD	9.525	4.76	4.4	0.4	7					☆	★	☆	☆		
		160408-MD	9.525	4.76	4.4	0.8	7					☆	★	☆	☆		
	VBMT	110304-MD	6.35	3.18	2.8	0.4	5					☆	★	☆	☆		
		110308-MD	6.35	3.18	2.8	0.8	5					☆	★	☆	☆		
		160404-MD	9.525	4.76	4.4	0.4	5					☆	★	☆	☆		
		160408-MD	9.525	4.76	4.4	0.8	5					☆	★	☆	☆		





B1-6 不锈钢负型刀片 Inserts for processing stainless steel ..... 半精加工 Semi finishing

Negative inserts

B

普通车削  
General Turning

刀片基本形状 The basic shape of inserts		型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended										
			φl.C	S	φd	R	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoated grade			
							BPS051	BPS101	BPS251	BPS371	BP005B	BP008B	BP009B	BP005B	BU810	BK110		
		CNMG	120404-MA	12.7	4.76	5.16	0.4					☆	★	☆	☆			
			120408-MA	12.7	4.76	5.16	0.8					☆	★	☆	☆			
			120412-MA	12.7	4.76	5.16	1.2					☆	★	☆	☆			
			160604-MA	15.875	6.35	6.35	0.4					☆	☆	☆	☆			
			160608-MA	15.875	6.35	6.35	0.8					☆	★	☆	☆			
		DNMG	150404-MA	12.7	4.76	5.16	0.4					☆	★	☆	☆			
			150408-MA	12.7	4.76	5.16	0.8					☆	★	☆	☆			
			150604-MA	12.7	6.35	5.16	0.4					☆	★	☆	☆			
			150608-MA	12.7	6.35	5.16	0.8					☆	★	☆	☆			
		SNMG	120404-MA	12.7	4.76	5.16	0.4					☆	☆	☆	☆			
			120408-MA	12.7	4.76	5.16	0.8					☆	★	☆	☆			
		TNMG	160404-MA	9.525	4.76	5.16	0.4					☆	★	☆	☆			
			160408-MA	9.525	4.76	5.16	0.8					☆	★	☆	☆			
			160412-MA	9.525	4.76	5.16	1.2					☆	★	☆	☆			
		VNMG	160404-MA	9.525	4.76	5.16	0.4					☆	★	☆	☆			
			160408-MA	9.525	4.76	5.16	0.8					☆	★	☆	☆			
		WNMG	080404-MA	12.7	4.76	5.16	0.4					☆	★	☆	☆			
			080408-MA	12.7	4.76	5.16	0.8					☆	★	☆	☆			
			080412-MA	12.7	4.76	5.16	1.2					☆	☆	☆	☆			





B1-6 不锈钢负型刀片 Inserts for processing stainless steel ..... 精加工 Finishing

Negative inserts

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended									
		φl.C	S	φd	R	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoated grade		
						BP0351	BP0301	BP0351	BP0371	BP0355	BP0308	BP0308	BP0355	BU010	BK110	
	CNMG	120404-SA	12.7	4.76	5.16	0.4					☆	★	☆			
		120408-SA	12.7	4.76	5.16	0.8					☆	★	☆			
		120412-SA	12.7	4.76	5.16	1.2					☆	★	☆			
	TNMG	160404-SA	12.7	4.76	5.16	0.4					☆	★	☆			
		160408-SA	12.7	4.76	5.16	0.8					☆	★	☆			
	WNMG	080404-SA	12.7	4.76	5.16	0.4					☆	★	☆			
		080408-SA	12.7	4.76	5.16	0.8					☆	★	☆			

B  
General Turning  
普通车削





## B1-7 耐热合金加工刀片 Inserts for Heat-resisting alloy ..... 材质 Grades

**S** 耐热合金加工 Heat-resisting alloy process

牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPG118	S05-S15	紫黄 Purple yellow 	PVD涂层硬质合金牌号，用于耐热优质合金的中等速度铣削。 具有良好的抗积屑瘤和抗塑性变形能力。 PVD coated carbide grade for medium-speed milling of heat resistant alloys. With good ability to avoid built-up edge and good resistance to plastic deformation capacity.
BPG218	S15(S15-S30)	紫黄 Purple yellow 	PVD涂层硬质合金牌号，具有良好的抗积屑瘤和抗塑性变形能力。 用于不稳定工况，如长切削刃、切屑堵塞、深台肩和立铣、长悬伸、车铣工序等； 不锈钢的轻型铣削；结合周边磨削刀片，用于粘性和加工硬化材料；耐热优质合金的中等速度铣削； 淬硬零件的低进给和中速铣削。 PVD coated carbide grade have good ability to avoid built-up edge and good resistance to plastic deformation capacity. For unstable conditions, such as long cutting edge, clogging, deep shoulder milling, long overhang, milling processes. Light milling of stainless steel; combine grinding blade for viscous and hardening materials; moderate speed milling of heat resistant alloys; hardened parts milling at low feed and medium-speed.
BPG318	S25(S20-S30)	紫黄 Purple yellow 	PVD涂层超细晶粒硬质合金，可提供锋利的切削作用和出色的切削刃韧性，良好的抗沟槽磨损和热冲击能力。用于低进给量或低切削速度碳钢精加工。中等到低切削速度的各种不锈钢的精加工，也适用于轻型间断切削。耐热优质合金的低速加工，或轻型间断切削。 适用于短接触时间的一般加工工序及有很高强度要求或要 锋利切削刃的工序。 PVD coated micro-grain carbide. Can provide a sharp cutting action and excellent toughness of the cutting edge, a good anti-the grooves wear and thermal shock resistance. For carbon steel finishing at low feed rate or low cutting speed. a variety of stainless steel finishing at low to medium cutting speed, but also suitable for light interrupted cutting. Low-speed machining of heat resistant alloys, or light interrupted cuts. General short contact time processing step and high strength requirements of sharp cutting edges processing step.

**B**  
普通车削  
General Turning







B1-7 耐热合金正型刀片 Inserts for Heat-resisting alloy ..... 精加工 Finishing  
Positive Inserts

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended											
		φl.C	S	φd	R	α	CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade		非涂层牌号 Uncoated grade							
							BPS051	BPS101	BPS251	BR0371	BRG118	BRG218	BRG318	BRG40A	BU810			
	CCGT	060202-SL	6.35	2.38	2.8	0.2	7					★	☆					
		060204-SL	6.35	2.38	2.8	0.4	7					★	☆					
		09T302-SL	9.525	3.97	4.4	0.2	7					★	☆					
		09T304-SL	9.525	3.97	4.4	0.4	7					★	☆					
		09T308-SL	9.525	3.97	4.4	0.8	7					★	☆					
		120404-SL	12.7	4.76	5.5	0.4	7					★	☆					
		120408-SL	12.7	4.76	5.5	0.8	7					★	☆					
	DCGT	070202-SL	6.35	2.38	2.8	0.2	7					★	☆					
		070204-SL	6.35	2.38	2.8	0.4	7					★	☆					
		11T302-SL	9.525	3.97	4.4	0.2	7					★	☆					
		11T304-SL	9.525	3.97	4.4	0.4	7					★	☆					
		11T308-SL	9.525	3.97	4.4	0.8	7					★	☆					
	SCGT	09T304-SL	9.525	3.18	4.4	0.4	7					★	☆					
		09T308-SL	9.525	3.18	4.4	0.8	7					★	☆					
		120404-SL	12.7	4.76	5.5	0.4	7					★	☆					
		120408-SL	12.7	4.76	5.5	0.8	7					★	☆					
		120412-SL	12.7	4.76	5.5	1.2	7					★	☆					
	TCGT	090202-SL	5.56	2.38	2.5	0.2	7					★	☆					
		090204-SL	5.56	2.38	2.5	0.4	7					★	☆					
		110302-SL	6.35	3.18	2.8	0.2	7					★	☆					
		110304-SL	6.35	3.18	2.8	0.4	7					★	☆					
		110308-SL	6.35	3.18	2.8	0.8	7					★	☆					
		16T304-SL	9.525	3.97	4.4	0.4	7					★	☆					
	VCGT	110302-SL	6.35	3.18	2.8	0.2	7					★	☆					
		110304-SL	6.35	3.18	2.8	0.4	7					★	☆					
		110308-SL	6.35	3.18	2.8	0.8	7					★	☆					
		160402-SL	9.525	4.76	4.4	0.2	7					★	☆					
		160404-SL	9.525	4.76	4.4	0.4	7					★	☆					
		160408-SL	9.525	4.76	4.4	0.8	7					★	☆					
	VBGT	110302-SL	6.35	3.18	2.8	0.2	5					★	☆					
		110304-SL	6.35	3.18	2.8	0.4	5					★	☆					
		110308-SL	6.35	3.18	2.8	0.8	5					★	☆					
		160402-SL	9.525	4.76	4.4	0.2	5					★	☆					
		160404-SL	9.525	4.76	4.4	0.4	5					★	☆					
		160408-SL	9.525	4.76	4.4	0.8	5					★	☆					





# B1-7 耐热合金负型刀片 Inserts for Heat-resisting alloy .....半精加工 Semi finishing

## Negative inserts

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Grade recommended									
		Φ1.C	S	Φd	R	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
						BPS051	BPS101	BPS251	BPS371	BPG118	BPG218	BPG318	BPG-DA	BUE10	
	CNGG	120402E-LHC	12.7	4.76	5.16	0.2					★	☆	☆		
		120404E-LHC	12.7	4.76	5.16	0.4					★	☆	☆		
		120408E-LHC	12.7	4.76	5.16	0.8					★	☆	☆		
	DNGG	150404E-LHC	12.7	4.76	5.16	0.4					★	☆	☆		
		150408E-LHC	12.7	4.76	5.16	0.8					★	☆	☆		
		150604E-LHC	12.7	6.35	5.16	0.4					★	☆	☆		
		150608E-LHC	12.7	6.35	5.16	0.8					★	☆	☆		
	SNGG	120404E-LHC	12.7	4.76	5.16	0.4					★	☆	☆		
		120408E-LHC	12.7	4.76	5.16	0.8					★	☆	☆		
		120412E-LHC	12.7	4.76	5.16	1.2					★	☆	☆		
	TNGG	160404E-LHC	9.525	4.76	3.81	0.4					★	☆	☆		
		160408E-LHC	9.525	4.76	3.81	0.8					★	☆	☆		
		160412E-LHC	9.525	4.76	3.81	1.2					★	☆	☆		
		220408E-LHC	12.7	4.76	5.16	0.8					★	☆	☆		
	VNGG	160401E-LHC	9.525	4.76	3.81	0.1					★	☆	☆		
		160402E-LHC	9.525	4.76	3.81	0.2					★	☆	☆		
		160404E-LHC	9.525	4.76	3.81	0.4					★	☆	☆		
		160408E-LHC	9.525	4.76	3.81	0.8					★	☆	☆		
	WNGG	060404E-LHC	9.525	4.76	3.81	0.4					★	☆	☆		
		060408E-LHC	9.525	4.76	3.81	0.8					★	☆	☆		
		080404E-LHC	12.7	4.76	5.16	0.4					★	☆	☆		
		080408E-LHC	12.7	4.76	5.16	0.8					★	☆	☆		
		080412E-LHC	12.7	4.76	5.16	1.2					★	☆	☆		

B

普通车削  
General Turning





B1-7 耐热合金正型刀片 Inserts for Heat-resisting alloy .....粗加工 Rough machining  
Positive Inserts

刀片基本形状The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Grade recommended									
		ΦLC	S	Φd	R	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
						BPS051	BPS101	BPS251	BPS371	BPG118	BPG218	BPG318	BPG3DA	BU810	
	CNMG	120408-SN	12.7	4.76	5.16	0.8					☆	★	☆		
		120412-SN	12.7	4.76	5.16	1.2					☆	☆	☆		
		160608-SN	15.875	6.35	6.35	0.8					☆	☆	☆		
		160612-SN	15.875	6.35	6.35	1.2					☆	☆	☆		
		190608-SN	19.05	6.35	7.93	0.8					☆	☆	☆		
		190612-SN	19.05	6.35	7.93	1.2					☆	☆	☆		
	DNMG	110408-SN	9.525	4.76	3.81	0.8					☆	★	☆		
		110412-SN	9.525	4.76	3.81	1.2					☆	☆	☆		
		150408-SN	12.7	4.76	5.16	0.8					☆	☆	☆		
		150412-SN	12.7	4.76	5.16	1.2					☆	☆	☆		
		150608-SN	12.7	6.35	5.16	0.8					☆	☆	☆		
		150612-SN	12.7	6.35	5.16	1.2					☆	☆	☆		
	SNMG	120408-SN	12.7	4.76	5.16	0.8					☆	☆	☆		
		120412-SN	12.7	4.76	5.16	1.2					☆	☆	☆		
		150612-SN	15.875	6.35	6.35	1.2					☆	☆	☆		
	TNMG	160408-SN	9.525	4.76	3.81	0.8					☆	★	☆		
		160412-SN	9.525	4.76	3.81	1.2					☆	☆	☆		
		220404-SN	12.7	4.76	5.16	0.4					☆	☆	☆		
		220408-SN	12.7	4.76	5.16	0.8					☆	☆	☆		
		220412-SN	12.7	4.76	5.16	1.2					☆	☆	☆		
	VNMG	160408-SN	9.525	4.76	3.81	0.8					☆	☆	☆		
		160412-SN	9.525	4.76	3.81	1.2					☆	☆	☆		
	WNMG	060408-SN	9.525	4.76	3.81	0.8					☆	★	☆		
		060412-SN	9.525	4.76	3.81	1.2					☆	☆	☆		
		080408-SN	12.7	4.76	5.16	0.8					☆	☆	☆		
		080412-SN	12.7	4.76	5.16	1.2					☆	☆	☆		

B  
普通车削  
General Turning







## B1-8 铝的加工刀片 Aluminum processing ..... 材质 Grades

**N** 铝的加工刀片 Aluminum processing

### a 涂层牌号 Grade for coating

牌号 Grade	ISO分类 ISO classification	表面颜色 Surface color	应用推荐 Applications Recommended
BPU109	N10(N01-N15)	DLC色 DLC color	金刚石涂层牌号, 涂层可显著降低积屑瘤, 从而获得更高表面质量。适于铝、镁、铜、黄铜、塑料等的精加工到粗加工。 Diamond coating grade, the coating can reduce BUE, obtain higher surface quality. Suitable for aluminum, magnesium, copper, brass, plastic finishing to roughing processing.

### b 非涂层牌号 Grade for uncoating

	牌号 Grade	ISO分类 ISO classification	密度 Density (g/cm <sup>3</sup> )	硬度 Hardness HRA	抗弯强度 Bending strength (N/mm <sup>2</sup> )	使用性能及用途 Application and performance
	BU810	K06-K16	14.7-15	92.8-93.1	2700	亚微米晶粒, 适用于加工有色金属的连续和间断切削精加工。 Sub-micron grain, suitable for the continuous and interrupted finishing of non-ferrous metal
	BU813	K10-K20	14.8-15	91.5-92.5	2500	WC-Co硬质合金牌号, 具有较高的硬度和强度, 适合于有色金属的车削加工, 也可用于涂层的基体材料。 WC - Co in cemented carbide grade, it has excellent hardness and strength, suitable for turning of non-ferrous metal and can also be used for coating substrate materials.

**B**

普通车削  
General Turning





B1-8 铝加工正型刀片 Aluminum processing ..... 高精度系列  
Positive Inserts

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended					
		Φ1.C	S	Φd	R	α	PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
							BP005B	BP008	BP100B	BU010	BU013	BK10
	060202-LHC	6.35	2.38	2.8	0.2	7			☆	★	★	
	060204-LHC	6.35	2.38	2.8	0.4	7			☆	★	★	
	060208-LHC	6.35	2.38	2.8	0.8	7			☆	☆	☆	
	09T302-LHC	9.525	3.97	4.4	0.2	7			☆	★	★	
	09T304-LHC	9.525	3.97	4.4	0.4	7			☆	★	★	
	09T308-LHC	9.525	3.97	4.4	0.8	7			☆	★	★	
	120402-LHC	12.7	4.76	5.5	0.2	7			☆	☆	☆	
	120404-LHC	12.7	4.76	5.5	0.4	7			☆	★	★	
120408-LHC	12.7	4.76	5.5	0.8	7			☆	★	★		
	070202-LHC	6.35	2.38	2.8	0.2	7			☆	★	★	
	070204-LHC	6.35	2.38	2.8	0.4	7			☆	★	★	
	070208-LHC	6.35	2.38	2.8	0.8	7			☆	☆	☆	
	11T302-LHC	9.525	3.97	4.4	0.2	7			☆	★	★	
	11T304-LHC	9.525	3.97	4.4	0.4	7			☆	★	★	
	11T308-LHC	9.525	3.97	4.4	0.8	7			☆	★	★	
	11T312-LHC	9.525	3.97	4.4	1.2	7			☆	☆	☆	
	09T302-LHC	9.525	3.97	4.4	0.2	7			☆	★	★	
	09T304-LHC	9.525	3.97	4.4	0.4	7			☆	★	★	
	09T308-LHC	9.525	3.97	4.4	0.8	7			☆	★	★	
	120402-LHC	12.7	4.76	5.5	0.2	7			☆	☆	☆	
	120404-LHC	12.7	4.76	5.5	0.4	7			☆	★	★	
	120408-LHC	12.7	4.76	5.5	0.8	7			☆	★	★	
	120412-LHC	12.7	4.76	5.5	1.2	7			☆	★	★	
120416-LHC	12.7	4.76	5.5	1.6	7			☆	☆	☆		
	090202-LHC	5.56	2.38	2.5	0.2	7			☆	★	★	
	090204-LHC	5.56	2.38	2.5	0.4	7			☆	★	★	
	090208-LHC	5.56	2.38	2.5	0.8	7			☆	☆	☆	
	110202-LHC	6.35	2.38	2.8	0.2	7			☆	★	★	
	110204-LHC	6.35	2.38	2.8	0.4	7			☆	★	★	
	110208-LHC	6.35	2.38	2.8	0.8	7			☆	☆	☆	
	16T302-LHC	9.525	3.97	4.4	0.2	7			☆	★	★	
	16T304-LHC	9.525	3.97	4.4	0.4	7			☆	★	★	
	16T308-LHC	9.525	3.97	4.4	0.8	7			☆	★	★	
	16T312-LHC	9.525	3.97	4.4	1.2	7			☆	☆	☆	

B  
普通车削  
General Turning





B1-8 铝加工正型刀片 Aluminum processing ..... 高精度系列  
Positive Inserts

B

普通车削  
General Turning

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended					
		ΦI.C	S	Φd	R	α	PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
							BP005B	BP008	BP1008	BU810	BU813	BK10
	110302-LHC	6.35	3.18	2.8	0.2	5			☆	★	★	
	110304-LHC	6.35	3.18	2.8	0.4	5			☆	★	★	
	110308-LHC	6.35	3.18	2.8	0.8	5			☆	★	★	
	160402-LHC	9.525	4.76	4.4	0.2	5			☆	★	★	
	160404-LHC	9.525	4.76	4.4	0.4	5			☆	★	★	
	160408-LHC	9.525	4.76	4.4	0.8	5			☆	★	★	
	160412-LHC	9.525	4.76	4.4	1.2	5			☆	★	★	
	220516-LHC	12.7	5.96	5.5	1.6	5			☆	☆	☆	
	220525-LHC	12.7	5.96	5.5	2.5	5			☆	☆	☆	
220530-LHC	12.7	5.96	5.5	3	5			☆	☆	☆		
	110302-LHC	6.35	3.18	2.8	0.2	7			☆	★	★	
	110304-LHC	6.35	3.18	2.8	0.4	7			☆	★	★	
	110308-LHC	6.35	3.18	2.8	0.8	7			☆	★	★	
	130302-LHC	7.86	3.18	3.4	0.2	7			☆	☆	☆	
	130304-LHC	7.86	3.18	3.4	0.4	7			☆	☆	☆	
	160402-LHC	9.525	4.76	4.4	0.2	7			☆	★	★	
	160404-LHC	9.525	4.76	4.4	0.4	7			☆	★	★	
	160408-LHC	9.525	4.76	4.4	0.8	7			☆	★	★	
	160412-LHC	9.525	4.76	4.4	1.2	7			☆	★	★	
	220520-LHC	12.7	5.96	5.5	2	7			☆	☆	☆	
220530-LHC	12.7	5.96	5.5	3	7			☆	☆	☆		
	0602MO-LHC	6	2.38	2.5	-	7			☆	☆	☆	
	0803MO-LHC	8	3.18	3.4	-	7			☆	★	★	
	1003MO-LHC	10	3.18	4.4	-	7			☆	★	★	
	10T3MO-LHC	10	3.97	4.4	-	7			☆	★	★	
	1204MO-LHC	12	4.76	5.5	-	7			☆	★	★	







B1-8 铝加工正型刀片 Aluminum processing ..... 高精度系列  
Positive Inserts

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended					
		ΦI.C	S	Φd	R	α	PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
							BP005B	BP008	BP108	BU810	BU813	BK10
	09T302-LH2C	9.525	3.97	4.4	0.2	7			☆	☆	☆	
	09T304-LH2C	9.525	3.97	4.4	0.4	7			☆	☆	☆	
	11T302-LH2C	9.525	3.97	4.4	0.2	7			☆	★	★	
	11T304-LH2C	9.525	3.97	4.4	0.4	7			☆	★	★	
	11T308-LH2C	9.525	3.97	4.4	0.8	7			☆	★	★	
	16T304-LH2C	9.525	3.97	4.4	0.4	7			☆	★	★	
	16T308-LH2C	9.525	3.97	4.4	0.8	7			☆	★	★	
	160404-LH2C	9.525	4.76	4.4	0.4	7			☆	★	★	
	160408-LH2C	9.525	4.76	4.4	0.8	7			☆	★	★	
	220530-LH2C	12.7	5.96	5.5	3	7			☆	★	★	
	220530-LH2C	12.7	5.96	5.5	3	11			☆	★	★	

B  
General Turning  
普通车削





B1-8 铝加工正型刀片 Aluminum processing ..... 高精度系列  
Positive Inserts

B  
普通车削  
General Turning

刀片基本形状The basic shape of inserts	型号 Type	基本尺寸Dimension (mm)					材质推荐 Grade recommendation					
		Φ1.C	S	Φd	R	α	PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
							BP05B	BP03B	BP01B	BU010	BU013	BU011
	060202-LZC	6.35	2.38	2.8	0.2	7			☆	★	★	
	060204-LZC	6.35	2.38	2.8	0.4	7			☆	★	★	
	09T302-LZC	9.53	3.97	4.4	0.2	7			☆	★	★	
	09T304-LZC	9.53	3.97	4.4	0.4	7			☆	★	★	
	09T308-LZC	9.53	3.97	4.4	0.8	7			☆	★	★	
	120404-LZC	12.7	4.76	5.5	0.4	7			☆	★	★	
	120408-LZC	12.7	4.76	5.5	0.8	7			☆	☆	★	
	070202-LZC	6.35	2.38	2.8	0.2	7			☆	★	★	
	070204-LZC	6.35	2.38	2.8	0.4	7			☆	★	★	
	11T302-LZC	9.53	3.97	4.4	0.2	7			☆	★	★	
	11T304-LZC	9.53	3.97	4.4	0.4	7			☆	★	★	
	11T308-LZC	9.53	3.97	4.4	0.8	7			☆	★	★	
	110204-LZC	6.35	2.38	2.8	0.4	7			☆	★	★	
	16T304-LZC	9.53	3.97	4.4	0.4	7			☆	★	★	
	16T308-LZC	9.53	3.97	4.4	0.8	8			☆	☆	★	
	110302-LZC	6.35	3.18	2.8	0.2	7			☆	★	★	
	110304-LZC	6.35	3.18	2.8	0.4	7			☆	★	★	
	160402-LZC	9.53	4.76	4.4	0.2	7			☆	★	★	
	160404-LZC	9.53	4.76	4.4	0.4	7			☆	★	★	
	160408-LZC	9.53	4.76	4.4	0.8	7			☆	★	★	





B1-8 铝加工负型刀片 Aluminum processing ..... 高精度系列

Negative inserts

刀片基本形状 The basic shape of inserts		型号 Type		基本尺寸 Dimension (mm)				材质推荐 Grade recommended					
								PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
				$\phi$ 1.C	S	$\phi$ d	R	BP005B	BP008	BPUD6	BUB10	BUB13	BK10
		CNGG	120402-LHC	12.7	4.76	5.16	0.2			☆	★	★	
			120404-LHC	12.7	4.76	5.16	0.4			☆	★	★	
			120408-LHC	12.7	4.76	5.16	0.8			☆	★	★	
			120412-LHC	12.7	4.76	5.16	1.2			☆	☆	☆	
		DNGG	150404-LHC	12.7	4.76	5.16	0.4			☆	★	★	
			150408-LHC	12.7	4.76	5.16	0.8			☆	★	★	
			150604-LHC	12.7	6.35	5.16	0.4			☆	★	★	
			150608-LHC	12.7	6.35	5.16	0.8			☆	★	★	
		SNGG	120404-LHC	12.7	4.76	5.16	0.4			☆	★	★	
			120408-LHC	12.7	4.76	5.16	0.8			☆	★	★	
			120412-LHC	12.7	4.76	5.16	1.2			☆	☆	☆	
		TNGG	160404-LHC	9.525	4.76	3.81	0.4			☆	★	★	
			160408-LHC	9.525	4.76	3.81	0.8			☆	★	★	
			160412-LHC	9.525	4.76	3.81	1.2			☆	☆	☆	
			220408-LHC	12.7	4.76	5.16	0.8			☆	★	★	
			220412-LHC	12.7	4.76	5.16	1.2			☆	☆	☆	
		VNGG	160401-LHC	9.525	4.76	3.81	0.1			☆	☆	☆	
			160402-LHC	9.525	4.76	3.81	0.2			☆	☆	☆	
			160404-LHC	9.525	4.76	3.81	0.4			☆	★	★	
			160408-LHC	9.525	4.76	3.81	0.8			☆	★	★	
		WNGG	060404-LHC	9.525	4.76	3.81	0.4			☆	★	★	
			060408-LHC	9.525	4.76	3.81	0.8			☆	★	★	
			080404-LHC	12.7	4.76	5.16	0.4			☆	★	★	
			080408-LHC	12.7	4.76	5.16	0.8			☆	★	★	
			080412-LHC	12.7	4.76	5.16	1.2			☆	☆	☆	

B  
普通车削  
General Turning







B1-8 铝加工正型刀片 Aluminum processing ..... 普通精度系列  
Positive Inserts

B

普通车削  
General Turning

刀片基本形状 The basic shape of inserts		型号 Type		基本尺寸 Dimension (mm)					材质推荐 Grade recommended					
									PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
				φ1.C	S	φd	R	α	BP0205B	BP0303B	BP0102B	BU810	BU813	BK10
	CCGT	060202-LH	6.35	2.38	2.8	0.2	7			☆	★	★		
		060204-LH	6.35	2.38	2.8	0.4	7			☆	★	★		
		060208-LH	6.35	2.38	2.8	0.8	7			☆	☆	☆		
		09T302-LH	9.525	3.97	4.4	0.2	7			☆	★	★		
		09T304-LH	9.525	3.97	4.4	0.4	7			☆	★	★		
		09T308-LH	9.525	3.97	4.4	0.8	7			☆	★	★		
		120402-LH	12.7	4.76	5.5	0.2	7			☆	☆	☆		
		120404-LH	12.7	4.76	5.5	0.4	7			☆	★	★		
		120408-LH	12.7	4.76	5.5	0.8	7			☆	★	★		
	DCGT	070202-LH	6.35	2.38	2.8	0.2	7			☆	★	★		
		070204-LH	6.35	2.38	2.8	0.4	7			☆	★	★		
		070208-LH	6.35	2.38	2.8	0.8	7			☆	☆	☆		
		11T302-LH	9.525	3.97	4.4	0.2	7			☆	★	★		
		11T304-LH	9.525	3.97	4.4	0.4	7			☆	★	★		
		11T308-LH	9.525	3.97	4.4	0.8	7			☆	★	★		
		11T312-LH	9.525	3.97	4.4	1.2	7			☆	☆	☆		
	TCGT	090202-LH	5.56	2.38	2.5	0.2	7			☆	★	★		
		090204-LH	5.56	2.38	2.5	0.4	7			☆	★	★		
		090208-LH	5.56	2.38	2.5	0.8	7			☆	☆	☆		
	VCGT	110302-LH	6.35	3.18	2.8	0.2	7			☆	★	★		
		110304-LH	6.35	3.18	2.8	0.4	7			☆	★	★		
		110308-LH	6.35	3.18	2.8	0.8	7			☆	★	★		
		130302-LH	7.86	3.18	3.4	0.2	7			☆	☆	☆		
		130304-LH	7.86	3.18	3.4	0.4	7			☆	☆	☆		
		160402-LH	9.525	4.76	4.4	0.2	7			☆	★	★		
		160404-LH	9.525	4.76	4.4	0.4	7			☆	★	★		
		160408-LH	9.525	4.76	4.4	0.8	7			☆	★	★		
	VBGT	110302-LH	6.35	3.18	2.8	0.2	5			☆	★	★		
		110304-LH	6.35	3.18	2.8	0.4	5			☆	★	★		
		110308-LH	6.35	3.18	2.8	0.8	5			☆	★	★		
		160402-LH	9.525	4.76	4.4	0.2	5			☆	★	★		
		160404-LH	9.525	4.76	4.4	0.4	5			☆	★	★		
		160408-LH	9.525	4.76	4.4	0.8	5			☆	★	★		





B1-8 铝加工正型刀片 Aluminum processing .....普通精度系列  
Positive Inserts

刀片基本形状The basic shape of inserts	型号 Type	基本尺寸Dimension (mm)					材质推荐 Grade recommendation						
		Φl.C	S	Φd	R	α	PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade			
							BP05B	BP03B	BP02B	BU010	BU013	BU031	
		060202-LZ	6.35	2.38	2.8	0.2	7			☆	★	★	
		060204-LZ	6.35	2.38	2.8	0.4	7			☆	★	★	
	CCGT	09T302-LZ	9.53	3.97	4.4	0.2	7			☆	★	★	
		09T304-LZ	9.53	3.97	4.4	0.4	7			☆	★	★	
		09T308-LZ	9.53	3.97	4.4	0.8	7			☆	★	★	
		120404-LZ	12.7	4.76	5.5	0.4	7			☆	★	★	
		120408-LZ	12.7	4.76	5.5	0.8	7			☆	☆	★	
		070202-LZ	6.35	2.38	2.8	0.2	7			☆	★	★	
		070204-LZ	6.35	2.38	2.8	0.4	7			☆	★	★	
	DCGT	11T302-LZ	9.53	3.97	4.4	0.2	7			☆	★	★	
		11T304-LZ	9.53	3.97	4.4	0.4	7			☆	★	★	
		11T308-LZ	9.53	3.97	4.4	0.8	7			☆	★	★	
		110204-LZ	6.35	2.38	2.8	0.4	7			☆	★	★	
	TCGT	16T304-LZ	9.53	3.97	4.4	0.4	7			☆	★	★	
		16T308-LZ	9.53	3.97	4.4	0.8	8			☆	☆	★	
		110302-LZ	6.35	3.18	2.8	0.2	7			☆	★	★	
		110304-LZ	6.35	3.18	2.8	0.4	7			☆	★	★	
	VCGT	160402-LZ	9.53	4.76	4.4	0.2	7			☆	★	★	
		160404-LZ	9.53	4.76	4.4	0.4	7			☆	★	★	
		160408-LZ	9.53	4.76	4.4	0.8	7			☆	★	★	

B  
普通车削  
General Turning





B1-8 铝加工负型刀片 Aluminum processing ..... 普通精度系列  
Negative inserts

B  
普通车削  
General Turning

刀片基本形状 The basic shape of inserts		型号 Type		基本尺寸 Dimension (mm)				材质推荐 Grade recommended					
								PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
				$\phi$ 1.C	S	$\phi$ d	R	BP005B	BP008	BP10B	BU810	BU813	BK10
		CNMG	120402-LH	12.7	4.76	5.16	0.2			☆	★	★	
			120404-LH	12.7	4.76	5.16	0.4			☆	★	★	
			120408-LH	12.7	4.76	5.16	0.8			☆	★	★	
			120412-LH	12.7	4.76	5.16	1.2			☆	★	★	
		DNMG	150404-LH	12.7	4.76	5.16	0.4			☆	★	★	
			150408-LH	12.7	4.76	5.16	0.8			☆	★	★	
			150604-LH	12.7	6.35	5.16	0.4			☆	★	★	
			150608-LH	12.7	6.35	5.16	0.8			☆	★	★	
		SNMG	120404-LH	12.7	4.76	5.16	0.4			☆	★	★	
			120408-LH	12.7	4.76	5.16	0.8			☆	★	★	
			120412-LH	12.7	4.76	5.16	1.2			☆	★	★	
		TNMG	160404-LH	9.525	4.76	3.81	0.4			☆	★	★	
			160408-LH	9.525	4.76	3.81	0.8			☆	★	★	
			160412-LH	9.525	4.76	3.81	1.2			☆	★	★	
			220408-LH	12.7	4.76	5.16	0.8			☆	★	★	
			220412-LH	12.7	4.76	5.16	1.2			☆	☆	☆	
		VNMG	160404-LH	9.525	4.76	3.81	0.4			☆	★	★	
			160408-LH	9.525	4.76	3.81	0.8			☆	★	★	
		VNMG	060404-LH	9.525	4.76	3.81	0.4			☆	★	★	
			060408-LH	9.525	4.76	3.81	0.8			☆	★	★	
			080404-LH	12.7	4.76	5.16	0.4			☆	★	★	
			080408-LH	12.7	4.76	5.16	0.8			☆	★	★	
			080412-LH	12.7	4.76	5.16	1.2			☆	★	★	







B1-8 铝加工铣削刀片 Aluminum milling

高精度系列

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended													
		LW	L	S	Φd	r		CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
								BP-S163	BP-S263	BP-Q25B	BP-G108	BP-Q20B	BP-Q30B	BP-Q25B	BP-Q30A	BP-20	BP-35	BK10	BU810	BU813	
	APKT11T304-LHC	6.5	12.24	3.6	2.8	0.4					☆		☆		☆				★	★	
	APKT11T308-LHC	6.5	12.24	3.6	2.8	0.8					☆		☆		☆				★	★	
	APKT1135PDR-G2C	6.2	11.3	3.5	2.8	0.8					☆		☆		☆				★	★	
	APKT1604PDR-G2C	9.26	17	4.76	4.4	0.8					☆		☆		☆					★	★
	APEX100304FR-LHC	6.6	10.3	3.18	2.8	0.4					☆		☆		☆					★	★
	APKT160402FR-LHC	9.8	16.88	4.76	4.4	0.2					☆		☆		☆					★	★
	APKT160404PDR-LHC	9.8	16.88	4.76	4.4	0.4					☆		☆		☆					★	★
	APKT160408FR-LHC	9.8	16.88	4.76	4.4	0.8					☆		☆		☆					★	★
	APKT160416FR-LHC	9.8	16.88	4.76	4.4	1.6					☆		☆		☆					★	★
	APKT1674PDR-LH1C	9.5	17	4.96	4.4	0.8					☆		☆		☆					★	★
	APKT1662PDR-LH2C	9.8	16.88	4.76	4.4	3.2					☆		☆		☆					★	★
	ADGT113504PDR-LHC	6.6	12.58	3.55	2.8	0.4					☆		☆		☆					☆	★
	ADGT113508PDR-LHC	6.6	12.58	3.55	2.8	0.8					☆		☆		☆					☆	★
	ADGT113510PDR-LHC	6.6	12.58	3.55	2.8	1.0					☆		☆		☆					☆	★
	ADGT150404PDR-LHC	9.7	15.58	4.76	4.4	0.4					☆		☆		☆					☆	★
	ADGT150408PDR-LHC	9.7	15.58	4.76	4.4	0.8					☆		☆		☆					☆	★
	ADGT150412PDR-LHC	9.7	15.58	4.76	4.4	1.2					☆		☆		☆					☆	★
	SEKT13T3AEFN-LH	13.4	3.97	4.4	20						☆		☆		☆					★	★
	SEKT13T3AEFN-LHC	13.4	3.97	4.4	20						☆		☆		☆					★	★
	SDKT0903AEFN-LH	9.525	3.18	3.4	15						☆		☆		☆					★	★
	SDKT0903AEFN-LH1	9.525	3.18	3.4	15						☆		☆		☆					★	★
	SDKT0903AEFN-LHC	9.525	3.18	3.4	15						☆		☆		☆					★	★
	SDKT0903AEFN-LH1C	9.525	3.18	3.4	15						☆		☆		☆					★	★
	SEKT1204AFRN-LH2	12.7	4.76	5.5	20	16					☆		☆		☆					★	★
	SDHT1204AEFN-LH2	12.7	4.76	5.5	15	15.76					☆		☆		☆					★	★
	SEKT1204AFRN-LH2C	12.7	4.76	5.5	20	16					☆		☆		☆					★	★
	SDHT1204AEFN-LH2C	12.7	4.76	5.5	15	15.76					☆		☆		☆					★	★

B  
General Turning  
普通车削



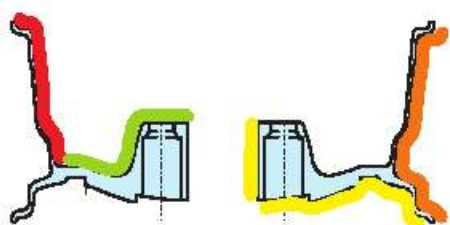
## B1-8 轮毂加工 Inserts For Wheel Turning ..... 高精度系列

B  
General Turning  
普通车削

刀片基本形状 The basic shape of inserts		型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended							
			L	R	Bl	S	R	PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade				
								BP008B	BP008B	BP1009	BK10	BK10	BK20UF	BK10	
		GDM A840-LHC	30	8	5.6	8.2	4				☆	☆	★		
		GIPATYZ-35V1.2-LHC	30	7.2	6	8.2	1.2				☆	☆	★		
		GIP600E-3.00-LHC	18	6	4.8	6.5	3				☆	☆	★		
		400-A-LHC	21	4	3.3	4.8	2				☆	☆	☆		
		500-A-LHC	26	5	4.1	5.8	2.5				☆	☆	☆		
		600-A-LHC	26	6	5	5.8	3				☆	☆	★		
		800-A-LHC	31	8	6	6.5	4				☆	☆	☆		
		160412-LHC	9.525	4.76	4.4	1.2	7				☆	☆	★		
		220520-LHC	12.7	5.96	5.5	2	7				☆	☆	★		
		220530-LHC	12.7	5.96	5.5	3	7				☆	☆	★		
		220612-LH2C	12.7	6.35	5.5	1.2	11				☆	☆	★		
		220530-LH2C	12.7	5.96	5.5	3	11				☆	☆	★		
						R	a								

★ 主推荐牌号 Recommended grade ☆ 可选牌号 Optional grade

## B1-8 铝合金轮毂加工方案 ..... 高精度系列



提供全套解决方案及技术服务

详情请咨询当地销售经理








## B1-7 铸铁加工刀片 Inserts for processing cast iron ..... 材质 Grades

### **K** 铸铁加工 Process on cast iron

#### a 涂层牌号 Grade for coating

牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPC102	K10-K20	黑 Black 	CVD涂层硬质合金，在硬基体上涂有光滑的耐磨涂层，能够耐受苛刻的间断切削工况。用于铸铁低到中等切削速度的粗加工。 CVD-coated cemented carbide, the hard substrate coated with a smooth and wear-resistant coating, can bear harsh intermittent cutting conditions. Universal grade for all cast iron roughing cutting at low to medium speed.
BPC102A	K15-K25	黑 Black 	CVD涂层硬质合金牌号，在硬度、韧性兼备的梯度烧结基体上涂有耐磨涂层。灰口和球墨铸铁的低到中等切削速度加工。在湿和干式加工中的安全性。 CVD-coated cemented carbide grades, thick abrasion resistant coating on the high intensity gradient sintered base. Machining of gray and ductile iron at low to medium cutting speed. Security in wet and dry machining.
BPC132	K15-K35	黑 Black 	CVD涂层硬质合金牌号。WC-Co较高强度的基体与TiN/TiCN/Al <sub>2</sub> O <sub>3</sub> 厚膜结构化学涂层的结合，尤其适合于灰口铸铁、球墨铸铁的车削加工。 CVD coating carbide grade. It combines WC-Co high strength matrix and TiN/TiCN/Al <sub>2</sub> O <sub>3</sub> thick chemical coating, especially suitable for turning of gray iron, ductile cast iron

#### b 非涂层牌号 Grade for uncoating

牌号 Grade	ISO分类 ISO classification	密度 Density (g/cm <sup>3</sup> )	抗弯强度 Bending strength (N/mm <sup>2</sup> )	硬度 Hardness HRA	应用推荐 Applications Recommended
YG6	K15-K20	14.85-15.05	2050	90.5-91.5	耐磨性较高、抗冲击和震动较好。适用铸铁，有色金属及合金、非金属材料中等切削速度的半精加工和精加工。 High wear resistance, good resistance to shock and vibration. Application of cast iron, non-ferrous metals and alloys, non-metallic materials medium cutting speed for semi-finishing and finishing.
YG8	K30	14.6-14.85	2520	89.5-90.5	使用强度高，抗冲击、抗震性好，但耐磨性和允许的切削速度较低。适于铸铁，有色金属及合金、非金属材料低速的粗加工。The use of high strength, impact resistance, good wear resistance, but wear resistance and allows the cutting speed is low. For cast iron, non-ferrous metals and alloys, non-metallic materials low speed roughing.
BK10	K10-K20	14.8-15	2000	91.5-92.5	耐磨性高，使用强度较好，适用于加工冷硬合金铸铁与耐热合金钢，及普通铸铁加工。 High wear resistance, the use of high strength, suitable for machining of chilled alloy cast iron and steel, and ordinary cast iron processing.







