2015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

成都邦普合金材料有限公司

Chengdu Bangpu Alloy Materials 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！成都邦普合金材料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涂层炉、高速铣床、电火花机、慢走丝线切割机、线性检测仪、磁饱和仪、矫顽磁力机、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、钻铣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！我们将一如继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 Alloy Materials Co., Ltd is a professional carbide products manufacturer which produces carbide indexable inserts, cutting tools, woodworking reversible inserts , hing eboring 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 vacum 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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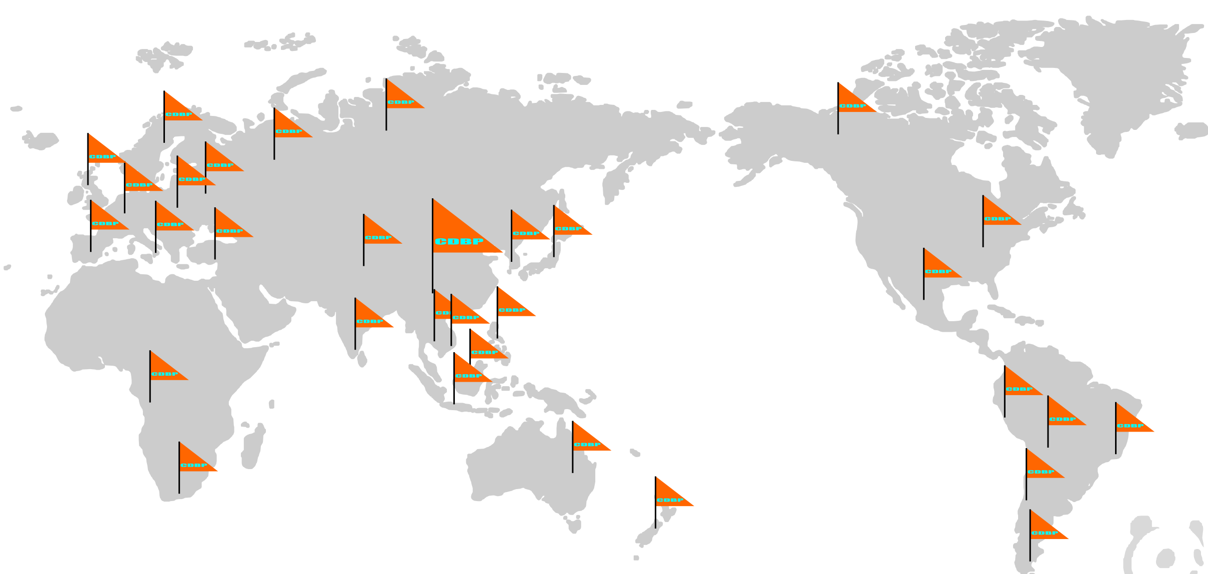
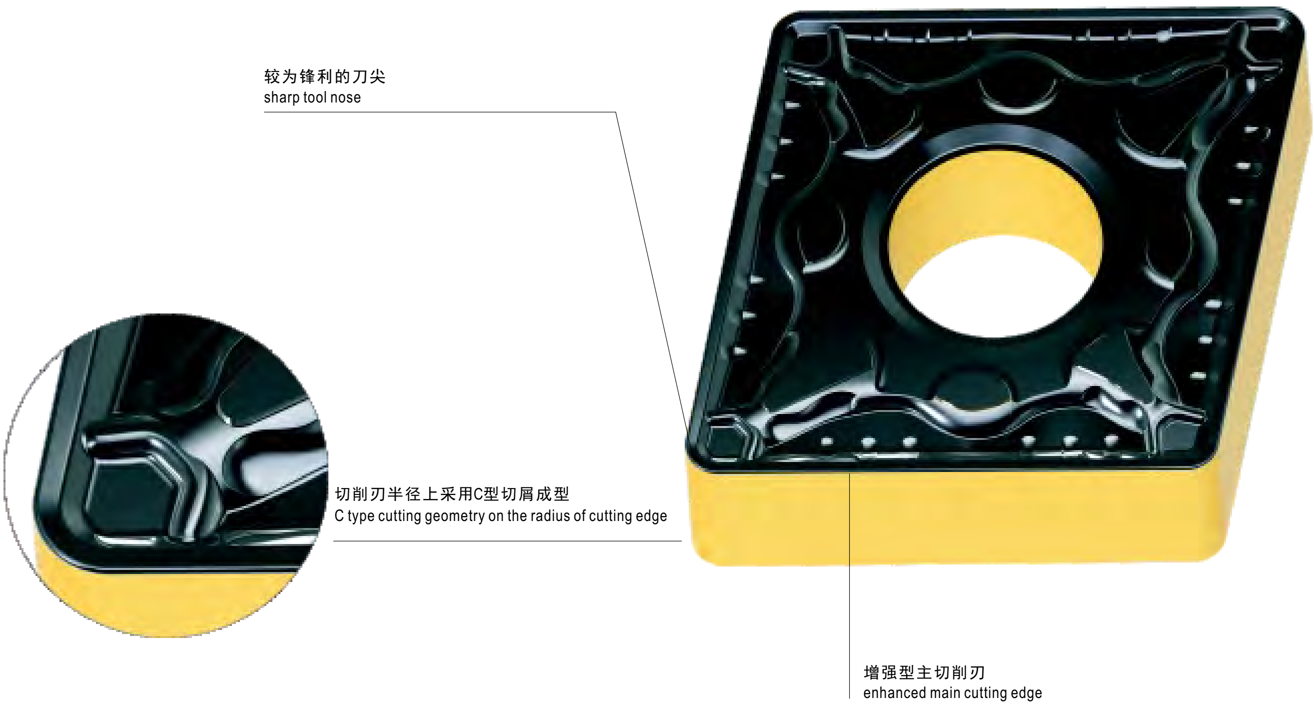


邦普FW\MD\RA\RB
全面提升钢件加工性能



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
． apmax：8mm，fmax：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
．apmin：0. 4mm，fmin：0. 1mm
-基本形状：CNMG、DNMG、SNMG、TNMG、WNMG
-basic type CNMG, DNMG,SNMG,TNMG,WNMG

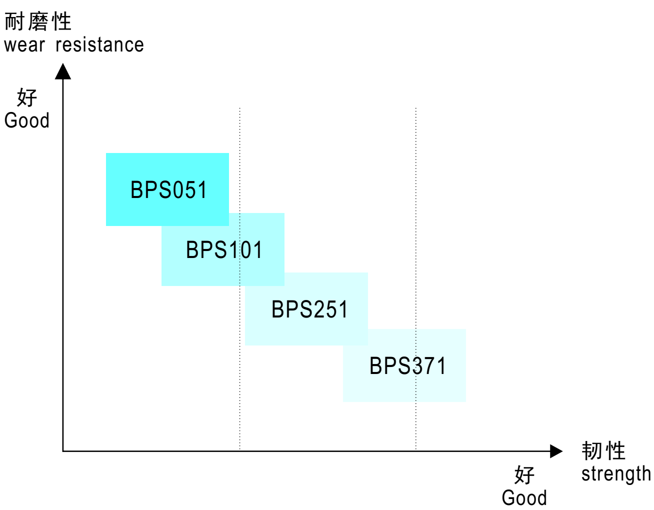
应用 application
-与原先的半精加工刀片相比，具有更广泛的应用领域，通用性更强
-with better working range
-在加工余量波动幅度很大的情况下仍然能实现非常高效的加工
-high performance under unstable allowance machining
-典型零件：钢制轮轴、毂和齿轮等
-typical work piece: steel wheel and hub,gear

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 bombine 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
2014

加工条件



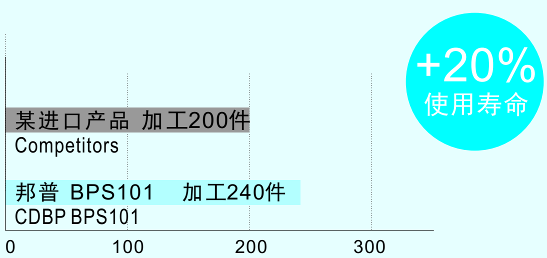
半精加工 semi-finishing
汽车变速箱零件 automobile gearbox spare parts

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

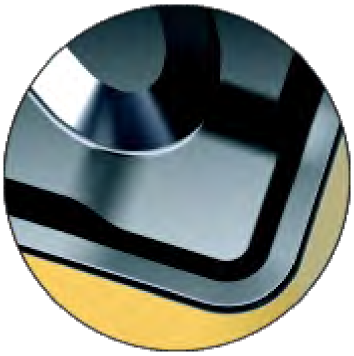


采用了双槽/C型切屑成型而实现完美的断屑
perfect chip break performance with double chip breaker/ C type geometry

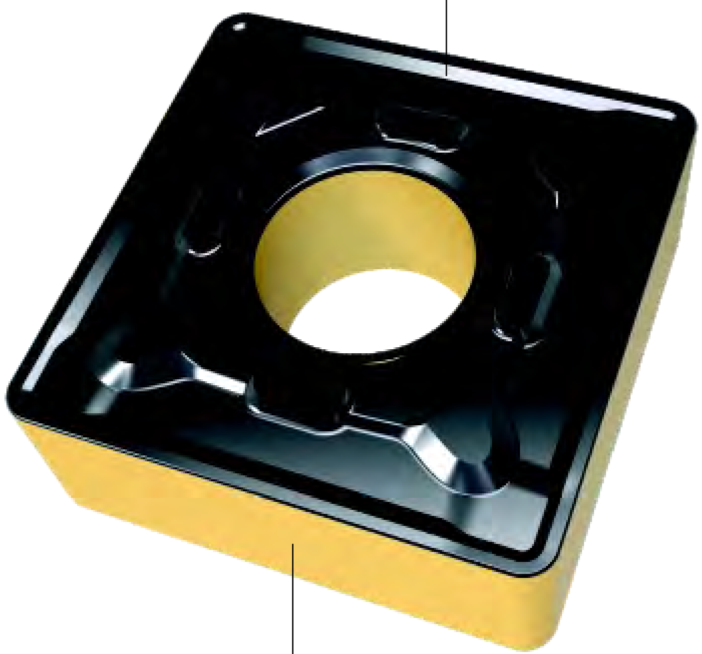
ap：3mm，f:0.35mm

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



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 thicknese of inserts

RA槽型

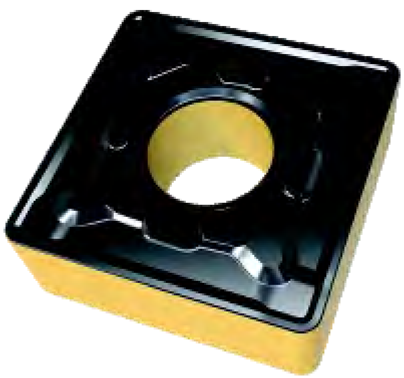
应用 application
-加工余量不同的锻件，以及“第一刀”加工
-Cutting Different Margin Forgings,and "First Cutting"Machining
-在重工业中经常出现的铸件砂皮
-Castings surface sand in heavy industry
-以最大的进给量进行重切削粗加工
-Maximum feed rate in rough heavy cutting
-车床使用最大驱动功率，以实现最高加工效率
-Lathe can use maximum power to ensure maximum processing efficiency
-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

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，可在极限条件下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需求。
–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 requirments of rough cutting.

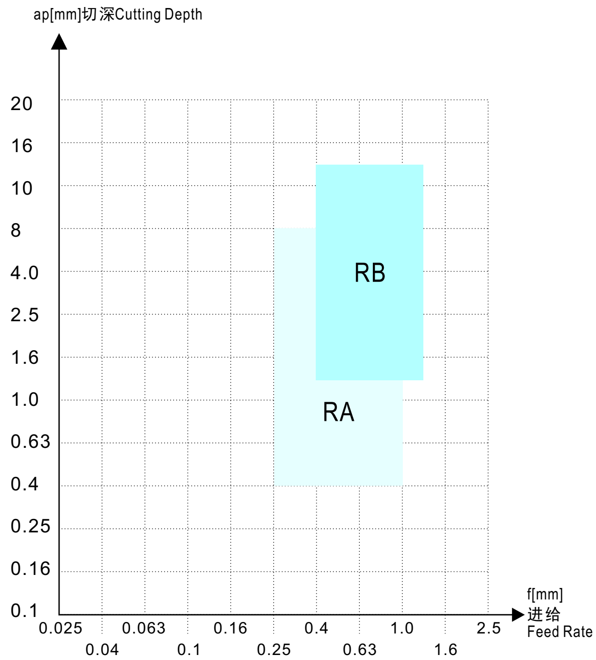
RA基本形状C型 C type inserts with RA chip breaker



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



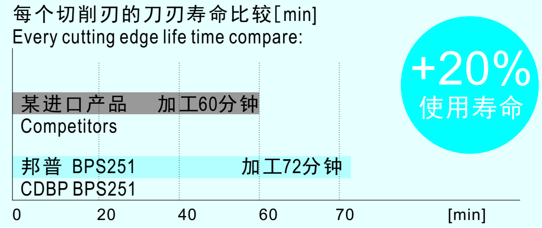
钢铁行业用轧辊 Roll use in steel industry
粗加工 Rough cutting

工件材料 Working materials: 42CrMo4
可转位刀片 CNC carbide inserts: SNMG190624-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
Vc	80m/min	80m/min
f	1.0mm	1.0mm
ap	6-8mm	6-8mm

每个切削刃的刀刃寿命比较[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刃寿命，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 braker

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
-Stabiliy 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
 .功率需求低,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:

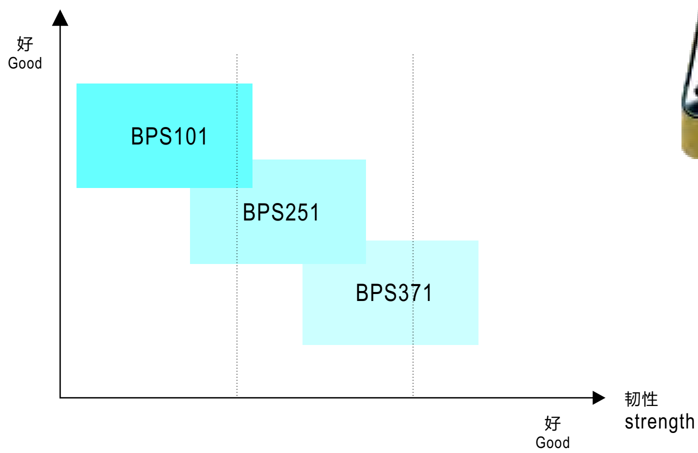
-与原先的粗加工刀片相比,具有更广泛的应用领域,不仅涵盖了重切削粗加工,而且还能在最后切削时毫无问题地通过车削进行轮廓精加工
-Compare with before rough cutting inserts,it have a widely applications,not only use for heavy machining roug cutting,but also better use for turning contour finishing.
-锻件粗加工,如风力涡轮机、发电机轴等的轴承内外圈
-Forgings rough cutting,such as the bearing's 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

产品扩展
2014

加工条件
Cutting Condition



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

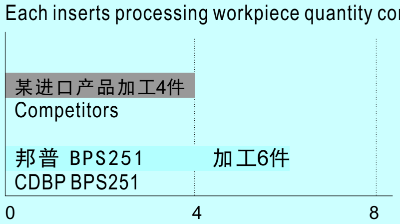
工件材料 Cutting Materials:	Q345E+Z25
可转位刀片 CNC carbide inserts item:	CNMM 190624-RB
刀具材料 Grade:	BPS 251
主偏角 Entering Angle：	95°

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丶LHC和SN-
两种专门用于高温合金的新槽型
CDBP SL丶LHC and SN chip breaker
New chip breaker specifically for heat-resistant alloys

新
2014

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 Incone1718 ,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 braker

-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

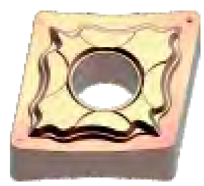
SN 槽型 SN chip breaker

-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 BPG3318 use the newest technical PVD coated materials(Al2O3), With high temperature resistance coating,can be used for high cutting speed.
-LH和SN槽型能将刀刃寿命提高到150%
-LH and SN chip breaker will extend inserts 150% lifetime compare with before.

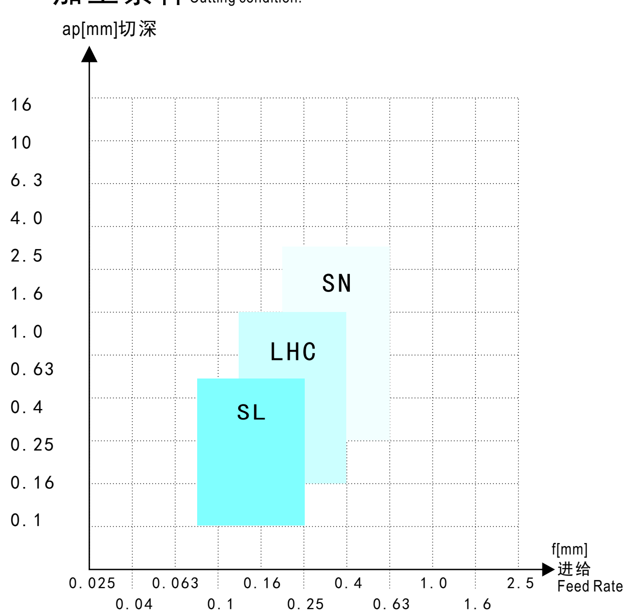
SL可转位刀片：精加工
SL CNC carbide inserts:Finishing



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:



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

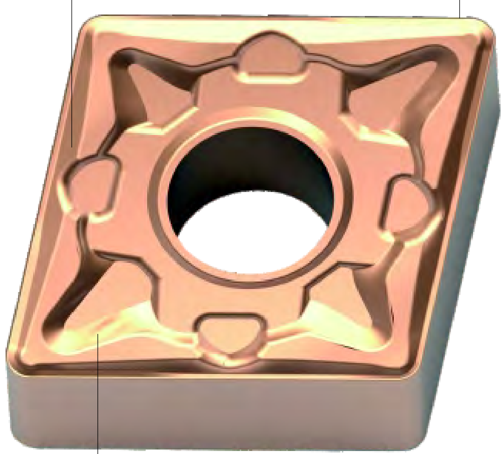
-As PVD coating temperature is low,so the crafts reliable.