B1-7 铸铁加工负型刀片 Inserts for processing cast iron ..... 精加工 Finishing

B  
普通车削  
General Turning

刀片基本形状The basic shape of inserts		型号 Type	基本尺寸 Dimension (mm)				材质推荐 Grade recommended							
			ΦL/C	S	Φd	R	CVD涂层牌号 CVD coating grade				非涂层牌号 Uncoated grade			
							BPC102	BPC131	BPC102	BPS101	YG8	BU810	BU813	
		CNMG	120404-CX	12.7	4.76	5.16	0.4		☆	☆				☆
			120408-CX	12.7	4.76	5.16	0.8		☆	★				☆
			120412-CX	12.7	4.76	5.16	1.2		☆	★				☆
			160604-CX	15.875	6.35	6.35	0.4		☆	☆				☆
			160608-CX	15.875	6.35	6.35	0.8		☆	☆				☆
			160612-CX	15.875	6.35	6.35	1.2		☆	☆			☆	
		DNMG	110404-CX	9.525	4.76	3.81	0.4		☆	☆				☆
			110408-CX	9.525	4.76	3.81	0.8		☆	☆				☆
			150404-CX	12.7	4.76	5.16	0.4		☆	☆				☆
			150408-CX	12.7	4.76	5.16	0.8		☆	★				☆
			150412-CX	12.7	4.76	5.16	1.2		☆	★				☆
			150604-CX	12.7	6.35	5.16	0.4		☆	☆				☆
			150608-CX	12.7	6.35	5.16	0.8		☆	★				☆
			150612-CX	12.7	6.35	5.16	1.2		☆	★			☆	
		SNMG	090304-CX	9.525	3.18	3.81	0.4		☆	☆				☆
			090308-CX	9.525	3.18	3.81	0.8		☆	☆				☆
			120404-CX	12.7	4.76	5.16	0.4		☆	☆				☆
			120408-CX	12.7	4.76	5.16	0.8		☆	★				☆
			120412-CX	12.7	4.76	5.16	1.2		☆	☆				☆
			150608-CX	15.875	6.35	6.35	0.8		☆	☆				☆
			150612-CX	15.875	6.35	6.35	1.2		☆	☆			☆	
		TNMG	160404-CX	9.525	4.76	3.81	0.4		☆	★				☆
			160408-CX	9.525	4.76	3.81	0.8		☆	★				☆
			160412-CX	9.525	4.76	3.81	1.2		☆	★				☆
		WNMG	060404-CX	9.525	4.76	5.16	0.4		☆	★				☆
			060408-CX	9.525	4.76	5.16	0.8		☆	★				☆
			080404-CX	12.7	4.76	5.16	0.4		☆	★				☆
			080408-CX	12.7	4.76	5.16	0.8		☆	★				☆
			080412-CX	12.7	4.76	5.16	1.2		☆	★				☆





B1-7 铸铁加工负型刀片 Inserts for processing cast iron .....半精加工 Semi finishing

刀片基本形状The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Grade recommended								
		ΦL.C	S	Φd	R	CVD涂层牌号 CVD coating grade				非涂层牌号 Uncoated grade				
						BPC102	BPC131	BPC132	BPS101	Y08	BU810	BU813		
		CNMG	120404-CQ	12.7	4.76	5.16	0.4		☆	★				☆
			120408-CQ	12.7	4.76	5.16	0.8		☆	★				☆
			120412-CQ	12.7	4.76	5.16	1.2		☆	★				☆
			120416-CQ	12.7	4.76	5.16	1.6		☆	★				☆
			160608-CQ	15.875	6.35	6.35	0.8		☆	☆				☆
			160612-CQ	15.875	6.35	6.35	1.2		☆	☆				☆
			160616-CQ	15.875	6.35	6.35	1.6		☆	☆				☆
		DNMG	110408-CQ	9.525	4.76	3.81	0.8		☆	★				☆
			110412-CQ	9.525	4.76	3.81	1.2		☆	☆				☆
			150404-CQ	12.7	4.76	5.16	0.4		☆	★				☆
			150408-CQ	12.7	4.76	5.16	0.8		☆	★				☆
			150412-CQ	12.7	4.76	5.16	1.2		☆	★				☆
			150604-CQ	12.7	6.35	5.16	0.4		☆	★				☆
			150608-CQ	12.7	6.35	5.16	0.8		☆	★				☆
150612-CQ	12.7	6.35	5.16	1.2		☆	★				☆			
		SNMG	120408-CQ	12.7	4.76	5.16	0.8		☆	★				☆
			120412-CQ	12.7	4.76	5.16	1.2		☆	☆				☆
			120416-CQ	12.7	4.76	5.16	1.6		☆	☆				☆
			150612-CQ	15.875	6.35	6.35	1.2		☆	☆				☆
			150616-CQ	15.875	6.35	6.35	1.6		☆	☆				☆
		TNMG	160408-CQ	9.525	4.76	3.81	0.8		☆	★				☆
			160412-CQ	9.525	4.76	3.81	1.2		☆	★				☆
			220408-CQ	12.7	4.76	5.16	0.8		☆	☆				☆
			220412-CQ	12.7	4.76	5.16	1.2		☆	☆				☆
		WNMG	060404-CQ	9.525	4.76	3.81	0.4		☆	★				☆
			060408-CQ	9.525	4.76	3.81	0.8		☆	★				☆
			060412-CQ	9.525	4.76	3.81	1.2		☆	★				☆
			080404-CQ	12.7	4.76	5.16	0.4		☆	★				☆
			080408-CQ	12.7	4.76	5.16	0.8		☆	★				☆
			080412-CQ	12.7	4.76	5.16	1.2		☆	☆				☆
			080416-CQ	12.7	4.76	5.16	1.6		☆	☆				☆
		VNMG	160404-CQ	9.525	4.76	3.81	0.4		☆	☆				☆
			160408-CQ	9.525	4.76	3.81	0.8		☆	★				☆
			160412-CQ	9.525	4.76	3.81	1.2		☆	☆				☆

B  
General Turning  
普通车削





B1-7 铸铁加工负型刀片 Inserts for processing cast iron .....半精加工 Semi finishing

B  
普通车削  
General Turning

刀片基本形状The basic shape of inserts		型号 Type	基本尺寸 Dimension (mm)				材质推荐 Grade recommended							
			ΦL.C	S	Φd	R	CVD涂层牌号 CVD coating grade				非涂层牌号 Uncoated grade			
							BPC102	BPC131	BPC102	BPS101	Y08	BU810	BU813	
		CNMG	120404-U	12.7	4.76	5.16	0.4			☆		☆		☆
			120408-U	12.7	4.76	5.16	0.8			★		☆		★
			120412-U	12.7	4.76	5.16	1.2			☆		☆		☆
			160604-U	15.875	6.35	6.35	0.4			☆		☆		☆
			160608-U	15.875	6.35	6.35	0.8			★		☆		★
			160612-U	15.875	6.35	6.35	1.2			☆		☆		☆
		DNMG	150404-U	12.7	4.76	5.16	0.4			☆		☆		☆
			150408-U	12.7	4.76	5.16	0.8			☆		☆		☆
			150604-U	12.7	6.35	5.16	0.4			☆		☆		☆
			150608-U	12.7	6.35	5.16	0.8			☆		☆		☆
		SNMG	120404-U	12.7	4.76	5.16	0.4			☆		☆		☆
			120408-U	12.7	4.76	5.16	0.8			☆		☆		☆
			150608-U	15.875	6.35	5.16	0.8			☆		☆		☆
			150612-U	15.875	6.35	5.16	1.2			☆		☆		☆
		TNMG	160404-U	9.525	4.76	5.16	0.4			☆		☆		☆
			160408-U	9.525	4.76	5.16	0.8			★		☆		★
			160412-U	9.525	4.76	5.16	1.2			★		☆		★
		VNMG	160404-U	9.525	4.76	5.16	0.4			☆		☆		☆
			160408-U	9.525	4.76	5.16	0.8			★		☆		★
			160412-U	9.525	4.76	5.16	1.2			★		☆		★
		WNMG	080404-U	12.7	4.76	5.16	0.4			☆		☆		☆
			080408-U	12.7	4.76	5.16	0.8			★		☆		★
			080412-U	12.7	4.76	5.16	1.2			★		☆		★







B1-7 铸铁加工负型刀片 Inserts for processing cast iron .....半精加工 Semi finishing

刀片基本形状The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Grade recommended								
		ΦL.C	S	Φd	R	CVD涂层牌号 CVD coating grade				非涂层牌号 Uncoated grade				
						BPC102	BPC103	BPC104	BPS101	Y08	BU810	BU813		
		CNMG	120408-GH	12.7	4.76	5.16	0.8	☆	★				★	
			120412-GH	12.7	4.76	5.16	1.2		☆	★				★
			120416-GH	12.7	4.76	5.16	1.6		☆	☆				☆
			160608-GH	15.875	6.35	6.35	0.8		☆	☆				☆
			160612-GH	15.875	6.35	6.35	1.2		☆	☆				☆
			190608-GH	19.05	6.35	7.93	0.8		☆	☆				☆
190612-GH	19.05	6.35	7.93	1.2		☆	☆				☆			
		DNMG	110408-GH	9.525	4.76	3.81	0.8		☆	☆			☆	
			150408-GH	12.7	4.76	5.16	0.8		☆	★				★
			150608-GH	12.7	6.35	5.16	0.8		☆	☆				☆
		TNMG	160408-GH	9.525	4.76	3.81	0.8		☆	★			★	
			160412-GH	9.525	4.76	3.81	1.2		☆	★				★
			220408-GH	12.7	4.76	5.16	0.8		☆	★				★
			220412-GH	12.7	4.76	5.16	1.2		☆	★				★
		WNMG	060408-GH	9.525	4.76	3.81	0.8		☆	☆			☆	
			060412-GH	9.525	4.76	3.81	1.2		☆	☆				☆
			080408-GH	12.7	4.76	5.16	0.8		☆	★				★
			080412-GH	12.7	4.76	5.16	1.2		☆	★				★
			080416-GH	12.7	4.76	5.16	1.6		☆	☆				☆

B  
普通车削  
General Turning





B1-7 铸铁加工负型刀片 Inserts for processing cast iron .....半精加工 Semi finishing

B

普通车削  
General Turning

刀片基本形状The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Grade recommended							
		ΦLC	S	Φd	R	CVD涂层牌号 CVD coating grade				非涂层牌号 Uncoated grade			
						BPC102	BPC131	BPC132	BPS101	Y08	BU810	BU813	
	CNMA	120404	12.7	4.76	5.16	0.4		☆	★				☆
		120408	12.7	4.76	5.16	0.8		☆	★				☆
		120412	12.7	4.76	5.16	1.2		☆	★				☆
		120416	12.7	4.76	5.16	1.6		☆	★				☆
		160604	15.875	6.35	6.35	0.4		☆	☆				☆
		160608	15.875	6.35	6.35	0.8		☆	★				☆
		160612	15.875	6.35	6.35	1.2		☆	★				☆
		160616	15.875	6.35	6.35	1.6		☆	★				☆
		190612	19.05	6.35	7.94	1.2		☆	★				☆
		190616	19.05	6.35	7.94	1.6		☆	★				☆
	190624	19.05	6.35	7.94	2.4		☆	★				☆	
	DNMA	110404	9.525	4.76	3.81	0.4		☆	★				☆
		110408	9.525	4.76	3.81	0.8		☆	★				☆
		110412	9.525	4.76	3.81	1.2		☆	★				☆
		150404	12.7	4.76	5.16	0.4		☆	★				☆
		150408	12.7	4.76	5.16	0.8		☆	★				☆
		150412	12.7	4.76	5.16	1.2		☆	★				☆
		150604	12.7	6.35	5.16	0.4		☆	★				☆
		150608	12.7	6.35	5.16	0.8		☆	★				☆
	150612	12.7	6.35	5.16	1.2		☆	★				☆	
	SNMA	090304	9.525	3.18	3.81	0.4		☆	☆				☆
		090308	9.525	3.18	3.81	0.8		☆	★				☆
		120404	12.7	4.76	5.16	0.4		☆	★				☆
		120408	12.7	4.76	5.16	0.8		☆	★				☆
		120412	12.7	4.76	5.16	1.2		☆	★				☆
		120416	12.7	4.76	5.16	1.6		☆	★				☆
		150608	15.875	6.35	6.35	0.8		☆	★				☆
		150612	15.875	6.35	6.35	1.2		☆	★				☆
		150616	15.875	6.35	6.35	1.6		☆	★				☆
		190608	19.05	6.35	7.93	0.8		☆	★				☆
		190612	19.05	6.35	7.93	1.2		☆	★				☆
		190616	19.05	6.35	7.94	1.6		☆	★				☆
		190624	19.05	6.35	7.94	2.4		☆	★				☆
		250724	25.4	7.94	9.12	2.4		☆	★				☆
	250924	25.4	9.52	9.12	2.4		☆	★				☆	





B1-7 铸铁加工负型刀片 Inserts for processing cast iron .....半精加工 Semi finishing

刀片基本形状The basic shape of inserts		型号 Type	基本尺寸 Dimension (mm)				材质推荐 Grade recommended							
			ΦL.C	S	Φd	R	CVD涂层牌号 CVD coating grade				非涂层牌号 Uncoated grade			
							BPC102	BPC103	BPC104	BPS101	Y08	BU810	BU813	
		TNMA	160404	9.525	4.76	3.81	0.4		☆	★				☆
		160408	9.525	4.76	3.81	0.8		☆	★				☆	
		160412	9.525	4.76	3.81	1.2		☆	★				☆	
		160416	9.525	4.76	3.81	1.6		☆	★				☆	
		220404	12.7	4.76	5.16	0.4		☆	★				☆	
		220408	12.7	4.76	5.16	0.8		☆	★				☆	
		220412	12.7	4.76	5.16	1.2		☆	★				☆	
		220416	12.7	4.76	5.16	1.6		☆	★				☆	
270616	15.875	6.35	6.35	1.6		☆	★				☆			
		WNMA	060404	9.525	4.76	3.81	0.4		☆	★			☆	
		060408	9.525	4.76	3.81	0.8		☆	★				☆	
		060412	9.525	4.76	3.81	1.2		☆	★				☆	
		080404	12.7	4.76	5.16	0.4		☆	★				☆	
		080408	12.7	4.76	5.16	0.8		☆	★				☆	
		080412	12.7	4.76	5.16	1.2		☆	★				☆	
		080416	12.7	4.76	5.16	1.6		☆	★				☆	

B  
General Turning  
普通车削







B1-7 其他扒皮刀 Peeling inserts .....半精加工 Semi finishing

B  
普通车削  
General Turning

刀片基本形状 The basic shape of inserts		型号 Type		基本尺寸 Dimension (mm)					材质推荐 Grade recommended						
									CVD涂层牌号 CVD coating grade				非涂层牌号 Uncoated grade		
				B	L	S	L1	a	BP-S101	BP-S251	BP-S321	BP-S371	BP35	YT5	YW1
		LPUC	121517	12	31	7.5	17	1.5				★	★	☆	
			182020	18	37	12	20	2				★	★	☆	
			182027	18	43	12	27	2				★	★	☆	
			183020	18	43	12	20	3				★	★	☆	
			183027	18	47	12	27	3				★	★	☆	
		LNUC	121517	12	31	7.5	17	1.5				★	★	☆	
			182020	18	37	12	20	2				★	★	☆	
			182027	18	43	12	27	2				★	★	☆	
			183020	18	43	12	20	3				★	★	☆	
			183027	18	47	12	27	3				★	★	☆	
		XNGX	20.171138R	17.5	38.3	12	27					★	★	☆	

刀片基本形状 The basic shape of inserts		型号 Type		基本尺寸 Dimension (mm)				材质推荐 Grade recommended						
								CVD涂层牌号 CVD coating grade				非涂层牌号 Uncoated grade		
				B	L	S	L1	BP-S101	BP-S251	BP-S321	BP-S371	BP35	YT5	YW1
		LNCF	4012	20	40	12.4	12.15				★	★	☆	
		LNCF	3008-F	12	30	7.5	17.5				★	★	☆	





B1-7 仿形车刀 Turning inserts for profile .....半精加工 Semi finishing

刀片基本形状 The basic shape of inserts		型号 Type		基本尺寸 Dimension (mm)					材质推荐 Grade recommended							
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		非涂层牌号 Uncoated grade	
				B	L	LW	S	R	BPS061	BPP301	BPS251	BPS371	BPG06B	BPG30B	YT5	BUG10
		KNUX	160405L11	16	16.15	9.525	4.76	0.5	☆	☆	★			★	☆	
			160410L11	16	16.15	9.525	4.76	1	☆	☆	★				★	☆
			160405R11	16	16.15	9.525	4.76	0.5	☆	☆	★				★	☆
			160410R11	16	16.15	9.525	4.76	1	☆	☆	★				★	☆
		KNUX	160405L11-1	16.15	9.525	3.38	4.76	0.5	☆	☆	★				★	☆
			160410L11-1	16.15	9.525	3.38	4.76	1	☆	☆	★				★	☆
			160405R11-1	16.15	9.525	3.38	4.76	0.5	☆	☆	★				★	☆
			160410R11-1	16.15	9.525	3.38	4.76	1	☆	☆	★				★	☆

刀片基本形状 The basic shape of inserts		型号 Type		基本尺寸 Dimension (mm)					材质推荐 Grade recommended							
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		非涂层牌号 Uncoated grade	
				B	LW	ΦD	S	R	BPS061	BPP301	BPS251	BPS371	BPG10A	BPG30B	YT5	BUG10
		KNUX	160405L11-2	16.15	9.525	3.38	4.76	0.5	☆	☆	★				★	☆
			160410L11-2	16.15	9.525	3.38	4.76	1	☆	☆	★				★	☆
			160405R11-2	16.15	9.525	3.38	4.76	0.5	☆	☆	★				★	☆
			160410R11-2	16.15	9.525	3.38	4.76	1	☆	☆	★				★	☆





## B2-1 车削刀具一览表 Turning toolholders overview

### 外圆车刀刀具 External Turning tools

<b>CLNR/L</b> Kr=95° 	<b>CBNR/L</b> Kr=75° 	<b>HGNR/L</b> Kr=90° 	<b>DJNR/L</b> Kr=93° 
<b>MSBNR/L</b> Kr=75° 	<b>SKNR/L</b> Kr=75° 	<b>SSNR/L</b> Kr=45° 	<b>MTBNR/L</b> Kr=75° 
<b>MTENN</b> Kr=60° 	<b>TFNR/L</b> Kr=90° 	<b>TGNR/L</b> Kr=90° 	<b>MTJNR/L</b> Kr=93° 
<b>MVJNR/L</b> Kr=93° 	<b>MVQNR/L</b> Kr=117° 30' 	<b>MVVNN</b> Kr=72° 30' 	<b>MVUNR/L</b> Kr=93° 
<b>WLNR/L</b> Kr=95° 	<b>SCACRL</b> Kr=90° 	<b>SCBCRL</b> Kr=75° 	<b>SCFCR/L</b> Kr=90° 
<b>SCKCRL</b> Kr=75° 	<b>SCLCRL</b> Kr=95° 	<b>SCMCN</b> Kr=50° 	<b>SDACRL</b> Kr=90° 
<b>SDJCR/L</b> Kr=93° 	<b>SDNCN</b> Kr=62° 30' 	<b>SRACR/L</b> 	<b>SRDCN</b> 
<b>SSBCR/L</b> Kr=75° 	<b>SSDCN</b> Kr=45° 	<b>SSKCR/L</b> Kr=75° 	<b>SSSCR/L</b> Kr=45° 

B

普通车削  
General Turning





## B2-1 车削刀具一览表 Turning toolholders overview

### 外圆车刀刀具 External Turning tools

<b>STFCR/L</b> $Kr=90^\circ$ 	<b>STGCR/L</b> $Kr=90^\circ$ 	<b>SVJ□R/L</b> $Kr=93^\circ$ 	<b>SVU□R/L</b> $Kr=93^\circ$ 
<b>SVVBN</b> $Kr=72^\circ 30'$ 	<b>SVJ□R/L</b> $Kr=93^\circ$ 		

### 内孔车刀刀具 Internal turning tools

<b>MCLNR/L</b> 	<b>MDUNR/L</b> 	<b>MSKNR/L</b> 	<b>MTFNR/L</b> 
<b>MVUNR/L</b> 	<b>MWLNR/L</b> 	<b>SCLCL/R</b> 	<b>SDQCL/R</b> 
<b>SDUCL/R</b> 	<b>SSKCL/R</b> 	<b>SSSCR/L</b> 	<b>STFCL/R</b> 
<b>SVU□L/R</b> 			

### 切断(槽)刀: Grooving tools

<b>MGEHR/L</b> 	<b>MGVRL/R</b> 	<b>ZQ</b> 	<b>SPH</b> 
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## B2-2 外圆车削刀具命名规则 External turning tools code key

压紧方式 Clamping system	刀片形状 Inserts shape		刀片后角 Inserts clearance angle	切削方向 Cutting direction
 P - 杠杆压紧式 Hole clamping	 80° C	 55° D	 5° B	 L - 左手 N - Left hand
 M - 复合压紧式 Top and hole clamping	 R	 90° S	 7° C	
 S - 螺钉压紧式 Screw clamping	 60° T	 35° V	 15° D	 R - 右手 N - Right hand
 C - 压板压紧式 Top clamping	 80° W		 20° E	
 D - 双重夹紧式 Double clamping			 0° N	 N - 左、右手 N - Neutral
			 11° P	


**P C L N L**

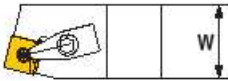
刀具形式与主偏角 Tool holder style and approach angle							
A	B	C	D	E	F	G	H
J	K	L	M	N	O	P	Q
R	S	T	U	V	W	X	

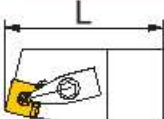
B

普通车削  
General Turning










刀尖高度(mm) Nose height (mm)	
	
代号 Code	高度 Height
12	12
16	16
20	20
25	25
32	32
40	40
50	50

刀体宽度(mm) Width of toolholder (mm)	
	
代号 Code	宽度 Width
12	12
16	16
20	20
25	25
32	32
40	40
50	50

刀具长度(mm) Length of toolholder (mm)	
	
代号 Code	长度 Length
E	70
F	80
H	100
K	125
M	150
P	170
Q	180
R	200
S	250
T	300

**25 25 M 12**

切屑刃长 Length of cutting edge							
刀片形状 Inserts shape	C	D	R	S	T	V	W
							
内切圆I.C(mm) Inscribed circle (mm)	切屑刃长度(mm) Length of cutting edge (mm)						
5.56	—	—	—	—	09	—	—
6.35	06	07	—	—	11	—	—
9.525	09	11	09	09	16	16	08
12.7	12	15	12	12	22	22	08
15.875	16	19	15	15	27	—	—
19.05	19	—	19	19	33	—	—
25.4	25	—	25	25	44	—	—
32.0	—	—	32	—	—	—	—



# B

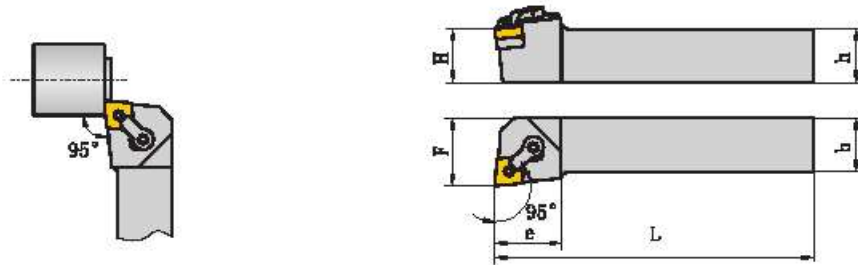
普通车削  
General Turning



## B2-3 外圆车刀刀具 External turning tools

□CLNR/L

Kr=95°



M-Type



P-Type

型号 Type	库存 Stock Item		适用刀片 Recommended Insert	适用条件 Application						配件 Parts					
	R	L		车削加工、端面加工 Turning/Facing						刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench	
				h	b	L	e	H	F						
MCLNR/L	1616H12	●	●	CN□□1204□□	16	16	100	32	16	20	MC1204	CTM617	HL1814	ML0825	L2.5, L3.0
	2020K12	●	●		20	20	125	32	20	25					
	2525M12	●	●		25	25	150	32	25	32					
	3232P12	●	●		32	32	170	32	32	40					
	2525M16	●	○	CN□□1806□□	25	25	150	36	25	32	MC1804	CTM822	HL2217	ML0830	L3.0, L4.0
	3232P16	○	○		32	32	170	36	32	40					
	3232P19	○	○	CN□□1906□□	32	32	170	36	32	40	MC1804	CTM1022	HL2217	ML0830	L4.0
	4040R19	○	○		40	40	200	36	40	50					

型号 Type	库存 Stock Item		适用刀片 Recommended Insert	适用条件 Application						配件 Parts					
	R	L		车削加工、端面加工 Turning/Facing						刀垫 Shim	杠杆 Lever	螺钉 Screw	垫片销 Shim Pin	扳手 Wrench	
				h	b	L	e	H	F						
PCLNR/L	1616H09			CN□□0803□□	16	16	100	20	16	20	MC0808B	LV3	VHX0617	SP10	L2.5
	2020K09				20	20	125	22	20	25					
	2525M09				25	25	150	22	25	32					
	1616H12			CN□□1204□□	16	16	100	28	16	20	MC1204B	LV4	VHX0821	SP4	L3.0
	2020K12				20	20	125	28	20	25					
	2525M12				25	25	150	28	25	32					
	3225P12				32	25	170	28	32	32					
	3232P12				32	32	170	28	32	40					
	2525M16			CN□□1806□□	25	25	150	33	25	32	MC1804B	LV5	VHX0625	SP5	L3.0
	3232P16				32	32	170	33	32	40					
	3225P19			CN□□1906□□	32	25	170	38	32	32	MC1904B	LV6	VHX1027	SP6	L4.0
	3232P19				32	32	170	38	32	40					
	4040S19				40	40	250	38	40	50					

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order

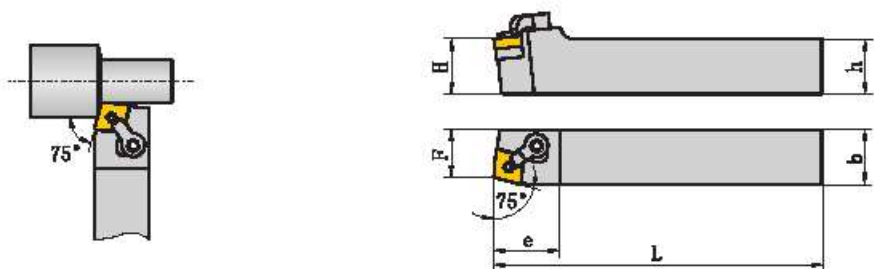




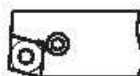
## B2-3 外圆车刀刀具 External turning tools

□CBNR/L

Kr=75°



M-Type



P-Type

型号 Type	库存		适用刀片 Recommended Inserts	适用条件 Application						配件 Parts					
	Stock Item			车削加工 Turning						刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench	
	R	L		h	b	L	a	H	F						
MCBRL	2020K12	●	●	CN□□1204□□	20	20	125	32	20	17	MC1204	CTM617	HL1814	ML0825	L2.5,L3.0
	2525M12	●	●		25	25	150	32	25	22					
	3232P12	●	●		32	32	170	32	32	27					
	3232P18	○		CN□□1806□□	32	32	170	36	32	27	MC1804	CTM622	HL2217	ML0830	L3.0,L4.0
	3232P19			CN□□1906□□	32	32	170	36	32	27	MC1804	CTM1022	HL2217	ML0830	L4.0

型号 Type	库存		适用刀片 Recommended Inserts	适用条件 Application						配件 Parts					
	Stock Item			车削加工 Turning						刀垫 Shim	杠杆 Lever	螺钉 Screw	垫片销 Shim Pin	扳手 Wrench	
	R	L		h	b	L	a	H	F						
PCBRL	1818H12			CN□□1204□□	18	18	100	27	18	20	MC1204B	LV4	VHX0821	SP4	L3.0
	2020K12				20	20	125	27	20	25					
	2525M12				25	25	150	27	25	32					
	2525M18			CN□□1806□□	25	25	150	33	25	32	MC1804B	LV5	VHX0825	SP5	L3.0
	3232P16			32	32	170	33	32	40						
	3232P19			CN□□1906□□	32	25	170	36	32	32	MC1904B	LV6	VHX1027	SP6	L4.0
	3232P19			32	32	170	36	32	40						

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order

B

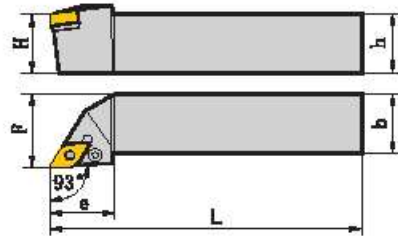
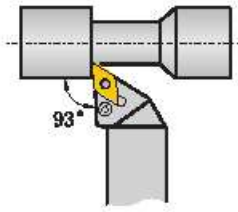
普通车削  
General Turning



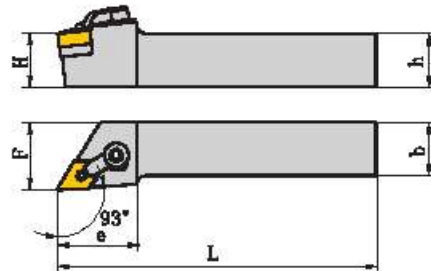
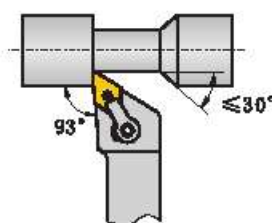


## B2-3 外圆车刀刀具 External turning tools

□DJNR/L  
Kr=93°



型号 Type	库存 Stock Item		适用刀片 Recommended Inserts 	适用条件 Application						配件 Parts				
	R	L		车削加工, 端面加工, 仿形加工 Turning Facing Profiling						刀垫 Shim 	红销 Pin 	螺钉 Clamp 	垫片销 Screw 	扳手 Wrench 
				h	b	L	e	H	F					
PDJNR/L	1816H11		DN□□1104□□	16	16	100	25	16	20	MD1103B	LV3	VH00617	SP3	L2.5
	2020K11			20	20	125	25	20	25					
	2525M11			25	25	150	30	25	32					
	2020K15		DN□□1504□□ DN□□1508□□	20	20	125	35	20	25	MC1504B MD1506B	LV4B	VH00821	SP4	L3.0
	2525M15			25	25	150	35	25	32					
	3225P16			32	25	170	36	32	32					
	3232P15			32	32	170	35	32	32					



型号 Type	库存 Stock Item		适用刀片 Recommended Inserts 	适用条件 Application						配件 Parts				
	R	L		车削加工, 端面加工, 仿形加工 Turning Facing Profiling						刀垫 Shim 	销钉 Pin 	压板 Clamp 	双头螺丝 Screw 	扳手 Wrench 
				h	b	L	e	H	F					
MDJNR/L	1816H11	● ●	DN□□1104□□	16	16	100	32	16	20	MD1103	CTM513	HL1814	ML0625	L2, L3.0
	2020K11	● ●		20	20	125	32	20	25					
	2525M11	● ●		25	25	150	32	25	32					
	2020K15	● ●	DN□□1504□□ DN□□1508□□	20	20	125	38	20	25	MD1504 MD1506	CTM510	HL2114	ML0825	L2.5, L3.0
	2525M15	○ ○		25	25	150	38	25	32					
	3232P15			32	32	170	38	32	40					

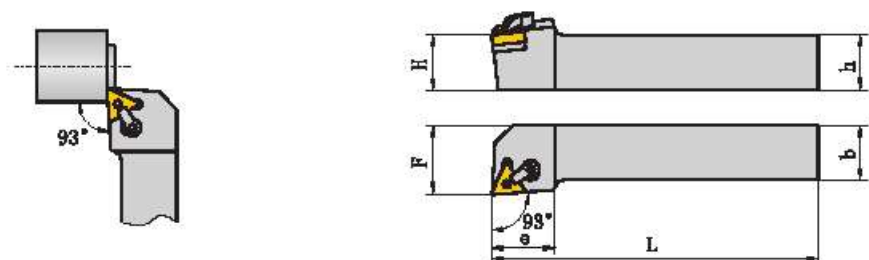
●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order





## B2-3 外圆车刀刀具 External turning tools

**MTJNR/L**  
Kr=93°

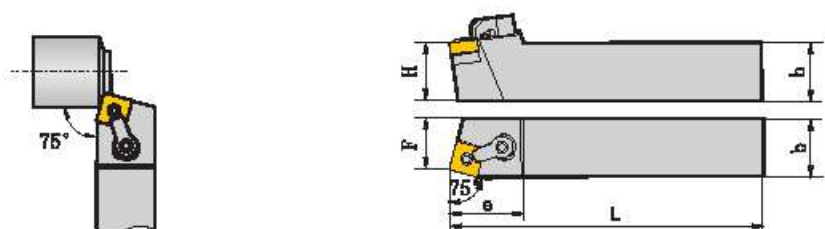


**B**

普通车削  
General Turning

型号 Type	库存 Stock Item		适用刀片 Recommended Inserts	适用条件 Application						配件 Parts					
	R	L		车削加工 Turning						刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench	
				h	b	L	φ	H	F						
MTJNR/L	1616H16	●	●	TN□□1604□□	16	16	100	28	16	20	MT1603	CTM513	HL1814	ML0625	L2.0, L3.0
	2020K16	●	●		20	20	125	28	20	25					
	2525M18	●	●		25	25	150	28	25	32					
	3232P16	●	○		32	32	170	28	32	40					
	2525M22	○		TN□□2204□□	25	25	150	32	25	32	MT2204	CTM617	HL1817	ML0830	L2.5, L4.0
	3232P22				32	32	170	32	32	32					
4040R22			40		40	200	32	40	50						

**MSB NR/L**  
Kr=75°



型号 Type	库存 Stock Item		适用刀片 Recommended Inserts	适用条件 Application						配件 Parts					
	R	L		车削加工、端面加工、仿形加工 Turning Facing Profiling						刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench	
				h	b	L	φ	H	F						
MSB NR/L	2020K12	●	○	SN□□1204□□	22	22	125	32.5	20	17	MS1204	CTM617	HL1814	ML0825	L2.5, L3.0
	2525M12	●	○		25	25	150	32.5	25	22					
	3232P12				32	32	170	32.5	32	27					
	3232P18			SN□□19064□□	32	32	170	40	32	27	MS1904	CTM1022	HL2217	ML0830	L4.0
	4040S18				40	40	250	40	40	35					

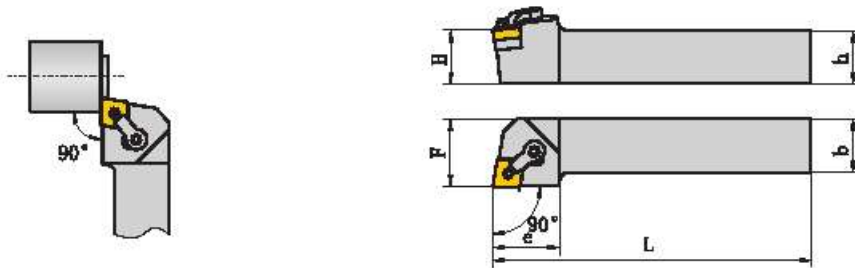
●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order



## B2-3 外圆车刀刀具 External turning tools

### MCGNR/L

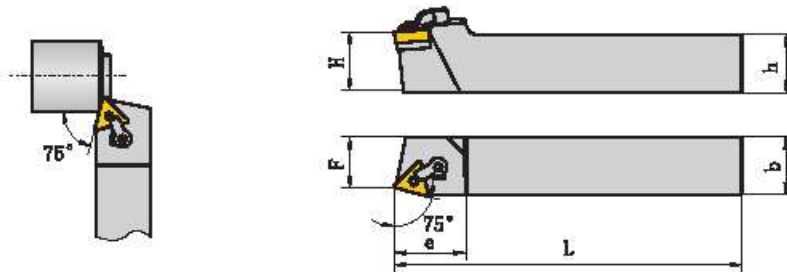
Kr=90°



型号 Type	库存		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts					
	Stock Item			车削加工、端面加工 Turning/Facing						刀垫 Shim 	销钉 Pin 	压板 Clamp 	双头螺丝 Screw 	扳手 Wrench 	
	R	L		h	b	L	e	H	F						
MCGNR/L	2020K12	●	○	CN□□1204□□	20	20	125	32	20	25	MC1204	CTM517	HL1814	ML0825	L2.5, L3.0
	2525M12	●	○		25	25	150	32	25	32					
	3232P12				32	32	170	32	32	40					
	3232P19			CN□□1906□□	32	32	170	36	32	40	MC1904	CTM1022	HL2217	ML0830	L4.0

### MTBNR/L

Kr=75°



型号 Type	库存		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts					
	Stock Item			车削加工 Turning						刀垫 Shim 	销钉 Pin 	压板 Clamp 	双头螺丝 Screw 	扳手 Wrench 	
	R	L		h	b	L	e	H	F						
MTBNR/L	2020K16	●	○	TN□□1604□□	20	20	125	26	20	15.5	MT1603	CTM513	HL1814	ML0825	L2.0, L3.0
	2525M16	●	○		25	25	150	26	25	20.5					

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order



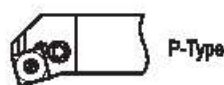
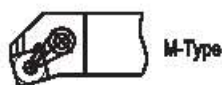
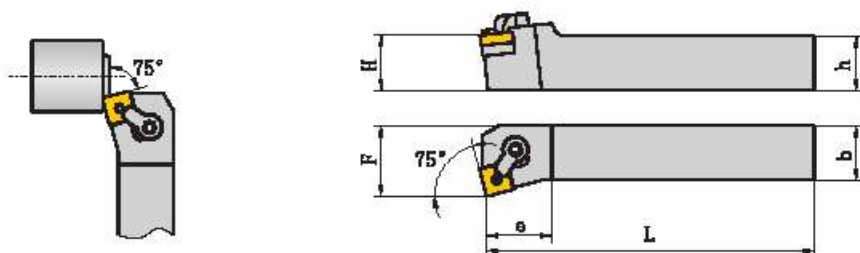




## B2-3 外圆车刀刀具 External turning tools

□SKNR/L

Kr=75°



型号 Type	库存 Stock Item		适用刀片 Recommended Insert	适用条件 Application						配件 Parts					
	R	L		车削加工 Turning						刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench	
				h	b	L	e	H	F						
MSKRL	2020K12	●	○	SN□□1204□□	20	20	125	29	20	25	MS1204	CTM617	HL1814	ML0825	L2.5, L3.0
	2525M12	●	○		25	25	150	29	25	32					
	2525M15			SN□□1606□□	25	25	150	32	25	32	MS1604	CTM822	HL2217	ML0830	L3.0, L4.0
	3232P15				32	32	170	32	32	40					
	3232P19			SN□□1808□□	32	32	170	36	32	40	MS1804	CTM1022	HL2217	ML0830	L4.0
	4040S19				40	40	250	40	40	50					

型号 Type	库存 Stock Item		适用刀片 Recommended Insert	适用条件 Application						配件 Parts					
	R	L		车削加工 Turning						刀垫 Shim	杠杆 Lever	螺钉 Screw	垫片销 Shim Pin	扳手 Wrench	
				h	b	L	e	H	F						
PSKRL	2020K12			SN□□1204□□	20	20	125	26	20	25	MS1204B	LV4	VXH0821	SP4	L3.0
	2525M12				25	25	150	26	25	32					
	3232P12				32	32	170	26	32	40					

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order

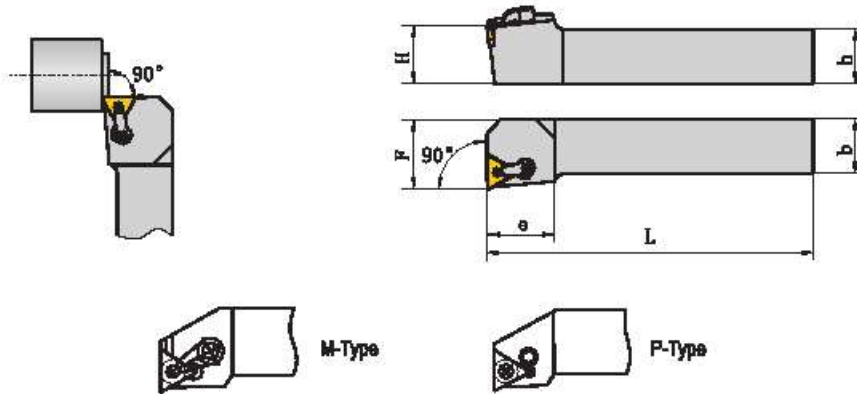
B

普通车削  
General Turning



## B2-3 外圆车刀刀具 External turning tools

MTFNRL  
Kr=90°



型号 Type	库存		适用刀片 Recommended inserts	适用条件 Application						配件 Parts					
	Stock item			端面加工 Facing						刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench	
	R	L		h	b	L	e	H	F						
MTFNRL	1816H16	●	●	TN□□1604□□	16	16	100	28	16	20	MT1803	CTM513	HL1814	ML0825	L2.0, L3.0
	2020K16	●	●		20	20	125	28	20	25					
	2525M16	●	●		25	25	150	28	25	32					
	3232P16	○			32	32	170	28	32	40					
	2525M22			TN□□2204□□	25	25	150	32	25	32	MT2204	CTM517	HL1817	ML0830	L2.5, L4.0
	3232P22				32	32	170	32	32	32					

型号 Type	库存		适用刀片 Recommended inserts	适用条件 Application						配件 Parts					
	Stock item			端面加工 Facing						刀垫 Shim	杠杆 Lever	螺钉 Screw	垫片销 Shim Pin	扳手 Wrench	
	R	L		h	b	L	e	H	F						
PTFNRL	1816H16			TN□□1604□□	16	16	100	20	16	20	MT1803B	LV3	VXH0617	SP3	L2.5
	2020K16				20	20	125	20	20	25					
	2525M16				25	25	150	20	25	32					
	2525M22			TN□□2204□□	25	25	150	25	25	32	MT2204B	LV4	V-D0821	SP4	L3.0
	3232P22				32	32	170	25	32	40					

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order

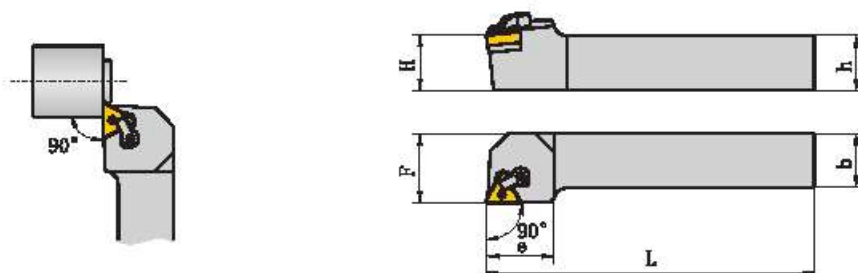




## B2-3 外圆车刀刀具 External turning tools

□TGNR/L

Kr=90°



B

普通车削  
General Turning

型号 Type	库存 Stock Item		通用刀片 Recommended Insert	适用条件 Application						配件 Parts					
	R	L		车削加工 Turning						刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench	
				h	b	L	e	H	F						
MTGNRL	1616H16	●	●	TN□□1604□□	16	16	100	26	16	20	MT1603	CTM513	HL1814	ML0825	L2.0, L3.0
	2020K16	●	●		20	20	125	26	20	25					
	2525M16	●	●		25	25	150	26	25	32					
	2525P22			TN□□2204□□	32	32	170	32	32	40	MT2204	CTM617	HL1917	ML0830	L2.5, L4.0

型号 Type	库存 Stock Item		通用刀片 Recommended Insert	适用条件 Application						配件 Parts					
	R	L		车削加工 Turning						刀垫 Shim	杠杆 Lever	螺钉 Screw	垫片销 Shim Pin	扳手 Wrench	
				h	b	L	e	H	F						
PTGNRL	1616H16			TN□□1604□□	16	16	100	20	16	20	MT1603B	LV3	VXH0617	SP3	L2.5
	2020K16				20	20	125	20	20	25					
	2525M18				25	25	150	20	25	32					
	2525M22			TN□□2204□□	25	25	150	26	25	32	MT2204B	LV4	VXD0821	SP4	L3.0
	3232P22			32	32	170	26	32	40						

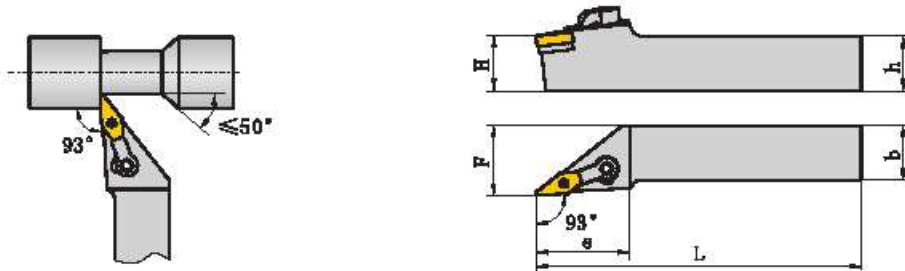
●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order





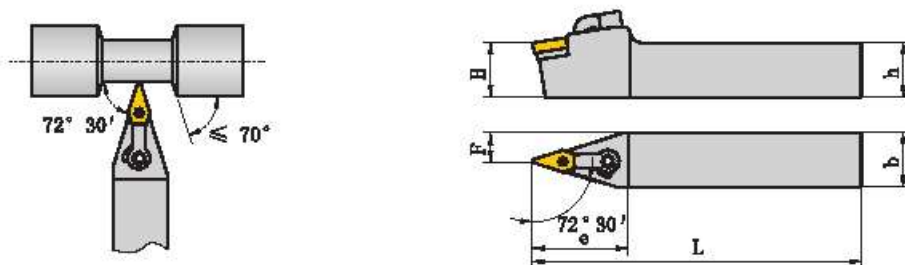
## B2-3 外圆车刀刀具 External turning tools

**MVJNRL**  
Kr=93°



型号 Type	库存 Stock Item		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts					
	R	L		车削加工、仿形加工 Turning, Profiling						刀垫 Shim 	销钉 Pin 	压板 Clamp 	双头螺丝 Screw 	扳手 Wrench 	
				h	b	L	e	H	F						
MVJNRL	1616H16	●	○	VN□□1804□□	16	16	100	36	16	20	MV1603	CTM513	HL2414	ML0825	L2.0, L3.0
	2020K16	●	○		20	20	125	36	20	25					
	2525M16	○			25	25	150	42	25	32					
	3232P16				32	32	170	42	32	40					

**MVVNN**  
Kr=72° 30'



型号 Type	库存 Stock Item		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts					
	R	L		车削加工、镗削加工、仿形加工 Turning, Facing, Profiling						刀垫 Shim 	销钉 Pin 	压板 Clamp 	双头螺丝 Screw 	扳手 Wrench 	
				h	b	L	e	H	F						
MVVNN	2020K16	●		VN□□1804□□	20	20	125	48	20	10	MV1603	CTM513	HL2414	ML0825	L2.0, L4.0
	2525M16	●			25	25	150	48	25	12.5					
	3232P16	○			32	32	170	48	32	16					

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order

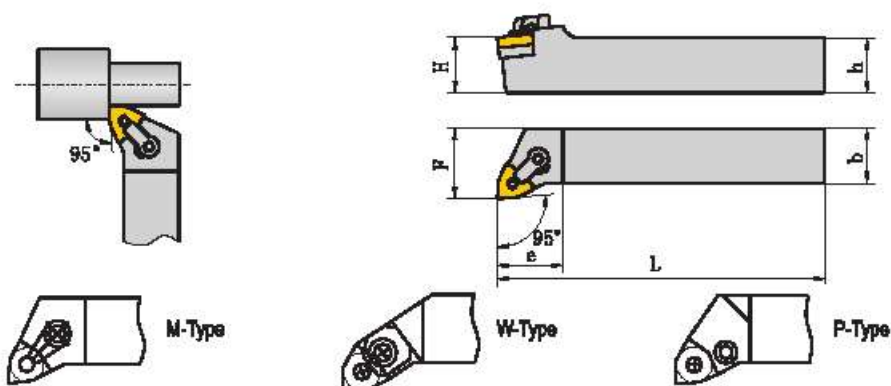





## B2-3 外圆车刀刀具 External turning tools

□WLNRL

Kr=95°



型号 Type	库存 Stock Item		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts				
	R	L		车削加工、端面加工、仿形加工 Turning Facing Profiling						刀垫 Shim 	销钉 Pin 	压板 Clamp 	双头螺丝 Screw 	扳手 Wrench 
				h	b	L	e	H	F					
WLNRL	1616H06	○	WN□□0604□□	16	16	100	23	16	20	MWC603	CTM513	HL1814	ML0825	L2.0,L3.0
	2020K06	○		20	20	125	23	20	25					
	2525M06	●		25	25	150	23	25	32					
	1616H08	●	WN□□0804□□	16	16	100	25	16	20	MWC604	CTM817	HL1814	ML0826	L2.5,L3.0
	2020K08	●		20	20	125	25	20	25					
	2525M08	●		25	25	150	25	25	32					
3232P08	●	32	32	170	25	32	40							

型号 Type	库存 Stock Item		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts				
	R	L		车削加工 Turning						刀垫 Shim 	中心销 Pin 	楔形压板 Clamp 	压板螺丝 Screw 	扳手 Wrench 
				h	b	L	e	H	F					
WLNRL	2020K08		WN□□0804□□	20	20	125	32	20	25	WW08	CTM6-S	YW08	CTWC	L3.0,L4.0
	2525M08			25	25	150	33	25	32					
	3232P08			32	32	170	33	32	40					

型号 Type	库存 Stock Item		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts				
	R	L		车削加工 Turning						刀垫 Shim 	杠销 Lower 	螺钉 Screw 	垫片销 Shim Pin 	扳手 Wrench 
				h	b	L	e	H	F					
PWLNR	1616H06		WN□□0604□□	16	16	100	20	16	20	MWC603B	LV3	VHX0617	SP3	L2.5
	2020K06			20	20	125	20	20	25					
	1616H08		WN□□0804□□	16	16	100	26	16	20	MWC604B	LV4	VHX0821	SP4	L3.0
	2020K08			20	20	125	26	20	25					
	2525M08			25	25	150	26	25	32					

● 库存 stock item    ○ 准库存 be preparing for stock    其余订货 the others can be made to order

B

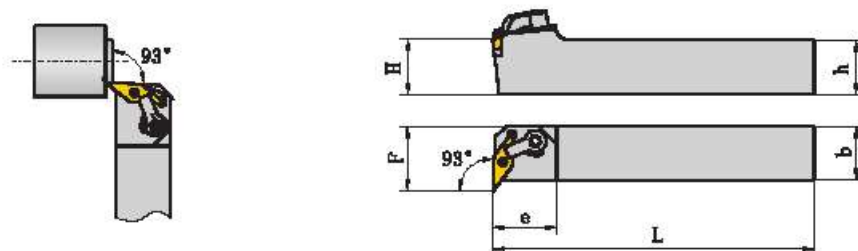
普通车削  
General Turning



## B2-3 外圆车刀刀具 External turning tools

### MVUNR/L

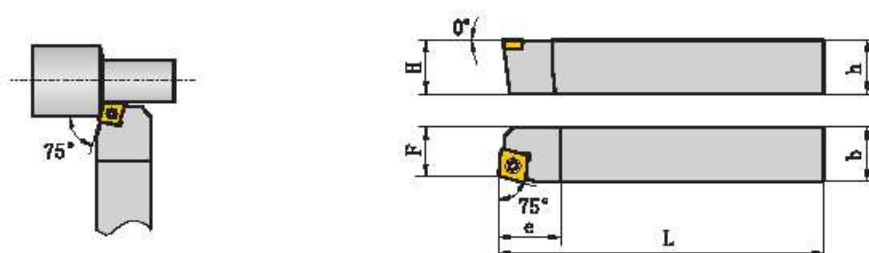
Kr=93°



型号 Type	库存 Stock Item		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts				
	R	L		车削加工、仿形加工 Turning Profiling						刀垫 Shim 	销钉 Pin 	压板 Clamp 	双头螺丝 Screw 	扳手 Wrench 
				h	b	L	e	H	F					
MVUNRL	2525M16		VN□□1604□□	25	25	150	21	25	32	MV1609	CTM51S	HL2414	ML0625	L2.0,L3.0

### SCBCR/L

Kr=75°



型号 Type	库存 Stock Item		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts	
	R	L		车削加工 Turning						螺钉 Screw 	扳手 Wrench 
				h	b	L	e	H	F		
SCBCRL			CC□□0602□□	8	8	70	10	8	8	M2.5×8	T-8
	0808E08	○		10	10	70	10	10	10		
	1010E08	○		12	12	80	13	12	12		
	1212F08	○		12	12	80	19	12	12		

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order



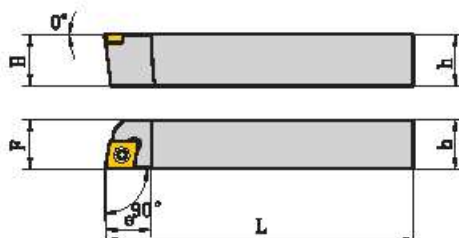
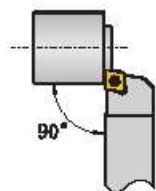




## B2-3 外圆车刀刀具 External turning tools

### SCACRL

$K_r=90^\circ$



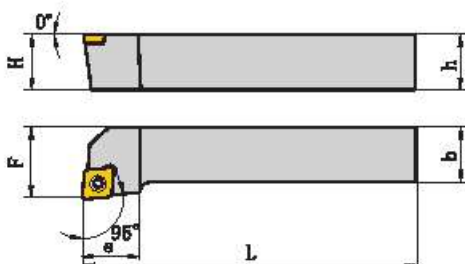
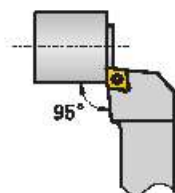
B

普通车削  
General Turning

型号 Type	库存 Stock Item		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts	
	R	L		车削加工 Turning						螺钉 Screw 	扳手 Wrench 
				h	b	L	$\phi$	H	F		
SCACRL				8	8	70	10	8	8	M2.5×8	T-8
	0808E06			10	10	70	10	10	10		
	1010E06	○		12	12	80	19	12	12		
	1212F08	○		12	12	80	19	12	12		
1212K09	○		CC□□08T3□□	12	12	80	19	12	M3.5×9	T-15	

### SCLCR/L

$K_r=95^\circ$



型号 Type	库存 Stock Item		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts	
	R	L		车削加工 Turning						螺钉 Screw 	扳手 Wrench 
				h	b	L	$\phi$	H	F		
SCLCR/L				10	10	70	19	10	5	M2.5×8	T-8
	1010E08	●		12	12	80	15	12	8		
	1212F08	●		18	18	100	16	16	8	M3.5×9	T-15
	1818H09	●		20	20	125	15	20	10		
	2020K09	●		25	25	150	15	25	12.5		
	2525M09	●		20	20	125	20	20	10		
	2020K12	●		25	25	150	20	25	12.5		
	2525M12	●		32	32	170	20	32	40		
3232P12	○		CC□□12M4□□								

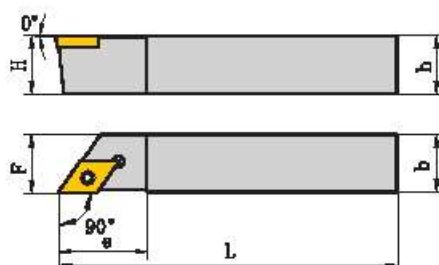
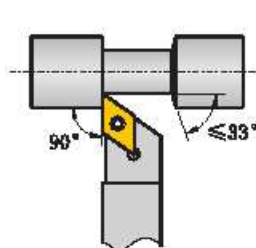
●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order



## B2-3 外圆车刀刀具 External turning tools

### SDACRL

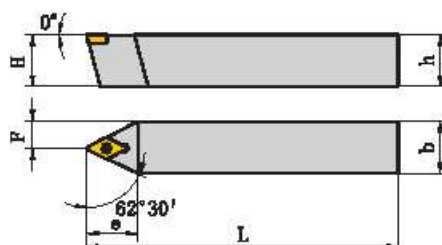
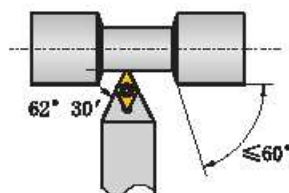
Kr=90°



型号 Type	库存 Stock item		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts	
	R	L		车削加工 Turning						螺钉 Screw 	扳手 Wrench 
				h	b	L	φ	H	F		
SDACRL			DC□□0702□□	8	8	70	15	8	8	M2.5×8	T-8
	0808E07			10	10	70	15	10	10		
	1010E07			12	12	125	15	12	12		
			DC□□11T3□□	12	12	125	22	12	12	M3.5×9	T-16
	1212K11			18	18	100	22	18	16		
	1818H11	○		20	20	125	22	20	20		
	2020K11	●		25	25	150	22	25	25		
2525M11	○										

### SDNCN

Kr=62° 30'



型号 Type	库存 Stock item		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts	
	R	L		车削加工 Turning						螺钉 Screw 	扳手 Wrench 
				h	b	L	φ	H	F		
SDNCN			DC□□0702□□	10	10	70	5	10	12	M2.5×8	T-8
	1010E07	●		12	12	70	13	12	16		
	1212E07	○		12	12	100	14	12	16	M3.5×9	T-15
	1212H11	●	16	16	100	14	16	20			
	1818H11	●	20	20	125	16	20	25			
	2020K11	●	25	25	150	22	25	25			
2525M11											

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order

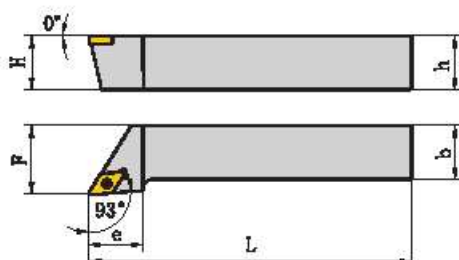
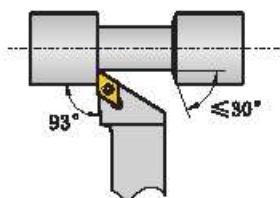




## B2-3 外圆车刀刀具 External turning tools

**SDJCR/L**

Kr=93°

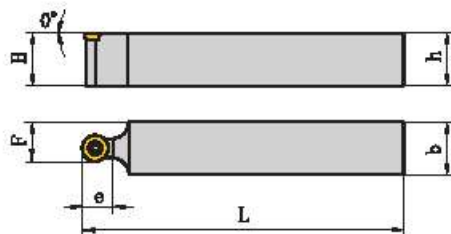
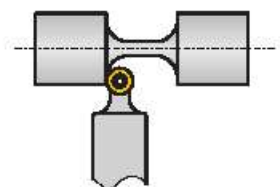


**B**

普通车削  
General Turning

型号 Type	库存 Stock Item		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts	
	R	L		车削加工 Turning						螺钉 Screw 	扳手 Wrench 
				h	b	L	φ	H	F		
SDJCR/L	1010E07	●	DC□□0702□□	10	10	70	14	10	12	M2.5×8	T-8
	1212F07	● ○		12	12	80	14	12	16		
	1818H07	● ●		18	18	100	14	18	20		
	1212F11		DC□□11T3□□	12	12	80	20	12	16	M3.5×9	T-15
	1818H11	● ●		18	18	100	20	18	20		
	2020K11	● ●		20	20	125	20	20	25		
	2525M11	● ●		25	25	150	22	25	32		
	3232P11	○		32	32	170	28	32	40		
	4040R11			40	40	200	25	40	50		

**SRDCN**



型号 Type	库存 Stock Item		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts	
	R	L		车削加工 Turning						螺钉 Screw 	扳手 Wrench 
				h	b	L	φ	H	F		
SRDCN	1818H08	○	RC□□0803□□	18	18	100	18	18	12	M2.5×8	T-8
	2020K08	○		20	20	125	18	20	14		
	2525M08	○		25	25	150	18	25	16.5		
	1010E10		RC□□1003□□	10	10	70	20.3	10	10	M3.5×9	T-15
	1212F10			12	12	80	20.3	12	11		
	1818H10	●		18	18	100	20.3	18	13		
	2020K10	●		20	20	125	20.3	20	15		
	2525M10	●		25	25	150	20.3	25	17.5		

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order

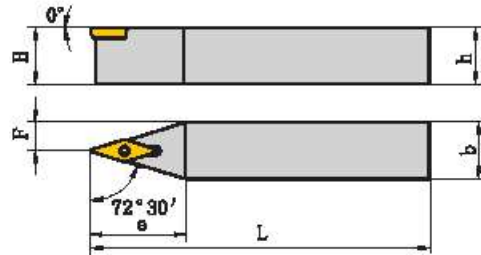
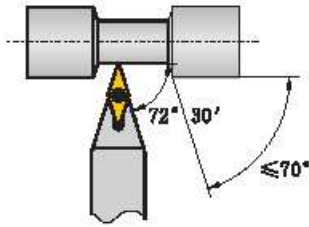




## B2-3 外圆车刀刀具 External turning tools

### SVVBN

Kr=72° 30'



型号 Type	库存 Stock item		通用刀片 Recommended inserts 	适用条件 Application 车削加工 Turning						配件 Parts	
	R	L		h	b	L	e	H	F	螺钉 Screw 	扳手 Wrench 
	SVVBN	1212F11		●	VB□□1103□□	12	12	80	24	12	6
1616H11		●	16	16		100	24	16	8		
2020K11		●	20	20		125	24	20	10		
2525M11		●	25	25		150	24	25	12.5		
1616H16		●	VB□□1604□□	16	16	100	34	16	8	M3.5×9	T-15
2020K16		●		20	20	125	34	20	10		
2525M16		●		25	25	150	34	25	12.5		
3232P16		○		32	32	170	34	32	16		
SVVCN	1212F11	●	VC□□1103□□	12	12	80	24	12	6	M2.5×8	T-8
	1616H11	●		16	16	100	24	16	8		
	2020K11	○		20	20	125	24	20	10		
	2525M11	○		25	25	150	24	25	12.5		
	1616H16	○	VC□□1604□□	16	16	100	34	16	8	M3.5×9	T-15
	2020K16	●		20	20	125	34	20	10		
	2525M16	●		25	25	150	34	25	12.5		
	3232P16	○		32	32	170	34	32	16		

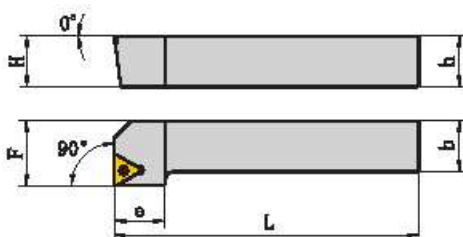
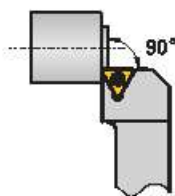
●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order





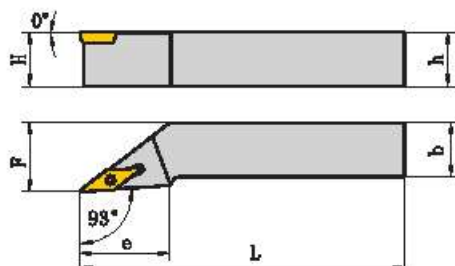
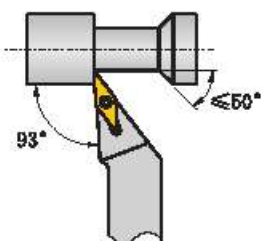
## B2-3 外圆车刀刀具 External turning tools

**STFCRL**  
Kr=90°



型号 Type	库存 Stock item		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts		
	R	L		车削加工 Turning						螺钉 Screw 	扳手 Wrench 	
				h	b	L	e	H	F			
STFCRL	1212F11	●		TC□□1102□□	12	12	80	14	12	16	M2.5×8	T-8
	1616H11	●	○		16	16	100	14	16	20		
	2020K16	●	○	TC□□1613□□	20	20	125	22	20	25	M3.5×8	T-15
	2525M16	●	○		25	25	150	22	25	32		
	3232P16	○			32	32	170	22	32	40		

**SVJ□RL**  
Kr=93°



型号 Type	库存 Stock item		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts		
	R	L		车削加工 Turning						螺钉 Screw 	扳手 Wrench 	
				h	b	L	e	H	F			
SVJBR	1616H16	●	●	VB□□1604□□	16	16	100	32	16	20	M3.5×8	T-15
	2020K16	●	●		20	20	125	32	20	25		
	2525M16	●	●		25	25	150	32	25	32		
	3232P16	○			32	32	170	40	32	40		
SVJCR	1616H16	●	●	VC□□1604□□	16	16	100	32	16	20	M3.5×8	T-15
	2020K16	●	●		20	20	125	32	20	25		
	2525M16	●	●		25	25	150	40	25	32		
	3232P16	○			32	32	170	40	32	40		

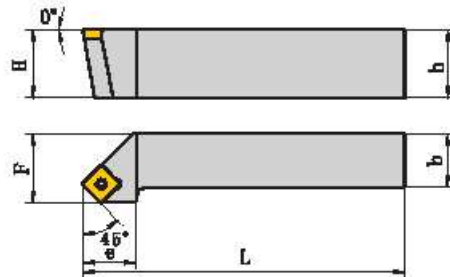
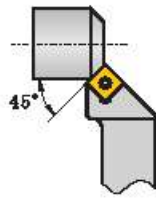
●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order



## B2-3 外圆车刀刀具 External turning tools

### SS9CRL

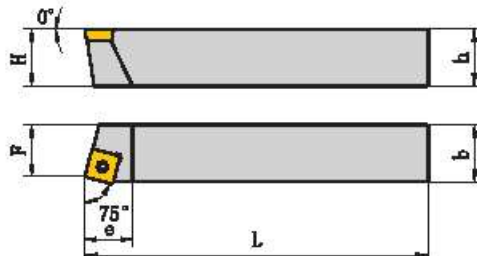
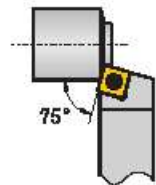
Kr=45°



型号 Type	库存 Stock item	适用刀片 Recommended inserts	适用条件 Application						配件 Parts		
			车削加工 Turning						螺钉 Screw	扳手 Wrench	
			h	b	L	e	H	F			
SS9CRL	1212F09	○	SC□□09T3□□	12	12	80	16	12	16	M3.5×9	T-16
	1616H09	●		16	16	100	18	16	20		
	2020K09	●		20	20	125	18	20	25		
	2525M09	●		25	25	150	25	25	32		
2525M12	○		SC□□1204□□	25	25	150	25	25	32	M5×12	T-20

### SSB□RL

Kr=75°



型号 Type	库存 Stock item	适用刀片 Recommended inserts	适用条件 Application						配件 Parts		
			车削加工 Turning						螺钉 Screw	扳手 Wrench	
			h	b	L	e	H	F			
SS9CRL	1212F09	●	SC□□09T3□□	12	12	80	14	12	9.5	M3.5×9	T-16
	1616H09	●		16	16	100	14	16	12		
SSB□RL	2020K12	○	SP□□1208□□	20	20	125	32	20	17	M5×12	T-20
	2525M12	○		25	25	150	32	25	22		

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order



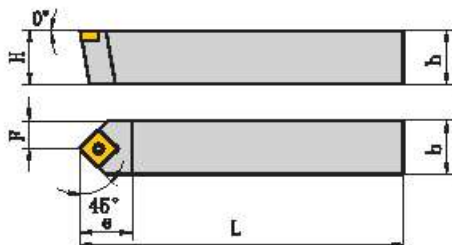
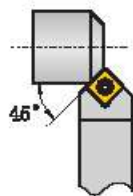




## B2-3 外圆车刀刀具 External turning tools

**SSDCN**

$Kr=45^\circ$



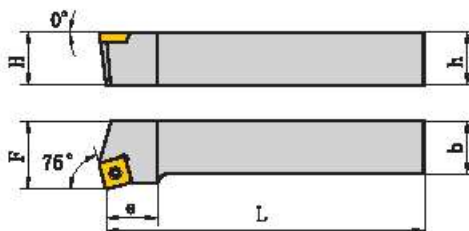
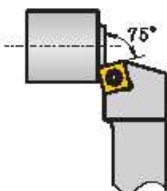
**B**

普通车削  
General Turning

型号 Type	库存 Stock item	通用刀片 Recommended inserts	适用条件 Application						配件 Parts		
			车削加工 Turning						螺钉 Screw	扳手 Wrench	
			h	b	L	e	H	F			
SSDCN	1212F09	○	SC□□09T3□□	12	12	80	16	12	8	M3.5×9	T-15
	1616H09	●		16	16	100	16	16	8		
	2020K09	●		20	20	125	16	20	10		
	2525M09	●		25	25	150	16	25	12.5		

**SSKCR/L**

$Kr=75^\circ$



型号 Type	库存 Stock item	通用刀片 Recommended inserts	适用条件 Application						配件 Parts		
			车削加工 Turning						螺钉 Screw	扳手 Wrench	
			h	b	L	e	H	F			
SSKCR/L	1212F09	○	SC□□09T3□□	12	12	80	16	12	16	M3.5×9	T-15
	1616H09	●		16	16	100	16	16	20		
	2020K09	●		20	20	125	16	20	25		
	2525M09	●		25	25	150	25	25	32		
	2525M12	○	SC□□1204□□	25	25	150	25	25	32	M5×12	T-20

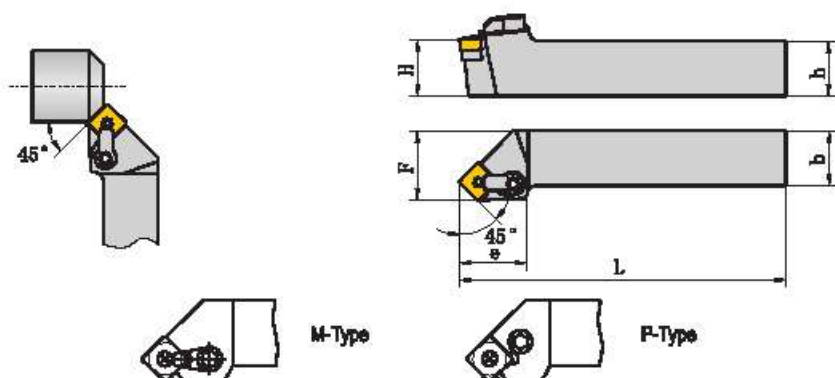
●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order



## B2-3 外圆车刀刀具 External turning tools

□SSNR/L

Kr=45°



型号 Type	库存 Stock Item		适用刀片 Recommended Inserts 	适用条件 Application						配件 Parts					
	R	L		车削加工 Turning						刀片 Shim 	销钉 Pin 	压板 Clamp 	双头螺丝 Screw 	扳手 Wrench 	
				h	b	L	a	H	F						
MSSNR/L	2020K12	●	●	SN□□1204□□	20	20	125	34	20	25	MS1204	CTM617	HL1814	ML0825	L2.5, L3.0
	2525M12	●	●		25	25	150	34	25	32					
	3232P12	○			32	32	170	34	32	40					
	2525M15			SN□□1506□□	25	25	150	36	25	32	MS1504	CTM822	HL2217	ML0830	L3.0, L4.0
	3232P15				32	32	170	45	32	40					
	3232P19			SN□□1908□□	32	32	170	46	32	40	MS1904	CTM1022	HL2217	ML0830	L4.0
	4040S19				40	40	250	50	40	50					

型号 Type	库存 Stock Item		适用刀片 Recommended Inserts 	适用条件 Application						配件 Parts					
	R	L		车削加工 Turning						刀片 Shim 	杠杆 Lever 	螺钉 Screw 	垫片销 Shim Pin 	扳手 Wrench 	
				h	b	L	a	H	F						
PSSNR/L	2020K12			SN□□1204□□	20	20	125	26	20	25	MS1204B	LV4	VXH0821	SP4	L3.0
	2525M12				25	25	150	26	25	32					
	3232P12				32	32	170	28	32	40					
	2525M15			SN□□1506□□	25	25	150	32	25	32	MS1504B	LV5	VHX0825	SP5	L3.0
	3232P15				32	32	170	32	32	40					

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order

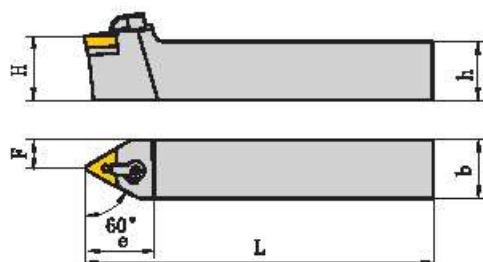
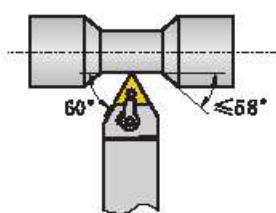




## B2-3 外圆车刀刀具 External turning tools




### MTENN

Kr=60°



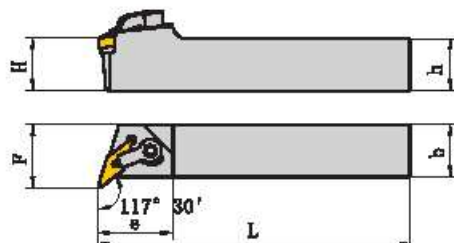
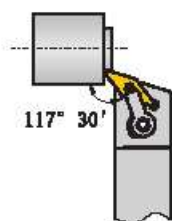
B

普通车削  
General Turning

型号 Type	库存 Stock Item		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts				
	R	L		车削加工 Turning						刀垫 Shim 	销钉 Pin 	压板 Clamp 	双头螺丝 Screw 	扳手 Wrench 
				h	b	L	e	H	F					
MTENN	2020K16	●	TN□□1604□□	20	20	125	35	20	10	MT1603	CTM513	HL1814	ML0625	L2.0, L3.0
	2525M16	●		25	25	150	35	25	12.5					
	3232P16	○		32	32	170	35	32	16					
	4040S16			40	40	250	35	40	20					
	2525M22		TN□□2204□□	25	25	150	38	25	12.5	MT2204	CTM617	HL1917	ML0830	L2.5, L4.0
	3232P22			32	32	170	38	32	16					

### MVQNR/L

Kr=117° 30'



型号 Type	库存 Stock Item		适用刀片 Recommended inserts 	适用条件 Application						配件 Parts				
	R	L		车削加工、端面加工、仿形加工 Turning, Facing, Profiling						刀垫 Shim 	销钉 Pin 	压板 Clamp 	双头螺丝 Screw 	扳手 Wrench 
				h	b	L	e	H	F					
MVQNR/L	2020K16	●	VN□□1604□□	20	20	125	40	25	32	MV1603	CTM513	HL2414	ML0625	L2.0, L3.0
	2525M16	●		25	25	150	40	25	32					
	3232P16	○		32	32	170	40	32	40					

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order

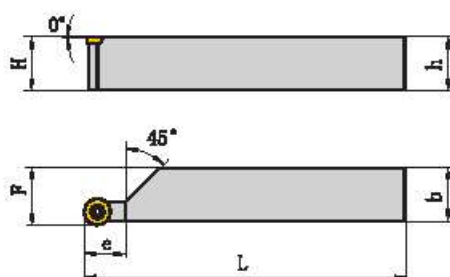
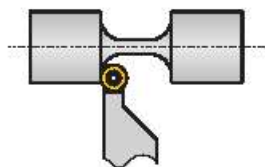




## B2-3 外圆车刀刀具 External turning tools

### SRACRL

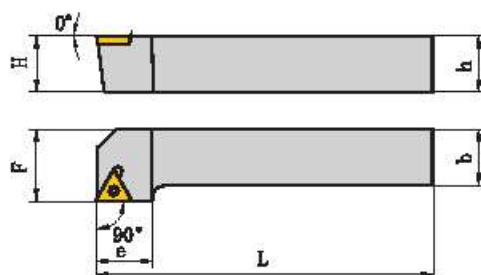
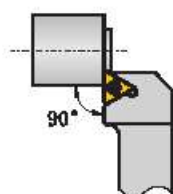
Kr=45°



型号 Type	库存 Stock item		适用刀片 Recommended inserts	适用条件 Application						配件 Parts	
	R	L		车削加工 Turning						螺钉 Screw	扳手 Wrench
				h	b	L	e	H	F		
SRACRL	●	○	RC□□0803□□	16	16	100	16	16	16.5	M2.5×8	T-8
	●	○		20	20	125	18	20	20.5		
	○			25	25	150	18	25	25.5		
	●	○	RC□□1003□□	20	20	125	20.3	20	20.4	M3.5×9	T-15
	○			25	25	150	20.3	25	25.4		

### STGCRL

Kr=90°



型号 Type	库存 Stock item		适用刀片 Recommended inserts	适用条件 Application						配件 Parts	
	R	L		车削加工 Turning						螺钉 Screw	扳手 Wrench
				h	b	L	e	H	F		
STGCRL	●	○	TC□□1102□□	16	16	100	14	16	20	M2.5×8	T-8
	●	○		20	20	125	20	20	25		
	●	○	TC□□1673□□	25	25	150	20	25	32	M3.5×9	T-15

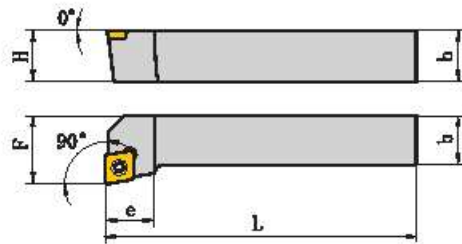
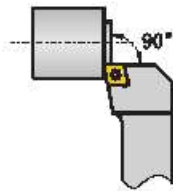
●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order





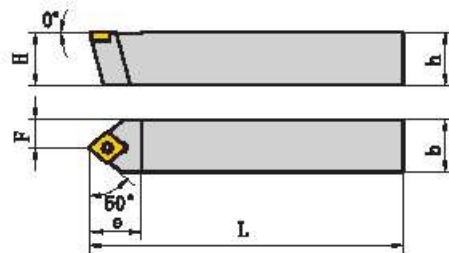
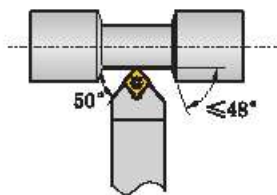
## B2-3 外圆车刀刀具 External turning tools

**SCFCR/L**  
Kr=90°



型号 Type	库存 Stock Item	适用刀片 Recommended inserts	适用条件 Application						配件 Parts	
			车削加工 Turning						螺钉 Screw	扳手 Wrench
			h	b	L	e	H	F		
SCFCRL	1212E06	CC□□0602□□	12	12	70	16	12	16	M2.5×8	T-8

**SCMCN**  
Kr=50°



型号 Type	库存 Stock Item	适用刀片 Recommended inserts	适用条件 Application						配件 Parts	
			车削加工 Turning						螺钉 Screw	扳手 Wrench
			h	b	L	e	H	F		
SCMCN	1010E08	CC□□0602□□	10	10	70	19	10	5	M2.5×8	T-8
	1212F08	CC□□08T3□□	12	12	80	15	12	6		
	1818H09		18	18	100	15	16	8		
	2020K09		20	20	125	15	20	10		
	2525M09		25	25	150	15	25	12.5		
	2020K12	CC□□1204□□	20	20	125	20	20	10	M5×12	T-20
	2525M12	25	25	150	20	25	12.5			

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order

B

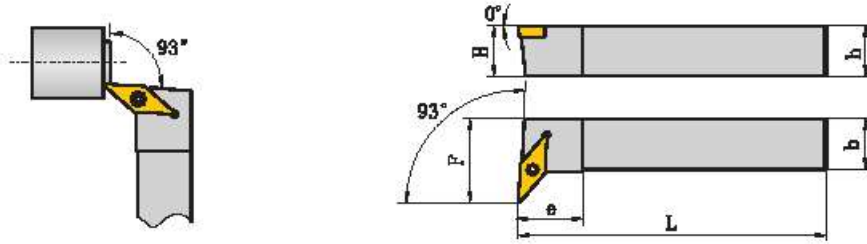
普通车削  
General Turning



## B2-3 外圆车刀刀具 External turning tools

### SVU□R/L

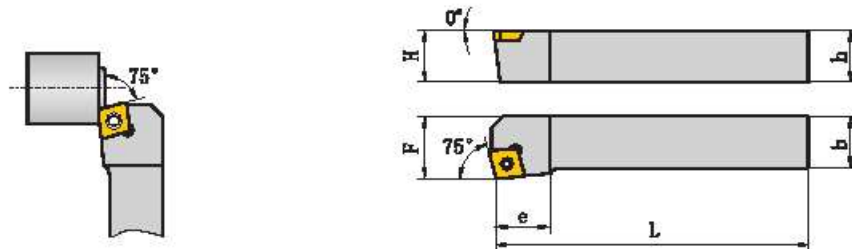
Kr=93°



型号 Type		库存		适用刀片 Recommended Inserts 	适用条件 Application						配件 Parts	
		Stock Item			车削加工 Turning						螺钉 Screw 	扳手 Wrench 
		R	L		h	b	L	e	H	F		
SVUBRL	2020K16	○		VB□□1604□□	20	20	125	16	20	30	M3.5×9	T-15
	2525M16	○			25	25	150	16	25	35		
SVUCRL	2020K16	○		VC□□1604□□	20	20	125	16	20	30	M3.5×8	T-15
	2525M16	○			25	25	150	16	25	35		

### SCKCRL

Kr=75°



型号 Type		库存		适用刀片 Recommended Inserts 	适用条件 Application						配件 Parts	
		Stock Item			车削加工 Turning						螺钉 Screw 	扳手 Wrench 
		R	L		h	b	L	e	H	F		
SCKCRL	2020K09	●	○	CC□□00T3□□	20	20	125	28	20	25	M3.5×8	T-15
	2525M09	●	○		25	25	150	28	25	32		
	2020K12			CC□□1204□□	20	20	125	28	20	25	M6×12	T-20
	2525M12				25	25	150	28	25	32		

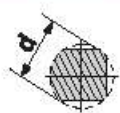












●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order



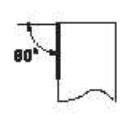
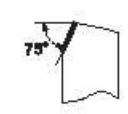
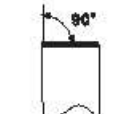


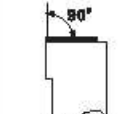
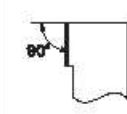
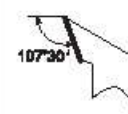

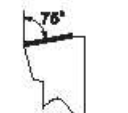
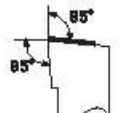
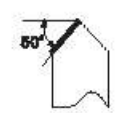

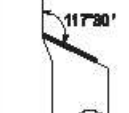
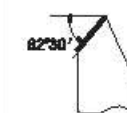
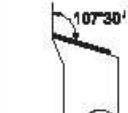


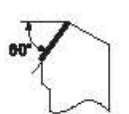
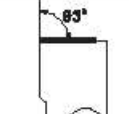
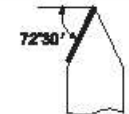
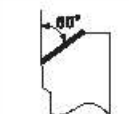
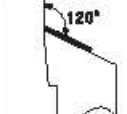




## B2-4 内孔车削刀具命名规则 Internal turning tools code key

刀杆形式 Toolholders type		刀杆直径 Diameter		刀杆长度 Length of toolholder		压紧方式 Clamping system		刀片形状 Inserts shape	
代号 Code	类型 Type	代号 Code	直径 Diameter	代号 Code	长度 Length				
A	钢杆 + 内冷却孔 Steel Pole With Inner cooler hole						P - 杠杆压紧式 P - Hole clamping		
C	硬质合金杆 Cemented carbide toolholder	10	10	H	100		M - 复合压紧式 Top and hole clamping		
E	硬质合金杆 + 内冷却孔 Cemented carbide toolholder with inner cooler hole	16	16	K	125		S - 螺钉压紧式 S - Screw		
S	钢杆 Steel Pole	20	20	N	150		C - 压板压紧式 C - Top		
X	使用特殊刀片 For special inserts	25	25	Q	180				
		32	32	R	200				
		40	40	S	250				
		50	50	T	300				
				U	350				
				V	400				

**S 16 R - S D U**

刀具形式与主偏角 Tool holder style and approach angle							
A	B	C	D	E	F	G	H
							
							
							

B

普通车削  
General Turning



刀片后角 Inserts clearance angle	
	<b>B</b>
	<b>C</b>
	<b>D</b>
	<b>E</b>
	<b>N</b>
	<b>P</b>

切削方向 Cutting direction	
	<b>L - 左手</b> L - Left hand
	<b>R - 右手</b> R - Right hand

制造商选项	
<b>D</b>	加大偏置量 f 尺寸+1.0mm Increase offset f size+1.0mm
<b>E</b>	加大偏置量 f 尺寸+2.0mm Increase offset f size+2.0mm
<b>R</b>	圆刀柄 Round shank
<b>W</b>	楔块夹紧 Wedge clamping
<b>X</b>	背镗 Back boring

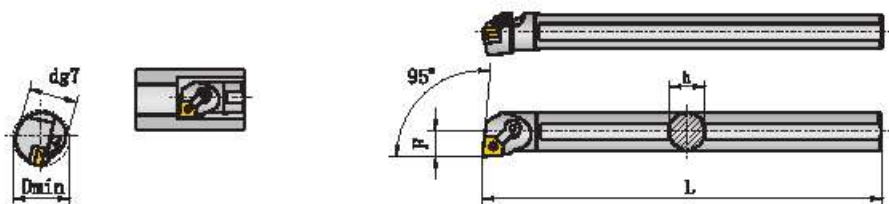
**C R 07**

切削刃长 Length of cutting edge							
刀片形状 Inserts shape	<b>C</b>	<b>D</b>	<b>R</b>	<b>S</b>	<b>T</b>	<b>V</b>	<b>W</b>
内接圆I.C.(mm) Inscribed circle (mm)	切削刃长度(mm) Length of cutting edge (mm)						
5.58	—	—	—	—	09	—	—
6.35	06	07	—	—	11	—	—
9.525	09	11	09	09	16	16	06
12.7	12	15	12	12	22	22	08
15.875	16	19	15	15	27	—	—
19.05	19	—	19	19	33	—	—
25.4	25	—	25	25	44	—	—





## B2-5 内孔车削刀具 Internal turning tools MCLNR/L



B  
General Turning  
普通车削

型号 Type	库存 Stock Item		适用刀片 Recommended inserts 	适用条件 Application						配件 Spare Parts				
				通孔加工 Through-hole machining						刀垫 Shim 	销钉 Pin 	压板 Clamp 	双头螺丝 Screw 	扳手 Wrench 
				最小加工直径 Minimum processing diameter	$\Phi d$	F	L	h	$\alpha^\circ$					
S20Q	●	●	CN□□1204□□	25	20	13	180	19	16	X	CTM613	HL1810	ML0620	L2.5, L3.0
S25R	●	●		32	25	17	200	24	12					
S32S	●	●		40	32	22.5	250	30	17					
S40T	●	○		50	40	27	300	38	15	MC1204	CTM617	HL1814	ML0625	
S45J	○			55	45	28.5	350	43	15					
S50J				60	50	31	350	48	12					
S60V				70	60	36	400	58	10					
S50J	-MCLNR/L18		CN□□1906□□	60	50	31	350	48	12	MC1804	CTM1022	HL2217	ML0803	L4.0

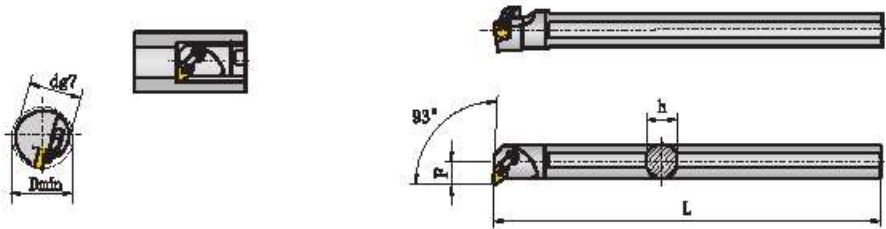
●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order





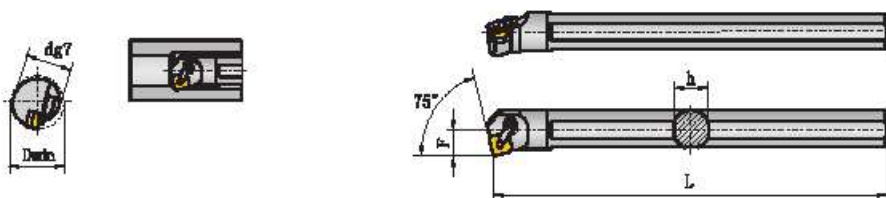
## B2-5 内孔车削刀具 Internal turning tools

### MDUNR/L



型号 Type	库存 Stock item	适用刀片 Recommended inserts 	适用条件 Application							配件 Spare Parts					
			通孔加工 Through-hole machining							刀垫 Shim 	销钉 Pin 	压板 Clamp 	双头螺丝 Screw 	扳手 Wrench 	
			最小加工直径 Minimum processing diameter	Φd	F	L	h	α'							
S25R	● ●	DN□□1504□□	32	25	17	200	24	12	X	CTM613	HL2114	ML0625	L2.5, L3.0		
S32S			40	32	22.5	250	30	17	MD1504					CTM617	
S40T			50	40	27	300	38	15		X					CTM613
S50U			60	50	32	350	48	12	MD1504					CTM617	
°H25R	● ●		32	25	17	200	24	12		X					CTM613
°H2S			40	32	22.5	250	30	17							
°H40T			50	40	28	300	38	15		MD1504					CTM617
°H50U			60	50	33	360	48	12							