-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削刃

-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.

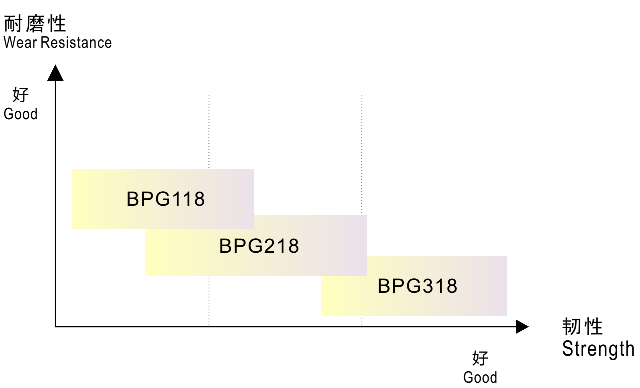
-锋利的切屑刃-采用了PVD涂层-确保加工零件无毛刺，并减少积屑瘤的产生

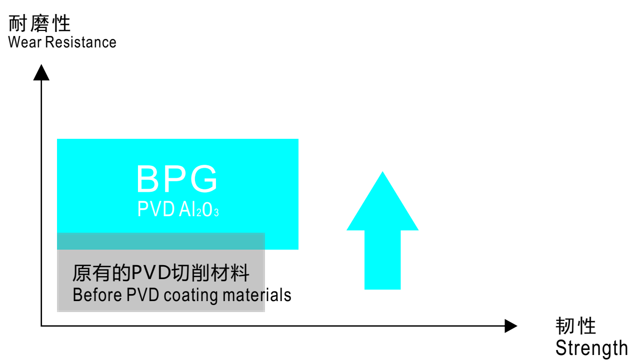
-Sharp cutting edge with PVD coating,to ensure the workpiece don't have glitches,also reduce the built-up edge.

加工条件 Cutting Condition

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

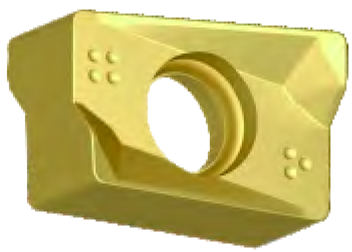
槽型：SN
Chip Breaker: SN





邦普面铣系列
Face milling inserts
通用铣刀-经济且高效
Universal Milling inserts-economical and efficient

可转位刀片
CNC carbide inserts

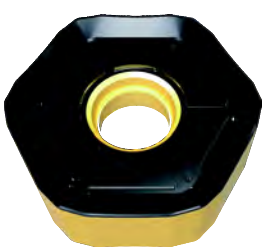


GNMU1105..-M1台阶铣刀
-菱形，负型刀片
-每个可转位刀片有4个切削刃
-1种可转位刀片规格
-刀尖圆弧为0.5-1.0mm

Shoulder milling
-Diamond ,Negative Inserts
-Each inserts have four cutting edge
-Item:GNMU110506-M1
-Nose radius:0.5-1.0mm

GNMU台阶铣刀
-直径20-63mm
-主偏角90° 整
-APMT系列替代方案,更加经济高效.

Shoulder milling
-Dia:20-63mm
-Entering angle:90°
-Perfect instead APMT series,
more economical and efficient



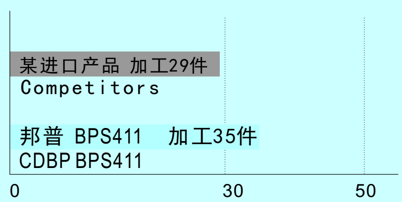
HNMU..面铣刀
-六边形，负型刀片
-每个可转位刀片有12个切削刃,实现刀片最大经济性
-结构上带有平面修光刃

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：
Machine tool — HM635
刀柄
Inserts Shank — HSK-A100
功率
Power — 15kw

Vc	226m/min
N	900min
Vf	0.24mm/min
ae	628mm
ap	2.5mm



+20%
使用寿命

HNMU面铣刀系列
-直径40-200mm
-主偏角45°
-用于面铣，粗铣

HNMU Face milling
-Dia:40-200mm
-Entering Angle:45°
-Use for face milling
and rough milling

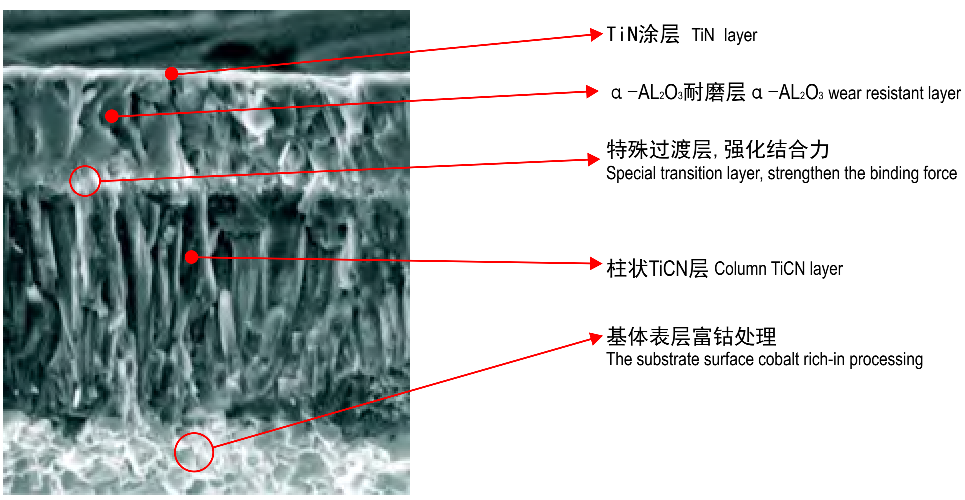
A 材质 Materials

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
BPC042	K05(K01-K05)	黑 Black	CVD涂层硬质合金，由极硬基体和极厚的光滑耐磨涂层构成。 推荐用于球墨铸铁或灰口铸铁的高速车削。 CVD coated carbide is extremely hard substrate and extremely thick, smooth, wear-resistant coating. Recommended for nodular cast iron high-speed turning.
BPC052	K10(K05-K15)	黑 Black	CVD涂层硬质合金，由极硬基体和极厚的光滑耐磨涂层构成。 推荐用于球墨铸铁或灰口铸铁的高速车削。 CVD coated carbide is extremely hard substrate and extremely thick, smooth, wear-resistant coating. Recommended for nodular cast iron high-speed turning.
BPC102	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.
BPS101	K15(K10-K25)	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。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.

CVD涂层 CVD coating



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) K15(K10-K20)	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	P15(P10-P20) K15(K10-K20)	黄 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.
BPS251	P20(P15-P30) M15(M10-M20)	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.
BPS253	P20(P15-P30) M15(M10-M20)	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.
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	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.

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 resistanceto 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。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.
BPG30A	M35(M25-M40)	紫黄 Purple yellow	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℃, 对超细合金基体没有影响
Coating temperature: 450-480℃， without effect on ultra-grained alloy substrate.

涂层失效温度:900℃, 高耐热
Coating failure temperature: 900℃， 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

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需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)	DLC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.

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 resistanceto 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.

A1 涂层材质特性 Coating grades properties overview

A1-6 铣削牌号 MILLING P

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。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.
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.
BPG217	P20(P15-P30)	黄 Yellow	使用高强度、耐磨损性及耐欠损相平衡的超细晶粒基体结合PVD TiAIN涂层，适于大多数工件材料的加工，可实现稳定车削及铣削加工。 Using high strength, high wear resistance and owe loss Phase Equilibrium ultrafine grain substrate with PVD TiAIN coating, suitable for most of the material machining,can achieve a stable turning and milling.
BPS321	P30(P25-P40)	黑/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	P30(P25-P40)	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	P40(P35-P50)	黑/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	P40(P35-P50)	黑 Black	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BPS412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BPS412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 BPS412 should be working in stable conditions, such as short overhangs, surface milling, shallow shoulder milling.For toughness process, BPS412 is the best choice.suitable for mixed materials small batch production. Whether the coolant supply is excellent.

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.
BPG45B	M35(M25-M40)	青灰黑 Cyan-blue gray dark	PVD涂层硬质合金牌号，用于以中速铣削具有磨蚀趋势的不锈钢，例如铸造零件、铁素体/马氏体不锈钢和PH钢. Coated carbide grade for medium speed milling abrasive trends stainless steel, such as casting parts, ferritic / martensitic stainless steel, and PH steel.
BPS411	M40(M30-M40)	黑/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.

A1 涂层材质特性 Coating grades properties overview

A1-8 铣削牌号 MILLING S

牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPU10B	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.
BPG318	S15(S15-S30)	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.
BPG40A	S30(S30-S40)	黄 Yellow	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.

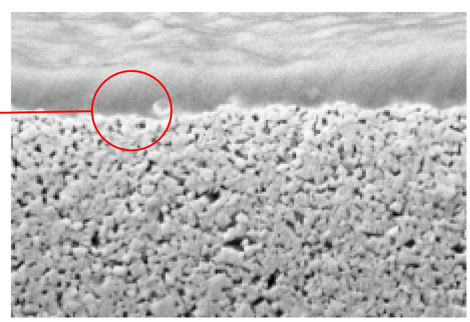
涂层材质:TiAlN
Coating materials: TiAlN

涂层显微硬度：HV3200
Coating microhardness: HV3200

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

涂层失效温度:900℃, 高耐热
Coating failure temperature: 900℃， 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

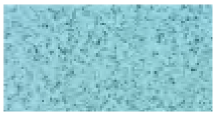
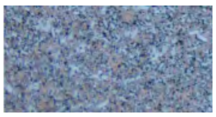
ISO类别 ISOclassification	ISO分组 ISO packet	加工类别 Processing category	涂层牌号 Coating grade	表面颜色 Surface color	基体性能 Substrate properties			涂层类别 Coating type	涂层描述 Coating descrption	厚度 Thickness	推荐切削速度 Recommended cutting speed (m/min)
					密度Density (g/cm3)	硬度Hardness (HRA)	抗弯强度 Bending strength(N/mm2)				
K	K05~K10	精加工 Finishing	BPC052	黑色 Black	14.9	93	2500	MT-CVD	TiCN-AL2O3	厚膜 Thick film	300 (200-400)
K	K10~K20	半精加工 Semi finishing	BPC102	黑色 Black	14.8	92	2000	MT-CVD	TiCN-AL2O3	厚膜 Thick film	250 (180-300)
K	K10~K20	半精加工 Semi finishing	BPS101	黑色 / 黄色 Black/yellow	14.8	92	2200	MT-CVD	TiCN-AL2O3	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)
M	M10~M20	半精加工 Semi finishing	BPG20B	青灰黑 Cyan-blue gray dark	13.5	91.3	2500	PVD	TiALN	厚膜 Thick film	120 (100-150)
M	M20~M35	粗加工 Rough machining	BPG30B	青灰黑 Cyan-blue gray dark	14.3	91.6	3000	PVD	TiALN	薄膜 Film	120 (100-150)
P	P01~P15	Finishing 精加工	BPS051	黄/黑色 Black/yellow	14.9	92.5	2000	MT-CVD/CVD	TiCN-AL2O3-TiN	厚膜 Thick film	250 (180-300)
P	P10~P20	Finishing 精加工	BPS101	黄/黑色 Black/yellow	13.7	91.4	2000	MT-CVD/CVD	TiCN-AL2O3-TiN	厚膜 Thick film	250 (180-300)
P	P20~P30	半精加工 Semi finishing	BPS251	黄/黑色 Black/yellow	13.6	91.5	2200	MT-CVD/CVD	TiCN-AL2O3-TiN	厚膜 Thick film	220 (180-280)
P	P25~P35	粗加工 Rough machining	BPS371	黄/黑色 Black/yellow	13.5	91	2500	MT-CVD/CVD	TiCN-AL2O3-TiN	厚膜 Thick film	130 (100-240)
P	P20~P30	半精加工 Semi finishing	BPG308	紫黄 Purple yellow	14.3	91.6	3000	PVD	TiALN	薄膜 Film	120 (100-150)
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)
S	S10~S20	半精加工 Semi finishing	BPG218	紫黄 Purple yellow	14.45	91.8	3000	PVD	TiALN+TiN	薄膜 Film	50 (30-70)
S	S20~S30	粗加工 Rough machining	BPG318	紫黄 Purple yellow	14.5	90	2500	PVD	TiALN+TiN	薄膜 Film	30 (20-60)
N	N01~N10	精加工 Finishing	BPU109	DLC色	14.9	92.5	3000	PVD	DLC	薄膜 Film	
N	N10~N20	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)

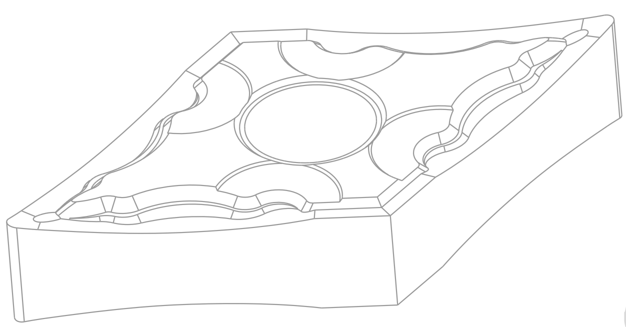
A1 涂层材质特性 Coating grades properties overview

A1-10 铣削涂层牌号分类及推荐 ISO packet MILLING

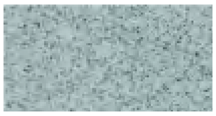
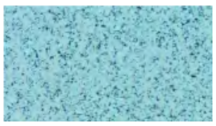
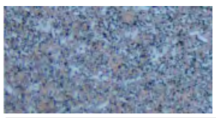
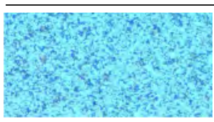
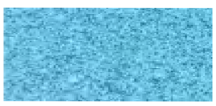
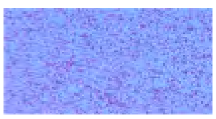
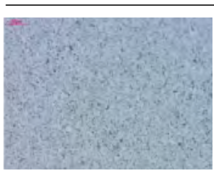
ISO类别 ISOclassification	ISO分组 ISO packet	加工类别 Processing category	涂层牌号 Coating grade	表面颜色 Surface color	基体性能 Substrate properties 密度Density (g/cm3)	硬度Hardness (HRA)	抗弯强度 Bending strength(N/mm2)	涂层类别 Coating type	涂层描述 Coating descrption	厚度 Thickness	推荐切削速度 Recommended cutting speed (m/min)
K	K10~K20	精加工 Finishing	BPG108	紫黄 Purple yellow	14.9	93	2500	PVD	TiALN	厚膜 Thick film	300 (200-400)
K	K10~K20	半精加工 Semi finishing	BPC122	黑色 Black	14.8	92	2000	MT-CVD	TiCN-AL_2O_3	厚膜 Thick film	250 (180-300)
K	K20~K30	半精加工 Semi finishing	BPS321	黑色 / 黄色 Black/yellow	14.5	90	2000	MT-CVD	TiCN-AL_2O_3	厚膜 Thick film	150 (120~200)
K	K30~K40	粗加工 Rough machining	BPS411	黑色 / 黄色 Black/yellow	14.2	89.5	3500	MT-CVD	TiCN-AL_2O_3	厚膜	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)
M	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	120 (100-150)
M	M20~M35	半精加工 Semi finishing	BPG30B	青灰黑 Cyan-blue gray dark	14.2	89.5	2900	PVD	TiALN	薄膜 Film	120 (100-150)
M	M30~M40	粗加工 Rough machining	BPS411	黑色 / 黄色 Black/yellow	14.2	89.5	2900	MT-CVD	TiCN-AL_2O_3	厚膜 Thick 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)
P	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 (180-280)
P	P20~P30	半精加工 Semi finishing	BPG217	黄 Yellow	14.5	91.8	2900	PVD	TiALN+TiN	薄膜 Film	150 (120~200)
P	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)
P	P30~P40	粗加工 Rough machining	BPS321	黑色 / 黄色 Black/yellow	14.5	90	2000	MT-CVD	TiCN-AL_2O_3	厚膜 Thick film	120 (100-150)
P	P30~P40	粗加工 Rough machining	BPS411	黑色 / 黄色 Black/yellow	14.2	89.5	3500	MT-CVD	TiCN-AL_2O_3	厚膜	120 (100-150)

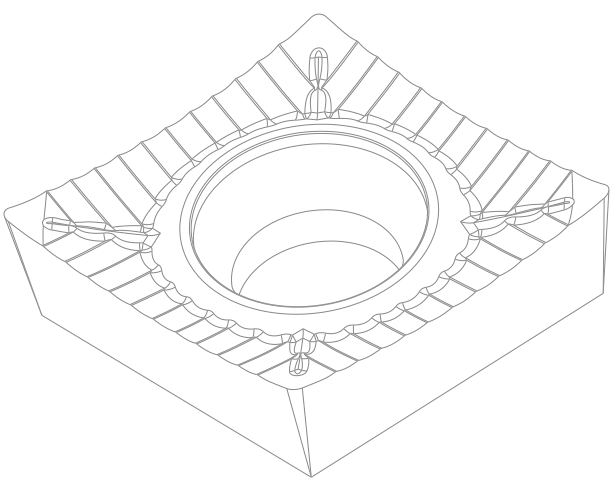
A2 硬质合金牌号材料特性 Features overview of cemented carbide

	牌号 Grade	ISO分类 ISO classification	密度 Density (g/cm3)	硬度 Hardness HRA	抗弯强度 Bending strength (N/mm2)	使用性能及用途 Usage and performance
	BP20	P20~P25 M20	12.3	≥91.5	1910	红硬性好，具有很高的抗热震裂和抗热塑性变形能力,适用削合金结构钢、合金工具钢和高锰钢、不锈钢的加工。 Excellent in red handness, anti-heat crak, anti xdformation.Suitable for processing the structural alloy steel, alloy tool steel, high manganese steel and stainless steel
	BP35	P30~P40	12.7	≥91.0	2220	红硬性好，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 Excellention red hardness anti-thermal deformation . high strength. common grage. Suitable for the roughing of steel, castiron
	BU810	K05~K15	14.7~15	92.8-93.1	2700	亚微细晶粒, 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	14.3~14.6	91.8	3500	亚微细晶粒, 适用于各种铣刀及孔加工刀具。 Sub-micro grain, suitable for the milling and drilling tools
	BK10UF	K01-K15	14.6-15	≥92.8	2060	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 castiron ,piled welding, spray welding hard rubber. card board and non-ferrous metal.) hard rubber,cardoard and non- ferrous metal
	BK20UF	K10-K30	14.5-14.9	≥92.0	2360	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 castiron ,piled welding, spray welding hard rubber. card board and non-ferrous metal.) hard rubber,cardoard and non- ferrous metal
	BK30UF	K15-K35	14.4-14.8	≥91.5	2520	超细晶粒合金，耐磨性和抗冲击性好。适于铸铁、有色金属及非金属材料加工。 Ultra-fine grain allo. good wear resistance and anti-shocking. suitable for processing the castion, non-ferrous metal,plastic wood, and etc.