### MSKNR/L



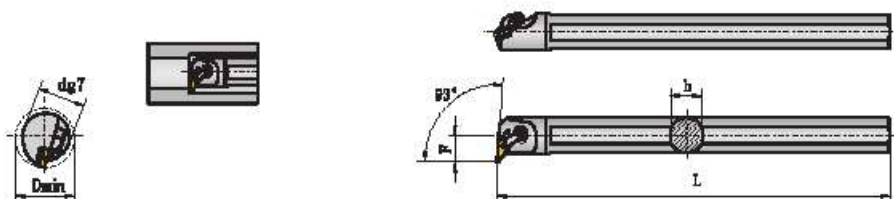
型号 Type	库存 Stock item	适用刀片 Recommended inserts 	适用条件 Application							配件 Spare Parts				
			通孔加工 Through-hole machining							刀垫 Shim 	销钉 Pin 	压板 Clamp 	双头螺丝 Screw 	扳手 Wrench 
			最小加工直径 Minimum processing diameter	Φd	F	L	h	α'						
S20Q	● ○	SN□□1204□□	25	20	13	100	19	15	X	CTM613	HL1810	ML0620	L2.5, L3.0	
S25R			32	25	17	200	24	12						MC1204
S32S	40		32	22	260	30	17	HL1814	ML0625					
S40T	50		40	27	300	38	15							
S45U	55		45	30	350	43	15							
S50U	63		50	34	360	48	12							

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order



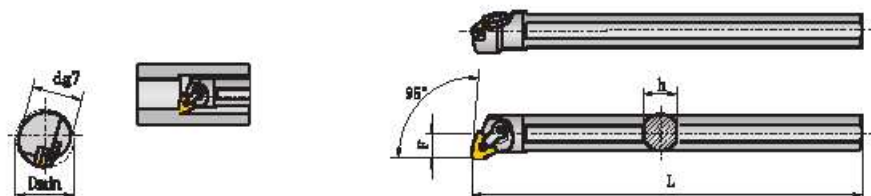


## B2-5 内孔车削刀具 Internal turning tools MVUNR/L



型号 Type	库存 Stock item	适用刀片 Recommended inserts	适用条件 Application							配件 Spare Parts						
			通孔加工 Through hole machining							刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench		
			最小加工直径 Min. processing diameter	Φd	F	L	h	α°								
S25R	● ○	VN□□1604□□	36	25	20	200	24	12	X	CTM510	HL2414	ML0620	L2.5, L3.0			
S32S			42	32	22	250	30	17								
S40T			50	40	27	300	36	15	MV1603	CTM513						
S50U			63	50	32	350	48	12								
1H25R	● ○	VN□□1604□□	36	25	20	200	20	12	X	CTM510						
1H2S			42	32	22	250	30	17								
1H40T			50	40	27	300	36	15	MV1603	CTM513						
1H50U			63	50	32	350	48	12								

## MWLNRL/L



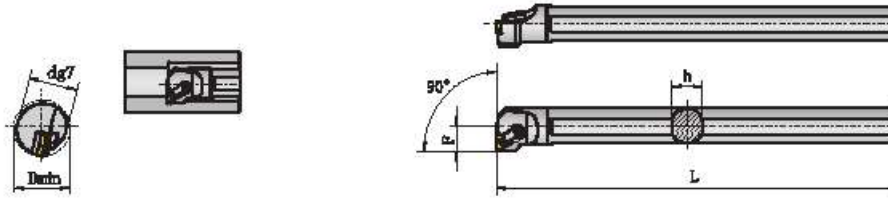
型号 Type	库存 Stock item	适用刀片 Recommended inserts	适用条件 Application							配件 Spare Parts					
			通孔加工 Through hole machining							刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench	
			最小加工直径 Min. processing diameter	Φd	F	L	h	α°							
S16N	● ○	VN□□0604□□	22	16	11	160	16	16	X	CTM510	HL1511	ML0516	L2.0, L2.5		
S20Q			25	20	13	180	19	15							
S25R			32	25	17	200	24	12							
S20Q	25	20	13	180	19	15									
S25R	● ○	VN□□0604□□	32	25	17	200	24	12					HL1810	ML0620	L2.5
S32S			41	32	22	250	30	17							
S40T			50	40	27	300	36	15			MW0604	CTM617	HL1814	ML0625	L2.5, L3.0
S50U			60	50	31	350	48	12							

● 库存 stock item    ○ 准库存 be preparing for stock    其余订货 the others can be made to order



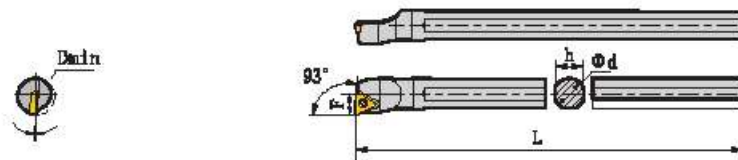
## B2-5 内孔车削刀具 Internal turning tools

### MTFNR/L



型号 Type	库存 Stock item	适用刀片 Recommended inserts	适用条件 Application							配件 Spare Parts				
			通孔加工 Through hole machining							刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
			最小加工直径 Minimum processing diameter	$\phi d$	F	L	h	$\alpha^\circ$						
S20Q	● ○	TN□□1604□□	25	20	13	180	18	15	X	CTM510	HL1810	ML0620	L2.0,L3.0	
S25R			32	25	17	200	24	12						
S32S			41	32	22.5	250	30	17	MT1803	CTM513	HL1814	ML0625		
S40T			50	40	27	300	38	15						
S50U			60	50	31	350	48	12						
S40T	● ○	TN□□2204□□	50	40	27	300	38	15	MT2204	CTM617	HL1817	M0630		L2.0,L4.0
S50U			60	50	31	350	48	12						

### STUPL/R



型号 Type	库存 Stock item		适用刀片 Recommended inserts	适用条件 Application							配件 Spare Parts	
	R	L		仿形、通孔加工 Profiling, Through hole machining							螺丝 Screw	扳手 Wrench
				最小加工直径 Minimum processing diameter	$\phi d$	F	L	h	$\alpha^\circ$			
S10K	● ○	○	TC□□1103□□	13	10	7	125	9	12	M3×8	T-8	
S12M				16	12	8	150	11	10			
S16N				20	16	10	180	15	8			
S20Q				24	20	13	180	19	8			
S20Q	● ○	○	TC□□1604□□	24	20	13	180	19	4	M3.5×8	T-15	
S25R				32	25	17	200	24	2			
S32S				39	32	22	250	32	0			
S40T				50	40	27	300	38	0			
S50U				60	60	31	350	48	0			

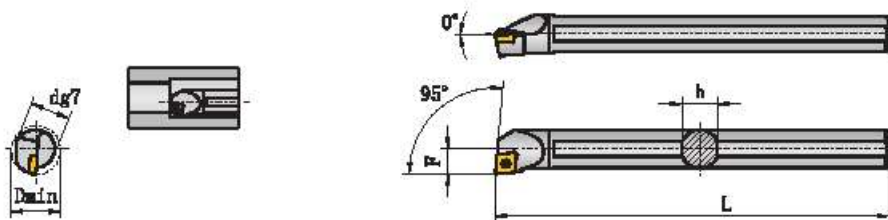
●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order







## B2-5 内孔车削刀具 Internal turning tools SCLCL/R



B

普通车削  
General Turning

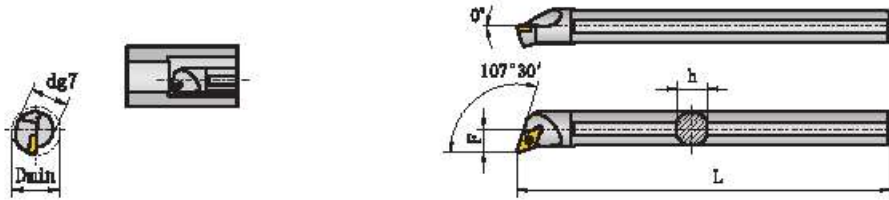
型号 Type	库存 Stock Item		适用刀片 Recommended inserts 	适用条件 Application							配件 Spare Parts			
	R	L		车削加工 Turning							螺丝 Screw 	扳手 Wrench 		
				最小加工直径 Min. turning diameter	Φd	F	L	h	θ°					
S07K	●	●	CC□□0602□□	8	7	5	125	7	15	M2.5×6	T-8			
S08K		●		10	8	5.5	125	7	13					
S08K	●	●		12	8	5	125	15	13					
S08K		-SCLCR/L06-A16		●	12	9	5	125	15			13		
S10K	●	●		13	10	7	125	9	12					
S10K	-SCLCR/L06-A16	●		13	10	8	125	15	12					
S12M	●	●		16	12	5.5	150	11	10					
S12M	-SCLCR/L09	●		18	12	9	160	11	12			M3.5×9	T-16	
S14M	-SCLCR/L09-A16	●		17	14	9	180	19	12					
S16N	●	●		20	16	11	180	15	10					
S20Q	●	●	25	20	13	180	19	8						
S25R		-SCLCR/L09	●	31	25	17	200	24	8					
S32S		●	39	32	22	250	30	4						
S20Q	●	●	CC□□1204□□	25	20	13	180	19	8	M5×12	T-20			
S25R		-SCLCR/L12		●	32	25	17	200	24					8
S32S		●		39	32	22	250	30	8					
S40T		○		50	40	27	300	36	4					

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order



## B2-5 内孔车削刀具 Internal turning tools

### SDQCL/R



型号 Type	库存		适用刀片 Recommended inserts 	适用条件 Application						配件 Spare Parts	
	Stock Item			车削加工、端面加工、仿形加工 Turning, Facing, Profiling						螺丝 Screw 	扳手 Wrench 
	R	L		最小加工直径 Minimum processing diameter	Φd	F	L	h	θ°		
S10K	●	●	DC□□0702□□	19	10	7	125	9	10	M2.5×8	T-8
S12M		●		23	12	9	150	11	8		
S16N		●		27	16	11	180	15	8		
S20Q	●	●	DC□□11T3□□	25	20	13	180	19	6	M3.5×9	T-15
S25R	●	●		32	25	17	200	24	4		
S32S	●	○		40	32	22	250	30	4		
*H10K	●		DC□□0702□□	13	10	7	125	9	10	M2.5×8	T-8
*H12M				16	12	9	160	11	8		
*H16N				20	16	10.5	160	15	6		
*H20Q	●		DC□□11T3□□	25	20	13	180	19	6	M3.5×9	T-15
*H25R				32	25	16	200	24	4		
*H32S				39	32	20	250	30	4		

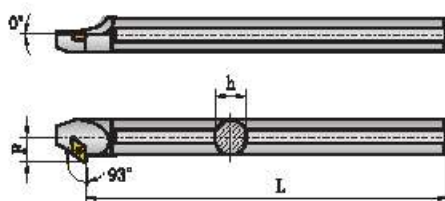
●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order








## B2-5 内孔车削刀具 Internal turning tools

### SDUCL/R



B

普通车削  
General Turning

型号 Type	库存 Stock Item		适用刀片 Recommended inserts 	适用条件 Application 端面、通孔、盲孔加工 Facing, Through hole, Blind hole machining						配件 Spare Parts	
	R	L		最小加工直径 Min. process diameter	Φd	F	L	h	θ°	螺丝 Screw 	扳手 Wrench 
S10K	●	●	DC□□0702□□	15	10	8	125	8	10	M2.5×6	T-8
S12M	●	●		17	12	9	150	11	8		
S16N	●	●		22	16	11	180	15	8		
S20Q	●	●	DC□□11T3□□	25	20	13	180	19	6	M3.5×8	T-15
S25R	●	●		32	25	17	200	24	4		
S32S	●	○		39	32	22	250	30	4		
S40T				50	40	27	300	38	2		
S60U			60	60	31	360	48	0			
H10K			DC□□0702□□	15	10	8	125	8	10	M2.5×6	T-8
H12M				17	12	9	150	11	8		
H16N				22	16	11	180	15	8		
H20Q			DC□□11T3□□	25	20	13	180	19	6	M3.5×8	T-15
H25R				32	25	16	200	24	4		
H32S				39	32	20	250	30	4		
H40T				50	40	24	300	38	2		
H60U			60	60	29	360	48	0			
★C10H			DC□□0702□□	13	10	7	100	9.5	8	M2.5×6	T-8
★C12K				16	12	9	125	11	8		
★C16M				20	16	11	150	15	8		
★C20Q			DC□□11T3□□	25	20	13	180	19	6	M3.5×8	T-15
★C25R				32	25	17	200	24	6		

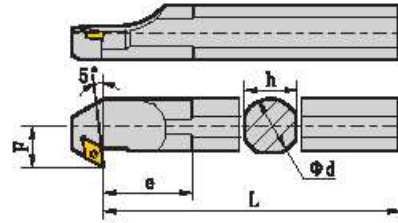
●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order





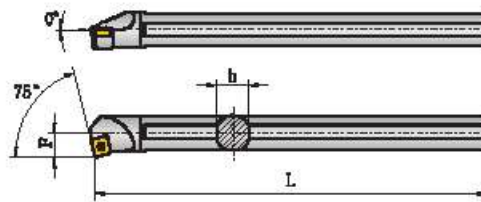
## B2-5 内孔车削刀具 Internal turning tools

### SDZCL/R



型号 Type	库存 Stock item		适用刀片 Recommended inserts 	适用条件 Application 仿形、通孔加工 Profiling, Through hole machining								配件 Spare Parts	
	R	L		通孔加工 Through hole machining								螺丝 Screw 	扳手 Wrench 
				最小加工直径MM Min. processing diameter	$\phi d$	F	L	e	h	$\theta^\circ$			
S10K	●	●	DC□□0702□□	15	10	8.5	125	30	9	12	M2.5×8	T-8	
S12M		●		18	12	10	150	30	11	10			
S16N		●		24	16	13	180	30	15	8			
S20Q	●	●	DC□□11T3□□	28	20	15	180	40	19	8	M3.5×9	T-16	
S25R		●		34	25	18	200	45	24	6			
S32S		●		○	38	32	22	250	50	30			4
*H10K	●		DC□□0702□□	15	10	8.5	125	30	9	12	M2.5×8	T-8	
*H12M				18	12	9.5	160	30	11	10			
*H16N				24	16	11.5	180	30	15	8			
*H20Q	●		DC□□11T3□□	28	20	14.5	180	40	19	8	M3.5×9	T-16	
*H25R				34	25	17	200	45	24	6			

### SSKCL/R



型号 Type	库存 Stock item		适用刀片 Recommended inserts 	适用条件 Application 通孔加工 Through hole machining						配件 Spare Parts	
	R	L		通孔加工 Through hole machining						螺丝 Screw 	扳手 Wrench 
				最小加工直径MM Min. processing diameter	$\phi d$	F	L	h	$\theta^\circ$		
S12M	●	○	SC□□09T3□□	16	12	8.5	150	11	12	M3.5×9	T-15
S16N		○		20	16	11	180	15	10		
S20Q		○		24	20	13	180	19	8		
S25R		○		31	25	17	200	24	6		
S12M	●		SP□□0903□□	16	12	8.5	150	11	8		
S16N				20	16	11	180	15	6		

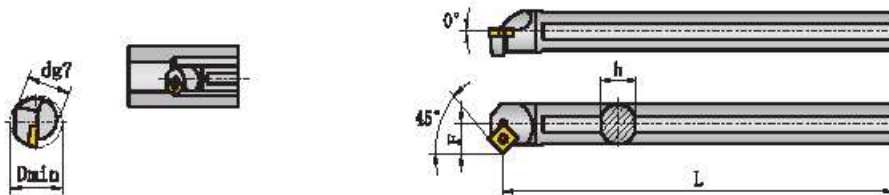
●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order





## B2-5 内孔车削刀具 Internal turning tools

### SSSCR/L



B  
普通车削  
General Turning

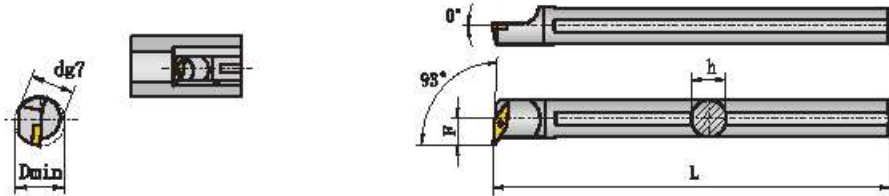
型号 Type	库存		适用刀片 Recommended inserts 	适用条件 Application						配件 Spare Parts			
	Stock Item			通孔加工, 倒角 Through hole machining, Chamfering						螺丝 Screw 	扳手 Wrench 		
	R	L		最小切削深度 Min. cutting depth	$\phi d$	F	L	h	$\alpha^\circ$				
S12M	●	●	SC□□09T3□□	16	12	8.5	150	11	12	M3.5×9	T-15		
S16N	●	●		22	16	11.5	180	15	10				
S20Q	●	○		28	20	13.5	180	19	8				
S25R	○	○		31	25	17	200	24	6				
S32S	○	○		38	32	22	250	30	4				
*H12M			SSSCR/L09	16	12	8.5	150	11	12			M3.5×9	T-15
*H16N				22	16	11.5	180	15	10				
*H20Q				28	20	13.5	180	19	8				
*H25R				31	25	16	200	24	6				
*H32S				38	32	19.5	250	30	4				
S12M			SP□□09T3□□	16	12	9	150	11	8	M3.5×9	T-15		
S16N				20	16	11	180	15	6				
S20Q				24	20	13	180	19	4				
S25R				32	25	17	200	24	4				
S32S				40	32	22	250	30	0				

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order



## B2-5 内孔车削刀具 Internal turning tools

### SVU□L/R



型号 Type	库存 Stock Item	适用刀片 Recommended Inserts	适用条件 Application							配件 Spare Parts	
			仿形加工 Profiling							螺丝 Screw	扳手 Wrench
			最小加工直径 Min. processing diameter	Φd	F	L	h	θ°			
S18N S20Q	-SVJBR/L11	● ●	VB□□1103□□	22	16	11.5	160	15	10	M2.5×8	T-8
S20Q	● ●		27	20	14	180	19	8			
S20Q S25R S32S S40T S50U	-SVJBR/L16	● ● ● ○ ○ ○	VB□□1604□□	31	20	19	180	19	8	M3.5×9	T-15
S25R	● ○		35	25	20	200	24	6			
S32S	○ ○		42	32	22.5	250	30	8			
S40T			51	40	27	300	38	6			
S50U			60	50	32	350	48	4			
*H16N *H20Q	-SVJBR/L11B		VB□□1103□□	22	16	11.5	160	15	10	M2.5×8	T-8
*H20Q				27	20	14	180	19	8		

型号 Type	库存 Stock Item	适用刀片 Recommended Inserts	适用条件 Application							配件 Spare Parts	
			通孔加工, 倒角 Through hole machining, Chamfering							螺丝 Screw	扳手 Wrench
			最小加工直径 Min. processing diameter	Φd	F	L	h	θ°			
S16N S20Q	-SVJCR/L11	● ●	VC□□1103□□	22	16	11.5	160	15	10	M2.5×8	T-8
S20Q	● ●		27	20	14	180	19	8			
S20Q S25R S32S S40T S60U	-SVJCR/L16	● ● ● ● ● ● ○	VC□□1604□□	31	20	14	180	19	8	M3.5×9	T-15
S25R	● ●		35	25	17	200	24	6			
S32S	● ●		42	32	22.5	250	30	8			
S40T	○		51	40	27	300	38	6			
S60U			60	50	32	350	48	4			
*H20Q *H25R *H32S *H40T *H60U	-SVJCR/L16B		VC□□1604□□	31	20	19	180	19	8	M3.5×9	T-15
*H25R			35	25	20	200	24	6			
*H32S			42	32	22.5	250	30	8			
*H40T			51	40	27	300	38	6			
*H60U			60	50	32	350	48	4			

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order

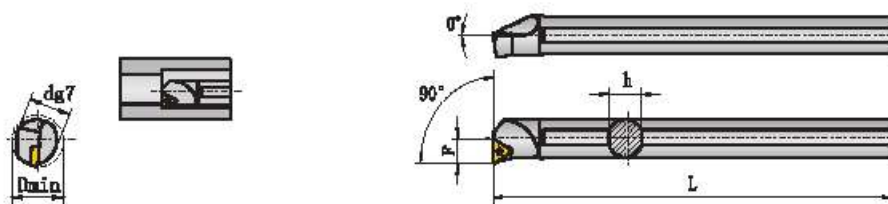






## B2-5 内孔车削刀具 Internal turning tools

### STFCL/R



B

普通车削  
General Turning

型号 Type	库存 Stock Item		适用刀片 Recommended Inserts	适用条件 Application							配件 Spare Parts		
	R	L		端面、通孔、盲孔加工 Facing, Through hole, Blind hole machining							螺丝 Screw	扳手 Wrench	
				最小加工直径 Min. processing diameter	$\phi d$	F	L	h	$\theta^\circ$				
S06K	●	●	TC□□09K2□□	11	8	6	125	7	15	M2.5×6	T-8		
S10K	●	●		13	10	7	125	9	13				
S12M	●	●		16	12	8.5	150	11	10				
S10K	●	●	TC□□11G2□□	13	10	7	125	9	12			M3.5×9	T-15
S12M	●	●		16	12	8.5	150	11	10				
S16N	●	●		20	16	11	180	15	8				
S20Q	●	●		25	20	13	180	19	8				
S20Q	●	●	TC□□16T3□□	25	20	13	180	19	8	M3.5×9	T-15		
S25R	●	●		31	25	17	200	24	8				
S32S	●	●		39	32	22	250	30	4				
S40T	●	●		50	40	27	300	38	2				
S50U	○			60	50	31	350	48	0				

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order







## C 切断 (切槽) Parting and grooving

<b>C1</b>	切断切槽刀片材质 Parting and grooving blade material	146
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<b>C3</b>	切槽刀刀具 Grooving tools	153






## C1 切断切槽刀片材质 Parting and grooving blade materials

**P** 钢加工 Process on steel

牌号 Grade	ISO分类 ISO classification	表面颜色 Surface color	应用推荐 Applications Recommended
BPS253	P20(P15-P30)	黄 Yellow 	梯度合金基体涂覆厚膜耐磨CVD牌号。通用性广的牌号。 适于钢和铸钢件上的精加工到粗加工的连续切削以及间断切削。不锈钢材料连续切削和间断切削。 CVD coated carbide grade, Universal grade, suitable for steel and cast steel continuous cutting and interrupted cutting finishing to roughing. Grades with a wide range of applications. Stainless steel continuous cutting and interrupted cutting.
BPS373	P30(P25-P40)	黄 Yellow 	CVD涂层硬质合金牌号，高强度合金基体上厚膜耐磨涂层。在恶劣工况下加工钢和铸钢件。 刃线安全性，用于高金属去除率的间断切削。 CVD coated carbide grade, high-strength alloy substrate with thick wear-resistant coating. Machining steel and cast steel in bad conditions. Edge line security for interrupted cutting high metal removal rate.
BPG20B	M25(M10-M30)	青灰 Cyan-blue gray dark 	PVD涂层微晶粒硬质合金。使用中等到低切削速度，进行各种不锈钢的精加工。需要出色的刃口强度和高表面质量时，可提供完美的平顺切削。很高的耐热冲击性能。 适用于轻型间断切削。 PVD coated micro-grain carbide. Use for a variety of stainless steel finishing at medium to low cutting speed. When need excellent edge strength and high surface quality, provide the perfect ride cutting. A high thermal shock resistance. Suitable for light interrupted cuts.
BPG30B	M35(M25-M40)	青灰 Cyan-blue gray dark 	PVD涂层硬质合金。用于以低至中等切削速度进行奥氏体不锈钢和双相不锈钢的半精加工到粗加工。很高的耐热冲击性能。非常适合快速间断切削。 PVD coated carbide. For austenitic stainless steels and duplex stainless steel semi-finishing to roughing at low to medium cutting speed. High thermal shock resistance. Ideal for quickly interrupted cutting.

C 切断切槽  
Parting Grooving

**M** 不锈钢加工 Process on stainless steel

牌号 Grade	ISO分类 ISO classification	表面颜色 Surface color	应用推荐 Applications Recommended
BPG05B	M10(M05-M15)	青灰 Cyan-blue gray dark 	具有很高的热硬度和良好的抗塑性变形能力，适用于高速切削条件下，奥氏体不锈钢、淬硬钢、碳钢的精加工。 With high hot hardness and good resistance to plastic deformation. Suitable for high speed cutting and finishing process of austenitic stainless steel, quenched steel and carbon steel
BPG20B	M25(M10-M30)	青灰 Cyan-blue gray dark 	PVD涂层微晶粒硬质合金。使用中等到低切削速度，进行各种不锈钢的精加工。需要出色的刃口强度和高表面质量时，可提供完美的平顺切削。很高的耐热冲击性能。 适用于轻型间断切削。 PVD coated micro-grain carbide. Use for a variety of stainless steel finishing at medium to low cutting speed. When need excellent edge strength and high surface quality, provide the perfect ride cutting. A high thermal shock resistance. Suitable for light interrupted cuts.
BPG30B	M35(M25-M40)	青灰 Cyan-blue gray dark 	PVD涂层硬质合金。用于以低至中等切削速度进行奥氏体不锈钢和双相不锈钢的半精加工到粗加工。很高的耐热冲击性能。非常适合快速间断切削。 PVD coated carbide. For austenitic stainless steels and duplex stainless steel semi-finishing to roughing at low to medium cutting speed. High thermal shock resistance. Ideal for quickly interrupted cutting.








## C1 切断切槽刀片材质 Parting and grooving blade materials



### K 铸铁加工 Process on cast iron

牌号 Grade	ISO分类 ISO classification	表面颜色 Surface color	应用推荐 Applications Recommended
BPS253	K25 (K10-K30)	黄 Yellow 	梯度合金基体涂覆厚膜耐磨CVD牌号。通用性广的牌号。 适于钢和铸钢件上的精加工到粗加工的连续切削以及间断切削。不锈钢材料连续切削和间断切削。 CVD coated carbide grade, Universal grade, suitable for steel and cast steel continuous cutting and interrupted cutting finishing to roughing. Grades with a wide range of applications. Stainless steel continuous cutting and interrupted cutting.

### N 有色金属加工 Process on Non-ferrous metals

牌号 Grade	ISO分类 ISO classification	表面颜色 Surface color	应用推荐 Applications Recommended
BU810	N10 (N05-N15)		非涂层硬质合金牌号，有良好的切削刃锋利性。推荐用于铝切削和断续切削。 Uncoated carbide grade, with good sharpness, best used for aluminum cutting process and aluminum interrupted cutting process.
BK10	N10 (N10-N20)		<b>耐磨性高，使用强度较好，适用于加工冷硬合金铸铁与耐热合金钢，及普通铸铁加工。</b> <b>High wear resistance, the use of high strength, suitable for machining of chilled alloy cast iron and steel, and ordinary cast iron processing.</b>
BPG05B	N05 (N05-N10)	青灰 Cyan-blue gray dark 	PVD涂层硬质合金牌号，用于车削典型预硬化和塑料模具钢，加工硬度为HRC36及其以上； PVD coated carbide grade for milling typical hardened steel and plastic mold steel, processing hardness above HRC36.

### S 耐热合金加工 Heat Resistant alloys

牌号 Grade	ISO分类 ISO classification	表面颜色 Surface color	应用推荐 Applications Recommended
BPG118	S05-S15	紫黄 Purple yellow 	PVD含硅涂层硬质合金牌号，用于湿工况下灰口铸铁和球墨铸铁的中到粗加工铣削。 在中等到高切削速度下，具有可预期刀具寿命。 CVD coated carbide grade for gray cast iron and ductile cast iron semi-finishing to roughing milling, mainly used in dry conditions. Under low to medium cutting speed the cutting tools can have a long tool life.
BPG218	S15(S15-S30)	紫黄 Purple yellow 	PVD涂层硬质合金牌号，具有良好的抗积屑瘤和抗塑性变形能力。 用于不稳定工况，如长切削刃、切屑堵塞、深台肩和立铣、长悬伸、车铣工序等； 不锈钢的轻型铣削；结合周边磨削刀片，用于粘性和加工硬化材料；耐热优质合金的中等速度铣削； 淬硬零件的低进给和中速铣削。 PVD coated carbide grade have good ability to avoid built-up edge and good resistance to plastic deformation capacity. For unstable conditions, such as long cutting edge, clogging, deep shoulder milling, long overhang, milling processes. Light milling of stainless steel; combine grinding blade for viscous and hardening materials; moderate speed milling of heat resistant alloys; hardened parts milling at low feed and medium-speed.





## C2 切槽刀 Parting and grooving tools

刀片基本形状 The basic shape of inserts		型号 Type		基本尺寸 Dimension (mm)					材质推荐 Grade recommended						
									CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade	
				B	R	L	D/a	S	BP3233	BP3371	BP335B	BP320B	BP330B	BU810	BU820
		MGMN	200-LH	2	0.2	16	1.5	3.5			★			★	
			300-LH	3	0.2	20	2.35	4.8			★			★	
			400-LH	4	0.3	21	3.3	4.8			★			★	
			500-LH	5	0.3	25.86	4.12	5.8			★			★	
			600-LH	6	0.4	26	5	5.8			★			★	
		MGMN	200-L	2	0.2	16	1.2	3.5	★			★			
			250-L	2.5	0.2	18.4	1.6	3.5	★			★			
			300-L	3	0.2	20	2.35	4.8	★			★			
			400-L	4	0.3	21	3.3	4.8	★			★			
			500-L	5	0.3	26	4.1	5.8	★			★			
		MGMN	200-H	2	0.2	16	1.2	3.5	★			★			
			250-H	2.5	0.2	18.4	2	3.85	★			★			
			300-H	3	0.2	20	2.35	4.8	★			★			
			400-H	4	0.3	21	3.3	4.8	★			★			
			500-H	5	0.3	26	4.1	5.8	★			★			
		MGMN	200-6D	2	0.2	16	6	3.5	★			★			
			250-6D	2.5	0.2	18.2	6	3.85	★			★			
			300-6D	3	0.4	21	6	4.8	★			★			
			400-6D	4	0.4	21	6	4.8	★			★			
			500-6D	5	0.4	26	6	5.8	★			★			
		MGMN	200-30D	2	0.2	16	30	3.5	★			★			
			250-30D	2.5	0.2	18.2	30	3.85	★			★			
			300-30D	3	0.4	21	30	4.8	★			★			
			400-30D	4	0.4	21	30	4.8	★			★			
			500-30D	5	0.4	26	30	5.8	★			★			





## C2 切槽刀 Parting and grooving tools

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended									
							CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade		
		B	R	L	D	S	BPC122	BPS321	BPS411	BPG108	BPG169	BPG208	BPG256	BPG308	BK10	BU810
	GR/LIP300-M	3	0.30	19	2.1	5.4									☆	★
	GR/LIP400-M	4	0.40	18.93	2.85	5.85	★	☆		★	★	★	☆			
	GR/LIP500-M	5	0.40	19	3.4	5.75		☆	★	☆		★	★	☆		

提供模块式刀杆系统 详见: P152

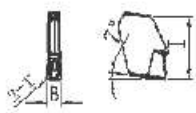
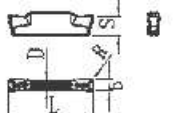
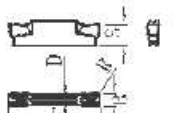
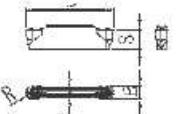
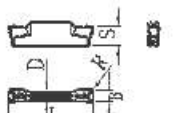
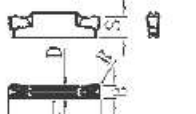
刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended								
							CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade			
		B	R	L	D	S	BPS253	BPS371	BPG208	BPU226	BPG308	BU810	BU820	BP35	
	TDJ2	2	0.2	20	1.7	3.9	★		★						
	TDJ3	3	0.2	20	2.4	4	★		★						
	TDJ4	4	0.3	19.76	3	4.05	★		★						
	TDJ5	5	0.3	25	4	4.89	☆		☆						
	TDC2	2	0.2	20	1.7	3.84	★		★						
	TDC3	3	0.2	20	2.4	4	★		★						
	TDC4	4	0.3	20	3	4.03	★		★						
	TDC5	5	0.3	25	4	4.89	★		★						
	TDT2	2	0.2	20	1.7	3.9	★		★						
	TDT3	3	0.2	20	2.4	4	★		★						
	TDT4	4	0.3	19.76	3	4.05	★		★						
	TDT5	5	0.3	25	4	4.89	☆		☆						

★ 主推荐牌号 Recommended grade ☆ 可选牌号 Optional grade





## C2 切槽刀 Parting and grooving tools

刀片基本形状 The basic shape of inserts		型号 Type		基本尺寸 Dimension (mm)					材质推荐 Grade recommended						
									CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade	
				B	R	L	D	S	BP3233	BP3371	BP320B	BP1206	BP3308	BU810	BU820
	BP	200	2.2	9.3	0.2			★		★					
		300	3.1	11.3	0.2			★		★					
		400	4.1	11.3	0.25			★		★					
		500	5.1	11.4	0.3			★		★					
	MGMN	200-M	2	0.2	16	1.2	3.5	★		★					
		250-M	2.5	0.2	18.5	2	3.85	★		★					
		300-M	3	0.4	21	2.35	4.8	★		★					
		400-M	4	0.4	21	3.3	4.8	★		★					
		500-M	5	0.8	26	4.1	5.8	★		★					
		600-M	6	0.8	26	5	5.8	★		★					
	MGMN	150-G	1.5	0.15	16	1.2	3.5	★		★					
		200-G	2	0.2	16	1.6	3.5	★		★					
		300-G	3	0.4	21	2.35	4.8	★		★					
		400-G	4	0.4	21	3.3	4.8	★		★					
	MRMN	200-M	2	1	16	1.5	3.5	★		★					
		300-M	3	1.5	21	2.35	4.8	★		★					
		400-M	4	2	21	3.3	4.8	★		★					
		500-M	5	2.5	25.86	4.12	5.8	★		★					
		600-M	6	3	26	5	5.8	★		★					
	MGGN	200-M	2	0.2	16	1.5	3.5	★		★					
		300-M	3	0.4	21	2.35	4.8	★		★					
		400-M	4	0.4	21	3.3	4.8	★		★					
		500-M	5	0.8	25.86	4.12	5.8	★		★					
		600-M	6	0.8	26	5	5.8	★		★					
	MGGN	150-G	1.5	0.15	16	1.2	3.5	★		★					
		200-G	2	0.2	16	1.6	3.5	★		★					
		300-G	3	0.4	21	2.35	4.8	★		★					
		400-G	4	0.4	21	3.3	4.8	★		★					

C 切槽切槽  
Parting Grooving





## C2 切槽刀 Parting and grooving tools

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended								
							CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
		B	R	L	D	S	BP3233	BP3371	BP320B	BP1206	BP3308	BU810	BU820	BP35	
	N123E2-0200-0004-BGF	2	0.4	20.6	1.63	4.44	★		★						
	N123E2-0260-0008-BGF	2.6	0.8	20.7	2	4.52	★		★						
	N123G2-0318-0008-GF	3.18	0.8	20.7	2.31	4.52	★		★						
	N123J2-0500-0004-BTF	5	0.4	25.2	4.3	4.6	★		★						
	DGN2202J	2.2	0.2	19.8	1.9	-	★		★						
	DGR_L2202J	2.2	0.2	20.8	1.84	-	★		★						
	DGR/L2202J-6D	2.2	0.2	20.6	1.84	6	★		★						
	DGR/L2200JS-6D	2.2	0.02	20.3	1.84	6	★		★						
	DGR/L2200JS-15D	2.2	0.02	20.3	1.84	15	★		★						
	DGN3102C	3.1	0.2	20	2.4	-	★		★						





## C2 切槽刀 Parting and grooving tools

C 切  
断  
切  
槽  
Parting  
Grooving

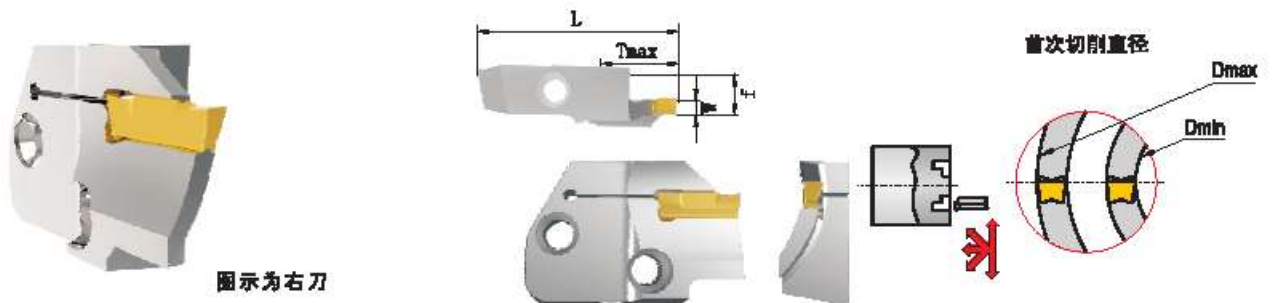
刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)							材质推荐 Grade recommended							
		Φ I.C	S	Φ d	B	W	R/C	CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade		非涂层牌号 Uncoated grade				
								BPS263	BPS371	BPG208	BPU206	BPG308	BU810	BU820	BP35	
	TGF32R/L	-033-005	9.525	3.18	4.4	0.8	0.33	0.05			★			★		
		-050-005	9.525	3.18	4.4	1.2	0.50	0.05			★			★		
		-065-010	9.525	3.18	4.4	2.0	0.65	0.10			★			★		
		-075-010	9.525	3.18	4.4	2.0	0.75	0.10			★			★		
		-100-010	9.525	3.18	4.4	2.0	1.00	0.10			★			★		
		-120-010	9.525	3.18	4.4	2.0	1.20	0.10			★			★		
		-125-010	9.525	3.18	4.4	2.0	1.25	0.10			★			★		
		-150-010	9.525	3.18	4.4	2.0	1.50	0.10			★			★		
		-175-010	9.525	3.18	4.4	2.0	1.75	0.10			★			★		
-200-010	9.525	3.18	4.4	2.0	2.00	0.10			★			★				
	TGF32R/L	-075-C010	9.525	3.18	4.4	2.0	0.75	C0.1			★			★		
		-100-C010	9.525	3.18	4.4	2.0	1.00	C0.1			★			★		
		-120-C010	9.525	3.18	4.4	2.0	1.20	C0.1			★			★		
		-125-C010	9.525	3.18	4.4	2.0	1.25	C0.1			★			★		
		-150-C010	9.525	3.18	4.4	2.0	1.50	C0.1			★			★		
		-175-C010	9.525	3.18	4.4	2.0	1.75	C0.1			★			★		
		-200-C010	9.525	3.18	4.4	2.0	2.00	C0.1			★			★		

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)										材质推荐 Grade recommended					
		最大切削直径	S	W	D	H	α	k	R	CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade		非涂层牌号 Uncoated grade			
										BPS263	BPS371	BPG208	BPU206	BPG308	BU810	BU820	
	KGF12R/L	-050-15-00	5	3.0	0.50	4.4	8.0	15	0	0.05			★			☆	
		-070-15-00	8	3.0	0.70	4.4	8.0	15	0	0.05			★			☆	
		-100-15-00	12	3.0	1.00	4.4	8.0	15	0	0.05			★			☆	
		-125-15-00		3.0	1.25	4.4	8.0	15	0	0.05			★			☆	
		-150-15-00		3.0	1.50	4.4	8.0	15	0	0.05			★			☆	
		-175-15-00		3.0	1.75	4.4	8.0	15	0	0.05			★			☆	
-200-15-00	3.0	2.00	4.4	8.0	15	0	0.05			★			☆				
	KGF12R/L	-050-15-08	5	3.0	0.50	4.4	8.0	15	8	0.05			★			☆	
		-070-15-08	8	3.0	0.70	4.4	8.0	15	8	0.05			★			☆	
		-100-15-08		3.0	1.00	4.4	8.0	15	8	0.05			★			☆	
		-125-15-08	12	3.0	1.25	4.4	8.0	15	8	0.05			★			☆	
		-150-15-08		3.0	1.50	4.4	8.0	15	8	0.05			★			☆	
		-175-15-08		3.0	1.75	4.4	8.0	15	8	0.05			★			☆	
		-200-15-08		3.0	2.00	4.4	8.0	15	8	0.05			★			☆	

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended								
							CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade	
		B	R	L	D	S	BP12Z	BPS321	BPS411	BPG108	BPG05B	BPG20B	BPG30B	BK10	BU810
	GR/LIP300-M	3	0.30	19	2.1	5.4								☆	★
	GR/LIP400-M	4	0.40	18.93	2.85	5.85	★	☆		★	★	★	☆		
	GR/LIP500-M	5	0.40	19	3.4	5.75		☆	★	☆		★	★	☆	

加工用途		BPS321	BPS411	BPG05B	BPG20B	BPG30A	BU810
	P:钢	★	★	★	★	☆	
	M:不锈钢		☆	★	★	★	
	K:铸铁		★		☆		★
N:有色金属							★

★ 主推牌号 ★ Recommended grade and always stock available ☆ 按单生产 ☆ Recommended grade and produce according to order



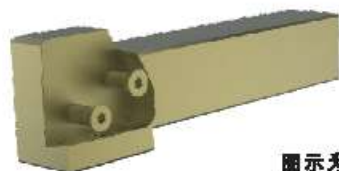
端面切槽刀头 左刀	尺寸					配件 刀片	适合刀体
	W	Tmax	L	Dmin~Dmax	F		
GDIR/L300025-12BG		12	48	25~30			
GDIR/L300030-12BG		12	48	30~40			
GDIR/L300040-12BG	3	12	48	40~65	10.3	GRIP300...	GDXL/R GDYL/R
GDIR/L300065-20BG		20	56	65~115			
GDIR/L300115-20BG		20	56	115~400			
GDIR/L400025-12BG		12	48	25~31			
GDIR/L400031-12BG		12	48	31~44			
GDIR/L400044-16BG	4	16	52	44~58	10.4	GRIP400...	GDXL/R GDYL/R
GDIR/L400058-16BG		16	52	58~88			
GDIR/L400088-16BG		16	52	88~175			
GDIR/L400175-22BG		22	58	175~800			
GDIR/L500040-16BG	5	16	52	40~50	10.5	GRIP500...	GDXL/R GDYL/R
GDIR/L500050-16BG		16	52	50~75			
GDIR/L500075-16BG		16	52	75~110			
GDIR/L500110-16BG		16	52	110~200			
GDIR/L500200-22BG		22	58	200~800			



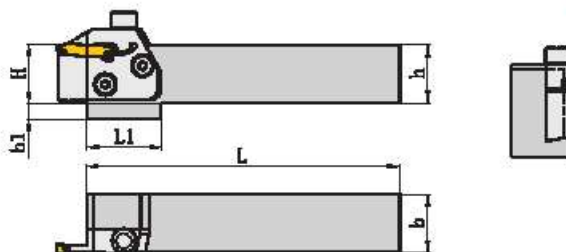
## 模块式切槽刀

纵向型刀体 (0°)

产品扩展  
2015

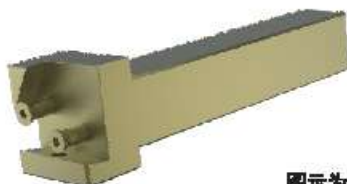


图示为右刀

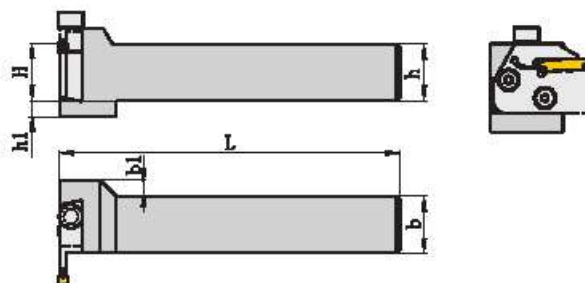


型号		尺寸						螺钉	扳手	适合刀头
左刀	右刀	h	b	H	L	L1	h1			
GDXL2020K	GDXR2020K	20	20	20	110	32	12	SIC060160	LT25	GD1L/R GDAL/R
GDXL2525M	GDXR2525M	25	25	25	135	32	7			
GDXL3225P	GDXR3225P	32	25	32	155	32	-			
GDXL3232P	GDXR3232P	32	32	32	155	32	-			
GDXL4040R	GDXR4040R	40	40	40	185	32	-			

横向型刀体 (90°)