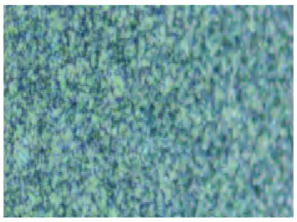


A2 硬质合金牌号材料特性 Features overview of cemented carbide

	牌号 Grade	ISO分类 ISO classification	密度 Density (g/cm3)	抗弯强度 Bending strength (N/mm2)	硬度 Hardness HRA	使用性能及用途 Usage and performance
	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 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.
	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.
	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.
	YT15	P10	11.1~11.5	1650	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	92~93	红硬性好、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，使用强度较高，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.

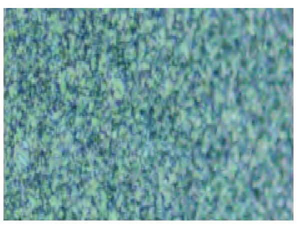


A3　金属陶瓷材质特性 Features overview of cermet



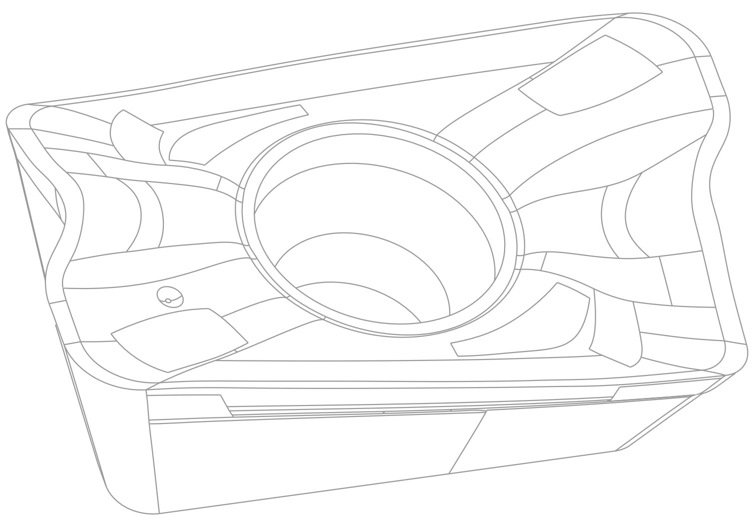
BN201

ISO分类 ISO classification	K05~K20　P10~P30　M10~M30
密度 Density (g/cm3)	6.1~7.2
硬度 Hardness HRA	>91
抗弯强度 Bending strength (N/mm2)	>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



BN301

ISO分类 ISO classification	K01~K10　P01~P20　M01~M20
密度 Density (g/cm3)	6.5~7.2
硬度 Hardness HRA	>92
抗弯强度 Bending strength (N/mm2)	>1800
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



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

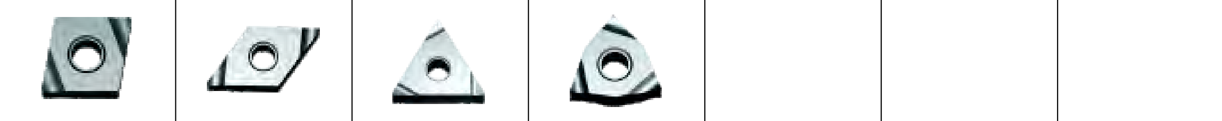
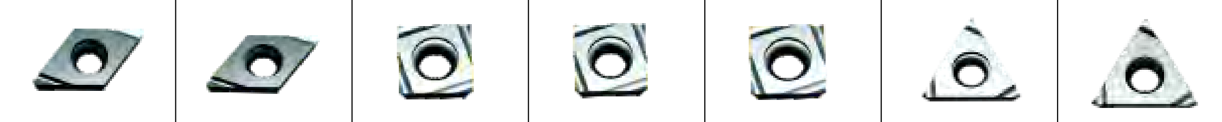
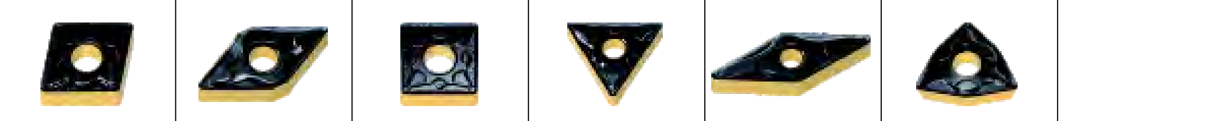
ISO分组ISO Standard		P钢 Steel					M不锈钢 Stainless steel					K铸铁 Cast iron				N有色金属 Non-ferrous metals			S耐热合金 Heat Resistant alloys		
		P01	P10	P20	P30	P40	M01	M10	M20	M30	M40	K01	K10	K20	K30	N01	N10	N20	S01	S10	S20
普通车削General turning	CVD涂层 CVD coating	BPS051	BPS101	BPS251	BPS371								BPC052		BPC102					BPG363	
	PVD涂层 PVD coating		BPG20A					BPG05B	BPG20B	BPG30B						BPU109	BPG05B		BPG118	BPG218	
	金属陶瓷 Cermet	BN201		BN301			BN201		BN301												
	硬质合金 Cemented carbide											BK10				BU810			BU810		
切断切槽Chipbreaker	CVD涂层 CVD coating			BPS253	BPS373								BPS253								
	PVD涂层 PVD coating			BPG20B	BPG30B		BPG05B		BPG20B	BPG30B						BPG05B			BPG118	BPG218	
	硬质合金 Cemented carbide						BU810	BK10				BK10				BU810			BU810	BK10	

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	N01	N10	N20	S01	S10	S20
铣削 Milling	CVD涂层 CVD coating				BPS321 BPS411					BPS411			BPC122	BPS321	BPS411						
	PVD涂层 PVD coating	BPG05B		BPG20B BPG25B			BPG05B	BPG20B	BPG30B	BPG45B			BPG108								
	金属陶瓷 Cermet																				
	硬质合金 Cemented carbide		BP20	BP35				BP35					BK10			BU810			BU810	BK10	

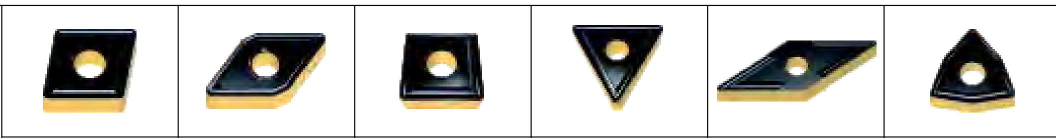
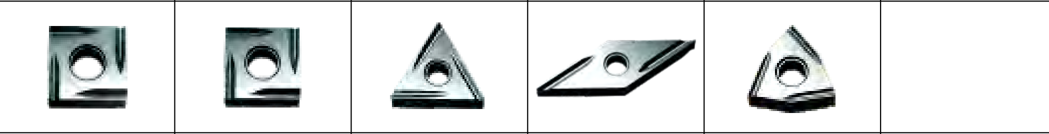
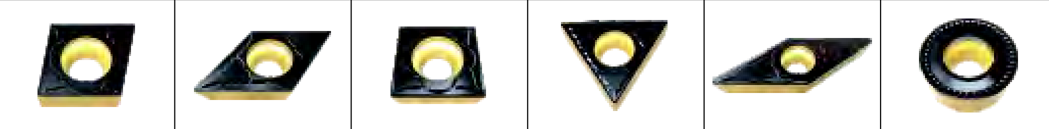
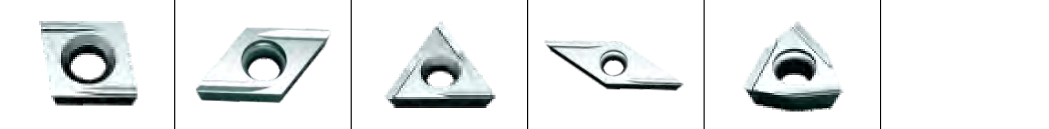
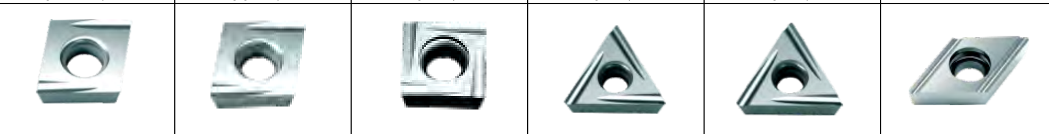
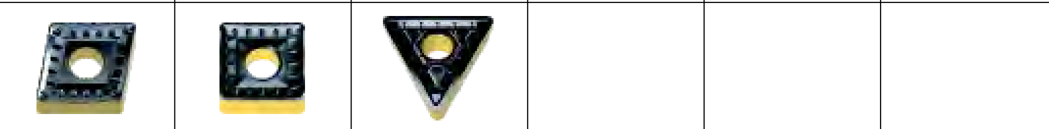
B 车削刀具
Cutting tools

B 普通车削 General turning

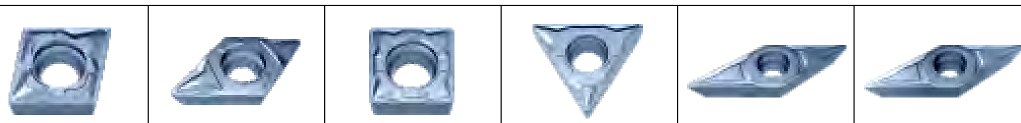
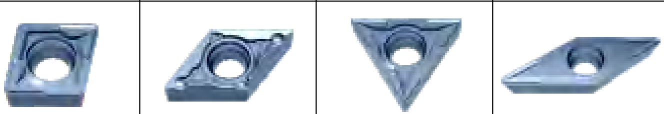
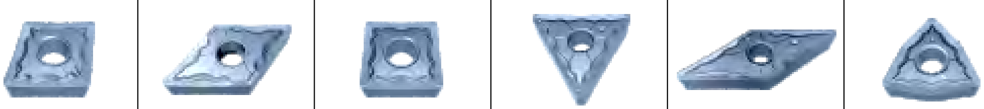
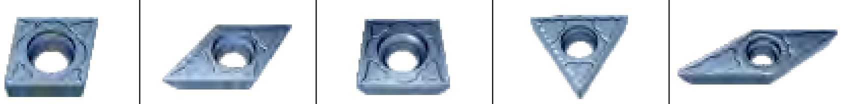
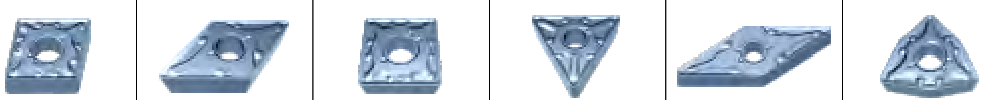
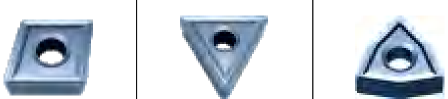
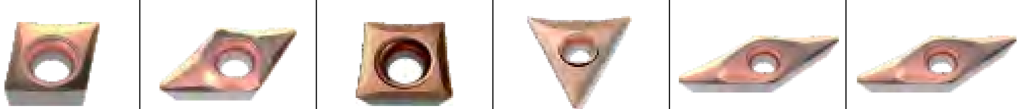
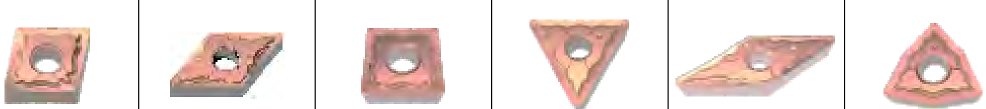
B1-1车削刀片一览表 Turning inserts overview

钢的精加工 Finishing of steel	50 	CNMG**-FW	DNMG**-FW	SNMG**-FW	TNMG**-FW	VNMG**-FW	WNMG**-FW	
	51 	CCMT**-FW	DCMT**-FW	SCMT**-FW	TCMT**-FW	VBMT**-FW	VCMT**-FW	
	52 	CNGG**L/R-S	DNGG**L/R-S	TNGG**L/R-S	WNGG**L/R-S			
	53 	CCGT**L/R-S	CCGH**L/R-S	DCET**L/R-S				
	54 	DCGT**L/R-S	DPET**L/R-S	SCGT**L/R-S	SPGH**L/R-S	SPGT**L/R-S	TCGT**L/R-S	TPGH
	55 	TPGR**L-S	TPET**L-S	TPGX**L-S	VBET**L-S			
	56 	VBGT**L/R-S	VCGT**L/R-S	VDGX**L/R-S	VPET**L/R-S	WPGT**L/R-S	DCET**L/R-E	TNGG**L/R-E
钢的半精加工 Semi Finishing of steel	57 	CNMG**-MD	DNMG**-MD	SNMG**-MD	TNMG**-MD	VNMG**-MD	WNMG**-MD	
	59 	CNMG**-MA	DNMG**-MA	SNMG**-MA	TNMG**-MA	VNMG**-MA	WNMG**-MA	
	60 	CNMG**-TM	DNMG**-TM	TNMG**-TM	VNMG**-TM	WNMG**-TM	VNMG**-UX	WNMG**-UX

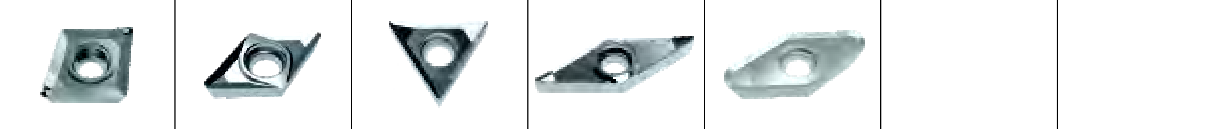
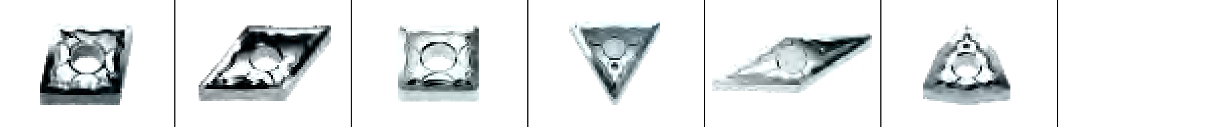
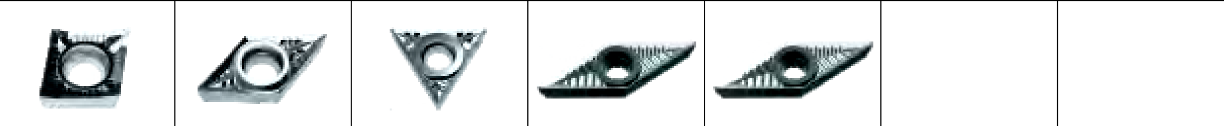
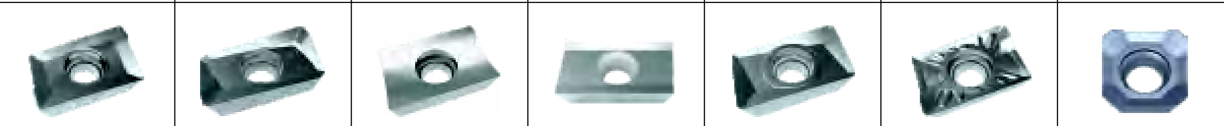
B1-1车削刀片一览表 Turning inserts overview

钢的半精加工 Semi Finishing of steel	61							
		CNMG**-U	DNMG**-U	SNMG**-U	TNMG**-U	VNMG**-U	WNMG**-U	
	62							
		SNMG**L/R-N	SNGG**L/R-N	TNGG**L/R-N	VNGG**L/R-N	WNGG**L/R-N		
	63							
		CNGG**L/R-H	DNGG**L/R-H	VNGG**L/R-H				
	64							
		CCMT**-MD	DCMT**-MD	SCMT**-MD	TCMT**-MD	VCMT**-MD	RCMT**MOE-R*	
	66							
		CPMH**L/R-N	DCGT**L/R-N	TPGH**L/R-N	VBGT**L/R-N	WPGT**L/R-N		
	67							
		CCET**L/R-E	CCGT**L/R-E	SPGT**L/R-E	TPET**L/R-E	TCGT**L/R-E	DCET**L/R-E	
钢、铸铁的粗加工 Rough machining of steel、cast iron	68							
		CNMG**-RA	DNMG**-RA	SNMG**-RA	TNMG**-RA	WNMG**-RA		
	69							
		CNMM**-RB	SNMM**-RB	TNMM**-RB				
	70							
		CCMT**-RA	DCMT**-RA	SCMT**-RA	TCMT**-RA			

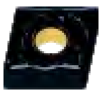
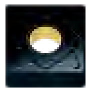
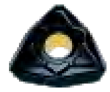
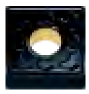
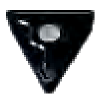
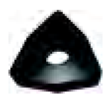
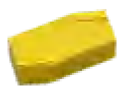
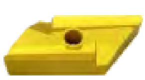
B1-1 车削刀片一览表 Turning inserts overview

不锈钢的精加工 Finishing of stainless steel	72 	CCMT**-FW	DCMT**-FW	SCMT**-FW	TCMT**-FW	VBMT**-FW	VCMT**-FW	
	73 	CCMT**-MX	DCMT**-MV	TCMT**-MX	VBMT**-MX			
	75 	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	74 	CCMT**-MD	DCMT**-MD	SCMT**-MD	TCMT**-MD	VCMT**-MD		
	76 	CNMG**-MA	DNMG**-MA	SNMG**-MA	TNMG**-MA	VNMG**-MA	WNMG**-MA	
	77 	CNMG**-SA	TNMG**-SA	WNMG**-SA				
耐热合金精加工 Finishing of Heat Resistant alloys	79 	CCGT**-SL	DCGT**-SL	SCGT**-SL	TCGT**-SL	VCGT**-SL	VBGT**-SL	
耐热合金精加工及半精加工 The semi-Finishing of Heat Resistant alloys	80 	CNGG**E-LHC	DNGG**E-LHC	SNGG**E-LHC	TNGG**E-LHC	VNGG**E-LHC	WNGG**E-LHC	

B1-1车削刀片一览表 Turning inserts overview

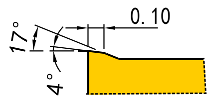
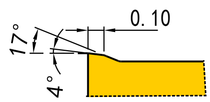
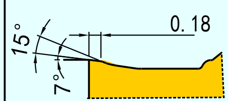
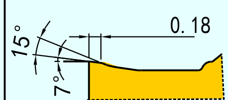
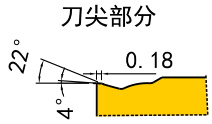
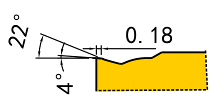
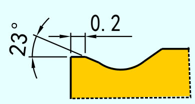
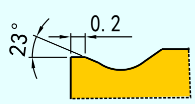
耐热合金半精加工及粗加工 The heat resistant alloys semi-finishing and roughing process	81 	CNMG**-SN	DNMG**-SN	SNMG**-SN	TNMG**-SN	VNMG**-SN	WNMG**-SN	
铝的加工 Aluminum processing	83 	CCGT**-LHC	DCGT**-LHC	SCGT**-LHC	TCGT**-LHC	VBGT**-LHC	VCGT**-LHC	RCGT**-LHC
	85 	CCGT**-LH2	DCGT**-LH2	TCGT**-LH2	VCGT**-LH2	VPGT**-LH2		
	86 	CNGG**-LHC	DNGG**-LHC	SNGG**-LHC	TNGG**-LHC	VNGG**-LHC	WNGG**-LHC	
	87 	CCGT**-LH	DCGT**-LH	TCGT**-LH	VCGT**-LH	VBGT**-LH		
	88 	CNMG**-LH	DNMG**-LH	SNMG**-LH	TNMG**-LH	VNMG**-LH	WNMG**-LH	
	89 	APKT**PDER-LH	APKT**PDFR-G2C	APEX**FR-LHC	APKT**FR-LHC	APKT**T4PDFR-LH1C	LDHT**PDFR-LHC	SEKT**AFFN-LH2
轮毂刀 Inserts for processing wheel	90 	GDMA840-LHC	GIPATYZ-35V-1.2-LHC	GIP600E-3.00-LHC	MRGN	VCGT		

B1-1 车削刀片一览表 Turning inserts overview

铸铁的精加工 Finishing of cast iron	92	 CNMG**-CX	 DNMG**-CX	 SNMG**-CX	 TNMG**-CX	 WNMG**-CX		
铸铁的半精加工 The semi-Finishing of cast iron	93	 CNMG**-CQ	 DNMG**-CQ	 SNMG**-CQ	 TNMG**-CQ	 WNMG**-CQ	 VNMG**-CQ	
	94	 CNMG**-U	 DNMG**-U	 SNMG**-U	 TNMG**-U	 VNMG**-U	 WNMG**-U	
铸铁的粗加工 Rough machining of cast iron	95	 CNMG**-GH	 DNMG**-GH	 TNMG**-GH	 WNMG**-GH			
	96	 CNMA**	 DNMA**	 SNMA**	 TNMA**	 WNMA**		
扒皮刀 Peeling-Inserts	98	 LPUC	 LNUC	 XNGX				
	98	 LNGF	 LNGF					
仿形车刀 Turning inserts for profile	99	 KNUX	 KNUX					
	99	 KNUX						

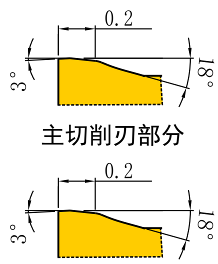
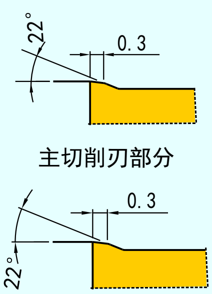
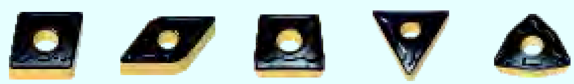
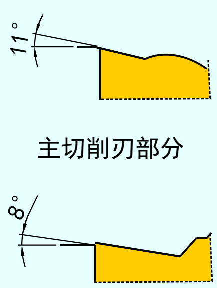
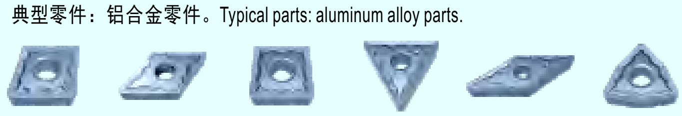
B1–2 车削刀片槽型说明 Description of chipbreaker

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 egde shape	刀片外形和槽型特点 Chipbreaker features
P	FW 	ap=0.15-1.5 mm fn=0.07-0.5 mm/r	刀尖部分  主切削刃部分 	用于钢精加工车削；For steel finishing turning. 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 工序： 纵向车削、车端面、背车和仿形切削 Operations: longitudinal cutting, facing, back-turning and profiling. 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. 局限性：切削深度和进给范围。Limitations: depth of cut and feed range. 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	MD 	ap=0.2-8.6 mm fn=0.1-0.65 mm/r	刀尖部分  主切削刃部分 	用于半精加工车削；For medium turning. 对于钢具有宽广的应用范围。With broad applied range for steel. 工序：纵向切削、车端面和仿形切削。Operations: longitudinal cutting, facing and profiling 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. 典型零件：钢制轮轴、毂和齿轮等。Components typically: axles, hubs, gears, etc in steel. 
P M	MA 	ap=0.2-6.0 mm fn=0.15-0.5 mm/r	刀尖部分  主切削刃部分 	用于半精加工车削。For semi-finishing turning. 应用于钢和铸铁的中型切削。For semi-finishing of steel and cast iron; 工序：车削、车端面和仿形车削。Operations:Turning,facing and profiling. 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. 典型零件：普通钢件和铸铁件。Typical parts:Ordinary steel parts and cast iron parts. 
P K	U 	ap=0.25-4.0 mm fn=0.15-0.5 mm/r	刀尖部分  主切削刃部分 	用于半精到精加工车削；For semi-finishing to finishing turning. 对于铸铁加工具有广泛的应用 With broad applied range for cast iron. 工序：车削、车端面。Operations: turning, facing. 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. 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. 典型零件：普通铸铁零件。Typical parts : pieces of cast iron. 

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

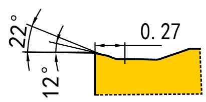
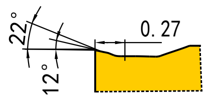
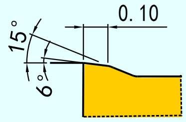
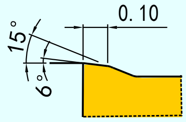
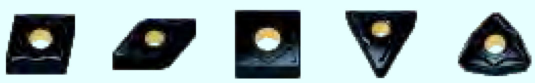
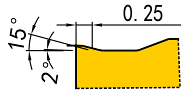
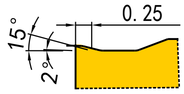
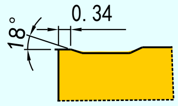
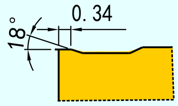
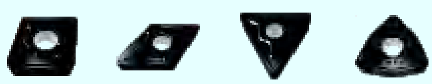
A 负角刀片 Negative inserts

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	TM 	ap=0.15-4.5 mm fn=0.2-0.5 mm/r	刀尖部分 	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、车端面和仿形车削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，使断屑槽保持锋刃的切削性能和低切削应力。Advantages: High universality, easy chip-flow, special bulge close to the nose radiusand 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	RA 	ap=0.7-15 mm fn=0.2-1 mm/r	刀尖部分 	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	RB 单面 	ap=0.7-15 mm fn=0.2-1 mm/r		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. 
M S N	LH 	ap=0.08-3.5 mm fn=0.1-0.4 mm/r	刀尖部分 	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. 

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
S	SN 	ap=0.05-4.5 mm fn=0.12-0.65 mm/r	刀尖部分  主切削刃部分 	用于半精加工车削；For semi-finishing turning. 对于耐热合金/钛合金具有宽广的应用范围. widely used for Resistance alloy/titalium alloy. 工序：纵向车削、车端面和仿形切削。Operations: longitudinal turning, facing and profiling 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. 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. 
K	CX 	ap=0.15-2.0 mm fn=0.08-0.30 mm/r	刀尖部分  主切削刃部分 	用于精加工车削。For finish turning; 灰口和球墨铸铁。Gray and nodular cast iron. 工序：纵向车削、车端面和仿形切削。 Operations:Longitudinal Turning,facing and profiling. 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。 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. 局限性：切削深度和进给。Limitations: The depth of cutting and feed. 典型零件：普通铸铁零件。Typical parts:Ordinary parts of cast iron. 
K	CQ 	ap=0.2-6.0 mm fn=0.15-0.50 mm/r	刀尖部分  主切削刃部分 	用于半精加工车削。For semi-finish turning; 灰口和球墨铸铁。Gray and nodular cast iron. 工序：纵向车削、车端面和仿形切削。Operations:Longitudinal Turning,facing and profiling. 优势：可靠并实现了无故障切削。Advantages:Reliable giving trouble-free machining. 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. 典型零件：普通铸铁零件。Typical parts:Ordinary parts of cast iron. 
K	GH 	ap=1.0-8.0 mm fn=0.3-0.85 mm/r	刀尖部分  主切削刃部分 	用于粗加工。For rough turning. 灰口和球墨铸铁。Gray and nodular cast iron. 工序：车削、车端面和仿形切削。Operations:Turning,facing and profiling. 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. 典型零件：铸铁件。Typical parts:Parts of cast iron. 

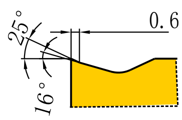
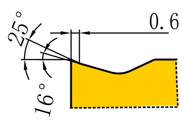
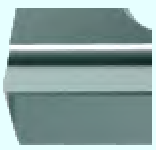
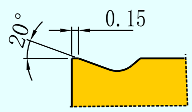
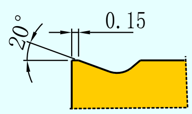
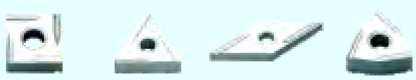
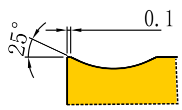
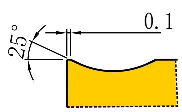
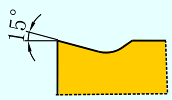
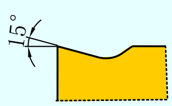
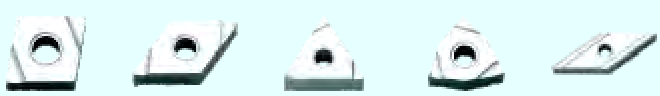
B1-2 车削刀片槽型说明 Description of chipbreaker

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 mm fn=0.1-1.19 mm/r	刀尖部分 0°  主切削刃部分 0° 	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、车端面和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=1-6mm fn=0.2-0.7 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、薄壁和不稳定加紧零件。低进给小切深是，切屑控制能力好。 For fine to medium turing of steel and statinless 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.  

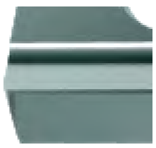
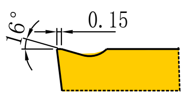
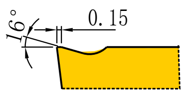
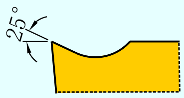
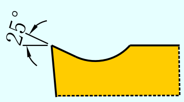
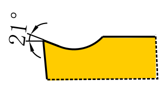
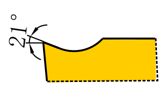
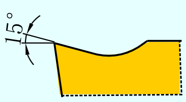
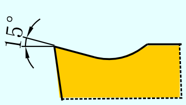
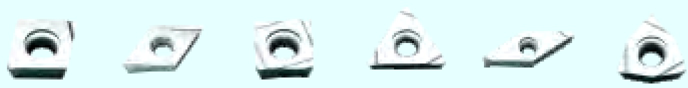
B1–2 车削刀片槽型说明 Description of chipbreaker

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 mm fn=0.1-0.25 mm/r	刀尖部分  主切削刃部分 	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	N 	ap=0.3-1.2 mm fn=0.03-0.18 mm/r	刀尖部分  主切削刃部分 	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 maching,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 siz 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. 
K	A 	ap=0.08-3.2 mm fn=0.18-0.38 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. 
N	S 	ap=0.06-2.0 mm fn=0.05-0.2 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. 

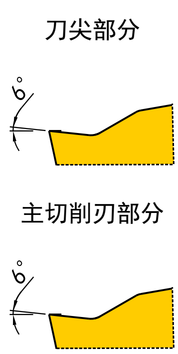
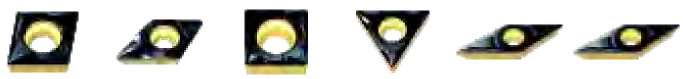
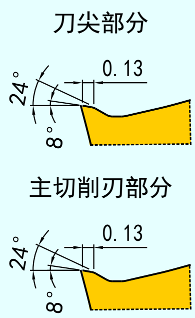
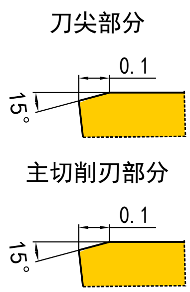
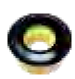
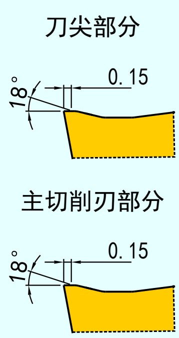
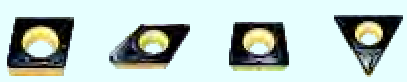
B1–2 车削刀片槽型说明 Description of chipbreaker

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	N 	ap=0.06-3.6 mm fn=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	E 	ap=0.08-2.6 mm fn=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	H 	ap=0.08-3.2 mm fn=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	S 	钢： ap=0.06-2.3 mm fn=0.05-0.18 mm/r 有色金属： ap=0.08-2.5 mm fn=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. 

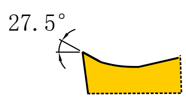
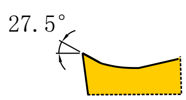
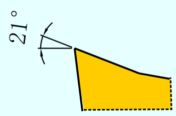
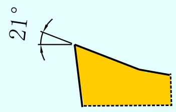
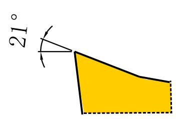
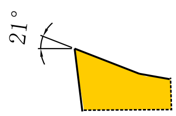
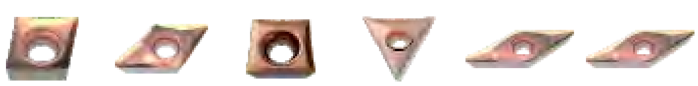
B1−2 车削刀片槽型说明 Description of chipbreaker

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 	ap=0.15-2.0 mm fn=0.01-0.3 mm/r		用于精加工车削。For finishing turning. 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. 工序：车削、车端面仿形切削和背车加工。Operations: turning, facing, profiling and back-facing. 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. 局限性：切削深度和进给。Limitations: depth of cut and feed. 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 M	MD 	ap=0.2-4.5mm fn=0.1-0.35 mm/r		用于半精加工车削。For medium-duty turning. 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. 工序：车削、车端面和仿形切削。Operations: turning, facing and profiling. 优点：通用性强、可靠并且无故障切削。Advantages: high universality, reliable and problem-free cutting 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. 典型零件：轮轴、轴、毂和齿轮。Components typically: axles, shafts, hubs, gears, etc. 
P	R 	ap=0.15-12.8 mm fn=0.05-3.5 mm/r		用于半精加工车削。 For semi-finishing turning . 适用于钢、不锈钢和铸铁加工。Used for steel, stainless steel and cast-iron. 工序：端面、外圆和仿形加工。Operations : turning, facing and profiling. 优点：具有高可靠性。Advantages: high reliability. 局限性：通过圆刀片进行断屑 Limitations: chip breaking via round insert. 典型零件：轴、轮轴等。Components typically: shafts, axles, etc. 
P	RA 	ap=0.2-14.5 mm fn=0.1-1.2 mm/r		用于粗加工车削。 For rough turning. 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. 工序：端面、外圆和仿形加工。 Operations: turning, facing and profiling. 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. 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. 典型零件：轮轴、轴和齿轮等。Components typically: axles, shafts, hubs, gears, etc. 