图示为右刀



型号		尺寸						螺钉	扳手	适合刀头
左刀	右刀	h	b	H	L	b1	h1			
GDYL2020K	GDYR2020K	20	20	20	125	12	12	SIC060160	LT25	GD1L/R GDAL/R
GDYL2525M	GDYR2525M	25	25	25	150	7	7			
GDYL3225P	GDYR3225P	32	25	32	170	-	-			
GDYL3232P	GDYR3232P	32	32	32	170	-	-			
GDYL4040R	GDYR4040R	40	40	40	200	-	-			

备注: 横向型刀体与刀头左右相反, 如左刀刀体GDYL... 使用右刀刀头GDOR

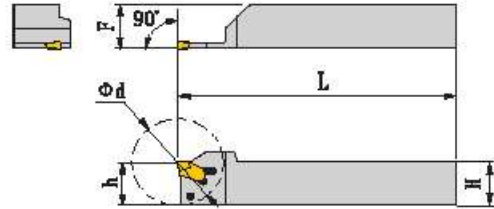
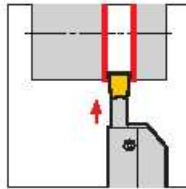
- ▶ 供货详情: 基本刀体均配有附件不包括刀头及刀片
- ▶ 订货示例: GDYL4040R 1件
- ▶ 刀头及刀片需单独订购





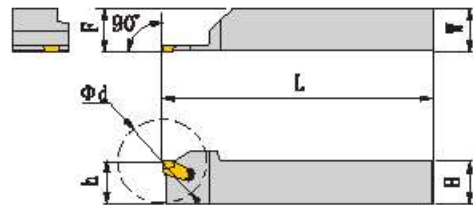
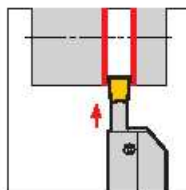
### C3 切槽刀刀具 Grooving tools

#### ZQ



型号 Type	库存		适用刀片 Recommended inserts	适用条件 Application						配件 Parts		
	Stock Item			外切槽、切断 External Grooving, Parting off						螺丝 Screw	扳手 Wrench	
	R	L		$\Phi d$	H	F	L	h	$\alpha^\circ$			
ZQ	1616R/L-03	●	●	BP300	30	18	16	100	16	18.3	M3.5×8	T-16
	2020R/L-03	●	●		38	20	20	125	20	20.3		
	2525R/L-03	●	●		38	25	25	150	25	25.3		
	2020R/L-04	●	●	BP400	38	20	20	125	20	20.4		
	2525R/L-04	●	●		38	25	25	150	25	25.4		

#### SPH



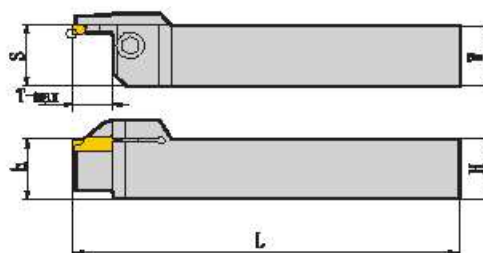
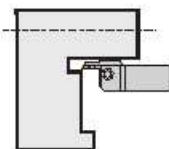
型号 Type	库存		适用刀片 Recommended inserts	适用条件 Application					配件 Parts	
	Stock Item			切断 Parting off					扳手 Wrench	
	R	L		H(h)	W	L	$\Phi d$	F(max)		
SPH	316R/L			BP300,300R/L	16	16	100	32	16.3	L5.0
	320R/L			BP300,300R/L	20	20	120	40	20.3	
	420R/L			BP400,400R/L	20	20	120	50	20.4	
	520R/L			BP500,500R/L	20	20	120	60	20.5	
	325R/L			BP300,300R/L	25	25	150	50	25.3	
	425R/L			BP400,400R/L	25	25	150	60	25.4	
	525R/L			BP500,500R/L	25	25	150	70	25.5	




●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order





### 03 切槽刀刀具 Grooving tools

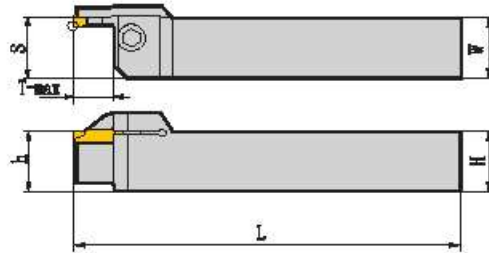
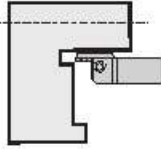


型号 Type	库存		通用刀片 Recommended inserts 	适用条件 Application					配件 Parts	
	Stock Item			外切槽、车削加工 External Grooving, Turning					螺丝 Screw 	扳手 Wrench 
	R	L		H=h	W	L	S	T(max)		
1616-1.5	○		MGMN150-G	16	16	100	16.25	14.5	LTX0512	L2.0
2020-1.5	○			20	20	125	20.25	14.5		
2525-1.5	○			25	25	150	25.25	14.5		
1212-2.0			MGMN200-G	12	12	100	14.25	14.5	BHA0616	L5.0
1616-2.0	○	○		16	16	100	16.25	14.5		
2020-2.0	○	○		20	20	125	20.25	14.5		
2525-2.0	○	○		25	25	150	25.25	14.5		
1616-2.5	○	○	MGMN250-G	16	16	100	16.3	16.5	MHA0512	L4.0
2020-2.5	○	○		20	20	125	20.3	16.5		
2525-2.5	○	○		25	25	150	25.3	16.5		
1616-3.0	●	●	MGMN300-M MRMN300-M	16	16	100	16.35	16.5	BHA0616	L5.0
2020-3.0	●	●		20	20	125	20.4	18		
2020-3.0-T10	●			20	20	125	20.4	10		
2525-3.0	●	●		25	25	150	25.4	18		
2525-3.0-T10	●			25	25	150	25.4	10		
3232-3.0	●	●		32	32	170	32.4	18		
3232-3.0-T10			32	32	170	32.4	10			
2020-4.0	●	●	MGMN400-M MRMN400-M	20	20	125	20.4	18	BHA0616	L5.0
2020-4.0-T10	●			20	20	125	20.5	10		
2525-4.0	●	●		25	25	150	25.4	18		
2525-4.0-T10	●	●		25	25	160	25.4	10		
3232-4.0	●	●		32	32	170	32.4	18		
3232-4.0-T10				32	32	170	32.4	10		
2020-5	○	○	MGMN500-M MRMN500-M	20	20	160	20.5	23		
2020-5-T15				20	20	150	20.5	15		
2525-5	○	○		25	25	160	25.5	23		
2525-5-T15				25	25	150	25.5	15		
3232-5	○	○		32	32	170	32.5	23		
3232-5-T15				32	32	170	32.5	16		

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order



### 03 切槽刀刀具 Grooving tools

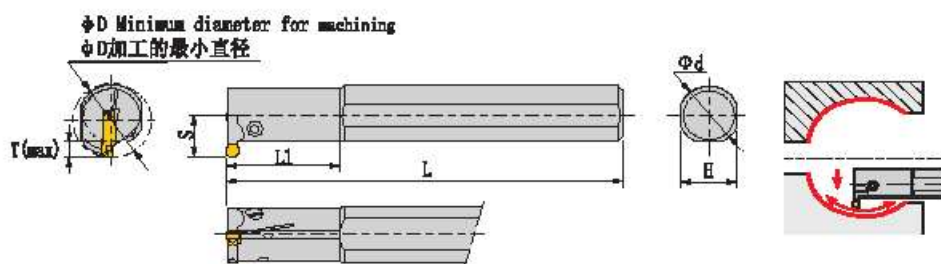


型号 Type	库存		适用刀片 Recommended Inserts 	适用条件 Application					配件 Parts	
	Stock Item			外切槽、车削加工 External Grooving, Turning					螺丝 Screw 	扳手 Wrench 
	R	L		H(h)	W	L	S	T(max)		
2020 -6	○	○	MGMN600-M MRMN600-M	20	20	125	20.6	23	BHA0816	L5.0
2020 -6-T15				20	20	125	20.6	15		
2525 -6				25	25	150	25.6	23		
2525 -6-T15				25	25	150	25.6	15		
3232 -6				32	32	170	32.6	23		
3232 -6-T15				32	32	170	32.6	15		
2525 -6			MRMN600-M	25	25	150	26.1	28		
2525 -6-T16				26	26	160	26.1	15		
3232 -6				32	32	170	33.1	28		
3232 -6-T15				32	32	170	33.1	16		
2525 -6A			MRGN600-A	25	25	150	25.6	23		
2525 -6A-T15				25	25	150	25.6	15		
3232 -6A				32	32	170	32.6	23		
3232 -6A-T15				32	32	170	32.6	15		
2525 -6A			MNGN600-A	25	25	150	26.1	28		
2525 -6A-T15				26	26	160	26.1	16		
3232 -6A				32	32	170	33.1	28		
3232 -6A-T15				32	32	170	33.1	16		

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order



### 03 切槽刀刀具 Grooving tools



型号 Type	库存		通用刀片 Recommended inserts	适用条件 Application								配件 Parts	
	R	L		内槽加工、车削加工 Internal Grooving, Turning								螺丝 Screw	扳手 Wrench
				$\phi D$	$\phi d$	L	L1	T(max)	H	S			
2020-1.5	○		MGMN150-G	20	16	125	35	4	15	11.3	MH30310	L2.5	
2525-1.5	○			25	20	150	45	4	18	13.1			
3025-1.5				29	25	200	45	4	23	16.2			
2016-2.0	○		MGMN200-G	20	16	125	35	5	15	12.4	MH30310	L2.5	
2520-2.0	○			25	20	150	45	5	18	14			
2825-2.0	○			29	25	200	45	5	23	17.2			
2016-2.5			MGMN260-G	20	16	125	35	6	15	12.5	MH30310	L2.5	
2520-2.5	○			25	20	160	45	6	18	15.1			
2825-2.5	○			29	25	200	45	6	23	18.2			
2520-3.0	●	●	MGMN300-M MRMN300-M	25	20	150	45	6	18	15.6	MHA0512	L4.0	
3125-3.0	●	●		31	25	200	45	6	25	18.9			
3732-3.0	●	●		37	32	250	65	6	30	21.5			
2520-4.0	●	●	MGMN400-M MRMN400-M	25	20	160	45	6	18	15.6			
3125-4.0	●			31	25	200	45	6	23	18.9			
3732-4.0	●			37	32	250	65	6	30	21.5			
3125-5	○		MGMN500-M MRMN500-M	31	25	200	45	6	25	19.5			
3732-5	○			37	32	250	65	6	30	21.5			
3125-6			MGMN600-M MRMN600-M	31	25	200	45	6	23	18.4			
3732-6				37	32	250	65	6	30	21.5			
3732-8			MRMN800-M	37	32	250	65	10	30	23.4			
3540-8				45	40	300	70	10	37	27.2			
3125-8A			MRGN600-A	31	25	200	45	6	23	18.4			
3732-8A				37	32	250	65	6	30	21.5			
3732-8A			MRGN800-A	37	32	250	65	10	30	23.4			
4540-8A				45	40	300	70	10	37	27.2			

●库存 stock item    ○准库存 be preparing for stock    其余订货 the others can be made to order


















































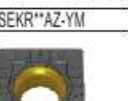








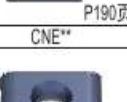
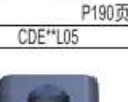
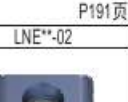
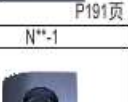
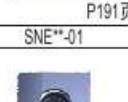

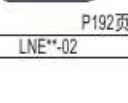
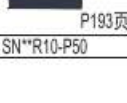
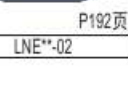
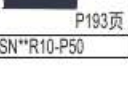
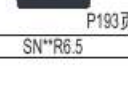
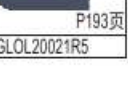









## D 铣削 Milling

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# D1 铣削刀片一览表 List of milling inserts

面铣刀片 Inserts for face milling	 P168页	 P168页	 P171页				
	<b>TEHW10T3*</b>	SEKT1204AZFN-*	SEKT13T3AEFN-*				
	 P174页	 P174页	 P174页	 P174页	 P175页	 P175页	 P176页
	RPMW**MOE	RDMT**MO-V1	RPMT**MOE-BJS	RCHT**MO-SM	LNKX**PN-**	TMRL**WM	CDE**
	 P177页	 P177页	 P177页	 P177页	 P178页	 P178页	 P178页
	TPCW**PDR/L	TPMR**	TPMR**3	TPKR**PDR	TPKN**PPR/L	TPKN**PPR/L-D2	TPKN**PDR-SU
	 P179页	 P179页	 P179页	 P180页	 P180页	 P180页	 P181页
	TPKN**PDR-3	TPAN**PPN	TPAN**PPN-D2	SPCW**EDR/L	SPKW**EDFR/L	SEEW**AFN	SEKT**AESN
	 P181页	 P181页	 P182页	 P182页	 P171页	 P172页	 P173页
	SEET**T3-DR	SDET**RF	SNAN1**ANN	SNAN**ENN	SEMT13T3**	HNGX0906ANSN-*	ONGX080608-*
	 P183页	 P183页	 P184页	 P184页	 P184页	 P184页	 P184页
	SPCN**APN	SPGN**	SPKN**ZETR/L	SPKN**EDL-D2	SPKN**EDFR/L	SPKN**EDFR/L-D2	SPAN**EDR/L
	 P185页	 P185页	 P185页	 P186页	 P186页	 P186页	 P187页
	SDHW**AEFN	SPAN**EDR/L	SPMR**	SEMN**AFN	SEKR**AZ-YM	SPEX**EDR/L	OPHN**ZZN
	 P187页	 P187页	 P188页	 P176页	 P201页	 P201页	
	OFER**NN	HEEN**	OFMT**NN	SOGX**EN-XN	SPMT120408-D51	LPMT1504**D51	
 P190页	 P190页	 P191页	 P191页	 P191页	 P191页	 P192页	
CNE**	CDE**L05	LNE**TL-φ4.1	LNE**-02	N**-1	SNE**-01	LND424-DA	
 P192页	 P192页	 P193页	 P192页	 P193页	 P193页	 P193页	
SNE**-4R3	LNE**-02	SN**R10-P50	LNE**-02	SN**R10-P50	SN**R6.5	GLOL20021R5	
 P192页	 P192页	 P193页	 P192页	 P193页	 P193页	 P193页	
SNE**-4R3	LNE**-02	SN**R10-P50	LNE**-02	SN**R10-P50	SN**R6.5	GLOL20021R5	
 P192页	 P192页	 P193页	 P192页	 P193页	 P193页	 P193页	
SNE**-4R3	LNE**-02	SN**R10-P50	LNE**-02	SN**R10-P50	SN**R6.5	GLOL20021R5	



























## D1 铣削刀片一览表 List of milling inserts

Inserts for heavy-cutting milling 重型铣刀	 P194页 SN**RK13-ING	 P194页 LNHX**	 P194页 NXE**-104	 P195页 DIN**-M			
Inserts for square shoulder milling 方肩铣刀片	 P196页 APMT**PDER-H2	 P196页 APMT**PDER-H8	 P196页 APMT**PDER-M2	 P196页 APMT**R-EM	 P196页 BR390**-PM	 P196页 BR390**-PL	 P197页 APKT**-LHC
Inserts for shallow hole drilling 浅孔钻	 P199页 APMT**T-WT	 P199页 SPMG**-ZV	 P199页 WCGX**-ZV	 P198页 WCGX**-ZS			
Inserts for profile milling 仿形铣刀	 P200页 WPGT**ZSR	 P200页 ZDGW**T2R10					
Inserts for chamfer milling 倒角铣刀	 P200页 SPMT**						





# D1 铣削刀片一览表 List of milling inserts

铝的加工 Aluminum processing	 P189页	 P197页	 P197页	 P197页	 P198页	 P198页	
	RCGT**MO-LHC	APKT**PDER-LH	APKT**PDFR-G2C	APEX**FR-LHC	APKT**FR-LHC	APKT**T4PDFR-LH1C	
	 P170页	 P193页	 P193页				
ADGT1135**PDFR-LHC	ADGT1504**PDFR-LHC	ADGT1904**LHC					
其他 Others	 P202页	 P202页	 P202页	 P202页	 P202页	 P202页	 P202页
	P22215**	P28*	P284*	P2800*	P2816-1	P2894*	P2803-1*
	 P202页	 P203页	 P203页	 P203页	 P203页	 P203页	 P203页
	P28451-1	P2822*	P28467*	P28475*	P270*	P2703-R	P270*
	 P204页						
P2603*							





## D2 铣削刀片材质 Grade for milling inserts

P 钢加工 Process steel

牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPG05B	P05(P01-P15)	青灰 Cyan-blue gray dark 	具有很高的热硬度和良好的抗塑性变形能力。适用于高速切削条件下，奥氏体不锈钢、淬硬钢、碳钢的精加工。 With high hot hardness and good resistance to plastic deformation. Suitable for high speed cutting and finishing process of austenitic stainless steel, quenched steel and carbon steel
BPG20B	P15(P10-P20)	青灰 Cyan-blue gray dark 	PVD涂层微晶粒硬质合金。使用中等到低切削速度，进行各种不锈钢的精加工。需要出色的刃口强度和高表面质量时，可提供完美的平顺切削。很高的耐热冲击性能。适用于轻型间断切削。 PVD coated micro-grain carbide. Use for a variety of stainless steel finishing at medium to low cutting speed. When need excellent edge strength and high surface quality, provide the perfect ride cutting. A high thermal shock resistance. Suitable for light interrupted cuts.
BPG25B	M35(M25-M40)	青灰 Cyan-blue gray dark 	PVD涂层硬质合金。用于以中至高切削速度进行奥氏体不锈钢和双相不锈钢的半精加工到粗加工。很高的耐热冲击性能。非常适合快速间断切削。 PVD coated carbide. For austenitic stainless steels and duplex stainless steel semi-finishing to roughing at low to medium cutting speed. High thermal shock resistance. Ideal for quickly interrupted cutting.
BPG308	P20(P15-P30)	紫黄 Purple yellow 	PVD涂层硬质合金牌号，例如长切削刃、切屑堵塞、深台肩和立铣、长悬伸、车铣工序等。可作为韧性工序的备用选择。结合周边磨削刀片，首选用于粘性材料，例如低碳钢。 PVD coated carbide grade, for example, the long cutting edge, clogging, deep shoulder milling, long overhang, milling processes. or an alternative of toughness processes. Combining the peripheral-edge grinding blade, preferred for viscous material, such as low carbon steel.
BPS321	P30(P25-P40)	/黄 Black/yellow 	高强度基体与AL2O3涂层结合，适于钢及铸铁的铣削加工。 High-strength matrix combined with AL2O3 coating suitable for steel and cast iron milling.
BPS322		Black 	
BPS411	P40(P35-P50)	/黄 Black/yellow 	韧性涂层硬质合金牌号用于钢铣削中要求苛刻的工序。对于立铣和方肩铣，应该将牌号BPS411用于较稳定的工况，例如短悬伸、面铣、浅方肩铣削等。对于其它工序，牌号BPS411则为韧性工序的首选或备选。有无冷却液供给时都表现出色。 Toughness coated carbide grade for steel milling in demanding process. For vertical milling and shoulder milling, the grade BPS411 should be working in stable conditions, such as short overhangs, surface milling, shallow shoulder milling. For toughness process, BPS411 is the best choice. Suitable for mixed materials small batch production. Whether the coolant supply is excellent.
BPS412		Black 	










## D2 铣削刀片材质 Grade for milling inserts

### K 铸铁加工 Process on cast iron

牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPG05B	K10(K05-K15)	青灰 Cyan-blue gray dark 	具有很高的热硬度和良好的抗塑性变形能力. 适用于高速切削条件下, 奥氏体不锈钢、淬硬钢、碳钢的精加工。 With high hot hardness and good resistance to plastic deformation. Suitable for high speed cutting and finishing process of austenitic stainless steel, quenched steel and carbon steel
BPG10B	K05-K15	紫黄 Purple yellow 	PVD涂层硬质合金牌号, 用于湿工况下灰口铸铁和球墨铸铁的中到粗加工铣削。在中等到高切削速度下, 具有可预期刀具寿命。 PVD coated carbide grade for gray cast iron and ductile iron medium to rough milling in wet conditions. In the medium to high cutting speeds, can predictor the tool-life.
BPC132	K15(K10-K25)	Black 	CVD涂层硬质合金, 在硬基体上涂有光滑的耐磨涂层, 能够耐受苛刻的间断切削工况。用于铸铁低到中等切削速度的粗加工。 CVD-coated cemented carbide, the hard substrate coated with a smooth and wear-resistant coating, can bear harsh intermittent cutting conditions. Universal grade for all cast iron roughing cutting at low to medium speed.
BPS411	K30(K25-K35)	/黄 Black/yellow 	CVD涂层硬质合金牌号, 用于在要求高韧性的工况下以低速进行的中等负荷和重载加工。 Coated carbide grade for toughness demanding operating conditions to work at low speed, medium load and reload processing.




















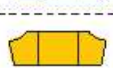



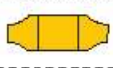





### M 不锈钢加工 Process on stainless steel

牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPG05B	M10(M05-M15)	青灰 Cyan-blue gray dark 	PVD涂层牌号具有很高的热硬度和良好的抗塑性变形能力. 适用于高速切削条件下, 奥氏体不锈钢、淬硬钢、碳钢的精加工。 With high hot hardness and good resistance to plastic deformation. Suitable for high speed cutting and finishing process of austenitic stainless steel, quenched steel and carbon steel
BPG20B	M15(M10-M25)	青灰 Cyan-blue gray dark 	PVD涂层硬质合金牌号, 用于不锈钢的轻型铣削。结合周边磨削刀片, 首选用于粘性和加工硬化材料。 PVD coated carbide grade for light milling of stainless steel. Combine grinding blade preferred for viscous and work hardening materials.
BPG30B	M25(M15-M30)	青灰 Cyan-blue gray dark 	PVD涂层硬质合金牌号, 用于中到高速的不锈钢(主要为奥氏体型)铣削。结合正前角槽形, 也适用于耐热材料和钛合金。 PVD coated carbide. For austenitic stainless steel and duplex stainless steel semi-finishing to roughing at low to medium cutting speed. High thermal shock resistance. Ideal for quickly interrupted cutting.
BPG25B	M35(M25-M40)	青灰 Cyan-blue gray dark 	PVD涂层硬质合金。用于以中至高切削速度进行奥氏体不锈钢和双相不锈钢的半精加工到粗加工。很高的耐热冲击性能。非常适合快速间断切削。 PVD coated carbide. For austenitic stainless steels and duplex stainless steel semi-finishing to roughing at low to medium cutting speed. High thermal shock resistance. Ideal for quickly interrupted cutting.
BPS411	M40(M30-M40)	/黄 Black/yellow 	CVD涂层硬质合金牌号, 用于不锈钢铸件的中等到重载加工工序。 Coated carbide grade for stainless steel castings heavy machining process.






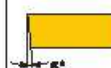










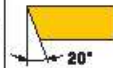








### D3 铣刀用可转位刀片表示方法 Code key for indexable milling inserts

刀片形状 / 代号 Insert Shape / Code			公制 Metric				
代号 Code	有无孔 With/Without hole	有无断屑槽 With/Without chipbreaker	刀片侧面 Section plane of Insert	代号 Code	有无孔 With/Without hole	有无断屑槽 With/Without chipbreaker	刀片侧面 Section plane of
 A	 B	 C		N	无 Without	无 Without	
 D	 E	 H		R	无 Without	单面 Single-side	
 K	 L	 M		F	无 Without	双面 Double-side	
 O	 P	 R		A	有 With	无 Without	
 S		 V		M	有 With	单面 Single-side	
 W	其他 Others	Z		G	有 With	双面 Double-side	
				X	--	--	特殊 Special
				U	有 With	双面 Double-side	

形状代号 Insert shape

断屑槽及夹固形式 Chipbreaker and clamping system

S P K N

主切削刃后角 Clearance angle of main cutting edge				允许偏差 Allowed tolerance																		
代号 Code	后角(度) Clearance angle	代号 Code	后角(度) Clearance angle	允许偏差			(参考) M级精度详细情况 (按形状、大小分) (Reference) details of M-class tolerance (identified by shape and size)															
				代号 Code	m允许偏差 (mm) tolerance range	内切圆 $\phi D_1$ 允许偏差 (mm) Inscribed circle $\phi D_1$ Tolerance (mm)	厚度 $S_1$ 允许偏差 (mm) Thickness $S_1$ Tolerance (mm)	● 刀尖高度 允许偏差 (mm) Nose height tolerance (mm)														
A		B		A	$\pm 0.005$	$\pm 0.025$	$\pm 0.025$	内切圆 Inscribed circle														
C		D		F	$\pm 0.005$	$\pm 0.013$	$\pm 0.025$	8.35	$\pm 0.06$	$\pm 0.08$	$\pm 0.06$	$\pm 0.11$	$\pm 0.16$									
E		F		C	$\pm 0.013$	$\pm 0.025$	$\pm 0.025$	9.525	$\pm 0.06$	$\pm 0.08$	$\pm 0.06$	$\pm 0.11$	$\pm 0.16$									
G		N		H	$\pm 0.013$	$\pm 0.013$	$\pm 0.025$	12.7	$\pm 0.13$	$\pm 0.13$	$\pm 0.13$	$\pm 0.15$										
P		O	其他的后角 Other clearance angle	E	$\pm 0.025$	$\pm 0.025$	$\pm 0.025$	15.875	$\pm 0.15$	$\pm 0.15$	$\pm 0.15$	$\pm 0.16$										
				G	$\pm 0.025$	$\pm 0.025$	$\pm 0.13$	19.05	$\pm 0.15$	$\pm 0.15$	$\pm 0.15$	$\pm 0.16$										
				J	$\pm 0.005$	$\pm 0.05 \sim \pm 0.13$	$\pm 0.025$	25.4	--	$\pm 0.18$	--	--										
				K	$\pm 0.013$	$\pm 0.05 \sim \pm 0.13$	$\pm 0.025$	内切圆 Inscribed circle														
				L	$\pm 0.025$	$\pm 0.05 \sim \pm 0.13$	$\pm 0.025$	8.35	$\pm 0.05$	$\pm 0.05$	$\pm 0.05$	$\pm 0.05$	$\pm 0.05$									
				M	$\pm 0.08 \sim \pm 0.16$	$\pm 0.05 \sim \pm 0.13$	$\pm 0.13$	9.525	$\pm 0.05$	$\pm 0.05$	$\pm 0.05$	$\pm 0.05$	$\pm 0.05$	$\pm 0.05$								
				N	$\pm 0.08 \sim \pm 0.16$	$\pm 0.05 \sim \pm 0.13$	$\pm 0.025$	12.7	$\pm 0.08$	$\pm 0.08$	$\pm 0.08$	$\pm 0.08$										
				U	$\pm 0.13 \sim \pm 0.38$	$\pm 0.08 \sim \pm 0.25$	$\pm 0.13$	15.875	$\pm 0.10$	$\pm 0.10$	$\pm 0.10$	$\pm 0.10$										
								19.05	$\pm 0.10$	$\pm 0.10$	$\pm 0.10$	$\pm 0.10$										
								25.4	--	$\pm 0.13$	--	--										



内切圆直径 (mm) Diameter of IC	刀片形状 Insert shape						
	C	D	R	S	T	V	W
3.97					06		
5.0			05				
5.58					09		
6.0			06				
6.35	08	07			11	11	
8.0			08				
9.525	09	11	09	09	16	16	08
10.0			10				
12.0			12				
12.7	12	15	12	12	22	22	08
15.875	16	19	16	16	27		10
16.0			16				
19.05	19		19	19	33		
20.0			20				
25.0			25				
25.4	25		25	25			
31.75			31				
32			32				

**切削刃长度 Length of cutting edge**

厚度指刀片底面与切削刃最高部分之间的高度  
Thickness is defined as height from bottom of insert to the highest part of cutting edge.

代号 Code	刀片厚度(mm) Insert thickness (mm)
00	0.79
T0	0.89
01	1.59
T1	1.98
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.78
T4	4.98
05	5.58
T5	5.95
06	6.35
T6	6.75
07	7.94
09	9.52
T9	9.72
11	11.11
12	12.70

**刀片厚度 Insert thickness**

# 12 04 AF T N -

修光刃 Wiper			
		$\alpha_n$	
A	45°	A	3°
D	60°	B	5°
E	75°	C	7°
F	85°	D	15°
P	90°	E	20°
Z	其它 Others	F	25°
		G	30°
		N	0°
		P	11°
		Z	其它 Others

切削刃倒棱(mm) Chamfer (mm)			
F	0-5°	0-0.10	K
	1-10°	1-0.15	
E	2-15°	2-0.20	P
	3-20°	3-0.25	
T	4-25°	4-0.30	W
	5-30°	5-0.35	
	6-0.40	6-0.40	
S	7-0.45	7-0.45	不标 No mark

**断屑槽型代号**  
Chipbreaker code

切削方向 Cutting direction	
R	右 Right hand
L	左 Left hand
N	双向 Neutral



## 可转位铝合金面铣刀刀片

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Material recommended											
		l.c	S	d	a	CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade					非涂层牌号 Uncoating grade				
						BPS321	BPS411	BPG05B	BPG05B	BPG20B	BPG30B	BPG30A	BPG20	BPG35	BK10	BU810	BU820
	TEHW16T3PEFR	9.525	3.97		20				★	★	☆					☆	★
	SEKT1204AZFN-LH2	12.7	4.76		20	☆			☆								★

加工用途		BPS321	BPS411	BPG05B	BPG20B	BPG30A	BU810
	P:钢	★	★	★	☆	☆	
	M:不锈钢	☆	★	★	★	★	
	K:铸铁	★		☆			★
N:有色金属							★

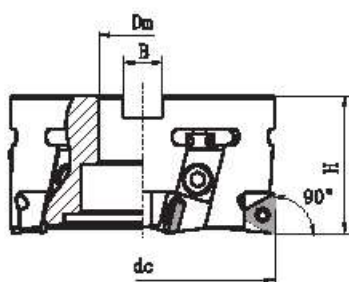
★ 主推牌号 ★ Recommended grade and always stock available

☆ 按单生产 ☆ Recommended grade and produce according to order

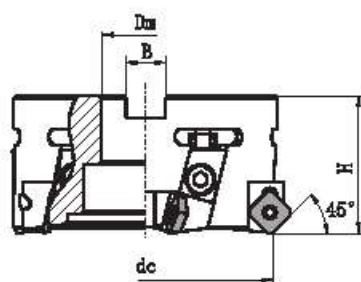
Kr=90°



型式 I



型式 II



型号	尺寸(mm)				齿数 Z	刀片	螺钉	扳手	刀夹	螺钉	扳手	螺钉	型式
	dc	Dm	B	H									
SA90-63R4TE16-P22AL	63	22	10.4	50	4	TEHW16T3PEFR -PCD	SIC035080	FT15	STGER14CA-16	SCC060250	S5	SAC060145	I
SA90-80R4TE16-P27AL	80	27	12.4	50	4								
SA90-100R8TE16-S32AL	100	32	14.4	60	6								
SA90-125R8TE16-S40AL	125	40	16.4	60	8								
SA90-160R10TE16-T40AL	160	40	16.4	60	10								
SA90-200R12TE16-T60AL	200	60	25.7	63	12								
SA90-250R16TE16-T80AL	250	60	25.7	63	16								
SA90-315R20TE16-U60AL	315	60	25.7	63	20								
SA45-63R4SE12-P22AL	63	22	10.4	60	4	SE..1204AZ..	SIC035080	FT16	SSDR14CA-09	SCC060250	S5	SAC060145	II
SA45-80R4SE12-P27AL	80	27	12.4	60	4								
SA45-100R8SE12-S32AL	100	32	14.4	60	6								
SA45-125R8SE12-S40AL	125	40	16.4	60	8								
SA45-160R10SE12-T40AL	160	40	16.4	60	10								
SA45-200R12SE12-T60AL	200	60	25.7	63	12								
SA45-250R16SE12-T80AL	250	60	25.7	63	16								
SA45-315R20SE12-U60AL	315	60	25.7	63	20								

★ 主推牌号 Recommended grade ☆ 可选牌号 Optional grade



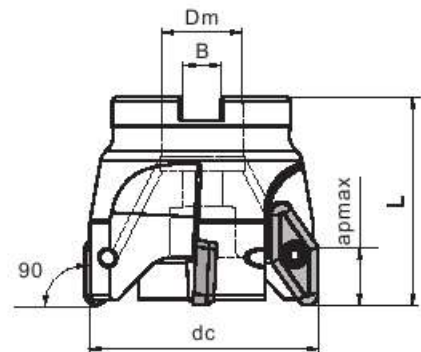
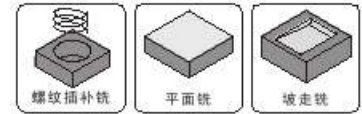
## 可转位铝合金面铣刀刀片

针对铝合金加工专用

方肩铣削、曲面铣削和斜坡铣

大前角断屑槽确保良好的表面粗糙度

刀片表面抛光处理，减少积屑瘤产生



刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Grade recommended									
		φI.C	S	φd	R	α	PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade						
							BPG05B	BPG308	BPU109	BU810	BU813	BK10				
	VCGT	220530-LH2C	12.7	5.96	5.5	3	11			☆	★	★				
加工用途			BPG05B	BPG308	BPU109	BU810	BU813	BK10								
	P:钢															
	M:不锈钢		☆													
	K:铸铁				☆			☆								
	N:有色金属								★	★			★			

★ 主推牌号 ★ Recommended grade and always stock available

☆ 按单生产 ☆ Recommended grade and produce according to order

型号 Type	apmax	尺寸(mm) Dimension				齿数 Teeth Z	刀片 Inserts	螺钉 Screw	扳手 Wrench	内冷状态 Cooling	重量 (kg)
		dc	Dm	B	H						
SA90-50R3VC22-P22	16	50	22	10	56	3					0.37
SA90-63R4VC22-P22	16	63	22	10	56	4	VCGT220530-LH2C	SIC050108	WT20	+	0.65
SA90-80R5VC22-P27	16	80	27	12	56	5					1.10

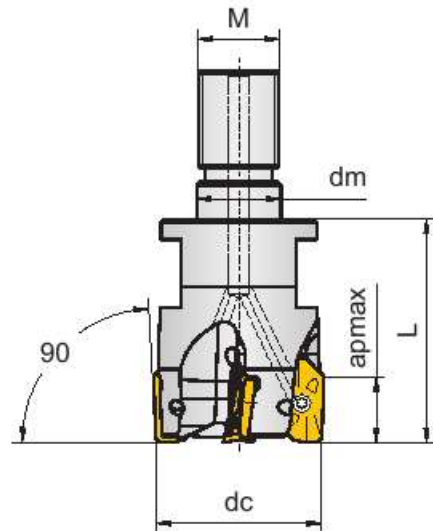
★ 主推牌号 Recommended grade ☆ 可选牌号 Optional grade







## 模块式立铣刀 Modular end milling cutters



D  
铣削  
Milling

刀片基本形状 The basic shape of inserts	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Grade recommended						
		φ I.W	S	φ d	R	PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade			
						BPG05B	BPG308	BPU109	BU810	BU813	BK10	
	ADGT113504PDFR-LHC	6.525	3.5	2.8	0.4			☆	★	★		
	ADGT113508PDFR-LHC	6.525	3.5	2.8	0.8			☆	★	★		
	ADGT113510PDFR-LHC	6.525	3.5	2.8	1.0			☆	★	★		

加工用途		BPG05B	BPG308	BPU109	BU810	BU813	BK10
	P:钢						
	M:不锈钢	☆		☆			
	K:铸铁			☆		☆	
	N:有色金属				★	★	☆
S:高温合金	☆		☆				

★ 主推牌号 ★ Recommended grade and always stock available

☆ 按单生产 ☆ Recommended grade and produce according to order

型号 Type	apmax	尺寸(mm) Dimension				齿数 Teeth	刀片 Inserts	螺钉 Screw	扳手 Wrench	内冷状态 Cooling	重量 (kg)
		dc	dm	M	L						
SB90-16R2AD11-DM8	10.2	16	8.5	M8	25	2	ADGT1135..	SIC025050	FT07	+	
SB90-20R3AD11-DM10	10.2	20	10.5	M10	30	3					
SB90-25R4AD11-DM12	10.2	25	12.5	M12	35	4		SIC025065			
SB90-32R5AD11-DM16	10.2	32	17	M16	43	5					







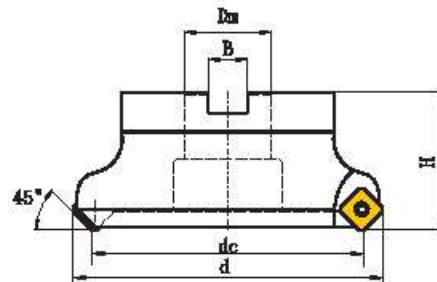
刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Material recommended											
						CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade					非涂层牌号 Uncoating grade				
		LC	S	d	a	BPS321	BPS411	BPG05B	BPG05B	BPG20B	BPG30B	BPG30A	BP20	BP35	BK10	BU810	BU820
	SEKT13T3AEFN-LHC	13.4	3.97	4.4	20						☆					☆	★
	SEKT13T3AEFN-JF	13.4	3.97	4.4	20				★		☆						
	SEMT13T3AGSN-JM	13.4	3.97	4.4	20	☆	★			★							
	SEMT13T3AGSN-JH	13.4	3.97	4.4	20	★	☆			★							

加工用途		BPS321	BPS411	BPG05B	BPG20B	BPG30A	BU810
	P:钢	★	★	★	★	☆	
	M:不锈钢		☆	★	★	★	
	K:铸铁		★			☆	★
N:有色金属							★

★ 主推牌号 ★ Recommended grade and always stock available ☆ 按单生产 ☆ Recommended grade and produce according to order

## 可转位45° 面铣刀

Kr=45°



型号	尺寸 (mm)					齿数 Z	刀片	螺钉	扳子	重量 (kg)
	dc	Dm	d	B	H					
SA45-50R3SE13-P22	50	22	63.4	10.4	40	3	SE..13T3..	SD040110	FT15	0.42
SA45-63R4SE13-P22	63	22	76.4	10.4	40	4				0.52
SA45-80R4SE13-P27	80	27	93.4	12.4	50	5				1.10
SA45-100R5SE13-S32	100	32	113.4	14.4	50	6				1.50
SA45-125R6SE13-S40	125	40	138.4	18.4	63	6				2.72
SA45-160R7SE13-T40	160	40	173.4	18.4	63	7				3.97
SA45-200R8SE13-T60	200	60	213.4	25.7	63	8				6.33
SA45-260R10SE13-T60	250	80	263.4	25.7	63	10				8.29

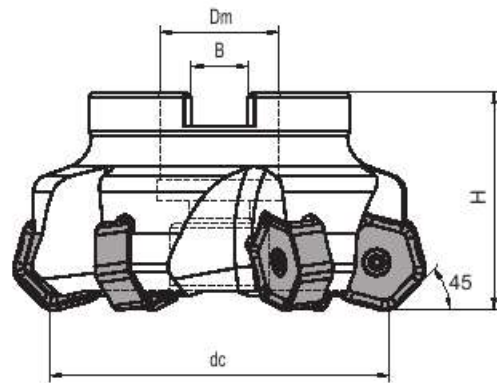




刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Material recommended									
						CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade		
		IC	S	d	r	BPC12	BPS321	BPS411	BPG108	BPG05B	BPG20B	BPG30B	BPG30A	BK10	BU810
	HNGX0906ANSN-L	16.5	6.35	4.9										☆	★
	HNGX0906ANSN-F	16.5	6.35	4.9		☆			★	★					
	HNGX0906ANSN-M	16.5	6.35	4.9			☆	★	☆		☆	☆			
	HNGX0906ANSN-R	16.5	6.35	4.9			☆	★				☆	☆		
	XNGX0906ANSN	16.5	6.35	4.9							★				

加工用途		BPS321	BPS411	BPG05B	BPG20B	BPG30A	BU810
	P:钢	★	★	★	★	☆	
	M:不锈钢		☆	★	★	★	
	K:铸铁		★		☆		★
	N:有色金属						★

★ 主推牌号 ★ Recommended grade and always stock available ☆ 按单生产 ☆ Recommended grade and produce according to order



型号	尺寸(mm)				齿数 Z	内冷状态	刀片	螺钉	扳手
	dc	Dm	B	H					
SA45-50R4HN09-P22	50	22	10.4	40	4	有	HNGX 0906..	SIC035120	WT15
SA45-63R6HN09-P22	63	22	10.4	40	6	有			
SA45-80R6HN09-P27	80	27	12.4	50	6	有			
SA45-100R8HN09-S32	100	32	14.4	50	8	有			
SA45-125R10HN09-S40	125	40	16.4	63	10	有			
SA45-160R12HN09-T40	160	40	16.4	63	12	无			
SA45-200R10HN09-T60	200	60	25.7	63	10	无			

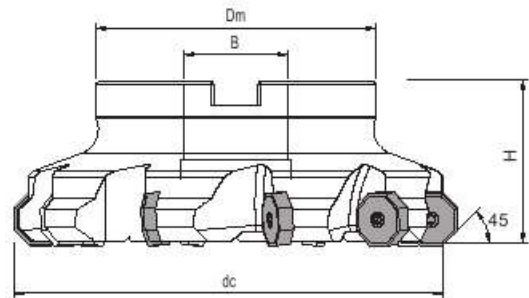




刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Material recommended									
						CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade		
		I.C	S	d	r	BP C1Z	BP S321	BP S411	BP G108	BP G05B	BP G20B	BP G25B	BP G30B	BK10	BU810
	ONGX080608-L	20.2	6.00	5.3	0.8									☆	★
	ONGX080608-F	20.2	6.00	5.3	0.8	☆			★	★					
	ONGX080608-M	20.2	6.00	5.3	0.8		☆	★	☆		☆	☆			
	ONGX080608-R	20.2	6.00	5.3	0.8		☆	★				☆	☆		

加工用途		BPS321	BPS411	BPG05B	BPG20B	BPG30A	BU810
	P:钢	★	★	★	★	☆	
	M:不锈钢		☆	★	★	★	
	K:铸铁				☆		★
	N:有色金属						★

★ 主推牌号 ★ Recommended grade and always stock available ☆ 按单生产 ☆ Recommended grade and produce according to order



型号	尺寸				齿数 Z	刀片	螺钉	扳手
	dc	Dm	B	H				
SA45-63R50N08-P22	63	22	10.4	40	5			
SA45-80R60N08-P27	80	27	12.4	50	6			
SA45-100R70N08-S32	100	32	14.4	63	7			
SA45-125R80N08-S40	125	40	16.4	63	8	ONGX080608..	SIC050140	WT20
SA45-160R100N08-T40	160	40	16.4	63	10			
SA45-200R120N08-T60	200	60	25.7	63	12			
SA45-250R140N08-T60	250	60	25.7	63	14			
SA45-315R160N08-U60	315	60	25.7	80	16			

型号	尺寸				齿数 Z	刀片	螺钉	扳手	模块
	dc	Dm	B	H					
WA45-80R100N08-P27	80	27	12.4	50	10				
WA45-100R140N08-S32	100	32	14.4	63	14				
WA45-125R180N08-S40	125	40	16.4	63	18				
WA45-160R220N08-T40	160	40	16.4	63	22	ONGX080608..	SEC060200	S3	W1006Y
WA45-200R280N08-T60	200	60	25.7	63	28				
WA45-250R360N08-T60	250	60	25.7	63	36				
WA45-315R460N08-U60	315	60	25.7	80	46				





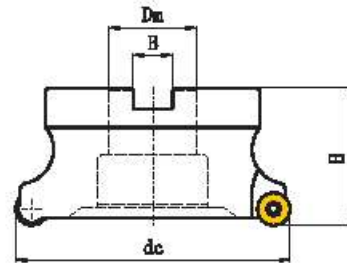


刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended											
		Φ I.C	S	Φ d	α			CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade					
								BPS153	BPS253	BPG05B	BPG10B	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BK10	BU810
 	RPMT0803MOE-BJS	8	3.18	3.4	11						★	☆		☆		☆	☆		
	RPMT10T3MOE-BJS	10	3.97	4.4	11						★	☆		☆		☆	☆		
	RPMT1204MOE-BJS	12	4.76	4.4	11						★	☆		☆		☆	☆		
 	RPH0803MO-SM	08	3.18	3.4	11			☆		☆	★	☆							
	RPH1204MO-MM	12	4.76	4.4	11			☆		☆	★	☆							
	RPH1608MO-ML	16	6.35	4.4	11			☆		☆	★	☆							

加工用途	BPS321	BPS411	BPG05B	BPG20B	BPG30A	BU810
	★	★	★	★	☆	
		☆	★	★	★	
		★		☆		★
						★
S:高温合金					★	

★ 主推牌号 ★ Recommended grade and always stock available ☆ 按单生产 ☆ Recommended grade and produce according to order

## 可转位R面铣刀

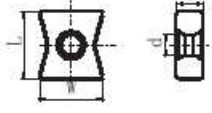



型号	尺寸 (mm)				齿数 Z	刀片	螺钉	扳手	重量 (kg)						
	dc	Dm	B	H											
SA00-63R3RP12-P22	63	22	10.4	40	3	RP. 1204..	SIC035080	FT15	0.46						
SA00-63R4RP12-P22					4				0.44						
SA00-63R5RP12-P22					5				0.44						
SA00-80R4RP12-P27	80	27	12.4	50	4				RP. 1605..	SID040110	FT15	0.88			
SA00-80R6RP12-P27					6							0.89			
SA00-100R4RP12-S32					100							32	14.4	50	4
SA00-100R8RP12-S32	6	1.37													
SA00-63R3RP16-P22	63	22	10.4	40		3	RP. 1605..	SID040110							FT15
SA00-63R4RP16-P22					4	0.37									
SA00-80R4RP16-P27					80	27			12.4	50	4	RP. 1605..	SID040110	FT15	
SA00-80R5RP16-P27	5	0.86													
SA00-100R4RP16-S32	100	32	14.4	50							4				
SA00-100R8RP16-S32					6	1.30									
SA00-125R5RP16-S40					125	40	16.4	63	5	RP. 1605..	SID040110				FT15
SA00-125R8RP16-S40	6	2.52													





刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended							
							CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoating grade		
		L	W	S	d	R	BPS321	BPS411	BPG108	BPG20B	BPG30C	BK10	BU810	BU820
 	LNKG1206EN-1	12.7	11.3	6.35	4.4					★				
	LNKG1206EN-2	12.7	11.3	6.35	4.4					★				
	LNKG1206EN-3	12.7	11.3	6.35	4.4					★				
	LNKG1206EN-LH	12.7	11.3	6.35	4.4						☆	★		

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Material recommended							
						CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoating grade		
		L	W	S	d	BPS321	BPS411	BPG108	BPG20B	BPG30C	BK10	BU810	BU820
 	LNKG1206EN-1	15	13.9	6	4.6				★				
	LNKG1206EN-MR	15	13.9	6	4.6				★				

加工用途		BPS321	BPS411	BPG05B	BPG20B	BPG30A	BU810
	<b>P:钢</b>	★	★	★	★	☆	
	<b>M:不锈钢</b>		☆	★	★	★	
	<b>K:铸铁</b>		★		☆		★
	<b>N:有色金属</b>						★

★ 主推牌号 ★ Recommended grade and always stock available ☆ 按单生产 ☆ Recommended grade and produce according to order

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended												
							CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoating grade							
		LW	L	S	φd	r	BPS153	BPS253	BPG05B	BPG108	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
 	TMR/L331.1A-155015-WM	11.5	14.5	4.95	4.6	1.52				★		☆	☆						
	TMR/L331.1A-155025-WM	11.5	14.5	4.95	4.6	2.29				★		☆	☆						
	TMR/L331.1A-155030-WM	11.5	14.5	4.95	4.6	3.05				★		☆	☆						
	TMR/L331.1A-155035-WM	11.5	14.5	4.95	4.6	3.5				★		☆	☆						
	TMR/L331.1A-155050-WM	11.5	14.5	4.95	4.6	4.83				★		☆	☆						
	TMR/L331.1A-155055-WM	11.5	14.5	4.95	4.6	6.35				★		☆	☆						





刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Material recommended								
						CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoating grade		
		L	W	S	d	BPS321	BPS411	BPG108	BPG208	BPG30C	BK10	BU810	BU820	
	LNHT0804PNR-1										☆			
	LNHT1006ENR							★			☆			
	LNHT110708PNR							★			☆			
	LNHT110716PNR							★			☆			

★ 主推牌号 ★ Recommended grade and always stock available ☆ 按单生产 ☆ Recommended grade and produce according to order

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)				材质推荐 Material recommended								
						CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoating grade		
		L	W	S	d	BPS321	BPS411	BPG108	BPG208	BPG30C	BK10	BU810	BU820	
	CDE060308										☆			
	CDE09T304							★			☆			
	CDE09T304L-1							★			☆			
	CDE09T310							★			☆			

★ 主推牌号 ★ Recommended grade and always stock available ☆ 按单生产 ☆ Recommended grade and produce according to order

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade						
		Φ I.C	S	r	α			BPS253	BPS321	BPS411	BPG35B	BPG108	BPG208	BPG308	BPG35B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	SOGX1206EN-XN	12	4.76	0.8	9				★			★	☆		☆		☆					



## D4 面铣刀片 Inserts for face milling

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
		I.C	S	d	bs	be	a	BPS163	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	TPCW2204PDR/L	12.7	4.76	5.5	1.4	0.7	11							★	☆	☆		☆				
	TPCW2204PPR/L	12.7	4.76	5.5	1.4	0.7	11							★	☆	☆		☆				

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
		I.C	S	r	a			BPS163	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	TPMR090204	5.56	2.38	0.4	11									★		☆		☆				
	TPMR110304	6.35	3.18	0.4	11									★		☆		☆				
	TPMR160304	9.525	3.18	0.4	11									★		☆		☆				
	TPMR160308	9.525	3.18	0.8	11									★		☆		☆				
	TPMR220404	12.7	4.76	0.4	11									★		☆		☆				
	TPMR220408	12.7	4.76	0.8	11									★		☆		☆				
	TPMR090204-3	5.56	2.38	0.4	11									★		☆		☆				
	TPMR110304-3	6.35	3.18	0.4	11									★		☆		☆				
	TPMR160304-3	9.525	3.18	0.4	11									★		☆		☆				
	TPMR160308-3	9.525	3.18	0.8	11									★		☆		☆				
	TPMR220404-3	12.7	4.76	0.4	11									★		☆		☆				
	TPMR220408-3	12.7	4.76	0.8	11									★		☆		☆				



## D4 面铣刀片 Inserts for face milling

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended														
							CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
		I.C	S	bs	be	$\alpha$	BPS163	BPS253	BPS411	BPG05B	BPG10B	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	TPKR1603PDR	9.525	3.18	1.2	0.7	11								★	☆		☆				
	TPKR2204PDR	12.7	4.76	1.4	0.7	11								★	☆		☆				

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended													
							CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade						
		I.C	S	bs	$\alpha$		BPS163	BPS253	BPS411	BPG05B	BPG10B	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
	TPKN1603PPR/L	9.525	3.18	1.2	11									★	☆		☆			
	TPAN1603PDR/L	9.525	3.18	1.3	11									★	☆		☆			
	TPCN1603PDR/L	9.525	3.18	1.3	11									★	☆		☆			
	TPKN1603PDR/L	9.525	3.18	1.2	11									★	☆		☆			
	TECN1603PER/L	9.525	3.18	2	20									★	☆		☆			
	TPAN2204PDR/L	12.7	4.76	1.4	11									★	☆		☆			
	TPCN2204PDR/L	12.7	4.76	1.4	11									★	☆		☆			
	TPKN2204PDR/L	12.7	4.76	1.4	11									★	☆		☆			
	TDKN2204PDR/L	12.7	4.76	1.4	15									★	☆		☆			
	TEKN2204PDTRL	12.7	4.76	1.4	20									★	☆		☆			
	TFAN2203PFR/L	12.7	3.18	2.5	25									★	☆		☆			
	TPKN1603PPR/L-D2	9.525	3.18	1.2	11									★	☆		☆			
	TPAN1603PDR/L-D2	9.525	3.18	1.3	11									★	☆		☆			
	TPCN1603PDR/L-D2	9.525	3.18	1.3	11									★	☆		☆			
	TPKN1603PDR/L-D2	9.525	3.18	1.2	11									★	☆		☆			
	TECN1603PER/L-D2	9.525	3.18	2	20									★	☆		☆			
	TPAN2204PDR/L-D2	12.7	4.76	1.4	11									★	☆		☆			
	TPCN2204PDR/L-D2	12.7	4.76	1.4	11									★	☆		☆			
	TPKN2204PDR/L-D2	12.7	4.76	1.4	11									★	☆		☆			
	TDKN2204PDR/L-D2	12.7	4.76	1.4	15									★	☆		☆			
	TEKN2204PDTRL-D2	12.7	4.76	1.4	20									★	☆		☆			
	TFAN2203PFR/L-D2	12.7	3.18	2.5	25									★	☆		☆			

D 铣削 Milling





## D4 面铣刀片 Inserts for face milling

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended															
							CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade								
		I.C	S	d	$\alpha$			BPS163	BPS253	BPS411	BP-G05B	BP-G10B	BP-G20B	BP-G30B	BP-G25B	BP-G30B	BP-20	BP-35	BK10	BU810	BU820	
	TPKN2204PDR-SU	12.7	4.76	1.4	11									★	☆		☆					
	TPKN2204PDR-3	12.7	4.76	1.4	11									★	☆		☆					

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended															
							CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade								
		I.C	S	bs	$\alpha$			BPS163	BPS253	BPS411	BP-G05B	BP-G10B	BP-G20B	BP-G30B	BP-G25B	BP-G30B	BP-20	BP-35	BK10	BU810	BU820	
	TPAN1103PPN	6.35	3.18	0.7	11									★	☆		☆					
	TPCN1103PPN	6.35	3.18	0.7	11									★	☆		☆					
	TPKN1103PPN	6.35	3.18	0.7	11									★	☆		☆					
	TPAN1603PPN	9.525	3.18	1.2	11									★	☆		☆					
	TPCN1603PPN	9.525	3.18	1.2	11									★	☆		☆					
	TPKN1603PPN	9.525	3.18	1.2	11									★	☆		☆					
	TPAN2204PPN	12.7	4.76	1.3	11									★	☆		☆					
	TPCN2204PPN	12.7	4.76	1.3	11									★	☆		☆					
	TPAN1603PPN-D2	9.525	3.18	1.2	11									★	☆		☆					
	TPCN1603PPN-D2	9.525	3.18	1.2	11									★	☆		☆					
	TPKN1603PPN-D2	9.525	3.18	1.2	11									★	☆		☆					
	TPAN2204PPN-D2	12.7	4.76	1.3	11									★	☆		☆					
	TPCN2204PPN-D2	12.7	4.76	1.3	11									★	☆		☆					
	TPKN2204PPN-D2	12.7	4.76	1.3	11									★	☆		☆					





## D4 面铣刀片 Inserts for face milling

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade					非涂层牌号 Uncoating grade						
		I.C	S	d	a	bs	be	BPS163	BPS253	BPS411	BPG05B	BPG10B	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	SPCW1504EDR/L	15.875	4.76	5.5	11	1.5	1								★	☆		☆				
	SPCW1504EPR/L	15.875	4.76	5.5	11	1.5	1								★	☆		☆				

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade					非涂层牌号 Uncoating grade						
		I.C	S	d	a	bs	be	BPS163	BPS253	BPS411	BPG05B	BPG10B	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	SPKW1204EDFRL	12.7	4.76	5.5	11	1.4	1								★	☆		☆				
	SPKW1204EDSRL	12.7	4.76	5.5	11	1.4	1								★	☆		☆				
	SPKW1204EDTRL	12.7	4.76	5.5	11	1.4	1								★	☆		☆				

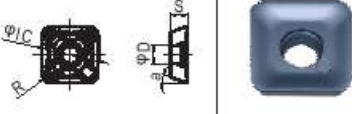
刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade					非涂层牌号 Uncoating grade						
		I.C	S	d	a	bs		BPS163	BPS253	BPS411	BPG05B	BPG10B	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	SEEW1504AFN	15.875	4.76	5.5	20	2.85									★	☆		☆				





## D4 面铣刀片 Inserts for face milling

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
		I.C	S	d	$\alpha$	L		BPS163	BPS253	BPS411	BP-G05B	BP-G10B	BP-G20B	BP-G30B	BP-G25B	BP-G30B	BP20	BP35	BK10	BU810	BU820	
	SEKT1204AESN	12.7	4.76	5.5	20	15.23									★	☆		☆				

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
		I.C	S	d	$\alpha$	R		BPS163	BPS253	BPS411	BP-G05B	BP-G10B	BP-G20B	BP-G30B	BP-G25B	BP-G30B	BP20	BP35	BK10	BU810	BU820	
	SEET12T3-DR	12.7	4.76	5.5	20	2.4									★	☆		☆				

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
		I.C	S	d	$\alpha$	R		BPS163	BPS253	BPS411	BP-G05B	BP-G10B	BP-G20B	BP-G30B	BP-G25B	BP-G30B	BP20	BP35	BK10	BU810	BU820	
	SDET120408-RF	12.7	4.76	4.4	15	0.8									★	☆		☆				
	SDET120412-RF	12.7	4.76	4.4	15	1.2									★	☆		☆				
	SDET120416-RF	12.7	4.76	4.4	15	1.6									★	☆		☆				
	SDET120420-RF	12.7	4.76	4.4	15	2.0									★	☆		☆				
	SDET120424-RF	12.7	4.76	4.4	15	2.4									★	☆		☆				
	SDET120432-RF	12.7	4.76	4.4	15	3.2									★	☆		☆				

★ 主推荐牌号 Recommended grade ☆ 可选牌号 Optional grade





## D4 面铣刀片 Inserts for face milling

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended																
		I.C	S	a	bs	be		CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade								
								BPS163	BPS253	BPS411	BPG05B	BPG10B	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820			
	SNAN1204ANN	12.7	4.76	0	2							★	☆		☆									
	SNCN1204ANN	12.7	4.76	0	2							★	☆		☆									
	SNKN1204ANN	12.7	4.76	0	2							★	☆		☆									
	SNAN1504ANN	15.875	4.76	0	2.5							★	☆		☆									
	SNCN1504ANN	15.875	4.76	0	2.5							★	☆		☆									
	SNKN1504ANN	15.875	4.76	0	2.5							★	☆		☆									
	SNAN1904ANN	19.05	4.76	0	3							★	☆		☆									
	SNCN1904ANN	19.05	4.76	0	3							★	☆		☆									
	SNKN1904ANN	19.05	4.76	0	3							★	☆		☆									
	SNCN1904ADSN	19.05	4.76	1	4	0.5						★	☆		☆									

D  
铁削  
Milling

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended																
		I.C	S	bs	m			CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade								
								BPS163	BPS253	BPS411	BPG05B	BPG10B	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820			
	SNAN1204ENN	12.7	4.76	1.4	0.8							★	☆		☆									
	SNCN1204ENN	12.7	4.76	1.4	0.8							★	☆		☆									
	SNKN1204ENN	12.7	4.76	1.4	0.8							★	☆		☆									
	SNAN1504ENN	15.875	4.76	1.4	1.5							★	☆		☆									
	SNCN1504ENN	15.875	4.76	1.4	1.5							★	☆		☆									
	SNKN1504ENN	15.875	4.76	1.4	1.5							★	☆		☆									
	SNAN1904ENN	19.05	4.76	2	1.3							★	☆		☆									
	SNCN1904ENN	19.05	4.76	2	1.3							★	☆		☆									
	SNKN1905ENN	19.05	4.76	2	1.3							★	☆		☆									





## D4 面铣刀片 Inserts for face milling

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade					非涂层牌号 Uncoating grade						
		I.C	S	a	bs	be		BPS163	BPS263	BPS411	BPG06B	BPG10B	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	SPCN1204APN	12.7	4.76	11	2.22							★	☆		☆		☆					
	SECN1203AEN	12.7	3.18	20	2.48							★	☆		☆		☆					
	SEEN1203AFFN	12.7	3.18	20	1.8							★	☆		☆		☆					
	SEKN1203AFTN	12.7	3.18	20	1.8							★	☆		☆		☆					
	SEKN1203AFTN-1	12.7	3.18	20	2.46	r1						★	☆		☆		☆					
	SEMN1204AEN	12.7	4.76	20	2.1							★	☆		☆		☆					
	SEKN1204AFN	12.7	4.76	20	1.8							★	☆		☆		☆					
	SEKN1204AFTN	12.7	4.76	20	1.8							★	☆		☆		☆					
	SPKN1504AFTN	15.875	4.76	11	1.8	1						★	☆		☆		☆					
	SDKN1504AEN	15.875	4.76	15	1.9							★	☆		☆		☆					
	SEKN1504AFN	15.875	4.76	20	1.6							★	☆		☆		☆					
	SEKN1504AFTN	15.875	4.76	20	1.6							★	☆		☆		☆					
	SPCN1904APN	19.05	4.76	11	4.48							★	☆		☆		☆					

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade					非涂层牌号 Uncoating grade						
		I.C	S	a	r			BPS163	BPS263	BPS411	BPG06B	BPG10B	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	SPGN090304	9.525	3.18	11	0.4				★				★	☆		☆		☆				
	SPGN090308	9.525	3.18	11	0.8				★				★	☆		☆		☆				
	SPGN120308	12.7	3.18	11	0.8				★				★	☆		☆		☆				
	SPEN120408	12.7	4.76	11	0.8				★				★	☆		☆		☆				
	SPGN120404	12.7	4.76	11	0.4				★				★	☆		☆		☆				
	SPGN120408	12.7	4.76	11	0.8				★				★	☆		☆		☆				
	SPEN150412	15.875	4.76	11	1.2				★				★	☆		☆		☆				
	SPEN190416	19.05	4.76	11	1.6				★				★	☆		☆		☆				





## D4 面铣刀片 Inserts for face milling

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended																
		I.C	S	a	bs	be		CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade								
								BPS153	BPS253	BPS411	BPG05B	BPG10B	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820			
	SPKN1204ZETRL	12.7	4.76	11	1.93	0.6			★					★	☆		☆							
	SPCN1504ZETRL	15.875	4.76	11	2	1			★					★	☆		☆							
	SPKN1504ZEFRL	15.875	4.76	11	2	0.8			★					★	☆		☆							

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended																	
		I.C	S	bs	m			CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade									
								BPS153	BPS253	BPS411	BPG05B	BPG10B	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820				
	SPKN1504EDL-D2	15.875	4.76	11	1.4				★					★	☆		☆								

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended																	
		I.C	S	a	bs	be		CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade									
								BPS153	BPS253	BPS411	BPG05B	BPG10B	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820				
	SPKN1203EDFR/L	12.7	3.18	11	1.4				★					★	☆		☆								
	SPKN1203EDER/L	12.7	3.18	11	1.4				★					★	☆		☆								
	SPKN1504EDFR/L	15.875	4.76	11	1.4				★					★	☆		☆								
	SPKN1504EDER/L	15.875	4.76	11	1.4				★					★	☆		☆								
	SPKN1203EDFR/L-D2	12.7	3.18	11	1.4				★					★	☆		☆								
	SPKN1203EDER/L-D2	12.7	3.18	11	1.4				★					★	☆		☆								
	SPKN1504EDFR/L-D2	15.875	4.76	11	1.4				★					★	☆		☆								
	SPKN1504EDER/L-D2	15.875	4.76	11	1.4				★					★	☆		☆								
	SPAN1203EDR/L	12.7	3.18	11	1.4				★					★	☆		☆								
	SPCN1203EDR/L	12.7	3.18	11	1.4				★					★	☆		☆								
	SPKN1203EDR/L	12.7	3.18	11	1.4				★					★	☆		☆								



## D4 面铣刀片 Inserts for face milling

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
		I.C	S	a	bs			BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	SDHW0903AEFN	9.53	3.18	15	0.75				★					★	☆		☆		☆			

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
		I.C	S	a	bs			BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	SPAN1203EDR/L	12.7	3.18	11	1.4				★					★	☆		☆		☆			
	SPCN1203EDR/L	12.7	3.18	11	1.4				★					★	☆		☆		☆			
	SPKN1203EDR/L	12.7	3.18	11	1.4				★					★	☆		☆		☆			

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
		I.C	S	a	r			BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	SPMR090304	9.525	3.18	11	0.4				★					★	☆		☆		☆			
	SPMR09T304	9.525	3.97	11	0.4				★					★	☆		☆		☆			
	SPMR090308	9.525	3.18	11	0.8				★					★	☆		☆		☆			
	SPMR120304	12.7	3.18	11	0.4				★					★	☆		☆		☆			
	SPMR120308	12.7	3.18	11	0.8				★					★	☆		☆		☆			
	SPMR120312	12.7	3.18	11	1.2				★					★	☆		☆		☆			





## D4 面铣刀片 Inserts for face milling

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended														
							CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
		I.C	S	$\alpha$	L		BP153	BP253	BP411	BP05B	BP108	BP20B	BP30B	BP25B	BP30B	BP20	BP35	BK10	BU810	BU820	
	SEMN1203AFTN	12.7	3.18	20	15.7			★					★	☆		☆					

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended														
							CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
		I.C	S	a	bs	be	BP153	BP253	BP411	BP05B	BP108	BP20B	BP30B	BP25B	BP30B	BP20	BP35	BK10	BU810	BU820	
	SEKR1203AZ-YM	12.7	3.18	20	1.6	0.8		★					★	☆		☆					
	SEKR12T3AZ-YM	12.7	3.98	20	1.6	0.8		★					★	☆		☆					
	SEKR1204AZ-YM	12.7	4.76	20	1.6	0.8		★					★	☆		☆					
	SEKR1504AZ-YM	15.875	4.76	20	1.6	0.8		★					★	☆		☆					

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended														
							CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
		I.C	S	a	R	L1	BP153	BP253	BP411	BP05B	BP108	BP20B	BP30B	BP25B	BP30B	BP20	BP35	BK10	BU810	BU820	
	SPEX1203EDR/L	12.7	3.18	11	500	15								★	☆		☆				
	SPKX1504EDFR/L	15.88	4.76	11	500	19.37								★	☆		☆				

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## D4 面铣刀片 Inserts for face milling

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended													
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade					非涂层牌号 Uncoating grade					
		L	I.C	S	r	$\alpha$	BP S153	BP S253	BP S411	BP G05B	BP G10B	BP G20B	BP G30B	BP G25B	BP G30B	BP 20	BP 35	BK 10	BU 810	BU 820	
	OPHN0504ZZN	5.26	12.7	4.76	0.4	11			★			★	☆		☆		☆				
	OFEW05T305	5.3	12.8	3.97	4.4	25			★			★	☆		☆		☆				

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended													
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade					非涂层牌号 Uncoating grade					
		L	I.C	S	d	r	$\alpha$	BP S153	BP S253	BP S411	BP G05B	BP G10B	BP G20B	BP G30B	BP G25B	BP G30B	BP 20	BP 35	BK 10	BU 810	BU 820
	OFER070405NN	7.46	18	4.76	2.3	0.5	25			★			★	☆		☆		☆			

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended												
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade					非涂层牌号 Uncoating grade				
		$\phi$ I.C	S	r	$\alpha$	BP S153	BP S253	BP S411	BP G05B	BP G10B	BP G20B	BP G30B	BP G25B	BP G30B	BP 20	BP 35	BK 10	BU 810	BU 820	
	HEEN532	15.875	4.76	0.8	20			★			★	☆		☆		☆				
	HDEN0625	6	2.48		15			★			★	☆		☆		☆				





## D4 面铣刀片 Inserts for face milling

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
		L	ΦI.C	S	Φd	r	α	BPS163	BPS253	BPS411	BPG05B	BPG10B	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	OFMT05T305NN	5.26	12.7	3.97	4.4	0.5	25								★	☆		☆				
	OFMT070405NN	7.46	18	4.76	5.5	0.5	25								★	☆		☆				

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
		ΦI.C	S	Φd	α			BPS163	BPS253	BPS411	BPG05B	BPG10B	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	RPMW0803MOE	8	3.18	3.4	11										★	☆		☆				
	RPMW1003MOE	10	3.18	4.4	11										★	☆		☆				
	RPMW10T3MOE	10	3.97	4.4	11										★	☆		☆				
	RPMW10T3MOT	10	3.97	4.4	11										★	☆		☆				
	RPMW1204MOE	12	4.76	4.4	11										★	☆		☆				
	RPMW1204MOT	12	4.76	4.4	11										★	☆		☆				

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
		ΦI.C	S	Φd	α			BPS263	BPS321	BPS411	BPG05B	BPG11B	BPG21B	BPG31B	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	RCHT0803MO-SM	08	3.18	3.4	7				☆		☆	★	☆									
	RCHT1204MO-MM	12	4.76	4.4	7				☆		☆	★	☆									
	RCHT1606MO-ML	16	6.35	4.4	7				☆		☆	★	☆									





## D4 面铣刀片 Inserts for face milling

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended													
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade						
		$\Phi$ I.C	S	$\Phi$ d	$\alpha$			BPS163	BPS263	BPS411	BPG05B	BPG10B	BPG20B	BPG30B	BPG35B	BPG30B	BP20	BP35	BK10	BU810	BU820
	RDMT0802MO-V1	8	2.38	3.4	15									★	☆		☆			☆	
	RDMT0803MO-V1	8	3.18	3.4	15									★	☆		☆			☆	
	RDMT1003MO-V1	10	3.18	4.4	15									★	☆		☆			☆	
	RDMT10T3MO-V1	10	3.97	4.4	15									★	☆		☆			☆	
	RDMT1204MO-V1	12	4.76	4.4	15									★	☆		☆			☆	

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended													
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade						
		$\Phi$ I.C	S	$\Phi$ d	$\alpha$			BPS163	BPS263	BPG05B	BPG10B	BPG20B	BPG30B	BPG35B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	RPMT0803MOE-BJS	8	3.18	3.4	11									★	☆		☆			☆	
	RPMT10T3MOE-BJS	10	3.97	4.4	11									★	☆		☆			☆	
	RPMT1204MOE-BJS	12	4.76	4.4	11									★	☆		☆			☆	

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended													
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade						
		$\Phi$ I.C	S	$\Phi$ d	$\alpha$			BPS163	BPS263	BPG05B	BPG10B	BPG20B	BPG30B	BPG35B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	RCGT0602MO-LHC	6	2.38	2.5	7															☆	
	RCGT0803MO-LHC	8	3.18	3.4	7															☆	
	RCGT1003MO-LHC	10	3.18	4	7															☆	
	RCGT10T3MO-LHC	10	3.97	4.4	7															☆	
	RCGT12T3MO-LHC	12	3.97	4.4	7															☆	

★ 主推荐牌号 Recommended grade ☆ 可选牌号 Optional grade





## D5 重型铣刀片 Inserts for heavy-cutting milling

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended												
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade				
		ΦI.C	W	S	d	C/R		BPS163	BPS263	BPS321	BPS411	BPG35B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
	CNE44102	12.7	12.7	6.35	5.4	C0.5		☆				★	★			★				☆
	CNE323-405	12.7	9.525	4.76	4.3	C0.5		☆				★	★			★				☆
	CNE44-405	12.7	12.7	6.35	5.5	C0.5		☆				★	★			★				☆
	CNE454-4R1	16.3	14.288	6.35	5.5	R1.0		☆				★	★			★				☆

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended												
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade				
		L	W	S	d	C/R		BPS163	BPS263	BPS321	BPS411	BPG35B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
	CDE323L05	12.7	9.525	4.76	4.5	C1.0		☆				★	★			★				☆
	CDE323L05	12.7	9.525	4.76	4.5	C1.0		☆				★	★			★				☆

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended												
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade				
		L	W	S	d	C/R		BPS163	BPS263	BPS321	BPS411	BPG35B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
	LNE0904TL-Φ4.1	9.53	9.53	4.76	4.1	C0.5		☆				★	★			★				☆







## D5 重型铣刀片 Inserts for heavy-cutting milling

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended												
							CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade					
		L	W	S	d	C/R	BPS163	BPS263	BPS321	BPS411	BPG35B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
	LNE434-02	19.05	14.29	6.35	5.4	C1.0		☆				★	★			★			☆
	N18404-JH	15.875	12.7	7.94	5.5	C0.4		☆				★	★			★			☆

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended												
							CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade					
		L	W	S	d		BPS163	BPS263	BPS321	BPS411	BPG35B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
	N18-1	15.875	12.7	7.94	5.5			☆				★	★			★			☆
	L19.05/14.3/6.35-R7-0.5.35	19.05	14.29	6.35	5.35			☆				★	★			★			☆

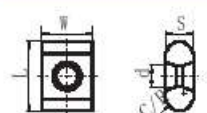

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended												
							CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade					
		L	W	S	d		BPS163	BPS263	BPS321	BPS411	BPG35B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
	SNE33-01	9.525	9.525	4.76	4.4			☆				★	★			★			☆
	SNC44	12.7	12.7	6.35	4.4			☆				★	★			★			☆
	SNC55	15.875	15.875	7.94	5.5			☆				★	★			★			☆

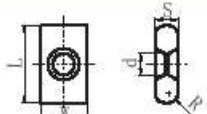





## D5 重型铣刀片 Inserts for heavy-cutting milling

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended												
							CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade					
		L	W	S	Φd1	R	BPS163	BPS263	BPS321	BPS411	BPG35B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
 	LND424-DA	13	12.7	6.35	6	2.0		☆					★	★		★			☆
	N136	15.875	12.7	7.94	5.5	2.0		☆					★	★		★			☆

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended												
							CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade					
		L	W	S	d	C/R	BPS163	BPS263	BPS321	BPS411	BPG35B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
 	SNE1507-4R3	15.88	15.88	7.94	5.5	R3.0		☆					★	★		★			☆
	LNC305-YT	17.46	12.7	7.15	5.5	R5.0		☆					★	★		★			☆

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended												
							CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade					
		L	W	S	d	R	BPS163	BPS263	BPS321	BPS411	BPG35B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
 	LNE323-02	15.875	9.525	4.76	4.4	2		☆					★	★		★			☆
	LND624-DA	15.5	12.7	7.35	6	2.80		☆					★	★		★			☆





## D5 重型铣刀片 Inserts for heavy-cutting milling

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended												
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade					
		L	W	S	d	R		BPS163	BPS263	BPS321	BPS411	BPG35B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
	SN155R10-P50	15.875	15.875	7.94	5.5	10		☆					★	★			★			☆
	SN55R8-EB50	16.875	16.875	7.94	5.5	8		☆					★	★			★			☆

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended												
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade					
		L	W	S	d	R		BPS163	BPS263	BPS321	BPS411	BPG35B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
	SN55R6.5	15.875	15.875	7.94	5.5	6.5		☆					★	★			★			☆
	SN55R40	15.875	15.875	7.94	5.5	40		☆					★	★			★			☆

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended												
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade					
		L	W	S	d	R		BPS163	BPS263	BPS321	BPS411	BPG35B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
	GLOL20021R5	15.28	12.7	7.94	5.4	5.0		☆					★	★			★			☆
	N182R5-JH	15.875	12.7	7.94	5.5	5.0		☆					★	★			★			☆
	LNC306-YT	15.875	12.7	7.15	5.5	4.7		☆					★	★			★			☆
	FNC334-103T05-W	23.5	11.5	6.4	4.4	6.5		☆					★	★			★			☆
	FNC484-103	51	14.3	6.3	5.6	6.3		☆					★	★			★			☆

★ 主推荐牌号 Recommended grade ☆ 可选牌号 Optional grade





## D5 重型铣刀片 Inserts for heavy-cutting milling

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended												
		L	W	S	d	R	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade					
							BPS163	BPS263	BPS321	BPS411	BPG35B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820	
	SN55RK13-ING	15.875	15.875	7.93	5.5	12.7		☆				★	★			★				☆
	SN55-R15-R00P50	15.875	15.875	7.93	5.5	15		☆				★	★			★				☆

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended												
		L	W	S	d		CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade					
							BPS163	BPS263	BPS321	BPS411	BPG35B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820	
	LNHX1906	19	14.3	6.35	5.3			☆				★	★			★				☆
	LNHX2509	25.4	14.3	9.5	5.5			☆				★	★			★				☆

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended												
		L	W	S	d		CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade					
							BPS163	BPS263	BPS321	BPS411	BPG35B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820	
	NXE324-104	12.7	11.89	6.35	4.5			☆				★	★			★				☆
	NXE324-R16	13.1	12.3	6.75	4.4			☆				★	★			★				☆
	LNKG1206TN-1	12.7	12.3	6.35	4.4			☆				★	★			★				☆
	LNKG1206EN-2	12.7	12.3	6.35	4.4			☆				★	★			★				☆
	LNXX1506PN-N-AM	15	13.9	6	4.6			☆				★	★			★				☆

D 铣削 Milling





## D5 重型铣刀片 Inserts for heavy-cutting milling

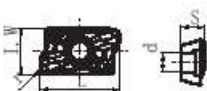

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)							材质推荐 Material recommended											
		L	W	S	d	R1	R2	CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade				
								BP-S153	BP-S253	BP-S321	BP-S411	BP-G15B	BP-G20B	BP-G30B	BP-G40A	BP-20	BP-35	BK10	BU810	BU820
	DIN7168-M	15.875	14.53	6	5.4	8.0	22		☆				★	★			★			☆





## D6 方肩铣刀片 Inserts for square shoulder milling

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
		LW	L	S	Φd	r	CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade							
							BP S153	BP S253	BP G35B	BP G10B	BP G20B	BP G30B	BP G25B	BP G30B	BP 20	BP 35	BK 10	BU 810	BU 820			
 	APMT1135PDER-H2	6.2	11.21	3.5	2.8	0.8							★	☆	☆							
	APMT1604PDER-H2	9.28	17.15	4.76	4.4	0.8							★	☆	☆							
 	APMT160432PDER-HB	9.33	16.31	4.76	4.4	3.2							★	☆	☆							
 	APMT1135PDER-M2	6.2	11.21	3.5	2.8	0.8							★	☆	☆							
	APMT1604PDER-M2	9.28	17.15	4.76	4.4	0.8							★	☆	☆							

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
		LW	L	S	Φd	r	CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade							
							BP S153	BP S253	BP G35B	BP G10B	BP G20B	BP G30B	BP G25B	BP G30B	BP 20	BP 35	BK 10	BU 810	BU 820			
 	APMT1135PDER-EM	6.24	11.2	3.5	2.8	0.8							★	☆	☆							
	APMT1604PDER-EM	9.41	17.24	5.28	4.4	0.8							★	☆	☆							
	APMT170508R-EM	10.63	18.54	5.56	4.4	0.8							★	☆	☆							
	APMT170516R-EM	10.63	18.54	5.56	4.4	1.6							★	☆	☆							

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
		LW	L	S	Φd	r	CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade							
							BP S153	BP S253	BP G35B	BP G10B	BP G20B	BP G30B	BP G25B	BP G30B	BP 20	BP 35	BK 10	BU 810	BU 820			
 	BR390-11T308-PM	6.9	11.72	3.58	2.8	0.8							★	☆	☆							
	BR390-11T331-PM	6.9	11.86	3.6	2.8	3.1							★	☆	☆							
	R390-170408-PM	9.6	17.82	4.76	4.12	0.8							★	☆	☆							
 	BR390-11T308-PL	6.9	11.72	3.58	2.8	0.8							★	☆	☆							
	R390-170450-PL	9.6	17.82	4.76	4.12	5							★	☆	☆							

★ 主推荐牌号 Recommended grade ☆ 可选牌号 Optional grade





## D6 方肩铣刀片 Inserts for square shoulder milling

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended													
		LW	L	S	Φd	r		CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
								BP S153	BP S253	BP G15B	BP G10B	BP G20B	BP G30B	BP G25B	BP G30B	BP 20	BP 35	BU 810	BU 813	BU 820	
	APKT11T304-LHC	6.5	12.24	3.6	2.8	0.4					☆		☆		☆				☆	★	
	APKT11T308-LHC	6.5	12.24	3.6	2.8	0.8					☆		☆		☆				☆	★	
	APKT1135PDFR-G2C	6.2	11.3	3.5	2.8	0.8					☆		☆		☆				☆	★	
	APKT1604PDFR-G2C	9.26	17	4.76	4.4	0.8					☆		☆		☆				☆	★	
	APEX100304FR-LHC	6.6	10.3	3.18	2.8	0.4					☆		☆		☆				☆	★	

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended													
		LW	L	S	Φd	r		CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
								BP S153	BP S253	BP G15B	BP G10B	BP G20B	BP G30B	BP G25B	BP G30B	BP 20	BP 35	BU 810	BU 813	BU 820	
	ADGT150404PDFR-LHC	9.7	15.58	4.76	4.4	0.4					☆		☆		☆				☆	★	
	ADGT150408PDFR-LHC	9.7	15.58	4.76	4.4	0.8					☆		☆		☆				☆	★	
	ADGT150412PDFR-LHC	9.7	15.58	4.76	4.4	1.2					☆		☆		☆				☆	★	
	ADGT190404-LHC	9.525	22.1	4.76	4.7	0.4					☆		☆		☆				☆	★	
	ADGT190408-LHC	9.525	22.1	4.76	4.7	0.8					☆		☆		☆				☆	★	
	ADGT190412-LHC	9.525	22.1	4.76	4.7	1.2					☆		☆		☆				☆	★	
	ADGT190420-LHC	9.525	22.1	4.76	4.7	2.0					☆		☆		☆				☆	★	
	ADGT190424-LHC	9.525	22.1	4.76	4.7	2.4					☆		☆		☆				☆	★	
ADGT190432-LHC	9.525	22.1	4.76	4.7	3.2					☆		☆		☆				☆	★		





## D6 方肩铣刀片 Inserts for square shoulder milling

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)					材质推荐 Material recommended										
		LW	L	S	φd	r	CVD涂层号 CVD coating grade		PVD涂层牌号 PVD coating grade					非涂层牌号 Uncoating grade			
							BPS103	BPS203	BPG05B	BPG10B	BPG20B	BPG30B	BPG30B	BPG30B	BU13	BP35	BK10
	APKT160402FR-LHC	9.0	16.88	4.76	4.4	0.2					☆	☆	☆	☆			☆
	APKT160404PDR-LHC	9.0	16.88	4.76	4.4	0.4					☆	☆	☆	☆			☆
	APKT160406PDR-LHC	9.0	16.88	4.76	4.4	0.8					☆	☆	☆	☆			☆
	APKT160408PDR-LHC	9.0	16.88	4.76	4.4	1.6					☆	☆	☆	☆			☆
	APKT16T4PDR-LHC	9.5	17	4.98	4.4	0.8											
	APKT16S2PDR-LHC	9.0	16.88	4.76	4.4	3.2					☆	☆	☆	☆			☆

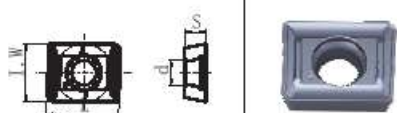
## D7 浅孔钻 Inserts for shallow hole drilling

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended								
		φLC	S	φd	R	α		CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoating grade			
								BPS251	BPS253	BPJ200	BPG20B	BPG30B	BP35	BK10	BU10	BU20
	WCGX030204-ZS	5.56	2.38	2.8	0.4	7		★	★		★				☆	☆
	WCGX030208-ZS	5.56	2.38	2.8	0.8	7		★	★		★				☆	☆
	WCGX040204-ZS	6.35	2.38	3	0.4	7		★	★		★				☆	☆
	WCGX040208-ZS	6.35	2.38	3	0.8	7		★	★		★				☆	☆
	WCGX050304-ZS	7.94	3.18	3.4	0.4	7		★	★		★				☆	☆
	WCGX050308-ZS	7.94	3.18	3.4	0.8	7		★	★		★				☆	☆
	WCGX06T304-ZS	9.525	3.97	4.4	0.4	7		★	★		★				☆	☆
	WCGX06T308-ZS	9.525	3.97	4.4	0.8	7		★	★		★				☆	☆
	WCGX080404-ZS	12.7	4.76	5.5	0.4	7		★	★		★				☆	☆
	WCGX080408-ZS	12.7	4.76	5.5	0.8	7		★	★		★				☆	☆
WCGX080412-ZS	12.7	4.76	5.5	1.2	7		★	★		★				☆	☆	





## D7 浅孔钻 Inserts for shallow hole drilling

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended										
		L.W	L	S	d			CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoating grade					
								BPS251	BPS253	BPU200	BPG20B	BPG30B	BP35	BK10	BU810	BU820		
	APMT1504T-WT	15.88	12.7	4.76	5.5			★	★		★							

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended										
		φI.C	S	d	r	a		CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoating grade					
								BPS251	BPS253	BPU200	BPG20B	BPG30B	BP35	BK10	BU810	BU820		
	SPMG050204-ZV	5.56	2.38	2.5	0.4	11		★			★							☆
	SPMG060204-ZV	6.35	2.38	2.8	0.4	11		★			★							☆
	SPMG07T308-ZV	7.94	3.97	2.8	0.8	11		★			★							☆
	SPMT090408-ZV	9.8	4.3	4.1	0.8	11		★			★							☆
	SPMG110408-ZV	11.5	4.76	4.4	0.8	11		★			★							☆
	SPMG140512-ZV	14.3	5.56	5.5	1.2	11		★			★							☆

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended										
		φI.C	S	φd	R	a		CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoating grade					
								BPS251	BPS253	BPU200	BPG20B	BPG30B	BP35	BK10	BU810	BU820		
	WCGX030204-ZV	5.56	2.38	2.5	0.4	7		★	★		★						☆	☆
	WCGX030208-ZV	5.56	2.38	2.5	0.8	7		★	★		★						☆	☆
	WCGX040204-ZV	6.35	2.38	2.8	0.4	7		★	★		★						☆	☆
	WCGX040208-ZV	6.35	2.38	2.8	0.8	7		★	★		★						☆	☆
	WCGX050304-ZV	7.94	3.18	3.4	0.4	7		★	★		★						☆	☆
	WCGX050308-ZV	7.94	3.18	3.4	0.8	7		★	★		★						☆	☆
	WCGX06T304-ZV	9.525	3.97	4.4	0.4	7		★	★		★						☆	☆
	WCGX06T308-ZV	9.525	3.97	4.4	0.8	7		★	★		★						☆	☆
	WCGX080404-ZV	12.7	4.76	5.5	0.4	7		★	★		★						☆	☆
	WCGX080408-ZV	12.7	4.76	5.5	0.8	7		★	★		★						☆	☆
WCGX080412-ZV	12.7	4.76	5.5	1.2	7		★	★		★						☆	☆	

★ 主推荐牌号 Recommended grade ☆ 可选牌号 Optional grade



## D8 仿形铣刀 Inserts for profile milling

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade						
		I.C	S	d	r	a		BPS153	BPS253	BPS321	BPS411	BPG10A	BPG20B	BPG30B	BPG35B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	WPGT060315ZSR	7.94	3.5	4	1.5	11					★		★	☆		☆						
	WPGT060415ZSR	9.525	4.2	4.4	1.5	11					★		★	☆		☆						
	WPGT080615ZSR	12.85	6.35	5.5	1.5	11					★		★	☆		☆						
	WPGT090725ZSR	15	7	5.5	2.5	11					★		★	☆		☆						

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended															
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade							
		Φ I.C	S	Φ d	L	R	a	BPS153	BPS253	BPS303	BPC102	BPG05B	BPG10A	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820	
	ZDGW08T2R10	6.75	2.78	2.8	8.4	10	15			★	☆			★	☆		☆		☆				
	ZDGW1103R12.5	8.5	3.18	2.8	10.6	12.5	15			★	☆			★	☆		☆		☆				
	ZDGW13T3R16	10.5	3.97	4.4	13.2	16	15			★	☆			★	☆		☆		☆				
	ZPGW2204R20	12.7	4.76	5.5	16.1	20	11			★	☆			★	☆		☆		☆				
	ZPGW2204R25	12.7	4.76	5.5	16.9	25	11			★	☆			★	☆		☆		☆				
	ZPGW2204R31	12.7	4.76	5.5	17.6	31.5	11			★	☆			★	☆		☆		☆				