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 	ap=0.1-5.0 mm fn=0.03-0.5 mm/r	刀尖部分  主切削刃部分 	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加的生产效率。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 	ap=0.1-6.5 mm fn=0.13-0.6 mm/r	刀尖部分  主切削刃部分 	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加的生产效率。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 	ap=0.06-1.7 mm fn=0.03-0.3 mm/r	刀尖部分  主切削刃部分 	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

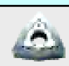
	加工类型 Process type	断屑槽 Chip breaker	精度 Tolerance	槽型示意图 Chipbreaker diagram	推荐切削用量 Recommended cutting parameter	CVD涂层 CVD coating	PVD涂层 PVD coating
负前角刀片 Negative Angle blade before	精加工 Finishing	FW	M		ap=0.3-1.5 mm、fn=0.07-0.5 mm/r	BPS051、BPS101	
		N	G		ap=0.3-1.2 mm、fn=0.03-0.18 mm/r		BU810、BPG05B
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

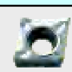
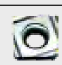
B1-3牌号与槽型推荐 Recommended grade and chipbreaker

M 不锈钢加工 Process on stainless steel

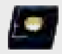
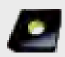
ISO 分类分组	加工类型 Process type	断屑槽 Chip breaker	精度 Tolerance	槽型示意图 Chipbreaker diagram	推荐切削用量 Recommended cutting parameter	CVD涂层 CVD coating	PVD涂层 PVD coating
负前角刀片 Negative Angle blade before	精加工 Finishing	LH	M		ap=0.8-3.5 mm、fn=0.1-0.4 mm/r		BPG05B
		MX	M		ap=0.1-1.5 mm、fn=0.05-0.4 mm/r		BPG05B
	半精加工 Semi-finishing	MD	M		ap=0.4-8.6 mm、fn=0.1-0.65 mm/r		BPG20B、BPG30B
		MA	M		ap=0.5-8.5 mm、fn=0.12-0.65 mm/r		BPG20B、BPG30B

N 有色金属 Non-ferrous metals

	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
负前角刀片 Negative Angle blade before	精加工 Finishing	LH	M		ap=0.8-3.5 mm、fn=0.1-0.4 mm/r	BU810
	半精加工、精加工 Semi-finishing, finishing	S	G		ap=0.8-2.5 mm、fn=0.06-0.2 mm/r	BU810

	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
正前角刀片 Is the former Angle blade	半精到粗车削加工 Semi-finishing , roughing turning	LH	G		ap=0.1-5.0 mm、fn=0.03-0.5 mm/r	BU810
		LH2	G		ap=0.4-6.5 mm、fn=0.13-0.6 mm/r	BU810
	半精加工 Semi-finishing	S	G		ap=0.6-2.0 mm、fn=0.05-0.2 mm/r	BU810

K 铸铁加工 Process on cost 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
负前角刀片 Negative Angle blade before	精加工 Finishing	CX	M		ap= 0.06-1.7 mm、fn= 0.03-0.3 mm/r	BPC052
	半精加工 Semi-finishing	CQ	M		ap= 0.2-6.0 mm、fn= 0.15-0.5 mm/r	BPC102
		U	M		ap=1-4.0 mm、fn=0.15-0.5 mm/r	BPC102
	粗加工 Rough finish	GH	M		ap=0.4-14 mm、fn=0.19-0.85 mm/r	BPC102
		无槽 No slot	M		ap=0.2-12.0 mm、fn=0.1-1.19 mm/r	BPC102

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		
85° A	82° B	80° C
55° D	75° E	H
55° K	L	86° M
O	P	R
S	T	75° T
35° V	80° W	其他 Others Z

形状代号 Insert shape

公 制 Metric							
代号 Code	有无孔 With/Without hole	有无断屑槽 With/Without chipbreaker	刀片剖面 Section plane of insert	代号 Code	有无孔 With/Without hole	有无断屑槽 With/Without chipbreaker	刀片剖面 Section plane of insert
B	有 With	无 Without	>65°	N	无 Without	无 Without	
H	有 With	单面 Single-side	>65°	R	无 Without	单面 Single-side	
C	有 With	无 Without	>65°	F	无 Without	双面 Double-side	
J	有 With	双面 Double-side	>65°	A	有 With	无 Without	
W	有 With	无 Without	≤65°	M	有 With	单面 Single-side	
T	有 With	单面 Single-side	≤65°	G	有 With	双面 Double-side	
Q	有 With	无 Without	≤65°	X	---	---	特殊 Special
U	有 With	双面 Double-side	≤65°				

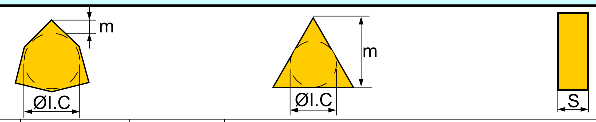
断屑槽及夹固形式 Chipbreaker and clamping system

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	3°	B	5°
C	7°	D	15°
E	20°	F	25°
G	30°	N	0°
P	11°	O	其他的后角 Other clearance angle

允许偏差 Allowed tolorence



代号 Code	m允许偏差(mm) tolerance range	内切圆ØI.C 允许偏差(mm) Inscribed circle Tolerance (mm)	厚度S 允许偏差(mm) Thickness S Tolerance (mm)
A	±0.005	±0.025	±0.025
F	±0.005	±0.013	±0.025
C	±0.013	±0.025	±0.025
H	±0.013	±0.013	±0.025
E	±0.025	±0.025	±0.025
G	±0.025	±0.025	±0.13
J	±0.005	±0.05-±0.13	±0.025
K	±0.013	±0.05-±0.13	±0.025
L	±0.025	±0.05-±0.13	±0.025
M	±0.08-±0.18	±0.05-±0.13	±0.13
N	±0.08-±0.18	±0.05-±0.13	±0.025
U	±0.13-±0.38	±0.08-±0.25	±0.13

(参考）M级精度详细情况（按形状、大小分）
(Reference) Details of M-class tolerance (Identied by shape and size)
刀尖高度允许偏差(mm)
Nose height tolerance (mm)

内切圆 Inscribed circle	T	S	80° C	55° K	35° V	R
6.35	±0.08	±0.08	±0.08	±0.11	±0.16	---
9.525	±0.08	±0.08	±0.08	±0.11	±0.16	---
12.7	±0.13	±0.13	±0.13	±0.15	---	---
15.875	±0.15	±0.15	±0.15	±0.18	---	---
19.05	±0.15	±0.15	±0.15	±0.18	---	---
25.4	---	±0.18	---	---	---	---

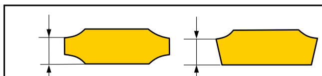
内切圆ØI.C允许公差(mm)
Tolerance of inscribed circle

内切圆 Inscribed circle	T	S	80° C	55° K	35° V	R
6.35	±0.05	±0.05	±0.05	±0.05	±0.05	---
9.525	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05
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			05					
5.56					09			
6.0			06					
6.35	06	07			11	11		
8.0			08					
9.525	09	11	09	09	16	16	06	16
10.0			10					
12.0			12					
12.7	12	15	12	12	22	22	08	
15.875	16	19	15	15	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	0.99
01	1.59
T1	1.98
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
T4	4.96
05	5.56
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

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	4.76
4	6.35
5	7.94
6	9.52

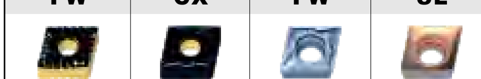
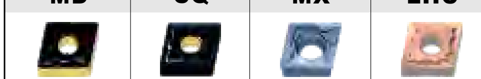
刀尖圆弧半径 Nose radius

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No radius
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
			

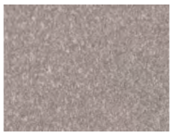
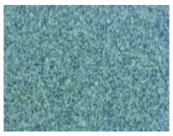
★ 厚度指刀片底面与切削刃最高部分之间的高度
Thickness is defined as height from bottom of insert to the highest part of cutting edge.

P 钢加工 Process steel

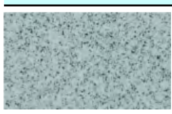
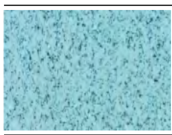
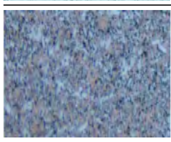
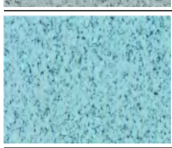
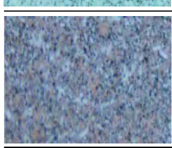
牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPS051	P05(P01-P10)	黑/黄 Black/yellow	CVD涂层牌号:在稳定工况下对钢材进行半精加工到粗加工时，可获得高金属去除率。 出色的耐月牙洼磨损和抗塑性变形能力。推荐用于稳定工况。湿式和干式加工。 CVD coated grade: stable conditions for steel semi-finishing to roughing can obtain high metal removal rate. Excellent resistance to crater wear and plastic deformation resistance. Recommended for stable conditions. Wet and dry processing.
BPS101	P15(P10-P20) K15(K10-K20)	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粗加工，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	P15(P10-P20) K15(K10-K20)	黄 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粗加工，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.
BPS251	P20(P15-P30) M15(M10-M20)	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.
BPS253	P20(P15-P30) M15(M10-M20)	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.
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	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.
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.

P 钢加工 Process steel

b 金属陶瓷 Cermet

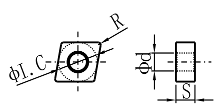
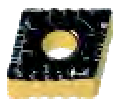
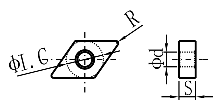
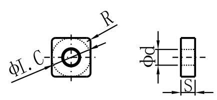
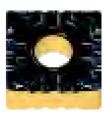
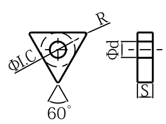
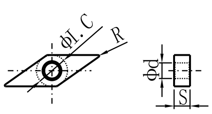
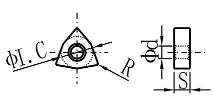
	牌号 Grade	ISO分类 ISO classification	密度 Density (g/cm3)	硬度 Hardness HRA	抗弯强度 Bending strength (N/mm2)	使用性能及用途 Usage and performance
	BN201	K01~K10 P01~P20 M01~M20	6.5~7.2	>92	>1800	适用于钢、不锈钢半精加工、精加工 Suitable for the finishing ,semi-finishing of stainless steel
	BN301	K05~K20 P10~P30 M10~M30	6.1~7.2	>91	>2000	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/cm3)	硬度 Hardness HRA	抗弯强度 Bending strength (N/mm2)	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	11.2~11.6	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	红硬性好，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 deformatio. Suitablefor thefinishing semi finishing of steel castiron .
	BP20	P20~P25 M20	12.3	≥91.5	1910	红硬性好，具有很高的抗热震裂和抗热塑性变形能力,适用削合金结构钢、合金工具钢和高锰钢、不锈钢的加工。 Excellent in red handness, anti-heat crak, anti xdformation.Suitable for processing the structural alloy steel, alloy tool steel, high manganese steel and stainless steel
	BP35	P30~P40	12.7	≥91.0	2220	红硬性好，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 Excellention red hardness anti-thermal deformation . high strength. common grage. Suitable for the roughing of steel, castiron

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

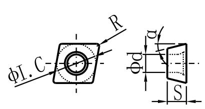
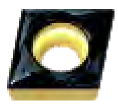
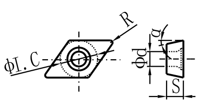
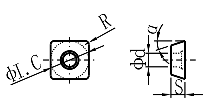
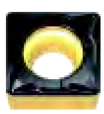
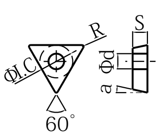
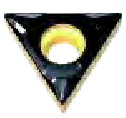
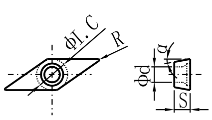
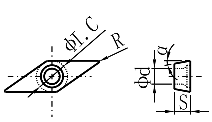
Negative inserts

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							
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic	
				ΦI.C	S	Φd	R	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301
		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		★	☆					
			150612-FW	12.7	6.35	5.16	1.2		★	☆					
		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		★	☆					

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

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

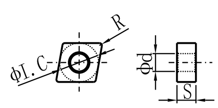
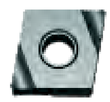
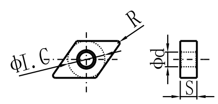
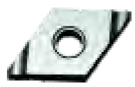
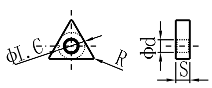
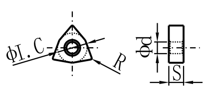
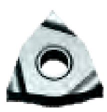
Positive inserts

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							
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic	
				ΦI.C	S	Φd	R	α	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301
		CCMT	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°	☆	★						
			120404-FW	12.7	4.76	5.5	0.4	7°	☆	★						
			120408-FW	12.7	4.76	5.5	0.8	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	3.97	4.4	0.4	7°	☆	★						
			09T308-FW	9.525	3.97	4.4	0.8	7°	☆	★						
		TCMT	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°	☆	☆						
			16T312-FW	9.525	3.97	4.4	1.2	7°	☆	☆						
		VBMT	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°	☆	★						
		VCMT	110304-MD	6.35	3.18	2.8	0.4	7°	☆	☆						
			110308-MD	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°	☆	☆						

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

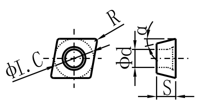
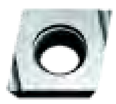
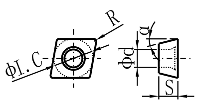
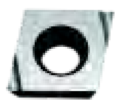
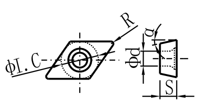
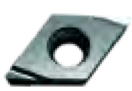
B1-5 钢加工正型刀片 Inserts for processing steel ·································· 精加工 Finishing

Positive inserts

刀片基本形状The basic shape of 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		金属陶瓷 ceramic		非涂层牌号 Uncoated grade	
				ΦI.C	S	Φd	R	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301	BU810	
		CNGG	090402L/R-S	9.525	4.76	3.81	0.2							☆		★	
			090404L/R-S	9.525	4.76	3.81	0.4							☆		★	
			090408L/R-S	9.525	4.76	3.81	0.8							☆		★	
		DNGG	110402L/R-S	9.525	4.76	3.81	0.2							☆		★	
			110404L/R-S	9.525	4.76	3.81	0.4							☆		★	
			110408L/R-S	9.525	4.76	3.81	0.8							☆		★	
		TNGG	110402L/R-S	6.35	4.76	2.4	0.2							☆		★	
			110404L/R-S	6.35	4.76	2.4	0.4							☆		★	
			110408L/R-S	6.35	4.76	2.4	0.8							☆		★	
			160402L/R-S	9.525	4.76	3.81	0.2							☆		★	
			160404L/R-S	9.525	4.76	3.81	0.4							☆		★	
			160408L/R-S	9.525	4.76	3.81	0.8							☆		★	
		WNGG	060402L/R-S	9.525	4.76	3.81	0.2							☆		★	
			060404L/R-S	9.525	4.76	3.81	0.4							☆		★	
			060408L/R-S	9.525	4.76	3.81	0.8							☆		★	

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

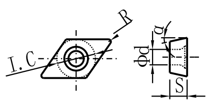
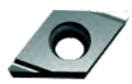
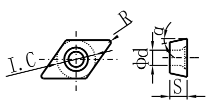
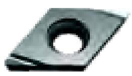
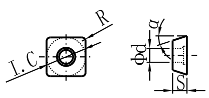
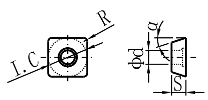
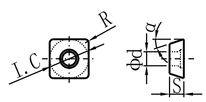
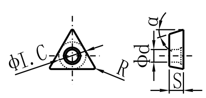
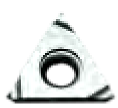
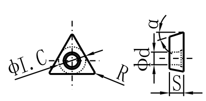
Positive inserts

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
				ΦI.C	S	Φd	R	α	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301	BU810
		CCGT	060202L/R-S	6.35	2.38	2.8	0.2	7°					☆	☆	☆		★
			060204L/R-S	6.35	2.38	2.8	0.4	7°					☆	☆	☆		★
			09T302L/R-S	9.525	3.97	4.4	0.2	7°					☆	☆	☆		★
			09T304L/R-S	9.525	3.97	4.4	0.4	7°					☆	☆	☆		★
			09T308L/R-S	9.525	3.97	4.4	0.8	7°					☆	☆	☆		★
			120402L/R-S	12.7	4.76	5.5	0.2	7°					☆	☆	☆		★
			120404L/R-S	12.7	4.76	5.5	0.4	7°					☆	☆	☆		★
			120408L/R-S	12.7	4.76	5.5	0.8	7°					☆	☆	☆		★
		CCGH	060202L/R-S	6.35	2.38	2.8	0.2	7°					☆	☆	☆		★
			060204L/R-S	6.35	2.38	2.8	0.4	7°					☆	☆	☆		★
		DCET	070201L/R-S	6.35	2.38	2.8	0.1	7°					☆	☆	☆		★
			070202L/R-S	6.35	2.38	2.8	0.2	7°					☆	☆	☆		★
			070204L/R-S	6.35	2.38	2.8	0.4	7°					☆	☆	☆		★
			11T301L/R-S	9.525	3.97	4.4	0.1	7°					☆	☆	☆		★
			11T302L/R-S	9.525	3.97	4.4	0.2	7°					☆	☆	☆		★
			11T304L/R-S	9.525	3.97	4.4	0.4	7°					☆	☆	☆		★

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

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

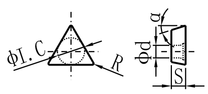
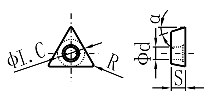
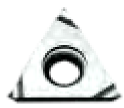
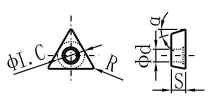
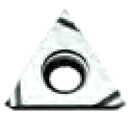
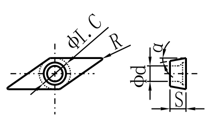
Positive inserts