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended																
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				金属陶瓷 Cemet		非涂层牌号 Uncoating grade						
		I.C	S	d	r	a		BPS153	BPS253	BPS303	BPC102	BPU106	BPU200	BPU206	BPG20B	BPG30B	BN201	BN301	BP20	BP35	BK10	BU810	BU820	
	SPMT120408	12.7	4.76	5.5	0.8	11		★	★	★	★													

D 铣削 Milling





## D9 仿形铣刀 Inserts for profile milling

刀片外形 Insert shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended															
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoating grade								
		I.C	S	d	r	a		BPS153	BPS253	BPS321	BPS411	BPG10A	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BU810	BU813	BU820		
	SPMT120408-D51	12.7	4.76	5.5	0.8	11					★		★	☆	☆	☆							

刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension (mm)						材质推荐 Material recommended															
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoating grade								
		I.W	L	S	d	r	a	BPS153	BPS253	BPS321	BPS411	BPG10A	BPG20B	BPG30B	BPG25B	BPG30B	BP20	BP35	BU810	BU813	BU820		
	LPMT150408R-D51	12.7	15.88	4.76	5.5	0.8	11				★		★	☆	☆	☆							
	LPMT150412R-D51	12.7	15.88	4.76	5.5	1.2	11				★		★	☆	☆	☆							





## D10 其他 Others

刀片外形 Insert shape	型号Type	基本尺寸Dimension (mm)			
		L/C	S	a	d
	P22215-00	8	2.38	14	3.4
	P22215-14	12	4.76	11	5.5

刀片外形 Insert shape	型号Type	基本尺寸Dimension (mm)			
		L	S	a	r
	P2601-0	9.52	3.18	14	0.8
	P2806-1	12.7	4.76	11	0.8
	P2809-1	12.7	4.76	11	0.8
	P28415-00	6.35	3.18	11	0.4
	P28415-0	9.52	3.18	14	0.8
	P28495-1	12.7	4.76	11	0.8
	P2800-0	9.52	3.18	11	0.8
	P2800-2	15.88	4.76	11	1.2
	P2816-1	12.7	4.76	11	C0.7

刀片外形 Insert shape	型号Type	基本尺寸Dimension (mm)			
		L	S	a	b
	P2894-1	12.7	4.76	20	2
	P2894-2	15.88	4.76	20	2.1
	P2803-1R	12.7	4.76	11	1.4
	P2803-1L	12.7	4.76	11	1.4
	P28451-1	1.27	4.76	11	1.4



## D10 其他 Others

刀片外形 Insert shape	型号Type	基本尺寸Dimension (mm)					
		LC	L	S	a	ε	r
	P29221-04	6.35	6.45	2.38	7	80	0.4
	P29221-14	9.525	9.67	3.97	7	80	0.4
	P29223-02	6.35	6.45	2.38	7	80	0.2
	P29223-12	9.525	9.525	3.97	7	80	0.2


刀片外形 Insert shape	型号Type	基本尺寸Dimension (mm)			
		L	S	a	ε
	P28467-1	6.35	2.38	14	90
	P28467-2	7.8	3.18	14	90
	P28467-3	9.52	3.97	11	96
	P28467-4	11	3.97	11	96
	P28467-5	12.7	4.76	11	96
	P28467-6	15	4.76	11	96
	P28467-7	17.6	5.56	11	96
	P28475-1	6.35	2.38	14	90
	P28475-2	7.8	3.18	14	90
	P28475-3	9.52	3.97	11	96
	P28475-4	11	3.97	11	96
	P28475-5	12.7	4.76	11	96
	P28475-6	15	4.76	11	96
	P28475-7	17.6	5.56	11	96

刀片外形 Insert shape	型号Type	基本尺寸Dimension (mm)					
		L	W	S	a	CR	b
	P2700-0	8.3	8.3	3.18	11	R0.5	
	P2700-3R	15	9.52	3.18	14	R0.8	
	P2700-3L	15	9.52	3.18	14	R0.8	
	P2703-3R	15	9.52	3.18	14		1.4
	P2703-4R	20	12.7	4.76	11		1.5
	P2706-3R	15.88	12.7	4.76	11	C1.1	
	P2706-4R	20	12.7	4.76	11	C0.8	
	P2706-4L	20	12.7	4.76	11	C0.8	
	P2707-3R	15.88	12.7	4.76	11	C1.1	
	P2707-4R	20	12.7	4.76	11	C0.8	
	P2707-4L	20	12.7	4.76	11	C0.8	

★ 主推荐牌号Recommended grade    ☆ 可选牌号Optional grade



## D10 其他 Others

刀片外形 Insert shape	型号Type	基本尺寸Dimension (mm)			
		LC	S	a	b
	P2603-2	9.52	4.76	11	1.2
	P2603-3	12.7	4.76	11	1.2

D

铣削  
Milling



## D11 铣削技术资料 Milling Technical information

### a 铣削加工常见问题及解决方案 Common problems and solutions for milling

对策与检查要点 Main points of solution and inspection		故障内容 Failure description	刀具材料选择 Selection of tool material		切削条件 Cutting condition					刀具形状 Tool shape					机床装夹 Machine tool clamping				
			硬度更高的材料 higher hardness material	韧性好的材料 Material with perfect toughness	切削速度 Cutting speed	进给 Feed rate	切深 Cutting depth	改变铣刀直径与宽度 Change the diameter and width of milling tools	切削液 Cutting liquid	前角 Rake angle	主偏角 Approach angle	切削刃强度 Strength of cutting edge	齿数 Number of teeth	增大容屑空间 Increase the chip pocket	检查副切削刃几何形状 Examine the geometry shape of minor cutting edge	检查端面跳动 Check the run-out of end face	提高刀具刚性 Improve the rigidity of tool	工件刀柄装夹 Clamping system of workpiece	刀柄悬伸 Overhang of tool
刀尖的损伤 Fracture of tool nose	后刀面磨损大 Severe abrasion of clearance face	切削条件不合适 Improper cutting condition			↓					✓									
		切削刃几何形状不合适 Improper geometry shape of cutting edge	✓							↑		↑							
	前刀面磨损大 Severe abrasion of rake face	切削条件不合适 Improper cutting condition			↓	↓	↓		✓										
		切削刃几何形状不合适 Improper geometry shape of cutting edge	✓							↑	↑	↑							
	切削刃破损 Fracture of cutting edge	切削条件不合适 Improper cutting condition					↑	↑											
		切削刃几何形状不合适 Improper geometry shape of cutting edge	✓							↑	↑			✓	✓	✓	✓	✓	✓
热冲击 Thermal cracking	切削条件不合适 Improper cutting condition					↑	↑	↑		✓									
	切削刃几何形状不合适 Improper geometry shape of cutting edge										↓		↑						
积屑瘤 Build-up edge	切削条件不合适 Improper cutting condition					↓	↓			✓									
	切削刃几何形状不合适 Improper geometry shape of cutting edge										↓		↑						
加工精度 Machining precision	表面粗糙度大 Coarse surface	刀具磨损铣刀振摆大 Abrasion of tool produces great vibration of milling tool	✓		↓	↑	↑			✓				修整刀 Wiper	✓				
	产生毛刺 Causing burr	切削条件不合适 Improper cutting condition			↑	↑	↑	✓											
		切削刃几何形状不合适 Improper geometry shape of cutting edge								↓	↓	↑		✓					
	产生塌边 Side collapse	切削条件不合适 Improper cutting condition					↑	↑											
	切削刃几何形状不合适 Improper geometry shape of cutting edge								↓	↑	↑	↓	✓		✓				
平面度、平行度 恶化 Worse planeness and parallelism	切削刃几何形状不合适 Improper geometry shape of cutting edge					↑	↑			↓	↓		↑	✓	✓	✓	✓	✓	
其他 Others	振动大 Great vibration	切削条件工艺不合适 Cutting condition improper technology			↑	↑	↑	✓		↓	↓	↑				✓	✓	✓	
	切屑缠绕堵塞 Chippings are twisting and jamming	切削条件不合适 Improper cutting condition			↓	↓		✓	✓				↑						
		切削刃几何形状不合适 Improper geometry shape of cutting edge								↓			↑	✓					





## D11 铣削技术资料 Milling Technical information

### b 问题与对策 Questions and solutions

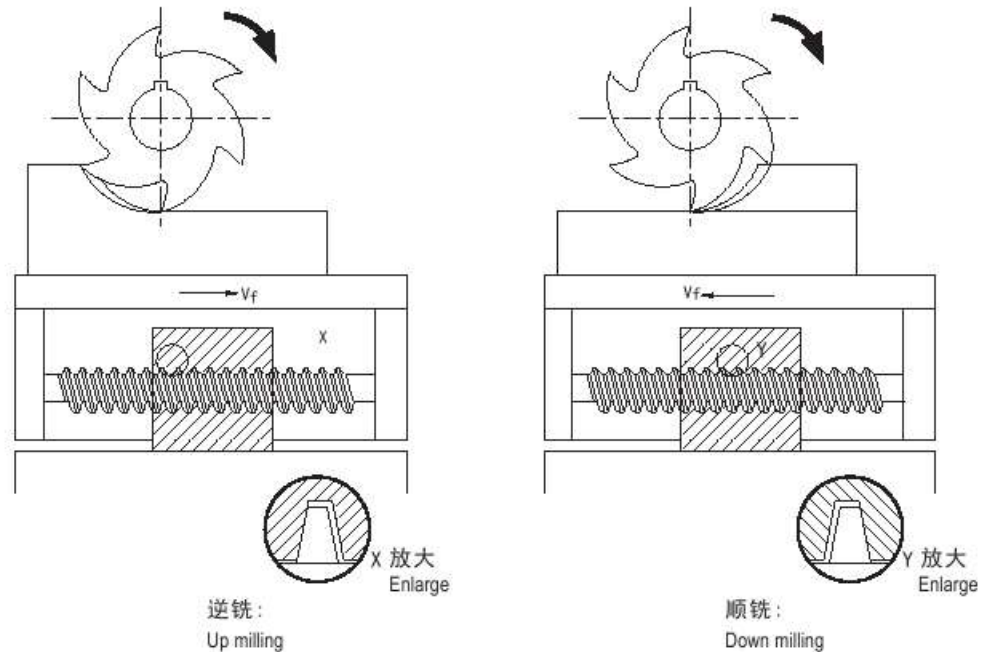
代表性的问题 The problem of representation	现象 Phenomenon	原因 Reason	对策 Solutions
刃口磨损 Blade wear	 精加工的表面粗糙度和尺寸精度下降 reduction of surface roughness and size for finishing	切削速度过高 刀具使用寿命结束 The cutting speed is too high The service life of the cutter end	降低切削速度 改用耐磨损性更佳的材料 Lower cutting speed The use of abrasion resistance and better material
一次边界磨损 A boundary wear	 产生毛刺 切削阻力增加 Burrs Cutting resistance	进刀量过大和切削速度过高 The amount of feed is too large and the cutting speed is too high	提高锋利度 降低切削速度 改用抗热性更好的材料 Improve the edge sharpness Lower cutting speed The use of thermal shock resistance of materials
凹坑磨损 Crater wear	 切屑控制恶化 精加工表面恶化(起毛) Chip control deterioration Finishing the surface deterioration(Terry)	切削速度过高 Cutting speed is too high	降低切削速度 使用更高切削速度的刀片如瓷金刀片和三氧化二铝涂层刀片 Improve the edge sharpness Lower cutting speed The use of thermal shock resistance of materials
塑性变形 Plastic deformation	 工件尺寸变化 先端崩损 Workpiece size change Blade damage	切削负荷过高 刀具材质错误配对 Cutting load is too high Cutter material mismatch	改用硬度更高的材料 降低进刀量和切深 The use of high hardness material Reduce the amount of feed and cutting depth
磨损崩损 Wear damage	 精加工表面急速恶化 工件尺寸超差 The rapid deterioration of processing surface, Workpiece size tolerance	切削速度过高 The cutting speed is too high	降低预设的刀具寿命 改用耐磨损性更佳的材料 Reduce the preset tool life The use of abrasion resistance and better material
表面粗糙 Surface roughness	 切削阻力增加 表面粗糙恶化 Cutting resistance Surface deterioration	进刀量过大 切削时的振刀 刀片韧性不足 The amount of feed is too large Cutting vibration knife Blade low toughness.	降低进刀量和切深 改用刚性更高的刀把 改用韧性更大的材料 Reduce the amount of feed and cutting depth The use of rigid and better tools The use of higher material toughness
粘刀与刃口积屑瘤 导致崩刃 Sticking to the knife and built-up edge cause chipping	 精加工表面恶化 切削阻力增加 Surface deterioration Cutting resistance	切削速度过低 The cutting speed is too low	增加切削速度 提高锋利度(前角, 倒角) Increasing the cutting speed Enhance the sharpness (anterior horn, chamfer)
机械性磨损 Mechanical abrasion	 突发性崩损 刀具寿命不稳定 Accidental damage Tool life instability	进刀量和切深过大 切削时的振刀 The amount of feed and depth of cut is too large Cutting vibration knife	改用韧性更大的材料 加大倒角 加大刀尖圆弧半径 R 改用刚性更高的刀把 The use of higher material toughness Increase chamfer Increase the radius of the cutter tip The use of rigid and better tools
热龟裂性崩损 Thermal cracking damage	 由热而崩损 多出现于断续切削和铣削 By the thermal cycle and damage Occurring in intermittent cutting and milling	进刀量过大和切削速度过高 The amount of feed is too large and the cutting speed is too high	降低进刀量 降低切削速度 改用干式加工 Reduce the amount of feed Reduce the cutting speed The use of dry cutting
崩缺 Chipping	 多出现于高硬度材料切削加工 多出现于有振刀的切削加工 Appearing for high hardness material machining Appearing in vibration knife cutting	刀片韧性不足 刀把的刚性不足 Tool less rigid	改用硬度更高的材质(TiC系陶瓷→CBN) 改用刚性更高的刀把, 变更刀尖式样 The use of high hardness material (TiC ceramics and CBN) The use of rigid and better tools Change the blade tip.





## D11 铣削技术资料 Milling Technical information

### c 顺铣和逆铣的差别和选择 Difference and selection between down milling and up milling



顺铣：铣刀与工件接触部分的旋转方向与切削进给方向相同的铣削方式。

逆铣：铣刀与工件接触部分的旋转方向与切削进给方向相反的铣削方式。

Down milling (also called down milling): the feed direction of workpiece is the same as the milling rotation at the connecting position.

Up milling (also called up milling): the feed direction of workpiece is opposite to the milling rotation at the connecting position.

顺铣时，切削刃主要受到的是压应力，逆铣时，切削刃受到的是拉应力。硬质合金材料抗压强度比抗拉强度大得多；顺铣时，切屑由厚变薄，刀刃与工件间相互挤压，刀齿与加工表面相对滑行时摩擦小，可减小刀齿磨损、减少加工表面硬化、减小表面粗糙度Ra值。逆铣时，切屑由薄变厚，刀片切入时产生强烈的摩擦，较顺铣产生更多的热量和使加工表面硬化。

逆铣时，由于铣刀作用在工件的水平切削力方向与工件进给方向相反，所以工作台丝杆与螺母的一个侧面紧密贴合。而顺铣切削时铣削力的方向与进给方向一致，当刀刃对工件的水平面作用力大到一定程度时工作台会发生窜动，从而将间隙留在后侧，随着丝杆的继续转动，间隙又恢复到前侧。在这一瞬间工作台停止运动；当下次水平切削分力又大到一定程度时，工作台会再次窜动。工作台的这种周期性窜动，将严重影响加工质量和损坏刀具。

使用立铣刀顺铣时，刀齿每次都是由工件表面开始切削，所以不宜用来加工有硬皮的工件。

铣削薄壁零件或精度较高的方肩铣采用逆铣。

In down milling, the major force of cutting edge is compressive stress; in up milling, cutting edge bears the tensile stress. The compressive strength of cemented carbide material is larger than its tensile strength. In down milling, chip becomes thin from thick gradually, cutting edge and workpiece press each other. The friction between edge and workpiece is small, thus can reduce the abrasion of edge, the hardening of workpiece surface and the surface roughness (Ra). In up milling, chip becomes thick from thin gradually. When insert cutting into the workpiece, it generates strong friction and more heat than down milling, and make workpiece surface harden.

In up milling, because horizontal direction of cutting force that milling cutter conducting on workpiece is opposite to the feed direction of workpiece, therefore the lead screw of work table joints closely with one side of screw nut. In down milling, the direction of cutting force is same as the feed direction. When edge's radial force on workpiece is big enough to some extent, the work table will bounce left and right, thus make the gap fall behind. The gap will return to front side along with the continuing rotation of lead screw. At this moment the work table stops motion, however it will bounce left and right again when the radial cutting force is big enough to some extent again. The periodical bounce of work table will cause poor surface quality of workpiece and tool breakage.

When use end mills for down milling, every time the edges begin the cutting at workpiece surface, therefore end mills are not suitable for machining the workpiece with hardened surface.

Up milling is recommended for milling the thin-wall components or square milling with the demand of high precision.



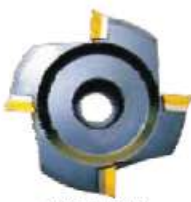




## D11 铣削技术资料 Milling Technical information

### d 刀具齿距的选择 Pitch selection

铣削刀具齿距是刀刃上某点和下一刀刃相同点之间的距离。铣削刀具分疏齿、密齿、超密齿。

Pitch is the distance between one point on one cutting edge and the same point on the next edge. Milling cutters are mainly classified into coarse, close and extra close pitches.

操作稳定性 Stability of operation		
L (低) (Low)	M (中) (Medium)	H (高) (High)
<p><b>疏齿</b> Coarse pitch</p>  <p>不等齿距设计 Differential pitch</p>	<p><b>密齿</b> Close pitch</p> 	<p><b>超密齿</b> Extra close pitch</p> 
<p>实际铣削面积等于铣削面积时,加工系统稳定,机床主电机功率足够时,选择疏齿刀具,可得到高的生产效率。 When the milling width is equal to diameter of cutter, the machining system is stable and main power of machine is sufficient, selecting coarse pitch can achieve high productive efficiency.</p>	<p>一般用途铣削和多种混合生产。 General milling function and multiple mixed productions</p>	<p>实际切削面积远小于铣削面积时,以最多的刀刃来参与切削,可获得高的生产率。 When the milling width is less than diameter of cutter, cutting by maximum edges can achieve high productive efficiency.</p>

### 选择主偏角 Selection of approach angle

铣削刀具的主偏角是由刀片与刀体形成的,主偏角影响切削厚度、切削力和刀具寿命。在给定的进给率下,减小主偏角,则切削厚度会减小,可使切削刃在更大的切削范围内与工件接触。

较小的主偏角可使刀片更为平稳地步入或退出刀具表面,这有助于减少径向力、保护刀刃,并减少破损机率。但会增大轴向力,故不适应加工薄板类零件。

The approach angle is composed by insert and tool body, Chip thickness, cutting forces and tool-life are affected especially by the approach thickness and spreads the cutting area between cutting edge and workpiece for a given feed rate.

A smaller approach angle also guarantee that it is stable entering into or exiting workpiece, to protect the cutting edge and extend tool life. However this will increase higher axial cutting forces on the workpiece, thus is not suitable for machining thin workpiece such as thin plate.

主偏角 Approach angle	每齿进给量 Feed rate per tooth	实际最大切削厚度 Real maximum cutting depth
90	$f_z$	$h_{ex} = f_z \times \text{sinkr}$
75	$f_z$	$h_{ex} = 0.96 \times f_z$
60	$f_z$	$h_{ex} = 0.86 \times f_z$
45	$f_z$	$h_{ex} = 0.707 \times f_z$
圆刀片 Round insert	$f_z$	$h_{ex} = \frac{\sqrt{iC^2 \times (iC - 2a_p)^2}}{iC} \times f_z$



## D11 铣削技术资料 Milling Technical information

### e 通用公式 General formula

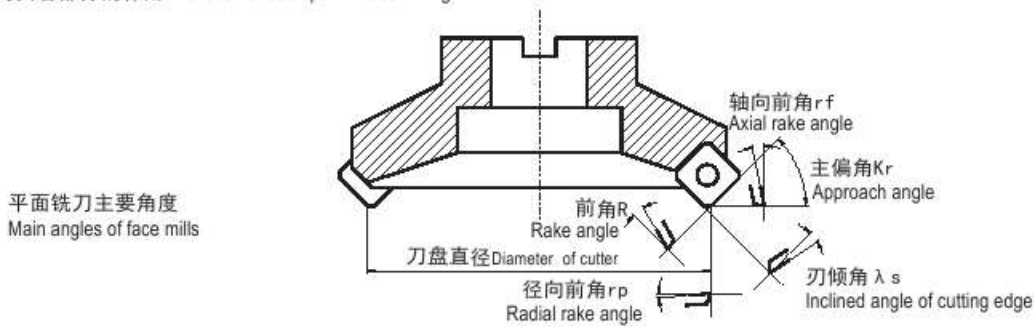
<p><math>V_c</math>: 切削速度 (m/min) cutting speed(m/min)</p> <p><math>D_c</math>: 铣刀公称直径 (mm) nominal diameter of milling tool(mm)</p> <p><math>n</math>: 主轴转速 (rev/min) spindle speed(rev/min)</p> <p><math>Z_n</math>: 刃数 number of teeth</p>	<p><math>V_f</math>: 工作台进给量 (进给速度) (mm/min) feed rate of worktable ( feed speed)(mm/min)</p> <p><math>f_z</math>: 每齿进给量 (mm/z) feed rate per tooth(mm/z)</p> <p><math>\pi</math>: 圆周率<math>\approx 3.14</math> circumference ratio<math>\approx 3.14</math></p> <p><math>T_c</math>: 加工时间 (min) machining time(min)</p>	<p><math>Q</math>: 金属去除率 (cm<sup>3</sup>/min) metal removal rate(cm<sup>3</sup>/min)</p> <p><math>f_n</math>: 每转进给量 (mm/rev) feed rate per revolution (mm/rev)</p> <p><math>L</math>: 实际走刀距离 (mm) Real cutting distance(mm)</p>
<p>● 切削速度 Cutting speed</p> $V_c = \frac{\pi D_c n}{1000} \text{ (m/min)}$		
<p>● 主轴转速 Spindle speed</p> $n = \frac{1000 V_c}{\pi D_c} \text{ (rev/min)}$		
<p>● 工作台进给量 (进给速度) (mm/min) Feed rate of worktable ( feed speed)</p> $V_f = f_z n z n$		
<p>● 每齿进给量 Feed rate per tooth</p> $f_z = \frac{V_f}{n Z n} \text{ (mm/z)}$		
<p>● 每转进给量 Feed rate per revolution</p> $f_n = \frac{V_f}{n} \text{ (mm/rev)}$		
<p>● 加工时间 Machining time</p> $T_c = \frac{L}{V_f} \text{ (min)}$		
<p>● 金属去除率 Metal removal rate</p> $Q = \frac{a_s a_p V_c}{1000} \text{ (cm}^3\text{/min)}$		





## D11 铣削技术资料 Milling Technical information

f 铣削刀具各部分的作用 Function of each part in face milling



平面铣刀主要角度标注 Main angles of face mills

名称 Designation	作用 Function	效果 Effect	
轴向前角 $r_f$ Axial rake angle $r_f$	决定排屑方向 Determining the chip direction	角度为负: 排屑性能好 negative angle, excellent capability of chip removal	
径向前角 $r_p$ Radial rake angle $r_p$	决定切削轻快与否 Determining whether the cutting is light and fast or not	角度为正: 切削性能好 Positive angle, good cutting performance	
主偏角 $K_r$ Approach angle $K_r$	决定切屑厚度 Determining the chip direction thickness	$K_r \uparrow$ , 切屑厚度 $\uparrow$ ; $K_r \downarrow$ , 切屑厚度 $\downarrow$ ; $K_r \uparrow$ , chip thickness $\uparrow$ ; $K_r \downarrow$ , chip thickness $\downarrow$	
前角 R Rake angle R	决定切削轻快与否 Determining whether the cutting is light and fast or not	切削性能差, 切削刃强度高 Poor cutting performance, high strength of high strength of cutting edge	(-) ← 0 → (+) 切削性能好, 切削刃强度低 Good cutting performance, cutting edge
刃倾角 $\lambda_s$ Inclined angle of cutting edge	决定排屑方向 Determining the chip direction	排屑性能差, 切削刃强度高 Poor cutting performance, high strength of high strength of cutting edge	(-) ← 0 → (+) 排屑性能好, 切削刃强度低 Good cutting performance, low strength of cutting edge

### 不同前角的组合特征 Characteristics of different rake angles combined

前角类型 Rake angle type	示意图 Diagram	双正前角 Double positive	双负前角 Double negative	一正一负前角 One positive, one negative
		负型前角 Negative rake angle		
零度前角 0 rake angle				
正型前角 Positive rake angle				
轴向前角 $r_f$ Axial rake angle $r_f$		+	-	+
径向前角 $r_p$ Radial rake angle $r_p$		+	-	-
适合加工材料 Applicable material machined	P	✓		✓
	M	✓		✓
	K		✓	✓
	N	✓		
	S	✓		✓



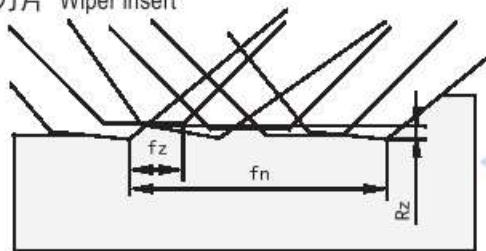


## D11 铣削技术资料 Milling Technical information

### g 不同主偏角的切削性能 Cutting performances of different approach angles

主偏角 Approach angle	示意图 Schematic diagram	说明 Instruction
45		轴向分力最大。加工薄壁零件时，工件会发生扰曲，导致加工工件的精度下降；加工易破碎材料时，有利于防止工件边缘产生崩落。 Axial force is the largest. It will bend when machining thin-wall workpiece, and reduces the precision of workpiece. It is benefit to avoid fringe breakage of workpiece when machining cast iron.
75		主要的为径向切削分力，是平面铣削最常用的一种主偏角。 The main purpose is to resolve the radial cutting force, it is often used for general face milling.
90		理论上轴向分力为零，适合于薄板件的铣削。 The axial force is zero in theory, suitable for milling thin plate workpiece.

### 修光刃刀片 Wiper insert



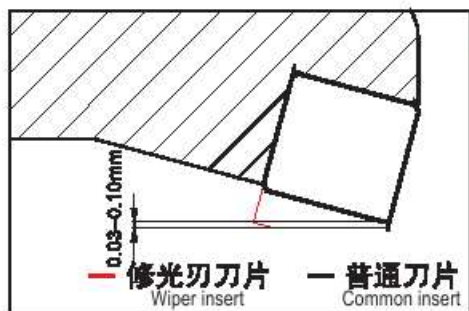
由于刀体和刀片存在制造误差，所以，刀具存在端刃的端面圆跳动和圆周刃的径向圆跳动，端刃的端面圆跳动将导致已加工表面粗糙度Ra值升高，使表面质量达不到要求。

It has axial and radial run out because of tools and inserts exist manufacturing tolerance. The axial runout lead to poor surface roughness.

解决办法  
Solution

安装修光刃刀片  
Assembling wiper inserts

用法  
usage

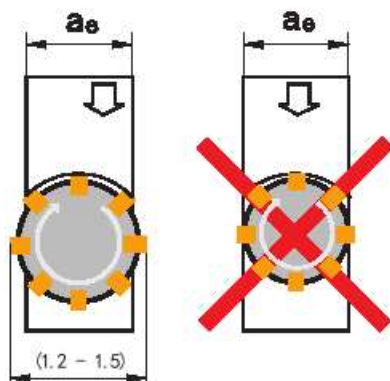


在端向上修光刃必须比其它刃高0.03-0.1mm才起到修光作用。  
一般来说一个刀盘装一片修光刃刀片即可。当刀盘直径比较大时或刀盘的每转进给量大于修光刃长度时，可装2-3片修光刃。

The wiper insert must protrude below the other inserts by 0.03-0.10 mm at axial direction, only that the wiping function can take into effect. Generally speaking, a cutter can just assemble only one wiper insert. If the diameter of cutter is much bigger or cutter's feed rate per revolution is bigger than the length of wiper edge, 2 to 3 wiper inserts can be assembled.

### 面铣中切宽与刀具切削直径的选择

#### Selection of cutting width diameter in face milling






















$D_c$  : 刀具切削直径 Tool cutting diameter

$a_e$  : 切削宽度 Cutting width

一般来说，切削宽度与刀具的切削直径与切宽的关系为： $D_c = (1.2 - 1.5) a_e$ 。  
在实际加工中尽量避免刀具中心与工件中心重合。

Generally speaking, the relation between cutting width and diameter is  $D_c = (1.2 - 1.5) a_e$ . In the machining practice, it need to avoid coincidence of tool center and workpiece center as much as possible.

## E 刀垫 Shim

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## E1 C\*A

刀垫外形 Shim shape	产品型号Type	D	S	d	r	d1	d2	e	适用刀片 applicative inserts
	C12A	11.7	3.18	6.1	0.8	7.3	8.5	0.5	CNMM/G12
	C16A	14.88	4.76	7.1	1.2	8.5	10	0.5	CNMM/G16
	C19A	18.05	6.35	8.7	1.6	10.3	11.5	0.5	CNMM/G19
	C16BP	15.6	4.76	7.9	1.6	9.58	11.3	0.5	CNMM/G16
	C19BP	18.8	4.76	10	1.6	12	12.1	0.5	CNMM/G19

## E2 C\*B

刀垫外形 Shim shape	产品型号Type	D	S	r	d1	d2	S1	e	适用刀片 applicative inserts
	C12B	11.7	3.18	0.8	6.6	8	1.5	0.5	CNMM/G12
	C16B	14.88	4.76	1.2	7.6	9	2	0.5	CNMM/G16
	C19B	18.05	4.76	1.6	8.6	10	2	0.5	CNMM/G19
	MC0903	9.3	3.18	0.8	5.8	6.5	1.87	0.2	CNMM/G09
	MC1204	12.5	4.76	1.2	7.4	8.1	2.77	0.2	CNMM/G12
	MC1604	15.5	4.76	2	9.8	10.8	2.2	0.3	CNMM/G16
	MC1904	18.65	4.76	1.25	8	12.25	2.5	0.5	CNMM/G19
	ICSN-332	9.14	4.76	0.8	5.94	6.63	3.43	0.5	CNMM/G09**08
	ICSN-432	12.32	4.76	0.8	7.52	8.2	2.59	0.5	CNMM/G12**08
	SM-303	12.32	4.76	0.79	6.76	9.14	2.49	0.5	CNMM/G12**08
	ICSN-433	12.32	4.76	1.27	7.52	8.2	2.59	0.5	CNMM/G12**12
	ICSN-443	12.32	5.3	1.27	7.52	8.2	3.05	0.5	CNMM/G12**12
	ICSN-533	15.49	4.76	1.27	9.86	10.97	2.59	0.5	CNMM/G16**12
	SM-304	18.67	4.76	1.27	8.48	11.71	2.49	0.5	CNMM/G19**12
	ICSN-633	18.67	4.76	1.27	11.43	12.29	2.59	0.5	CNMM/G19**12
	C0903B	9.13	9.13	0.8	5.85	6.7	1.75	0.5	CNMM/G09
	SC1203	12.2	3.18	0.8	6.95	8.05	1.75	0.2	
	SC1204	12.2	4.76	0.8	7.4	7.8	2.25	0.5	
	C1203B	12.3	3.18	1.27	7.35	8.3	1.75	0.5	
	C1203B	12.3	12.3	1.27	7.35	8.3	1.75	0.5	CNMM/G12
	SMC-432	12.4	4.8	0.8	7.35	8.1	2.3	0.5	
	MSC-432	12.4	4.8	1.2	7.25	8	2.6	0.5	
	C1204	12.5	4.76	1.2	7.4	8.25	3.25	0.8	
	M-C16B	14.88	4.76	1.2	7.8	9	2.8	0.5	
	SC1604	15.2	4.76	1.2	7.95	9.05	2.05	0.2	CNMM/G16
	C1604B	15.48	4.76	1.27	9.85	10.9	2.65	0.5	
	SCN-64	18.7	4.76	1.6	9.4	10.8	2.4	0.5	



### E3 D\*A

刀垫外形 Shim shape	产品型号Type	D	S	d	r	d1	d2	e	适用刀片 applicative inserts
	D15TA	11.7	3.18	6.1	1.2	7.3	8.5	0.2	DNMM/G15
	D15A	11.7	4.76	6.1	1.2	7.3	8.5	0.2	
	D19A	14.88	4.76	7.1	1.2	8.5	10	0.2	DNMM/G19
	TD1503	11.65	3.18	6.8	0.8	8.6		0.5	DNMM/G15

### E4 D\*B

刀垫外形 Shim shape	产品型号Type	D	S	r	d1	d2	S1	e	适用刀片 applicative inserts
	D15TB	11.7	3.18	1.2	6.6	8	1.5	0.2	DNMM/G15
	D15B	11.7	4.76	1.2	6.6	8	1.5	0.2	DNMM/G15
	D19B	14.88	4.76	1.2	7.6	9	2	0.2	DNMM/G19
	MD1504	12.5	4.76	0.8	7.4	8.1	2.77	0.2	DNMM/G15
	MD1506	12.5	6.35	0.8	7.4	8.1	4.28	0.2	
	IDSN-322	9.14	3.18	0.8	5.94	6.63	1.85	0.5	DNMM/G11**12
	IDSN-433	12.32	4.76	1.27	7.52	8.2	2.59	0.5	DNMM/G15**12
	IDSN-533	15.49	4.76	1.27	9.86	10.97	2.59	0.5	DNMM/G19**12
	D1103B	9.13	3.18	0.8	5.85	6.7	1.75	0.5	
	MD11	9.4	3.3	1.2	5.8	6.6	2	0.2	
	D1504B	12.32	4.76	1.27	7.35	8.3	2.65	0.5	
	SMD-432	12.4	6.46	0.8	7.45	8.16	4.4	0.5	
	SD1503	12.2	3.18	0.8	6.95	8.05	1.75	0.5	
	SD1506	12.2	6.35	0.8	7.25	8.05	4.05	0.5	DNMM/G15
	MSD-432	12.5	4.8	0.8	7.3	8	2.6	0.5	
	D1504	12.5	4.76	1	7.4	8.25	3.25	0.8	
MD15	12.5	4.76	1.2	7.4	8.3	3	0.2		

### E5 S\*A

刀片基本形状	产品型号	D	S	d	r	d1	d2	e	适用刀片
	S09A	8.53	3.18	4.6	0.4	5.6	6.6	0.2	SNMM/G09
	S12A	11.7	3.18	6.1	0.8	7.3	8.5	0.2	SNMM/G12
	S15A	14.88	4.76	7.1	1.2	8.5	10	0.2	SNMM/G15
	S19A	18.05	6.35	8.7	1.6	10.3	11.5	0.2	SNMM/G19
	S22A	21.23	6.35	8.7	1.6	10.3	11.5	0.2	SNMM/G22
	S25A	24.4	6.35	10.1	2.4	12	13	0.2	SNMM/G25
	S09BP	8.5	3.18	4.9	0.8	6.8	6.5	0.3	SNMM/G09
	SC42	12.5	3.18	6.9	1.2	8.5	8	0.5	





## E6 S\*B

刀垫外形 Shim shape	产品型号 Type	D	S	r	d1	d2	S1	e	适用刀片 applicative inserts
	S09B	8.53	3.18	0.4	5.6	7	1.5	0.2	SNMM/G09
	S12B	11.7	3.18	0.8	6.6	8	1.5	0.2	SNMM/G12
	S15B	14.88	4.76	1.2	7.6	9	2	0.2	SNMM/G15
	S19B	18.05	6.35	1.6	8.6	10	2	0.2	SNMM/G19
	S22B	21.23	7.93	1.6	9.6	11	2.5	0.2	SNMM/G22
	S25B	24.4	7.93	2.4	9.6	11	2.5	0.2	SNMM/G25
	MS0903	9.3	3.18	0.8	5.8	6.5	1.87	0.2	SNMM/G09
	MS1204	12.5	4.76	0.8	7.4	8.1	2.77	0.2	SNMM/G12
	ISSN-322	9.14	3.18	0.8	5.94	6.63	1.85	0.5	SNMM/G09**08
	ISSN-332	9.14	4.76	0.8	5.94	6.63	3.43	0.5	SNMM/G12**08
	ISSN-432	12.32	4.76	0.79	7.52	8.2	2.59	0.5	SNMM/G12**08
	ISSN-433	12.32	4.76	1.27	7.52	8.2	2.59	0.5	SNMM/G12**12
	ISSN-443	12.32	5.3	1.27	7.52	8.2	2.59	0.5	SNMM/G12**12
	ISSN-533	15.49	4.76	1.27	9.86	10.97	2.59	0.5	SNMM/G15**12
	ISSN-633	18.67	4.76	1.27	11.43	12.29	2.59	0.5	SNMM/G19**12
	ISSN-846	25.02	6.35	2.4	14.66	15.88	2.72	0.5	SNMM/G25**24
	S0903B	9.13	3.18	0.8	5.85	6.7	1.75	0.5	SNMM/G09
	SS1203	12.2	3.18	1.2	6.95	8.05	1.75	0.2	
	S1203B	12.32	3.18	1.27	7.35	8.3	1.75	0.5	
	M-S15B	14.88	4.76	1.2	7.8	9	2.8	0.5	
S1504B	15.48	4.76	0.8	9.85	10.9	2.65	0.5	SNMM/G15	

## E7 SE\*

刀垫外形 Shim shape	产品型号 Type	D	S	r	d1	d2	S1	$\alpha$	适用刀片 applicative inserts
	SEF12	10.5	3	2X45	5.4	6.7	1.2		SEKT12
	SE445	10.3	3.18	2.5X45	5.1	6.6	1.68	16	SEKT12

## E8 T\*A

刀垫外形 Shim shape	产品型号 Type	D	S	d	r	d1	d2	e	适用刀片 applicative inserts
	T16A	8.53	3.18	4.6	0.4	5.6	6.6	0.2	TNMM/G16
	T22A	11.7	3.18	6.1	0.8	7.3	8.5	0.2	TNMM/G22
	T27A	14.88	4.76	7.1	1.2	8.5	10	0.2	TNMM/G27



### E9 T\*B

刀垫外形 Shim shape	产品型号 Type	D	S	r	d1	d2	S1	e	适用刀片 applicative inserts
	T16B	8.53	3.18	0.4	5.6	7	1.5	0.2	TNMM/G16
	T22B	11.7	3.18	0.8	6.6	8	1.5	0.2	TNMM/G22
	T27B	14.88	4.76	1.2	7.6	9	2	0.2	TNMM/G27
	MT1603	9.2	3.18	0.8	5.8	6.5	1.87	0.2	TNMM/G16
	MT2204	12.5	4.76	1.2	7.3	8	2.7	0.4	TNMM/G22
	ITSN-322	9.14	3.18	0.8	5.94	6.63	1.85	0.5	TNMM/G16**08
	ITSN-323	9.14	3.18	1.27	5.94	6.63	1.85	0.5	TNMM/G16**12
	ITSN-333	9.14	4.76	1.27	5.94	6.63	3.43	0.5	TNMM/G16**12
	ITSN-432	12.32	4.76	0.79	7.52	8.2	2.59	0.5	TNMM/G22**08
	ITSN-433	12.32	4.76	1.27	7.52	8.2	2.59	0.5	TNMM/G22**12
	ITSN-534	15.49	4.76	1.57	9.86	10.72	2.59	0.5	TNMM/G27**16
	ITSN-538	15.49	4.76	3.18	9.86	10.72	2.59	0.5	TNMM/G27**32
	ITSN-636	18.67	4.76	2.39	11.43	12.29	2.59	0.5	TNMM/G33**24
	ST1603	9	3.18	0.8	5.95	7.05	1.75	0.2	
	ST1603B	9.13	3.18	1.27	5.85	6.7	1.75	0.5	
	T1603B	9.13	3.18	1.27	5.85	6.7	1.75	0.5	
T1603	9.4	3.3	1	5.8	6.9	2	0.5		
T2204B	12.3	3.18	1.27	7.35	8.3	1.75	0.5		
T2203B	12.3	3.18	1.27	7.35	8.3	1.75	0.5		

### E10 V\*B

刀垫外形 Shim shape	产品型号 Type	D	S	r	d1	d2	S1	e	适用刀片 applicative inserts
	IVSN-322	9.14	3.18	0.79	5.94	6.63	1.85	0.5	VNMM/G16**08
	IVSN-433	12.32	4.76	1.57	7.52	8.2	2.59	0.5	VNMM/G22**12
	SMV-321	8.3	3.2	0.8/0.2	5.4	6.5	1.7	0.5	
	MSV-321	8.6	3.2	0.8/0.2	5.6	6.6	1.5	0.5	
	SV1603	9	3.18	0.8	5.95	7.05	1.75	0.5	
	SMV-322	9.1	3.2	0.8/0.2	5.8	6.6	1.7	0.5	VNMM/G16
	V1603B	9.14	3.18	0.79	5.85	6.7	1.75	0.5	
	SM-310	9.14	3.18	0.79	5.41	7.11	1.78	0.5	
	MSV-322	9.3	3.2	0.8/0.2	5.8	6.4	1.9	0.5	

### E11 W\*A

刀垫外形 Shim shape	产品型号 Type	D	S	d	r	d1	d2	e	适用刀片 applicative inserts
	W08A	11.7	3.18	6.1	0.8	7.3	8.5	0.2	WNMM/G08
	W10A	14.88	4.76	7.1	1.2	8.5	10	0.2	WNMM/G10
	W13A	18.05	6.35	8.7	1.6	10.3	11.5	0.2	WNMM/G13
	SW317	9.35	2.7	5	0.8	6.3	6.6	0.5	
	TW0803	11.65	3.18	6.9	0.8	7.9	8.6	0.5	
	SW42	12.5	3.18	6.9	1.2	8.5	8	0.5	WNMM/G08



### E12 W\*B

刀垫外形 Shim shape	产品型号Type	D	S	r	d1	d2	S1	e	适用刀片 applicative inserts
	W8B	11.7	3.18	0.8	6.6	8	1.5	0.2	WNMM/G08
	W10B	14.88	4.76	1.2	7.6	9	2	0.2	WNMM/G10
	W13B	18.05	6.35	1.6	8.6	10	2	0.2	WNMM/G13
	MW0603	9.3	3.18	0.6	5.75	6.45	1.85	0.2	WNMM/G06
	MW0804	12.6	4.76	0.8	7.4	8.1	2.77	0.2	WNMM/G08
	IWSN-322	9.14	3.18	0.8	5.94	6.63	1.85	0.5	WNMM/G06
	IWSN-432	12.32	4.76	0.8	7.52	8.2	2.59	0.5	WNMM/G08**08
	IWSN-433	12.32	4.76	1.19	7.52	8.2	2.59	0.5	WNMM/G08**12
	W0603B	9.13	3.18	0.8	5.85	6.7	1.75	0.3	WNMM/G06
	SW0803	12.2	3.18	0.8	6.95	8.05	1.75	0.5	WNMM/G08
	SMW-432	12.3	4.8	1.2	7.4	8.2	2.6	0.5	
	W0803B	12.32	3.18	1.19	7.35	8.3	1.75	0.3	
	WW08	12.4	4.76	0.8	6.6	8.4	2.25	0.5	
	MSW-432	12.8	4.8	0.8	7.3	8.1	2.6	0.5	
	W1004B	15.48	4.76	0.8	9.85	10.9	2.65	0.3	WNMM/G10

### E13 R\*A

刀垫外形 Shim shape	产品型号Type	D	S	d	d1	d2	e	适用刀片 applicative inserts
	R10A	9	3.18	4.6	5.6	6.6	0.2	RNMM/G10
	R12A	11	3.18	6.1	7.3	8.5	0.2	RNMM/G12
	R16A	15	4.76	7.1	8.5	10	0.2	RNMM/G16
	R20A	19	6.35	8.7	10.3	11.5	0.2	RNMM/G20
	R22A	21	6.35	8.7	10.3	11.5	0.2	RNMM/G22
	R25A	24	6.35	10.1	12	13	0.2	RNMM/G25

### E14 R\*B

刀垫外形 Shim shape	产品型号Type	D	S	d1	d2	S1	e	适用刀片 applicative inserts
	R09B	9.4	4.76	4.6	5.8	2	0.2	RNMM/G10
	R12B	12.5	4.76	6.1	7.4	2	0.2	
	IRSN-43	12.47	4.77	7.34	8	2.24	0.76	RNMM/G12
	IRSN-44	12.47	6.41	7.34	8	2.24	0.76	
	IRSN-62	18.77	3.18	11.25	13.03	1.53	0.76	RNMM/G19
	R1003B	9.6	3.18	5.85	6.7	1.75	0.3	RNMM/G10
	R1203B	11.6	3.18	7.35	8.3	1.75	0.3	
	R1604B	15.6	4.76	9.85	10.9	2.65	0.3	RNMM/G16



### E15 KT\*

刀垫外形 Shim shape	产品型号Type	D	S	S1	d	d1				适用刀片 applicative inserts
	KTS20	13	5	2.5	4.5	6				
	KTS25	15	5	2.5	5.5	7				
	KTS32	20	5	2	6.5	10				
	KTS40	25	8	0	6.5	14.5				
	KTS50	30	8	0	6.5	14.5				

### E16 STM\*(L\*)

刀垫外形 Shim shape	产品型号Type		D	S	e	d	d1	R1	R2	L1	
	LW-16LT	LW-16RT	9.5	3.18	0.5	4.1	6.1	0.5	1.25	10	
	LT16R-3.0	LT16L-3.0	9.13	3.18	0.5	5.55	6.6	0.1	0.8	7.29	
	STM16		9.4	3.18	0.5	4		0.4	2	4.65	
	MT16-M		9.25	3.18	0.5	5.6		0.5	0.5		
	STM16L	STM16R	9.4	3.18	0.5	4.1		0.4	2	4.65	
	STM22L	STM22R	12.5	3.97	0.5	5.2		0.5	1.8	5.3	





## F 技术资料 Technical information

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## F1 硬质合金产品安全 Cemented Carbide products safety standard

### 1、硬质合金切削刀具材料基本特征

#### Features of cemented carbide materials

硬质合金刀具是由W、C、Co、N、Ti、Si、Al、O等元素及其化合物经过烧结成型，并进行一系列的后续加工而形成的加工工具。硬质合金有着很好的化学稳定性和很高的强度，是加工大部分金属和大量高强度非金属的理想工具。

Cemented carbide cutting tools are mainly comprised by W, C, Co, N, Ti, Si, Al, O etc elements and other chemical compound, and come into shape after sintering and a series of subsequent machining. Cemented carbide tool possesses good chemical stability and high strength, it is the ideal tool to cut most of metals and high strength nonmetals.

### 2、使用硬质合金刀具的注意事项

#### Cautions for safty use cemented carbide tools

1) 硬合金是质硬而脆的材料，在过大的作用力或某些特定的局部应力作用下脆裂破损，并带有锋利的刃口。

Cemented carbide is hard and frangible material, it is easy to generate brittle rupture and breakage because of larger force or partial stress, which causing sharp cutting edge.

2) 大部分硬质合金以钨、钴为主要成分，密度很大，在运送和存储应作重物处理，小心轻放。

Most of cemented carbide are mainly comprised of W and Co, which with high density. In the process of transport and storage, special treatment should be done for great heavy goods and handle them with care.

3) 硬质合金和钢铁有着不同的热膨胀系数，为避免应力集中破裂，在焊接时应注意在适当的温度下进行。

Cemented carbide and steel have different thermal expansion coefficients. In order to avoid breakage caused by concentrated stress, the welding should be made in suitable temperature.

4) 硬质合金刀具应存放在干燥，远离腐蚀性气氛的环境中。

Cemented carbide tools should be stored in the dry environment where is far away from the corrosive atmosphere.

5) 硬质合金刀具在切削过程中，不可避免的产生切屑，脆片等，请在加工前准备必要的劳保用品。

In the cutting process, it is unavoidable to generate chips and brittle discs etc, please make sure the labor protection articles are prepared before machining.

6) 如在切削过程中使用冷却液的，为机床和刀具的使用寿命着想，请正确使用切削液。

If coolant is used in the cutting process, please select correct coolant to prolong the machine and tool lives.

7) 对于在加工过程中产生裂纹的刀具，请停止使用。Please stop using the tool when it's generating crackle in the machining process.

8) 硬质合金刀具会因长时间使用导致刃口钝化，强度降低，请不要让非专业人员修磨。

The long use of cemented carbide tool will lead to cutting edge passivation and lower strength, however, please make sure to regrind by professional person

9) 经磨损的合金刀具和合金刀具的碎片请妥善收藏好，避免伤害他人。

Please collect the broken tools and chips properly, in case hurting other people.





## F2 安全使用切削工具的注意事项 Cautions for safty use cutting tools

危险性 Danger	防护措施 Protective measure
直接接触切削刀具锋利的刀刃可能对人体造成伤害。 Direct touch with the sharp cutting edges may cause injuries.	当您在机床上安装或拆卸切削刀具时, 请使用手套等防护劳保用品。 Please use gloves etc labor protection articles when assemble or disassemble cutting tools on machine.
不恰当使用刀具可导致其破损, 附件飞出, 引起损害。Improper use of tools may cause the tool breakage and be expelled from machine, thus will generate injuries	使用前先阅读样本和安全标准。 Please read catalogue and safety standard before operating. 请使用防护眼镜和防护服。 Please wear safeguard glasses and protective clothes.
过度磨损和剧烈冲击使切削抵抗力剧增, 可能导致刀具破裂而飞溅, 对操作者造成伤害。 Rapid increase of cutting resistance due to excessive abrasion and severe impact may lead to breakage of tool and spatter of chips, thus cause injuries to operator.	及时更换过度磨损的刀具。 Change the tool with excessive abrasion without delay 请使用防护眼镜和防护服。 Please wear safeguard glasses and protective clothes.
切削过程中的切屑可能对人造成烫伤和划伤。 In cutting process, hot chips may generate risk of scald and scuffing.	及时使用钳子等工具清除切屑。 Please use tools such as plier to clear away the chips in time. 请使用防护眼镜和防护服以及防护手套。 Please wear safeguard glasses and protective clothes
切削过程中产生的火花和高温切屑有引发火灾和爆炸的危险。In cutting process, sparks and hot chips may cause risks of fire and explosion.	清除在切削区域的易燃易爆物品。 Clear away the inflammable and explosive materials in the cutting area. 请做好灭火器准备。 Please make sure the fire extinguishers are prepared.
高速运行的机床由于夹具等的平衡性差而引起剧烈振动, 导致刀具破损。 At high speed, the machine will vibrate severely because of poor balance of holder etc., And may cause tool breakage.	在切削前, 检查设备是否有松动或异常声音。 Check whether the machine is loose or has any abnormal noise before cutting. 请使用防护眼镜和防护服。 Please wear safeguard glasses and protective clothes.
被加工件上的毛刺等缺陷非常锋利, 很容易划伤人体。 Burr on workpiece are very sharp and easy to cause injuries.	请不要触摸被加工件上的毛刺。 Don't touch the burrs on the workpiece with bare hand. 请使用防护手套和防护服。Please wear protective gloves and clothes.
没有夹紧被加工件就直接进行加工会造成刀具破损和被加工件的飞溅。 If directly machine the workpiece held un-firmly, it will cause tool breakage and splash of workpiece.	必须把被加工件牢牢夹住。Make sure the workpiece is clamped firmly. 请使用防护眼镜和防护服。 Please wear safeguard glasses and protective clothes.
在刀片或刀片附件没有被紧固妥当的情况下进行切削, 有刀具脱落飞出造成伤害的危险。If inserts or spare parts are not clamped properly, they may become loose and fly out, which cause risk of injuries.	加工前先确认刀片以及其它附件 经用恰当的工具紧固妥当。 Use the suitable tools to set inserts, and make sure the inserts and spare parts are clamped firmly before machining.
用螺销或压板等辅助工具过分紧固时, 刀片或刀具有破碎飞溅的危险。 If inserts and tool are clamped too tightly by screw and clamp, it may have the risk of breakage and splash.	请不要使用套管等辅助工具过分紧固。 Please not clamp tools too tightly by sleeve
刀片或附件在高速切削时, 有可能因惯性离心力的作用下脱落飞出。 Inserts or spare parts may be expelled due to inertial centrifugal force at high cutting speed.	请在推荐范围内使用刀具。 Use the tools within recommended cutting conditions. 请使用防护眼镜和防护服。 Please wear safeguard glasses and protective clothes.
由于铣削刀具的边锋利, 直接用手触摸有被划伤的危險Milling cutters have sharp cutting edges. Direct touch with them may cause injuries.	为了您的安全, 在必须接触刀片的情况下带好防护手套。 For your safety, please wear protective gloves if need to touch inserts.
旋转切削中, 衣服、手套等很容易被绞到高速运行的设备上, 造成人员伤亡。 In rotating cutting, clothes, gloves etc are easy to be wringed to the machine at high speed, thus cause casualties	当您在进行旋转切削中, 请不要带手套加工。 The operator should not wear gloves at rotating cutting. 时刻注意不要让衣服等接触运行中的机床部件。 Please pay attention that the clothes etc should not touch the operational parts of machine
偏心旋转或平衡不良的工具在旋转加工时会产生晃动振动而引起破损飞溅导致伤害。 Off-center or poor balance of tools in rotating machining will cause vibration, breakage and splash of tool, thus will cause injuries.	请在容许转速范围内使用刀具。 Please use the tools within the range of recommended rotating speed. 定期检查机械的平衡性能。 Check and adjust machine balance periodically.
在高速切削时, 高速飞出的切屑有可能造成伤害。 When cutting at high speed, the chips flying out rapidly may cause injuries.	使用安全罩、保护屏、外罩等。 Please use protective cover, screen etc safeguard goods. 请使用防护眼镜和防护服以及手套。 Please wear safeguard glasses ,protective clothes and gloves.
用极小的刀具进行钻削时, 容易造成刀具折断飞溅和无法取出的可能。 Using the extremely small drill is easy to cause tool breakage and splash, and hard to take out the broken part.	减小刀具的振动和在合适的运行速度下加工。 Reduce tool vibration and conduct machining at suitable speed. 请使用防护眼镜和防护服以及手套。 Please wear safeguard glasses ,protective clothes and gloves.
在规定用途外使用, 会导致机床和刀具的加速损坏, 并引发其它危险。 Machine and tools may be damaged if they are used out of specified purposes, thus may cause other risks.	请按照说明和规定使用。 Please use them strictly according to instructions and specified purposes.







### F3 表面粗糙度 Surface roughness

种类 Type	代号 Code	计算方法 Calculate method	计算方法例(图) Calculate Example
轮廓算术平均偏差 Arithmetic average deviation of profile	Ra	<p>在取样长度<math>l</math>内轮廓偏距绝对值的算术平均值。 Within sampling length <math>l</math>, the arithmetic average absolute value of profile deviation is</p> <p>式中轮廓偏距<math>y</math>指在测量方向上轮廓点与基准线之间的距离。基准线为轮廓的最小二乘中线<math>O</math>。这条线划分轮廓并使其在取样长度内轮廓偏离该线的平方和为最小。 In the formula, the profile deviation <math>y</math> is the distance between profile points and reference line in the measuring direction. Reference line is the profile least-square average line <math>O</math>. This line divide the profile and make the sum of squares of profile deviation to be the minimum within the sampling length.</p>	<p>轮廓算术平均偏差 Ra</p>
微观不平度十点高度 Irregularity ten-point high	Rz	<p>在取样长度<math>l</math>内5个最大的轮廓峰高的平均值与5个最大的轮廓谷深的平均值之和。 Within sampling length <math>l</math>, the sum of the average value of heights of five highest profile peak and the depths of five deepest profile valleys</p> <p>式中: <math>y_{pi}</math>是第<math>i</math>个最大的轮廓峰高, <math>y_{vi}</math>是第<math>i</math>个最大的轮廓谷深。轮廓最大高度<math>Ry</math>:在取样长度<math>l</math>内轮廓峰顶线与轮廓谷底线之间的距离。 In the formula, <math>y_{pi}</math> means the height of 'i', the highest profile peak. In the formula, <math>y_{vi}</math> means the depth of 'i' the deepest profile Valley. Maximum height of profile <math>Ry</math>: the distance between the top profile peak line and the bottom profile valley line in the longitudinal direction within the sampling length <math>l</math>.</p>	<p>微观不平度十点高度 Rz</p>
轮廓最大高度 Maximum height of profile	Ry	<p>在取样长度<math>l</math>内轮廓峰顶线与轮廓谷底线之间的距离。 The distance between the inner profile peak line and the bottom profile valley line in the longitudinal direction within the sampling length <math>l</math>.</p> <p>轮廓峰顶线是平行于基准线并通过轮廓最高点的线; 轮廓谷底线是平行于基准线并通过轮廓最低点的线。 Top profile peak line is the line that parallels to the reference line and passes through the highest point of profile peak. Bottom profile line is the line that parallels to the reference line and passes through the lowest point of profile valley</p>	<p>轮廓最大高度 Ry</p>

取样长度 $l$ 和评定长度 $l_n$ 的取值

The value Of Sampling leng 1 and rva 1uation length 1n

Ra/ $\mu\text{m}$	Rz/ $\mu\text{m}$	$l/\text{mm}$	$l_n=5l/\text{mm}$
> 0.008~0.02	$\geq 0.025\sim 0.10$	0.08	0.4
> 0.02~0.1	$\square 0.1\sim 0.50$	0.25	1.25
> 0.1~0.2	$\square 0.50\sim 10.0$	0.8	4.0
> 0.2~10.0	> 10.1~0.50	2.5	12.5
> 10.0~80.0	> 50~320	8.0	40.0







F4 金属材料横向对比表 Comparison table of metal materials from different countries

碳钢 Carbon steel

中国China	GB	日本Japan	德国Germany		英国Great Britain		法国France	意大利Italy	西班牙Spain	瑞典Sweden	美国USA
			W.-nr.	DIN	BS	EN					
15		SPHM12A/SPHM12S16C	1.0038/1.0401/1.1141	RS137-2/C15/CK15	4360 40 C/080M15	- /32C	E24-2w/CC12/CK12	- /C15, C16/C16	- /F.111/C19K	1311/1350/1370	A570.36/1015
20			1.0402	C22	050A20	2C	CC20	C20, C21	F.112	1450	1020
Y13			1.0736	9SMn36	240M07	1B	S300	CF9SMn36	12SMn35	-	1215
Y15		SUM22	1.0715	9SMn28	230M07	1A	S250	CF9SMn28	F.2111/11SMn28	1912	1213
25		S25C	1.1158	CK25	-	-	-	-	-	-	1025
35			1.0501	C35	060A35	-	CC35	C35	F.113	1550	1035
45			1.0503	C45	080M46	-	CC45	C45	F.114	1650	1045
40Mn			1.1157	40Mn4	150M36	15	35M5	-	-	-	1039
35Mn2		SMn438(H)	1.1167	36Mn5	-	-	40M5	-	36Mn5	2120	1335
30Mn		SCMn1	1.117	28Mn6	150M28	14A	20M5	C28Mn	-	-	1330
35Mn		S35C	1.1183	C35	060A35	-	XC38TS	C36	-	1572	1035
CK45		S45C	1.1191	CK45	080M46	-	XC42	C45	C45K	1672	1045
50		S50C	1.1213	C53	060A52	-	XC48TS	C53	-	1674	1050
55		- /S55C	1.0535/1.1203	C55/CK55	070M55	9/-	- /XC55	C55/C50	- /C55K	1655/-	1055
60			1.0601	C60	080A62	43D	CC55	C60	-	-	1060
60Mn		S59C	1.1221	CK60	080A62	43D	XC60	C60	-	1678	1060

不锈钢 (奥氏体类) Stainless steel (austenitic type)

中国China	GB	日本Japan	德国Germany		英国Great Britain		法国France	意大利Italy	西班牙Spain	瑞典Sweden	美国USA
			W.-nr.	DIN	BS	EN					
0Cr19Ni10		SUS304L	1.4306	X2CrNi1911	304S11	-	Z2CN18.10	X2CrNi18.11	-	2352	304L
0Cr18Ni9		SUS304	1.435	X5CrNi189	304S11	58E	Z6CN18.09	X5CrNi1810	F.3551/F.3541/F.3504	2332	304
1Cr18Ni9MoZr		SUS303	1.4305	X12CrNiS188	303S21	58M	Z10CNF18.09	X10CrNiS18.09	F.3508	2346	303
Cr17Ni7		SUS301	1.431	X12CrNi177	-	-	Z12CN17.07	X12CrNi1707	F.3517	2331	301
0Cr17Ni11Mo2		SUS316	1.4401	X5CrNiMo1810	316S16	58J	Z6CND17.11	X5CrNiMo1712	F.3543	2347	316
0Cr17Ni13Mo		SUS316LN	1.4429	X2CrNiMoN1813	-	-	Z2CND17.13	-	-	2375	316LN
0Cr27Ni12Mo3		SCS16/SUS316L	1.4435	X2CrNiMo1812	316S13	-	Z2CND17.12	X2CrNiMo1712	-	2353	316L
00Cr19Ni13Mo		SUS317L	1.4438	X2CrNiMo1816	317S12	-	Z2CND19.15	X2CrNiMo1816	-	2367	317L
1Cr18Ni9Ti		SUS321	1.4541	X10CrNiTi189	321S12	58B	Z6CNT18.10	X6CrNiTi1811	F.3553/F.3523	2337	321
1Cr18Ni11Nb		SUS347	1.455	X10CrNiNb189	347S17	58F	Z6CNNb18.10	X6CrNiNb1811	F.3552/F.3524	2338	347
Cr18Ni12Mo2Ti			1.4571	X10CrNiMoTi1810	320S17	58J	Z6CNDT17.12	X6CrNiMoTi1712	F.3535	2350	316Ti
1Cr23Ni13		SUH309	1.4828	X15CrNiS2012	309S24	-	Z15CNS20.12	X6CrNi2520	-	-	309
0Cr25Ni20		SUH310	1.4845	X12CrNi2521	310S24	-	Z12CN2520	X6CrNi2520	F.331	2361	310S
1Cr18Ni9Ti		SUS321	1.4876	X12CrNiTi189	321S32	58B, 58C	Z6CNT18.12B	X6CrNiTi18.11	F.3523	-	321



F4 金属材料横向对比表 Comparison table of metal materials from different countries  
合金钢 Alloy steel

中国China GB	日本Japan JIS	德国Germany		英国Great Britain		法国France AFNOR	意大利Italy UNI	西班牙Spain UNE	瑞典Sweden SS	美国USA AISI/AE
		W.-nr.	DIN	BS	EN					
55S2Mn	-	1.0904	55S7	250A53	45	55S7	55S8	56S7	2085	9255
Grl5-45G	SUJ2	1.3505	100C6	534A99	31	100C6	100C6	F.131	2258	ASTM52100
15Cr	SCr415(H)	1.7015	15Cr3	523M15	-	12C3	-	-	-	5015
40Cr	SCr440	1.7045	42Cr4	-	-	-	-	42Cr4	2245	5140
20CrMn	SUP9(A)	1.7176	55Cr3	527A60	48	55C3	-	-	-	5155
40CrNiMoA	-	1.6582	34CrNiMo6	817M40	24	35NCD6	35NiCrMo6(KB)	-	2541	4340
35Cr	SCr430(H)	1.7033	34Cr4	530A32	18B	32C4	34C4(KB)	35Cr4	-	5132
40Cr	SCr440(H)	1.7035	41Cr4	530M40	18	42C4	41C4	42Cr4	-	5140
18CrMn	-	1.7131	16MnCr5	(527M20)	-	16MnCr5	16MnCr5	16MnCr5	2511	5115
30CrMn	SCM420/SCM430	1.7218	25CrMo4	1717CDS110708M20	-	25CD4	25CrMo4(KB)	55Cr3	2225	4130
35CrMo	SCM432/SCRM3	1.722	34CrMo4	708A37	19B	35CD4	35CrMo4	34CrMo4	2234	4137/4135
40CrMoA	SCM440	1.7223	41CrMo4	708M40	19A	42CD4TS	41CrMo4	42CrMo4	2244	4140/4142
42CrMo42CrMnMo	SCM440(H)	1.7225	42CrMo4	708M40	19A	42CD4	42CrMo4	42CrMo4	2244	4140
50CrVA	SUP10	1.8159	50CrV4	735A50	47	50CV4	50CrV4	51CrV4	2230	6150
CrV/9SiCr	-	1.2067	100Cr6	BL3	-	Y100C6	-	100Cr6	-	L3
CrWMn	SKS31/SKS2/SKS3	1.2419	105WC6	-	-	105WC13	100WC6/107WC5KU	105WC5	2140	-
5CrNiMo	SKT4	1.2713	55NiCrMoV6	BH2245	-	55NCDV7	-	F.520.S	-	L6
Cr12	SKD1	1.208	X210Cr12	BD3	-	Z20C12	X210Cr12U/X250Cr12KU	X210Cr12	-	D3/ASTM D3
40CrMoV5	SKD61	1.2344	X40CrMoV51X40CrMoV51	BH13	-	Z40CrDV5	X38CrMoV51U/X40CrMoV51U	X40CrMoV5	2242	H13/ASTM H13
100CrMoV5	SKD12	1.2363	X100CrMoV51	BA2	-	Z100CDV5	X100CrMoV51KU	X100CrMoV5	2260	A2
30WCrV9	SKD5	1.2581	X30WCrV93	BH21	-	Z30WCV9	X28W09KU	X30WCv9	-	H21
V	SKS43	1.2833	100V1	BW2	-	Y1105V	-	-	-	W210
W18Cr4VC6	SKH3	1.3255	S18-1-2-5	BT4	-	Z80WKCV	X78WCr1805KU	HS18-1-1-5	-	T4
X45CrS93	SUH1	1.4718	X45CrS93	401S45	52	Z45CS9	X45CrS8	F.322	-	HW3
M2	SKH9	SKH51	1.3343	S652	BM2	-	Z85WDCV	HS6-5-2-2	F.5603	2722
M7	-	1.3348	S	20029/2	-	-	-	HS2-9-2	HS2-9-2	2782

耐热钢 Heat-resistant steel

中国China GB	日本Japan JIS	德国Germany		英国Great Britain		法国France AFNOR	意大利Italy UNI	西班牙Spain UNE	瑞典Sweden SS	美国USA AISI/AE
		W.-nr.	DIN	BS	EN					
-	SUH330	1.4864	X12NiCrSi3616	-	-	Z12NCS36.16	-	-	-	330
-	SCH15	1.4865	G-X40NiCrSi3818	330C11	-	-	XG50NiCr3919	-	-	HT,HT50



F4 金属材料横向对比表 Comparison table of metal materials from different countries  
 不锈钢（铁素体类,马氏体类）Stainless Steel(Ferrite type/Martensitic type)

中国China	GB	日本Japan		德国Germany		英国Great Britain		法国France	意大利Italy	西班牙Spain	瑞典Sweden	美国USA
		JIS	W-nr.	DIN	BS	EN	AFNOR					
	0Cr13/1Cr12	SUS403	1.4	X7Cr13	403S17	-	Z6C13	X8Cr13	F.3110	2301	403	
	1Cr13	SUS410	1.4006	X10Cr13	410S21	56A	Z10C14	X12Cr13	F.3401	2302	410	
	1Cr17	SUS430	1.4016	X8Cr17	430S15	60	Z8C17	X8Cr17	F.3113	2320	430	
	4Cr13	SUS420J2	1.4034	X46Cr13	420S45	56D	Z40CM/Z38C13M	X40Cr14	F.3405	2304	-	
	1Cr17Ni2	SUS431	1.4057	X22CrNi17	431S29	57	Z15CNi6.02	X16CrNi16	F.3427	2321	431	
	Y1Cr17	SUS430F	1.4104	X12CrMoS17	-	-	Z10CF17	X10CrS17	F.3117	2383	430F	
	1Cr17Mo	SUS434	1.4113	X8CrMo17	434S17	-	Z8CD17.01	X8CrMo17	-	2325	434	
	0Cr13Al	SUS405	1.4724	X10CrAl13	403S17	-	Z10C13	X10CrAl12	F.311	-	405	
	Cr17	SUS430	1.4742	X10CrAl18	430S15	60	Z10CAS18	X8Cr17	F.3113	-	430	
	5Cr2Mn9Ni4N	SUH35	1.4871	X53CrMnNiN219	348S54	-	Z52CMN21.09	X53CrMnNiN219	-	-	EV8	

### 灰口铸铁 Gray cast iron

中国China	GB	日本Japan		德国Germany		英国Great Britain		法国France	意大利Italy	西班牙Spain	瑞典Sweden	美国USA
		JIS	W-nr.	DIN	BS	EN	AFNOR					
	HT150	FC150	0.6015	GG15	Grade150	-	F115 D	G15	FG15	115	No.25 B	
	HT200	FC200	0.602	GG20	Grade220	-	F120 D	G20	-	120	No.30 B	
	HT250	FC250	0.6025	GG25	Grade260	-	F125 D	G25	FG25	125	No.35 B	
	HT300	FC300	0.603	GG30	Grade300	-	F130 D	G30	FG30	130	No.45 B	
	HT350	FC350	0.6035	GG35	Grade350	-	F135 D	G35	FG35	135	No.50 B	
	HT400	-	0.604	GG40	Grade400	-	F140 D	-	-	140	No.55 B	

### 球墨铸铁 Nodular cast iron

中国China	GB	日本Japan		德国Germany		英国Great Britain		法国France	意大利Italy	西班牙Spain	瑞典Sweden	美国USA
		JIS	W-nr.	DIN	BS	EN	AFNOR					
	QT400-18	FCD400	0.704	GGG40	SNG 420/12	-	FCS 400-12	GS 370-17	FGE 38-17	07 17-02	60-40-18	
	QT500-7	FCD500	0.705	GGG50	SNG 500/17	-	FGS 500-7	GS 500	FGE 50-7	07 27-02	80-55-06	
	QT600-3	FCD600	-	GGG60	SNG 600/3	-	FGS 600-3	-	-	07 32-03	-	
	QT700-18	FCD700	0.707	GGG70	SNG 700/2	-	FGS 700-2	GS 700-2	FGS 70-2	07 37-01	100-70-03	







### F5 牌号对照表 Comparison table of Grade

■ 车削材料对照表 Turning materials comparison table

类别	使用分类		CDBP 牌号	SANDVIK 山特维克	ISCAR 伊斯卡	KENAMETAL 肯纳金属	Teugino 特固克	WALTER 瓦尔特	MITSUBISHI 三菱	SUMITOMO 住友重工业	TUNGALOY 泰河洛	KYOCERA 京瓷	KORLOY 克洛伊	SECO 山崎工具	ZGC.CT 株洲刀具	
	代号	分号														
K	K01	BPC052	GC3205	IC5005 IC4028	K0K05 K0Y315	TT1300	WAK10	UC5105	AC405K AC410K	T5105 T5010	CA4505 CA4010	NC6105 NC305K	TK1000 YBD102			
			GC3210	IC5010 IC5100	K0K15 K0Y325	TT7310	WAK20	UC5115	AC420K	T5115 T5125	CA4515 CA4115 CA4120	NC6110 NC6010	TK2000 YBD252 YBC252			
			GC4205 GC4215 GC4225 GC4025	IC8150 IC9150 IC8250 IC9250	K0P05 K0P10 K0P25 K0Y125	TT8115 TT8125 TT5100	WPP05 WPP10 WPP20 WAP20	UE6105 UE6110 UE6020	AC700G AC810P AC820P PAC2000	T9005 T9115 T9125	CA5505 CA5515 CA5525 CR7025	NC3010 NC3015 NC3120 NC3020	TP0500 TP1500 TP2000 TP2500	YBC151 YBC152 YBC251 YBC252		
P	P30	BPS371	GC4235 GC4035	IC8350 IC9350	K0P30 K0P40 K0Y140	TT8135 TT7100	WPP30 WAP30	UE6035 UH6400	AC830P AC3000	T9135	CA5535 CR9025	NC3030 NC500H	TP3000 TP3500			
			GC2015 C2025	IC907 IC9300	K0M15 K0M25	TT9215 TT9225	WAM10 WAM20	US7020 VP05RT US735	AC610M AC510U AC630M AC520U	T6020 T6030	CA6515 CA6525	PC8110 NC9020 NC9025	TM2000 TP200 CP500	YBG201 YBG202		
			GC2035	IC3028	K0M35	TT9235 TT8020 GC3215	WAM30	UH6400	AC630M AC530U	PR630	NCS330 PC9030	TM4000 TP400 KCK20	YBG203			
M	M10	BPG118	GC505F GC1105	IC907	K0S510	TT5080	WSM10	VP05RT VP10RT	AC510U	AH110	PR1005 PR930	PC8110	TH1000 TH1500 TS2000 TS2500			
			GC1115													
			GC1125	IC908	K0S525	TT9080	WSM20 WSM30	VP15TF VP20RT	AC520U	AH120	PR1025 PR1125 PR1225	PC5300 PC9530	CP500			
S	S05	BPG218	GC1125	IC908	K0S525	TT9080	WSM20 WSM30	VP15TF VP20RT	AC520U	AH120	PR1025 PR1125 PR1225	PC5300 PC9530	CP500			
			GC1125	IC908	K0S525	TT9080	WSM20 WSM30	VP15TF VP20RT	AC520U	AH120	PR1025 PR1125 PR1225	PC5300 PC9530	CP500			
			GC1125	IC908	K0S525	TT9080	WSM20 WSM30	VP15TF VP20RT	AC520U	AH120	PR1025 PR1125 PR1225	PC5300 PC9530	CP500			

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## F5 牌号对照表 Comparison table of Grade

■ 铣削材料对照表 Milling materials comparison table

类别	使用分类		CBMP 博普	SAMICK 山特维克	ISCAR 伊斯卡	KENAMETAL 肯纳金属	Tegalite 特固克	WALTER 瓦尔特	MTSUBISHI 三菱	SUMITOMO 住友电气工业	TUNGSHUI 德玛格	KYOCERA 京瓷	KORLOY 克洛伊	BECO 山高工具	ZCC. CT 德视刀具	
	代号	分类														
铣削	K	K01	BPG108	GC3220	IC410	KC915M	TT6800		MP8010					T150M		
			BPC122	GC3020	IC810		TT6080	WKK25		VP10TF	ACZ310			PC6510	MK2000	YBG102
			BPS321	GC1020	IC910		TT7030	WKP25		F7030	ACK200 ACK300			PC215K		YBD152 YBD152
	P	P10	BPG05B	GC4220	IC950		TT6800	WAM10			ACP100			PC3500	MP2500	YBG252
			BPG20B	GC4020			TT7080	WAM20						PC3535	T250M	
							TT7030	WKP25					AH725		PC3525	
	M	M20	BPG05B	GC4230	IC808	KC522M	TT9080	WAM30		VP15TF	ACP200	GH330		PC9530	F30M	YBG202
			BPG20B	GC4030	IC908	KC635M	TT9030	WAM30								YBM251
			BPS321	GC4240	IC830	KC725M	TT8020	WKP35		VP30RT	ACP300			NCM325	F40M	
	M	M25	BPS411	GC4040	IC928	KC735M	TT8080	WSP45		F7030	ACZ350	AH730		NCM335	T350M	YBM351
						KC935M	TT7800	WAM30				AH140		PC3545		
						KC522M	TT9080	WAM30		VP15TF	ACP200		AH120			F30M
M	M30	BPG30B	GC2030		KC525M	TT9030	WQM35								YBG205	
		BPG25B				TT8020	WAM30									YBG302
		BPG40A	GC2040	IC830	KC725M	TT8020	WXM35		VP30RF	ACP300		AH130			F40M	
M	M40			IC928		TT8080	WSP45									





### F5 牌号对照表 Comparison table of Grade

#### 硬质合金材料 Cemented carbide

类别	使用分类 代号		CDBP 拜普	SANDVIK 山德维克	ISCAR 伊斯卡	KEMMETAL 肯纳金属	Tegalite 特固克	WALTER 瓦尔特	ITBUBSH 三菱	SUMITOMO 住友电气工业	TUNGALOY 钨钢洛	KYOCERA 京瓷	DIJET 戴杰	HITACHI 日立工具	KOBALY 克洛伊	SECO 山高工具	ZCC-CT 株视刀具
	分	代															
P	P01														ST05		
	P10	BP10	IC70	P10	IC70	P10	P10		ST10P	TX10S	TJ10		SRT	WS10	ST10		YC10
	P20	BP20	IC70 IC50M	K125M TTM	IC70	K125M TTM	P20	P20	UT120T	ST20E	TX20 TX25		SRT DX30	EX35	ST20		
	P30	BP35	IC50M IC54	GK K800 TTR	IC50M IC54	GK K800 TTR	P30	P30	UT120T	A30 A30N	TX30 UX30	PM30	SR30 DX30	EX35 EX40	ST30A		
	P40		IC54	G13	IC54	G13				ST40E	TX40		SR30 DX35	EX45			YC40
M	M10	BIM10	H10A	K313	IC28	K313	M10		UT105T	EH510 U10E	TJ10		UMN	WA10B	U10	890	YC10
	M20	BIM15A BIM25A	H13A	K95 KMF K125M TTM	IC08	K95 KMF K125M TTM	M20		UT120T	EH520 U2	TU20 UX30		DX25 UMS	EX35	U20	HX 883	
	M30		H10F SM30	K800 TTR	IC28 IC28	K800 TTR			UT120T	A30 A30N	UX30		DX25 UMS	EX40 EX45	ST30A		YC40
	M40		S6	G13	IC128	G13	M40				TU40		UM40	EX45	U40		
	M01		H1P	K605					UT105T	H1 H2	TH09 K305F		KG03	WH05	H02		YD051
K	K18	BK10 BLJ810 BK10UF	H1P H10 HM	K313 K110M THM THM-U	IC20	K313 K110M THM THM-U	K10		HT10	EH10 EH510	G1F TH10	KW10	KG10 KT9	WH10	H01	890	YD101
	K29	BLJ820 BK20UF	H13A	K715 KMF K680	IC20 IC10	K715 KMF K680	K20		UT120T	G10E EH20 EH520	G2F K316F G2 K320	GM10	CR1 KG20	WH20	G10	890 HX 883	YD201
	K34	BLJ820 BK30UF		THR	IC10 IC28	THR			UT120T	G10E	G3		KG30		G3	883	
	N01		H10 H13A	K605		K605				H1 H2	KS05F		KG03				
	N18	BLJ810 BK10UF		K313 K110M THM THM-U		K313 K110M THM THM-U	K10	WK10	HT10	EH10 EH510	TH10 H10T		KG10 KT9		H01	890 H15	YD101
S	N28	BLJ820 BK30UF		K715 KMF K600		K715 KMF K600	K30			G10E EH20 EH520	KS16F		CR1 KG20			HX IX 883 H15 H25	YD201
	N38			G13 THR		G13 THR							KG30			H25	
	S01							RT9005					KG03				
	S10		H10 H10A H10F H13A	K10 K313 THM		K10 K313 THM	K10		RT9005 RT9010	EH10 EH510	KS05F TH10		FZ05 KG10		H01	890	YD101
	S20			K715 KMF		K715 KMF			RT9010 TF15	EH20 EH520	KS15F KS20		FZ15 KG20			890 883 HX H25	
S30			G13 K800 THR		G13 K800 THR			TF15				KG30					



## F5 牌号对照表 Comparison table of Grade

■ 硬质合金材料 Carbide materials

ISO 分类 ISO Classification	CDBP 邦普	SANDVIK 山特维克	ISCAR 伊斯卡	KENAMETAL 肯纳金属	TaeguTec 特固克	WALTER 瓦尔特	MTSUBISHI 三菱	SUMITOMO 住友电气工业	TUNGALOY 泰珂洛	KYOCERA 京瓷	DIJET 黛杰	HITACHI 日立工具	KORLOY 克洛伊	SECO 山高工具	ZCC, CT 株硬刀具
P10	BP10	S1P									SRT				YC10
P20	BP20		IC50M IC28	K125	P10		UT120T	A30N	TX25		SRT DX30	EX35	ST20		
P30	BP35		IC50M IC28	GX K600	P20		UT120T	A30N	UX30	PW30	SR30 DX30	EX35 EX40	ST30A		
P40			IC28		P30					PW30	SR30	EX45	ST40		YC40
M10				K110M	M10						UMN		U10		YC10
M20	BM15A BM25A			K313	M20		UT120T	A30N			DX25 UMS	EX35	U20		
M30			IC28	KFM K600			UT120T	A30N	UX30		DX25 UMS	EX40 EX45			YC40
M40			IC28		M40				TU40			EX45	U40		
K01							UT105T				KG03		H01		YD051
K10	BU810 BK10	H1P	IC20	K110M K313	K10	WK10	HT10	G10E	TH10	KW10	KG10	WH10	H05 H10		YD101
K20	BU820		IC20 IC10	KFM	K20		UT120T	G10E			KT9 CR1 KG20	WH20	G10	HX	YD201
K30	BU820		IC10 IC28				UT120T				KG30				

铣削 Milling



F5 车削刀片槽型对照表 Comparison table of chipbreaker for turning insert  
 车削正切刀片断屑槽对照表 Comparison table for chipbreaker of positive inserts

ISO分类 ISO Classification	加工范围 Processing range	CD/CP 钨合金 Tungsten alloy	ZOCT 涂层刀具 Coated tool	SANDVIK 山特维克 Sandvik	KORLOY 克洛伊 Korloy	TeguTec 特固克 TeguTec	WALTER 瓦尔特 Walter	SECO 山高 Seco	MITSUBISHI 三菱 Mitsubishi	SUMITOMO 住友 Sumitomo	KENAMETAL 肯纳 Kenametal	DNET 德杰 Dnet	HTACHI 日立 Hitachi	TUNGALOY 泰珂洛 Tungaloy	KYOCERA 京瓷 Kyocera	VALANTITE 万利特 Valantite
P	精加工 Finishing	FW	SF HF	UF PF	HFP	FA FG	PF4	FF1 F1	FV SV	FP LU SU SK	11 UF LF		JQ	01 PF FS	GP XP VF	PF4 JQ JZ
	精加工 (修光) Finishing (light finish)			WK WP			PF	WF1	SW	LJW	FW					
	半精加工 Semi finishing	MD	HM	UM PM	HMP C25	MT CMX	PSS PMS	P2	MV 全周	MU	MF	FT	JE	PM Z3 Z4	HO XQ GK	PM2 PMA
	半精加工 (修光) Semi finishing (light finish)			WM			PM		MV		MW					
M	精加工 Finishing	FW	EF	MF	HFP	FA FG	PF4		SV					SS		1A 2A
	半精加工 Semi finishing	MD	EM	MM	HMP C25	MT CMX	PSS PMS		MV 全周							PM2 PMA
K	半精加工 Semi finishing	MD	HM HR 无槽 HM HR No notch	KF KM KR	HMP C25	MT CMX	MW PSS PM6		无槽 No notch	无槽 No notch		FT		无槽 No notch	无槽 No notch	PM2 PMA
	精加工半精加工 Finishing, semi finishing						PF4 PSS PMS		FJ	SC	LF HP					PM2 1A 2A
S	通用切削 General cutting	LH	LH	AL	TKAK MA	FL	PM2			AG	HP	ALU ACS	PP		A3	1L 1A 2A





## F6 车削刀片槽型对照表 Comparison table of chipbreaker for turning insert

### 车削负切刀片断屑槽对照表 Comparison table for chipbreaker of negative inserts

ISO分类 ISO Classification	加工范围 Processing range	CDBP 并背合金	ZCCCT 株洲刀具	SANDVIK 山特维克	KORLOY 克洛伊	TesqTec 特固克	WALTER 瓦尔特	SECO 山高	MISTUBISHI 三菱	SUMITOMO 住友	KENAMETAL 肯纳	DAIET 黛杰	HITACHI 日立	TUNGALOY 蒂河滨	KYOCERA 京瓷	VALANITE 万耐特
P	超精加工 Super finishing			QF	HJ		MF3	FF1	PK RH FY	FAFL	UF FF		FE	01 TF ZF	DF GF VF XP XP-T	F1
	精加工 Finishing	FW	DF	PF MF	HF	FG	NSB	MF2	C SA SH	SU LU SX	LF FN	PF UR UUT	BE CE	NS Z7 TS AS	HQ CQ	F2(20) F3(30)
	精加工(软精) Finishing (Soft)		SF	WP WF	HW		NF	W-MF2	BY	LW	FW			17	XQ XS	
	精加工(抛光) Finishing (Polish)								SW					AFW ASW	WP WQ	
	半精加工 Semi finishing	MD	DM PM	PM OM SM	HA HC HM	MC ML MP	NM4 NM6	NF3 M3 M5	MV MA MH	GU US UX	MG MN	PG UB	AB AY AE	NM ZM	CJ GS PS	RR RR R2(24) RR(24) R3(30)
	半精加工(抛光) Semi finishing (Polish)		WG	VM			NM	W-M3	MW	GUW	MW			TM DM 37	HS PT CS	
	粗加工(抛光) Rough machining (Polish)		DR(表面) DR(surface)	PR		MT MG	NM9	MR7	GH	MU MX	RN	UD GG	AR RE	TH	GT HT	
	轻磨削加工 Light lead finishing	RA	DR(单面) HDR DR(single) HDR	QR PR HR	HR HH	RT RH	NR6	NR6	RA RB RT PR9	HZ HK HY	MP HG HP	UC	HX HE	67 66 TU	HK	R3 RA R3(24) R3(24) R3(30)
	粗加工 Rough machining	LH SJ	EF	MF	HA	FG SF	MF4	MF4	FB	SU	K FP		SE	SS	GU	F1 F2(20) F3(30)
	半精加工 Semi finishing	SN	EM	MM	HS	ML MP	NM4	NM4	MS ES	EX LP	P MP	SF SG	DE	SA SM S	SU HU ST	RR RR R2(24) RR(24) R3(30)
K	粗加工 Rough machining	RA	ER	MR	GS HM	MT RH	NR4	MS MR7	GH HZ	MP	RP					R3 RA R3(24) R3(24) R3(30)
	精加工 Finishing	U CX	PM	KF	HA 无断屑槽 No chipbreaker	FG	MA		全周 All Work	UZ	FN		CM	全周 C All Work C	F2(20)	
	半精加工 Semi finishing	U CQ	PM	KM	全周 PM All Work PM	MG MT MG	MA NM5		全周 All Work	UX	全周 UN All Work UN		SS 全周 All Work	ZS GC	MS(20) MS(30)	
	粗加工 Rough machining	GH 全周 RA No. 661	无槽 No. 661	KR	GR PR GH	RT RH	MA		无断屑槽 No chipbreaker	无断屑槽 No chipbreaker					无断屑槽 No chipbreaker	R3 RA R7(30)
S	精加工 Finishing		NF			SF	MF4	SB R6	FJ		FS K					F3(30) M2(20)
	半精加工 Semi finishing		NM	NCP 20			NM4	MF1	MJ	SU	NGP		SA			MH MS(20) M7 55
	粗加工 Rough machining	LH		SR			NR4	M1	GU		MS					
N																





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地址：中国·四川·成都·高新西区百草路998号

Add: No. 998, Bai Cao Road, Western Zone of Hi-Tech District, Chengdu, Sichuan, P.R.C.

邮编 (P. C) : 611731

电话 (Tel) : 国内 Domestic Tel: 86-28-66337598

国际 International Tel: 86-28-66337597

传真 (Fax) : 86-28-66337580

E-mail : [cdbp@bpcarbide.com](mailto:cdbp@bpcarbide.com)

[http : //www.bpcarbide.com](http://www.bpcarbide.com)