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								
									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
				ΦI.C	S	Φd	R	α	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301	BU810
		DCGT	070202L/R-S	6.35	2.38	2.8	0.2	7°					☆	☆	☆		★
			070204L/R-S	6.35	2.38	2.8	0.4	7°					☆	☆	☆		★
			11T302L/R-S	9.525	3.97	4.4	0.2	7°					☆	☆	☆		★
			11T304L/R-S	9.525	3.97	4.4	0.4	7°					☆	☆	☆		★
		DPET	070201L/R-S	6.35	2.38	2.8	0.1	11°					☆	☆	☆		★
			070202L/R-S	6.35	2.38	2.8	0.2	11°					☆	☆	☆		★
			11T301L/R-S	9.525	3.97	4.4	0.1	11°					☆	☆	☆		★
			11T302L/R-S	9.525	3.97	4.4	0.2	11°					☆	☆	☆		★
		SCGT	09T304L/R-S	9.525	3.97	4.4	0.4	7°					☆	☆	☆		★
			09T308L/R-S	9.525	3.97	4.4	0.8	7°					☆	☆	☆		★
		SPGH	090304L/R-S	9.525	3.18	4.4	0.4	11°					☆	☆	☆		★
			090308L/R-S	9.525	3.18	4.4	0.8	11°					☆	☆	☆		★
			120304L/R-S	12.7	3.18	5.5	0.4	11°					☆	☆	☆		★
			120308L/R-S	12.7	3.18	5.5	0.8	11°					☆	☆	☆		★
		SPGT	090304L/R-S	9.525	3.18	4.4	0.4	11°					☆	☆	☆		★
			090308L/R-S	9.525	3.18	4.4	0.8	11°					☆	☆	☆		★
			120304L/R-S	12.7	3.18	5.5	0.4	11°					☆	☆	☆		★
			120308L/R-S	12.7	3.18	5.5	0.8	11°					☆	☆	☆		★
		TCGT	110302L/R-S	6.35	3.18	2.8	0.2	7°					☆	☆	☆		★
			110304L/R-S	6.35	3.18	2.8	0.4	7°					☆	☆	☆		★
		TPGH	090202L/R-S	5.56	2.38	2.5	0.2	11°					☆	☆	☆		★
			090204L/R-S	5.56	2.38	2.5	0.4	11°					☆	☆	☆		★
			110202L/R-S	6.35	2.38	3.4	0.2	11°					☆	☆	☆		★
			110204L/R-S	6.35	2.38	3.4	0.4	11°					☆	☆	☆		★
			110302L/R-S	6.35	3.18	3.4	0.2	11°					☆	☆	☆		★
			110304L/R-S	6.35	3.18	3.4	0.4	11°					☆	☆	☆		★
			110308L/R-S	6.35	3.18	3.4	0.8	11°					☆	☆	☆		★
			160302L/R-S	9.525	3.18	4.4	0.2	11°					☆	☆	☆		★
			160304L/R-S	9.525	3.18	4.4	0.4	11°					☆	☆	☆		★
			160308L/R-S	9.525	3.18	4.4	0.8	11°					☆	☆	☆		★

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

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

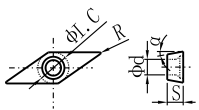
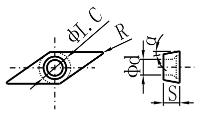
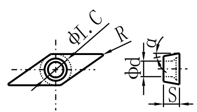
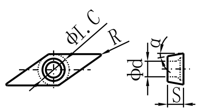
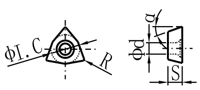
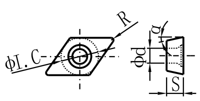
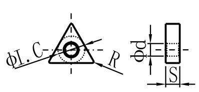
Positive inserts

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								
									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
				ΦI.C	S	Φd	R	α	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301	BU810
		TPGR	090202L/R-S	5.56	2.38		0.2	11°					☆	☆	☆		★
			090204L/R-S	5.56	2.38		0.4	11°					☆	☆	☆		★
			090208L/R-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°					☆	☆	☆		★

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

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

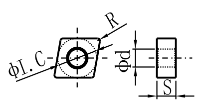
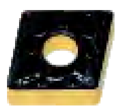
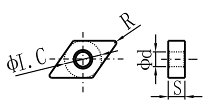
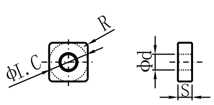
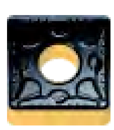
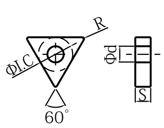
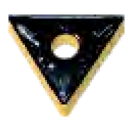
Positive inserts

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								
									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
				ΦI.C	S	Φd	R	α	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301	BU810
		VBGT	110301L/R-S	6.35	3.18	2.8	0.1	5°					☆	☆	☆		★
			110302L/R-S	6.35	3.18	2.8	0.2	5°					☆	☆	☆		★
			110304L/R-S	6.35	3.18	2.8	0.4	5°					☆	☆	☆		★
			160402L/R-S	9.525	4.76	4.4	0.2	5°					☆	☆	☆		★
			160404L/R-S	9.525	4.76	4.4	0.4	5°					☆	☆	☆		★
		VCGT	160404L/R-S	9.525	4.76	4.4	0.4	7°					☆	☆	☆		★
			160408L/R-S	9.525	4.76	4.4	0.8	7°					☆	☆	☆		★
		VDGX	160302L/R-S	9.525	3.18	4.4	0.2	15°					☆	☆	☆		★
			160304L/R-S	9.525	3.18	4.4	0.4	15°					☆	☆	☆		★
		VPET	110301L/R-S	6.35	3.18	2.8	0.1	11°					☆	☆	☆		★
			110302L/R-S	6.35	3.18	2.8	0.2	11°					☆	☆	☆		★
		WPGT	060304L/R-S	9.525	4.76	3.18	0.4	11°					☆	☆	☆		★
			060308L/R-S	9.525	4.76	3.18	0.8	11°					☆	☆	☆		★
		DCET	070204L/R-E	6.35	2.38	2.8	0.4	7°					☆	☆	☆		★
			11T302L/R-E	9.525	3.97	4.4	0.2	7°					☆	☆	☆		★
			11T304L/R-E	9.525	3.97	4.4	0.4	7°					☆	☆	☆		★
		TNGG	160404L/R-E	9.525	4.76	3.81	0.4	-					☆	☆	☆		★
			160408L/R-E	9.525	4.76	3.81	0.8	-					☆	☆	☆		★

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

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: CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic	
				ΦI.C	S	Φd	R	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301
		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		★	★	☆				

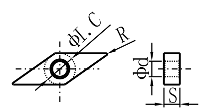
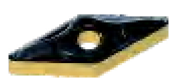
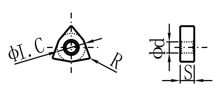
★ 主推荐牌号Recommended grade ☆ 可选牌号Optional grade

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

Negative inserts

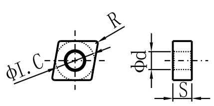
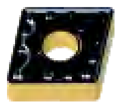
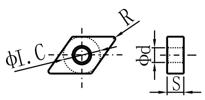
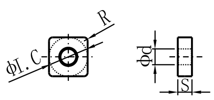
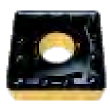
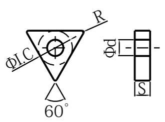
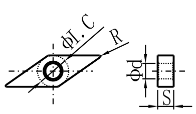
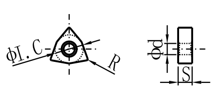
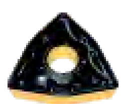
B

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	
				ΦI.C	S	Φd	R	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301
		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		★	★	☆				

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

Negative inserts

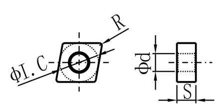
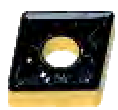
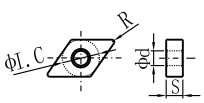
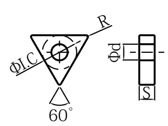
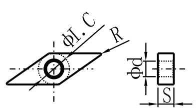
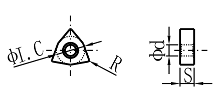
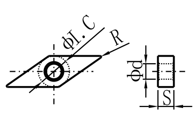
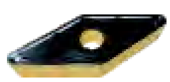
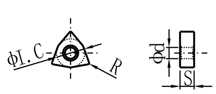
刀片基本形状The basic shape of inserts		型号 Type		基本尺寸 Dimension（mm） ΦI.C	S	Φd	R	材质推荐 Grade recommended CVD涂层牌号 CVD coating grade BPS051	BPS101	BPS251	BPS371	PVD涂层牌号 PVD coating grade BPG05B	BPG308	金属陶瓷 ceramic BN201	BN301
		CNMG	120404-MA	12.7	4.76	5.16	0.4		★	★	☆				
			120408-MA	12.7	4.76	5.16	0.8		★	★	☆				
			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		★	★	☆				

B 普通车削 General Turning

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

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

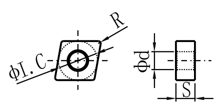
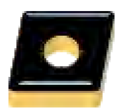
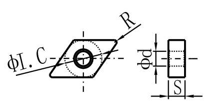
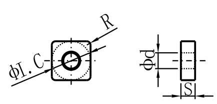
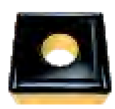
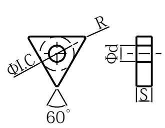
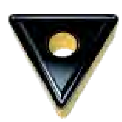
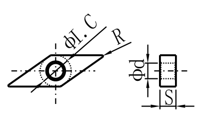
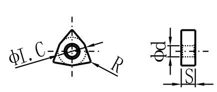
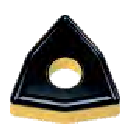
Negative inserts

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							
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic	
				ΦI.C	S	Φd	R	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301
		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		★	★	☆				
			150612-TM	12.7	6.35	5.16	1.2		★	★	☆				
		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		★	★	☆				
			220412-TM	12.7	4.76	5.16	1.2		★	★	☆				
		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		★	★	☆				

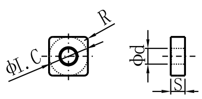
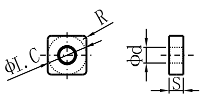
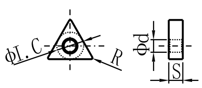
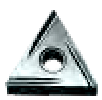
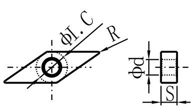
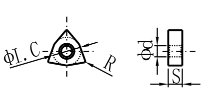
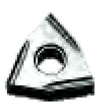
★ 主推荐牌号Recommended grade ☆ 可选牌号Optional grade

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 / CVD涂层牌号 CVD coating grade			
				ΦI.C	S	Φd	R	BPS051	BPS101	BPS251	BPS371
		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		☆	★	

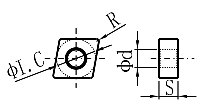
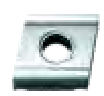
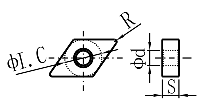
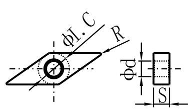
★ 主推荐牌号Recommended grade ☆ 可选牌号Optional grade

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
				ΦI.C	S	Φd	R	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301	BU810
		SNMG	120404L/R-N	12.7	4.76	5.16	0.4					☆	☆	☆		★
			120408L/R-N	12.7	4.76	5.16	0.8					☆	☆	☆		★
												☆	☆	☆		★
		SNGG	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					☆	☆	☆		★
		TNGG	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					☆	☆	☆		★
		VNGG	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					☆	☆	☆		★
		WNGG	060404L/R-N	9.525	4.76	3.81	0.4					☆	☆	☆		★
			060408L/R-N	9.525	4.76	3.81	0.8					☆	☆	☆		★

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

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

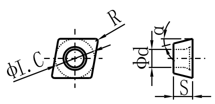
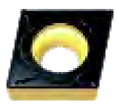
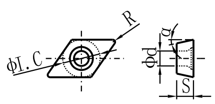
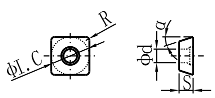
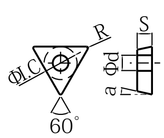
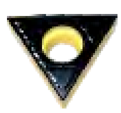
Negative inserts

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									
								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	
				ΦI.C	S	Φd	R	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301	BU810	
		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					☆	☆	☆		★	
		VNGG	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					☆	☆	☆		★	

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

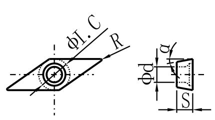
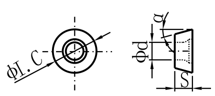
B1-5 钢加工正型刀片 Inserts for processing steel ······························ 半精加工 Semi finishing

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	
				ΦI.C	S	Φd	R	α	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301
		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°		★	★			☆		

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

Positive inserts

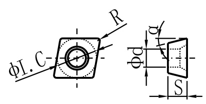
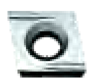
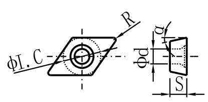
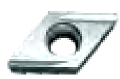
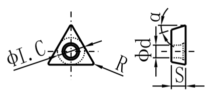
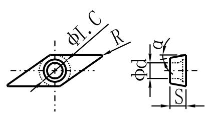
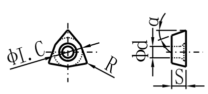
刀片基本形状The basic shape of inserts		型号 Type		基本尺寸 Dimension（mm）					材质推荐 Grade recommended							
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		金属陶瓷 ceramic	
				ΦI.C	S	Φd	R	α	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301
		VCMT	110304-MD	6.35	3.18	2.8	0.4	7°		★	★			☆		
			110308-MD	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 普通车削 General Turning

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

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

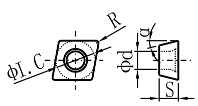
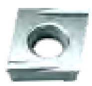
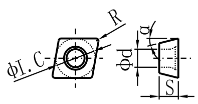
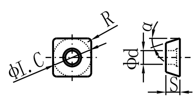
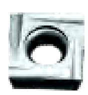
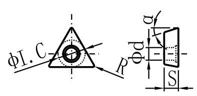
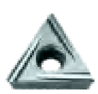
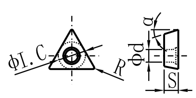
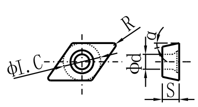
Positive inserts

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	
				ΦI.C	S	Φd	R	α	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301	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°					☆	☆	☆		★	

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

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

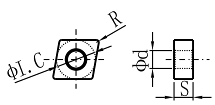
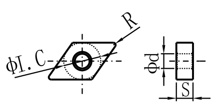
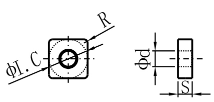
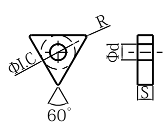
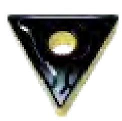
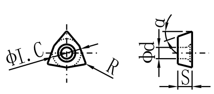
Positive inserts

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
				ΦI.C	S	Φd	R	α	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301	BU810
		CCET	060201L/R-E	6.35	2.38	2.8	0.1	7°					☆	☆	☆		★
			060202L/R-E	6.35	2.38	2.8	0.2	7°					☆	☆	☆		★
			060204L/R-E	6.35	2.38	2.8	0.4	7°					☆	☆	☆		★
			09T301L/R-E	9.525	3.97	4.4	0.1	7°					☆	☆	☆		★
			09T302L/R-E	9.525	3.97	4.4	0.2	7°					☆	☆	☆		★
			09T304L/R-E	9.525	3.97	4.4	0.4	7°					☆	☆	☆		★
		CCGT	060201L/R-E	6.35	2.38	2.8	0.1	7°					☆	☆	☆		★
			060202L/R-E	6.35	2.38	2.8	0.2	7°					☆	☆	☆		★
			060204L/R-E	6.35	2.38	2.8	0.4	7°					☆	☆	☆		★
			09T301L/R-E	9.525	3.97	4.4	0.1	7°					☆	☆	☆		★
			09T302L/R-E	9.525	3.97	4.4	0.2	7°					☆	☆	☆		★
			09T304L/R-E	9.525	3.97	4.4	0.4	7°					☆	☆	☆		★
		SPGT	090304L/R-E	9.525	3.18	4.4	0.4	11°					☆	☆	☆		★
			090308L/R-E	9.525	3.18	4.4	0.8	11°					☆	☆	☆		★
			120304L/R-E	12.7	3.18	5.5	0.4	11°					☆	☆	☆		★
			120308L/R-E	12.7	3.18	5.5	0.8	11°					☆	☆	☆		★
		TPET	110302L/R-E	6.35	3.18	2.8	0.2	11°					☆	☆	☆		★
		TCGT	110302L/R-E	6.35	3.18	2.8	0.2	7°					☆	☆	☆		★
		DCET	070202L/R-H	6.35	2.38	2.8	0.2	7°					☆	☆	☆		★
			070204L/R-H	6.35	2.38	2.8	0.4	7°					☆	☆	☆		★
			11T302L/R-H	9.525	3.97	4.4	0.2	7°					☆	☆	☆		★
			11T304L/R-H	9.525	3.97	4.4	0.4	7°					☆	☆	☆		★

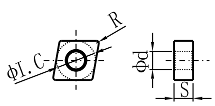
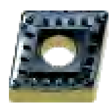
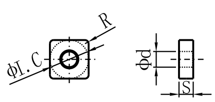
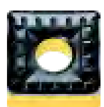
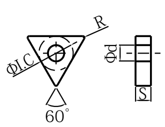
★ 主推荐牌号Recommended grade ☆ 可选牌号Optional grade

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	
				ΦI.C	S	Φd	R	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301
		CNMG	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		☆	☆	★				
		DNMG	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		☆	☆	☆				
		SNMG	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		☆	☆	☆				
		TNMG	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		☆	☆	☆				
		WNMG	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		☆	☆	☆				

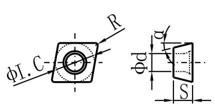
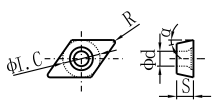
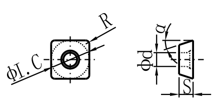
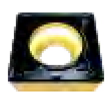
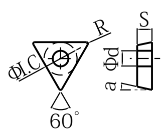
★ 主推荐牌号Recommended grade ☆ 可选牌号Optional grade

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	
				ΦI.C	S	Φd	R	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301
		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			☆	☆				

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

B1-5 钢加工正型刀片 Inserts for processing steel ···························· 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							
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		非涂层牌号 Uncoated grade	
				ΦI.C	S	Φd	R	α	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	BN201	BN301
		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°		☆	★	☆				

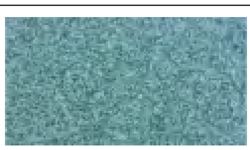
★ 主推荐牌号Recommended grade ☆ 可选牌号Optional grade

M 不锈钢加工 Process on stainless steel

a 涂层牌号 Grade for coating

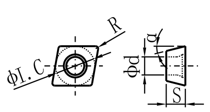
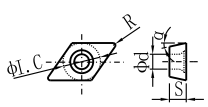
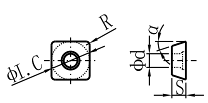
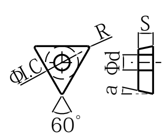
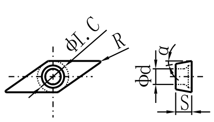
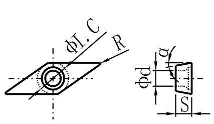
牌号 Grade	ISO分类 ISO classification	表面颜色 Surface color	应用推荐 Applications Recommended
BPG05B	M10(M05-M15)	青灰黑 Cyan-blue gray dark	PVD涂层硬质合金牌号，用于车削典型预硬化和塑料模具钢，加工硬度为HRC36及其以上； PVD coated carbide grade for milling typical hardened steel and plastic mold steel,processing hardness above HRC36.
BPG20B	M25(M10-M30)	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。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 cuttingspeed. 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	M30(M25-M35)	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.
BPG25B	M35(M30-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 金属陶瓷 Cermet

	牌号 Grade	ISO分类 ISO classification	密度 Density (g/cm3)	硬度 Hardness HRA	抗弯强度 Bending strength (N/mm2)	使用性能及用途 Usage and performance
	BN201	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	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

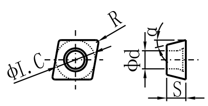
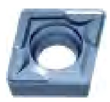
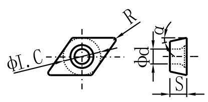
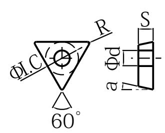
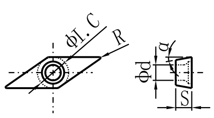
Positive inserts

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	
				ΦI.C	S	Φd	R	α	BPS051	BPS101	BPS251	BPG371	BPG05B	BPG20B	BPG30B	BPG25B	BU810	BK10
		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°					☆	☆	☆			

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

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

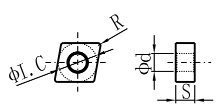
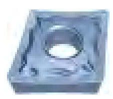
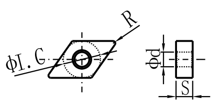
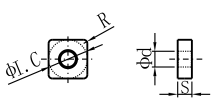
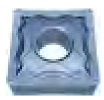
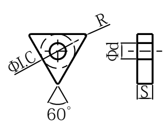
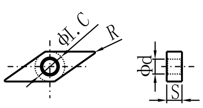
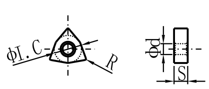
Positive inserts

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										
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				金属陶瓷 Cermet	
				ΦI.C	S	Φd	R	α	BPS051	BPS101	BPS251	BPG371	BPG05B	BPG20B	BPG30B	BPG25B	BU810	BK10
		CCMT	060202-MX	6.35	2.38	2.8	0.2	7°					☆	☆	☆			
			060204-MX	6.35	2.38	2.8	0.4	7°					☆	★	☆			
			060208-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°					☆	★	☆			
			09T308-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°					☆	★	☆			
			11T308-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°					☆	★	☆			
			110308-MX	6.35	3.18	2.8	0.8	7°					☆	☆	☆			
			16T304-MX	9.525	3.97	4.4	0.4	7°					☆	★	☆			
			16T308-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°					☆	★	☆			
			110308-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°					☆	★	☆			
			160408-MX	9.525	4.76	4.4	0.8	5°					☆	★	☆			

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

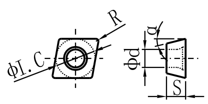
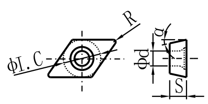
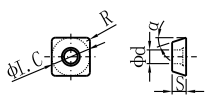
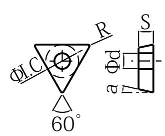
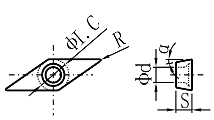
B1-6 不锈钢负型刀片 Inserts for processing stainless steel ·························· 精加工 Finishing

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									
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoated grade	
				ΦI.C	S	Φd	R		BPS051	BPS101	BPS251	BPG371	BPG05B	BPG20B	BPG30B	BPG25B	BU810	BK10
		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						★	☆	☆			

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

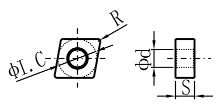
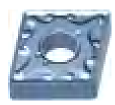
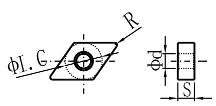
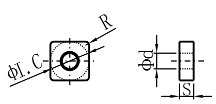
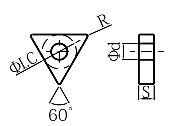
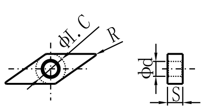
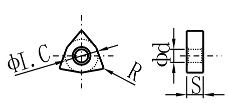
B1-6 不锈钢正型刀片 Inserts for processing stainless steel Positive inserts ··················· 半精加工 Semi finishing

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				金属陶瓷 Cermet	
				ΦI.C	S	Φd	R	α	BPS051	BPS101	BPS251	BPG371	BPG05B	BPG20B	BPG30B	BPG25B	BU810	BK10
		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°					☆	★	☆			

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

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

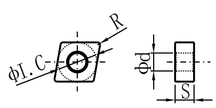
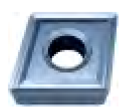
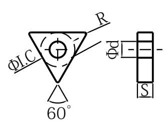
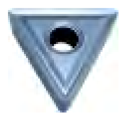
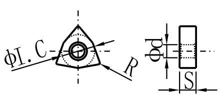
Negative inserts

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									
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoated grade	
				ΦI.C	S	Φd	R		BPS051	BPS101	BPS251	BPS371	BPG05B	BPG20B	BPG30B	BPG25B	BU810	BK10
		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						☆	☆	☆			

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

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									
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoated grade	
				ΦI.C	S	Φd	R		BPS051	BPS101	BPS251	BPG371	BPG05B	BPG20B	BPG30B	BPG25B	BU810	BK10
		CNMG	120404-SA	12.7	4.76	5.16	0.4						☆	★	☆			
			120408-SA	12.7	4.76	5.16	0.8						☆	★	☆			
		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						☆	★	☆			

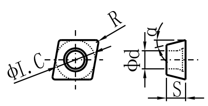
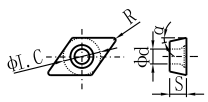
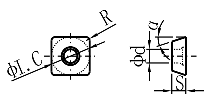
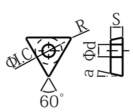
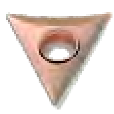
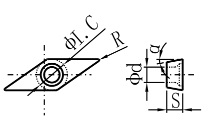
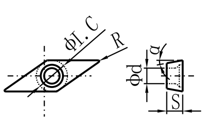
★ 主推荐牌号Recommended grade ☆ 可选牌号Optional grade

K 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需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.

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

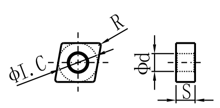
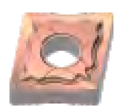
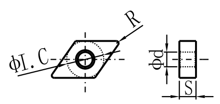
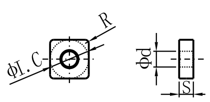
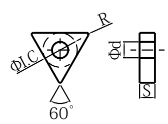
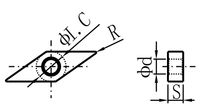
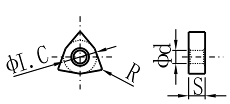
Positive inserts

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								
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoated grade
				ΦI.C	S	Φd	R	α	BPS051	BPS101	BPS251	BPG371	BPG118	BPG218	BPG318	BPG40A	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°					★	☆			

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

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

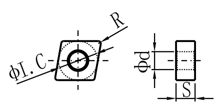
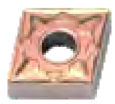
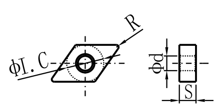
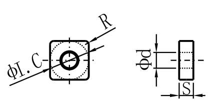
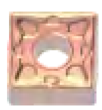
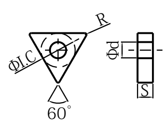
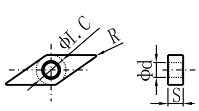
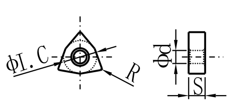
Negative inserts

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									
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoated grade	
				ΦI.C	S	Φd	R	BPS051	BPS101	BPS251	BPG371	BPG118	BPG218	BPG318	BPG40A	BU810	
		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					★	☆	☆			

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

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）ΦI.C	S	Φd	R	材质推荐 Grade recommended CVD涂层牌号 CVD coating grade BPS051	BPS101	BPS251	BPS371	PVD涂层牌号 PVD coating grade BPG118	BPG218	BPG318	BPG40A	非涂层牌号 Uncoated grade 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					☆	☆	☆		

〇 按需生产

★ 主推荐牌号

☆ 可选牌号

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

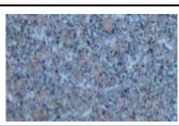
B1-8 铝的加工刀片 Aluminum processing ········ 材质 Grades

N 铝的加工刀片Aluminum processing

a 涂层牌号 Grade for coating

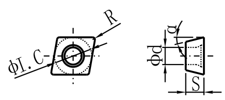
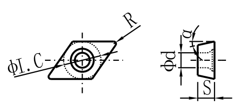
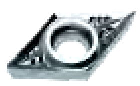
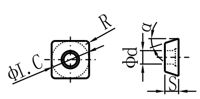
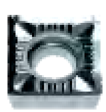
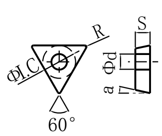
牌号 Grade	ISO分类 ISO classification	表面颜色 Surface color	应用推荐 Applications Recommended
BPU109	N10(N01-N15)	DLC色 DLC color	金刚石涂层牌号，涂层可显著降低积屑瘤，从而获得更高表面质量。适于铝、镁、铜、黄铜、塑料等的精加工到粗加工。 Diamond coating grade, the coating can reduce BUE,obtain higher surface quality. Suitable for aluminum, magnesium, copper, brass, 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/cm3)	硬度 Hardness HRA	抗弯强度 Bending strength (N/mm2)	使用性能及用途 Application and performance
	BU810	K05~K15	14.7~15	92.8-93.1	2700	亚微细晶粒，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
	BK10	K10~K20	14.8~15	91.5~92.5	2000	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.

B1-8 铝加工正型刀片 Aluminum processing

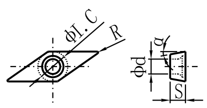
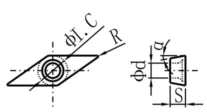
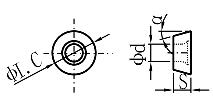
Positive inserts

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					
									PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
				ΦI.C	S	Φd	R	α	BPG05B	BPG308	BPU109	BU810	BK20UF	BK10
		CCGT	060202-LHC	6.35	2.38	2.8	0.2	7°			☆	★		
		CCGT	060204-LHC	6.35	2.38	2.8	0.4	7°			☆	★		
		CCGT	060208-LHC	6.35	2.38	2.8	0.8	7°			☆	☆		
		CCGT	09T302-LHC	9.525	3.97	4.4	0.2	7°			☆	★		
		CCGT	09T304-LHC	9.525	3.97	4.4	0.4	7°			☆	★		
		CCGT	09T308-LHC	9.525	3.97	4.4	0.8	7°			☆	★		
		CCGT	120402-LHC	12.7	4.76	5.5	0.2	7°			☆	☆		
		CCGT	120404-LHC	12.7	4.76	5.5	0.4	7°			☆	★		
		CCGT	120408-LHC	12.7	4.76	5.5	0.8	7°			☆	★		
		DCGT	070202-LHC	6.35	2.38	2.8	0.2	7°			☆	★		
		DCGT	070204-LHC	6.35	2.38	2.8	0.4	7°			☆	★		
		DCGT	070208-LHC	6.35	2.38	2.8	0.8	7°			☆	☆		
		DCGT	11T302-LHC	9.525	3.97	4.4	0.2	7°			☆	★		
		DCGT	11T304-LHC	9.525	3.97	4.4	0.4	7°			☆	★		
		DCGT	11T308-LHC	9.525	3.97	4.4	0.8	7°			☆	★		
		DCGT	11T312-LHC	9.525	3.97	4.4	1.2	7°			☆	☆		
		SCGT	09T302-LHC	9.525	3.97	4.4	0.2	7°			☆	★		
		SCGT	09T304-LHC	9.525	3.97	4.4	0.4	7°			☆	★		
		SCGT	09T308-LHC	9.525	3.97	4.4	0.8	7°			☆	★		
		SCGT	120402-LHC	12.7	4.76	5.5	0.2	7°			☆	☆		
		SCGT	120404-LHC	12.7	4.76	5.5	0.4	7°			☆	★		
		SCGT	120408-LHC	12.7	4.76	5.5	0.8	7°			☆	★		
		SCGT	120412-LHC	12.7	4.76	5.5	1.2	7°			☆	★		
		SCGT	120416-LHC	12.7	4.76	5.5	1.6	7°			☆	☆		
		TCGT	090202-LHC	5.56	2.38	2.5	0.2	7°			☆	★		
		TCGT	090204-LHC	5.56	2.38	2.5	0.4	7°			☆	★		
		TCGT	090208-LHC	5.56	2.38	2.5	0.8	7°			☆	☆		
		TCGT	110202-LHC	6.35	2.38	2.8	0.2	7°			☆	★		
		TCGT	110204-LHC	6.35	2.38	2.8	0.4	7°			☆	★		
		TCGT	110208-LHC	6.35	2.38	2.8	0.8	7°			☆	☆		
		TCGT	16T302-LHC	9.525	3.97	4.4	0.2	7°			☆	★		
		TCGT	16T304-LHC	9.525	3.97	4.4	0.4	7°			☆	★		
		TCGT	16T308-LHC	9.525	3.97	4.4	0.8	7°			☆	★		
		TCGT	16T312-LHC	9.525	3.97	4.4	1.2	7°			☆	☆		

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

B1-8 铝加工正型刀片 Aluminum processing
Positive inserts

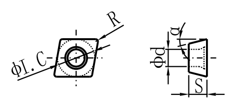
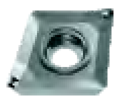
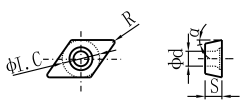
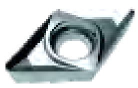
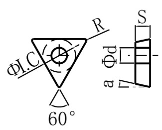
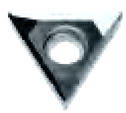
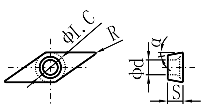
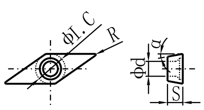
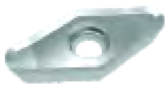
高精度系列

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		
				ΦI.C	S	Φd	R	α	BPG05B	BPG308	BPU109	BU810	BK20UF	BK10
		VBGT	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°			☆	☆		
		VCGT	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°			☆	☆		
		RCGT	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°			☆	★		

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

B1-8 铝加工正型刀片 Aluminum processing ·· 高精度系列

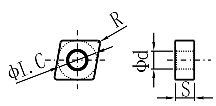
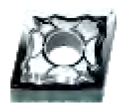
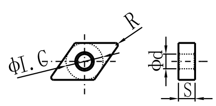
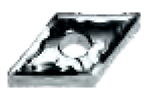
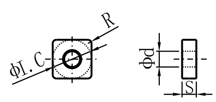
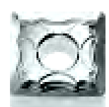
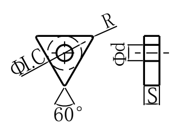
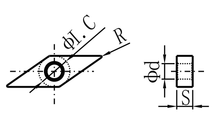
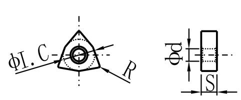
Positive inserts

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					
									PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
				ΦI.C	S	Φd	R	α	BPG05B	BPG308	BPU109	BU810	BK20UF	BK10
		CCGT	09T302-LH2C	9.525	3.97	4.4	0.2	7°			☆	☆		
			09T304-LH2C	9.525	3.97	4.4	0.4	7°			☆	☆		
		DCGT	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°			☆	★		
		TCGT	16T304-LH2C	9.525	3.97	4.4	0.4	7°			☆	★		
			16T308-LH2C	9.525	3.97	4.4	0.8	7°			☆	★		
		VCGT	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°			☆	★		
		VPGT	220530-LH2C	12.7	5.96	5.5	3	11°			☆	★		

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

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

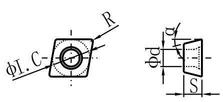
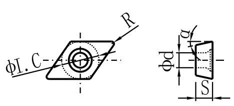
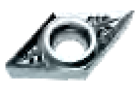
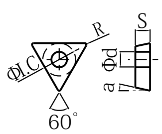
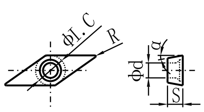
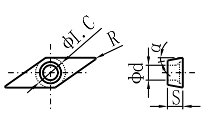
Negative inserts

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		
				ΦI.C	S	Φd	R	BPG05B	BPG308	BPU109	BU810	BK20UF	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			☆	☆		

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

B1-8 铝加工正型刀片 Aluminum processing ·· 高精度系列

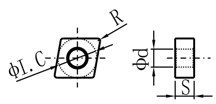
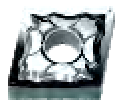
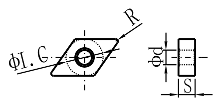
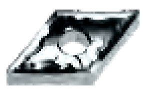
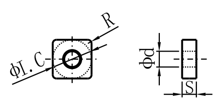
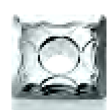
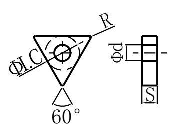
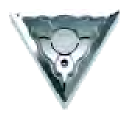
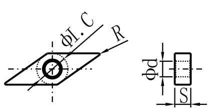
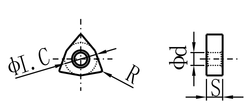
Positive inserts

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					
									PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
				ΦI.C	S	Φd	R	α	BPG05B	BPG308	BPU109	BU810	BK20UF	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°			☆	★		

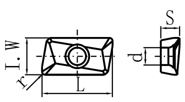
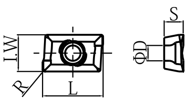
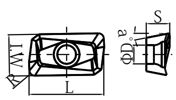
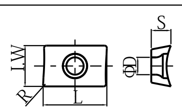
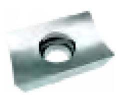
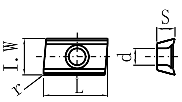
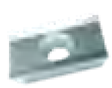
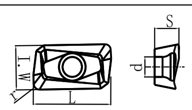
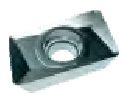
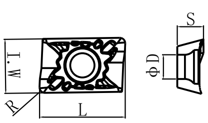
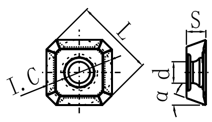
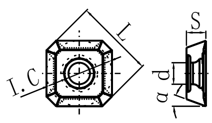
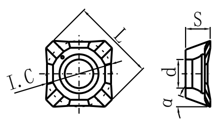
★ 主推荐牌号Recommended grade ☆ 可选牌号Optional grade

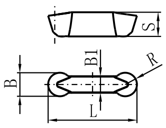
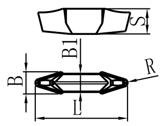
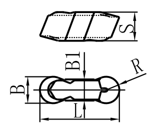
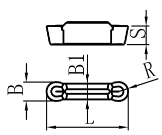
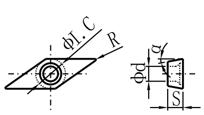
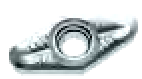
B1-8 铝加工负型刀片 Aluminum processing

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		
				ΦI.C	S	Φd	R	BPG05B	BPG308	BPU109	BU810	BK20UF	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			☆	★		
		WNMG	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			☆	★		

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

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.W	L	S	Φd	r		BPS153	BPS253	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30A	BP20	BP35	BK10	BU810	BU820
		APKT11T304-LHC	6.5	12.24	3.6	2.8	0.4					☆		☆		☆				★	
		APKT11T308-LHC	6.5	12.24	3.6	2.8	0.8					☆		☆		☆				★	
		APKT1035PDER-LH	6.7	11	3.5	2.8	0.4					☆		☆		☆				★	
		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					☆		☆		☆				★	
		APKT160402FR-LHC	9.8	16.88	4.76	4.4	0.2					☆		☆		☆				★	
		APKT160404PDFR-LHC	9.8	16.88	4.76	4.4	0.4					☆		☆		☆				★	
		APKT160408PDFR-LHC	9.8	16.88	4.76	4.4	0.8					☆		☆		☆				★	
		APKT160416PDFR-LHC	9.8	16.88	4.76	4.4	1.6					☆		☆		☆				★	
		APKT16T4PDFR-LH1C	9.5	17	4.96	4.4	0.8					☆		☆		☆				★	
		APKT1652PDFR-LH2C	9.8	16.88	4.76	4.4	3.2					☆		☆		☆				★	
		LDHT1504PDFR-LHC	9.9	15.2	4.76	4.4	0.8					☆		☆		☆				★	
		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°						☆		☆		☆				★	
		SEKT1204AFFN-LH2	12.7	4.76	5.5	20°	16					☆		☆		☆				★	
		SDHT1204AEFN-LH2	12.7	4.76	5.5	15°	15.76					☆		☆		☆				★	
		SEKT1204AFFN-LH2C	12.7	4.76	5.5	20°	16					☆		☆		☆				★	
		SDHT1204AEFN-LH2C	12.7	4.76	5.5	15°	15.76					☆		☆		☆				★	

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			
				L	R	B1	S	R	BPG05B	BPG308	BPU109	BK10	BU810	BK20UF	BK10
		GDMA840-LHC		30	8	5.6	8.2	4			☆	☆	★		
		GIPATYZ-35V-1.2-LHC		30	7.2	6	8.2	1.2			☆	☆	★		
		GIP600E-3.00-LHC		18	6	4.8	6.5	3			☆	☆	★		
		MRGN	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			☆	☆	☆		
		VCGT	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°			☆	☆	★		

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

K 铸铁加工 Process on cast iron

a 涂层牌号 Grade for coating

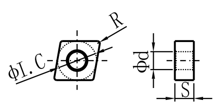
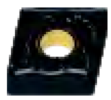
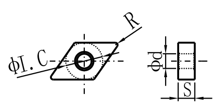
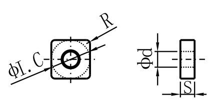
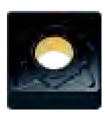
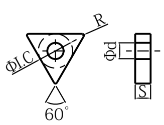
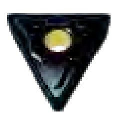
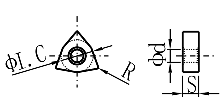
牌号 Grade	ISO分类 ISO classification	颜色 Color	应用推荐 Recommend for application
BPC042	K05(K01-K05)	黑 Black	CVD涂层硬质合金，由极硬基体和极厚的光滑耐磨涂层构成。 推荐用于球墨铸铁的高速车削。 CVD coated carbide is extremely hard substrate and extremely thick, smooth, wear-resistant coating. Recommended for nodular cast iron high-speed turning.
BPC052	K10(K05-K15)	黑 Black	CVD涂层硬质合金，由极硬基体和极厚的光滑耐磨涂层构成。 推荐用于球墨铸铁的高速车削。 CVD coated carbide is extremely hard substrate and extremely thick, smooth, wear-resistant coating. Recommended for nodular cast iron high-speed turning.
BPC102	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.
BPS101	K15(K10-K25)	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。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.

b 非涂层牌号 Grade for uncoating

牌号 Grade	ISO分类 ISO classification	密度 Density (g/cm3)	抗弯强度 Bending strength (N/mm2)	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 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.
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.

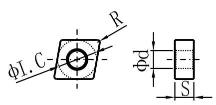
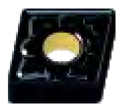
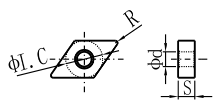
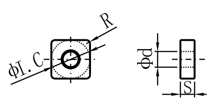
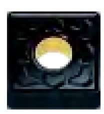
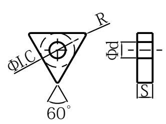
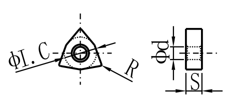
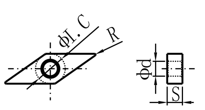
★ 主推荐牌号Recommended grade ☆ 可选牌号Optional grade

B1-7 铸铁加工负型刀片 Inserts for processing castiron ································ 精加工 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	
				ΦI.C	S	Φd	R	BPC042	BPC052	BPC102	BPS051	BPS101	BU810	BU820
		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		☆	★				

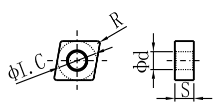
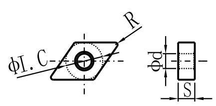
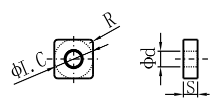
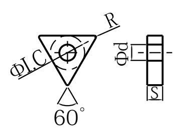
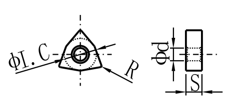
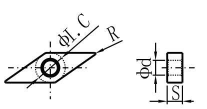
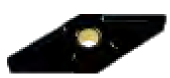
★ 主推荐牌号Recommended grade　☆ 可选牌号Optional grade

B1-7 铸铁加工负型刀片 Inserts for processing castiron ························半精加工 Semi finishing

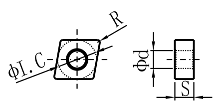
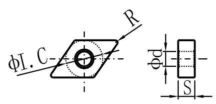
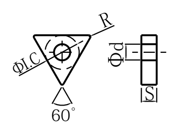
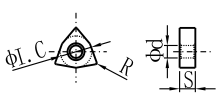
刀片基本形状The basic shape of inserts		型号 Type		基本尺寸 Dimension（mm）				材质推荐 Grade recommended						
								CVD涂层牌号 CVD coating grade					非涂层牌号 Uncoated grade	
				ΦI.C	S	Φd	R	BPC042	BPC052	BPC102	BPS051	BPS101	BU810	BU820
		CNMG	120404-CQ	12.7	4.76	5.16	0.4		☆	★				
			120408-CQ	12.7	4.76	5.16	0.8		☆	★				
			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		☆	☆				

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

B1-7 铸铁加工负型刀片 Inserts for processing castiron ························ 半精加工 Semi finishing

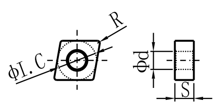
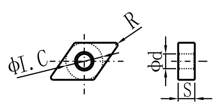
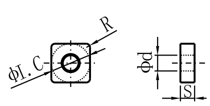
刀片基本形状The basic shape of inserts		型号 Type		基本尺寸 Dimension（mm）				材质推荐 Grade recommended						
								CVD涂层牌号 CVD coating grade					非涂层牌号 Uncoated grade	
				ΦI.C	S	Φd	R	BPC042	BPC052	BPC102	BPS051	BPS101	BU810	BU820
		CNMG	120404-U	12.7	4.76	5.16	0.4			☆		☆		
			120408-U	12.7	4.76	5.16	0.8			★		☆		
			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			★		☆		

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

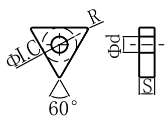
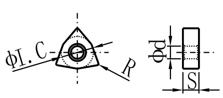
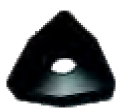
刀片基本形状The basic shape of inserts		型号 Type		基本尺寸 Dimension（mm）				材质推荐 Grade recommended						
								CVD涂层牌号 CVD coating grade					非涂层牌号 Uncoated grade	
				ΦI.C	S	Φd	R	BPC042	BPC052	BPC102	BPS051	BPS101	BU810	BU820
		CNMG	120408-GH	12.7	4.76	5.16	0.8		☆	★				
			120412-GH	12.7	4.76	5.16	1.2		☆	★				
			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		☆	☆				

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

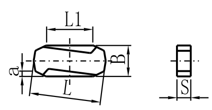
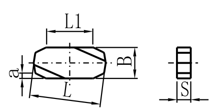
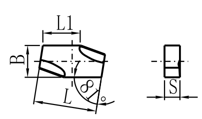
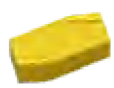
B1-7 铸铁加工负型刀片 Inserts for processing castiron ························ 半精加工 Semi finishing

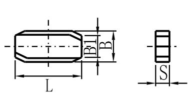
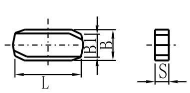
刀片基本形状The basic shape of inserts		型号 Type		基本尺寸 Dimension（mm）				材质推荐 Grade recommended						
								CVD涂层牌号 CVD coating grade					非涂层牌号 Uncoated grade	
				ΦI.C	S	Φd	R	BPC042	BPC052	BPC102	BPS051	BPS101	BU810	BU820
		CNMA	120404	12.7	4.76	5.16	0.4		☆	★				
			120408	12.7	4.76	5.16	0.8		☆	★				
			120412	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		☆	★				

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

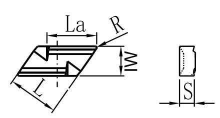
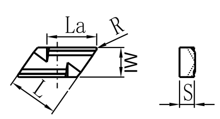
刀片基本形状The basic shape of inserts		型号 Type		基本尺寸 Dimension（mm）				材质推荐 Grade recommended						
								CVD涂层牌号 CVD coating grade					非涂层牌号 Uncoated grade	
				ΦI.C	S	Φd	R	BPC042	BPC052	BPC102	BPS051	BPS101	BU810	BU820
		TNMA	160404	9.525	4.76	3.81	0.4		☆	★				
			160408	9.525	4.76	3.81	0.8		☆	★				
			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		☆	★				

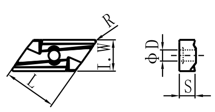
★ 主推荐牌号Recommended grade ☆ 可选牌号Optional grade

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	BPS101	BPS251	BPS321	BPS371	BP35	YT5	YW1	YW2
		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	BPS101	BPS251	BPS321	BPS371	BP35	YT5	YW1	YW2
		LNGF	4012	20	40	12.4	12.15				★	★	☆		
		LNGF	3008-F	12	30	7.5	17.5				★	★	☆		

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

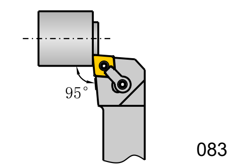
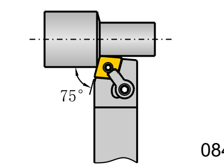
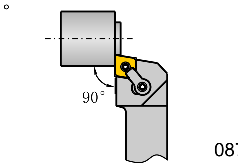
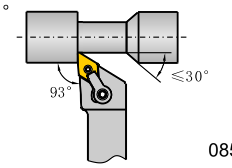
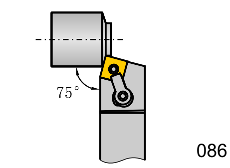
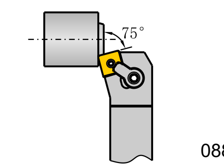
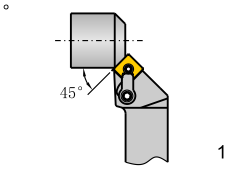
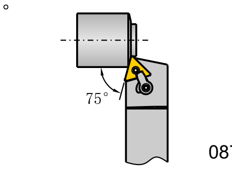
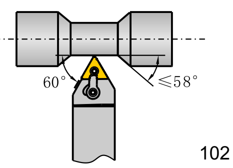
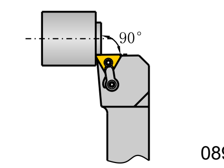
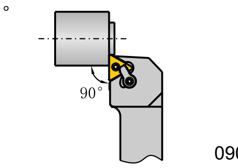
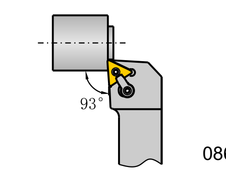
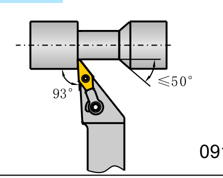
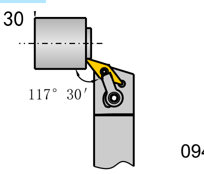
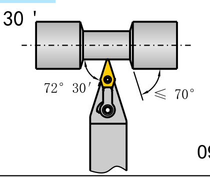
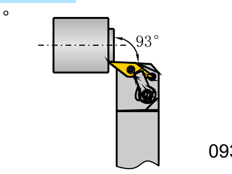
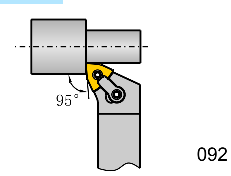
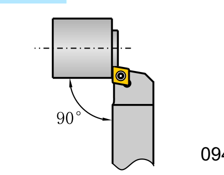
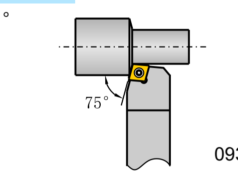
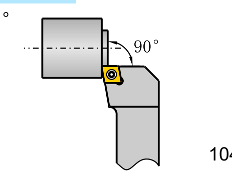
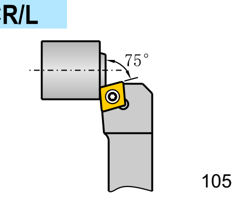
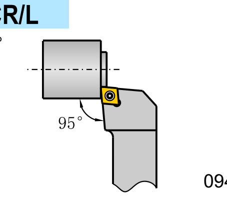
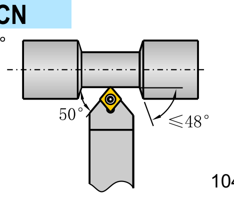
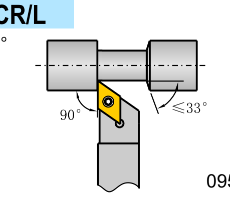
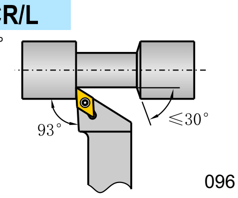
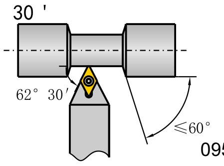
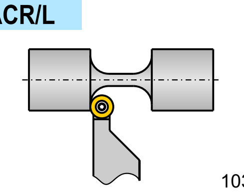
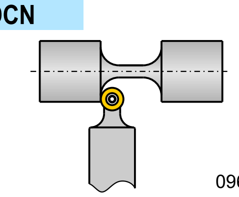
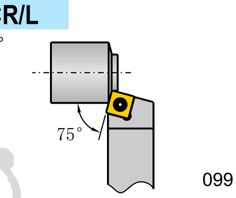
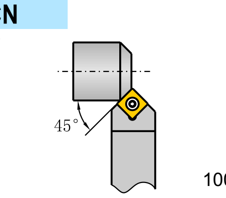
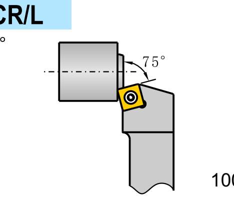
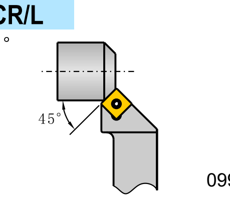
刀片基本形状The basic shape of inserts		型号 Type		基本尺寸 Dimension（mm）					材质推荐 Grade recommended							
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade		非涂层牌号 Uncoated grade	
				B	L	L.W	S	R	BPS051	BPS101	BPS251	BPS371	BPG05B	BPG308	YT5	BU810
		KNUX	160405L11	16	16.15	9.525	4.76	0.5	☆	☆	★				★	☆
			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	L.W	ΦD	S	R	BPS051	BPS101	BPS251	BPS371	BPG10A	BPG308	YT5	BU810
		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	☆	☆	★				★	☆

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

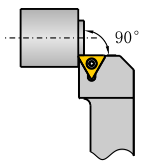
B2-1 车削刀具一览表 Turning toolholders overview

外圆车刀刀具 External Turning tools

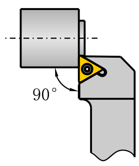
□CLNR/L Kr=95°  083	□CBNR/L Kr=75°  084	MCGNR/L Kr=90°  087	□DJNR/L Kr=93°  085
MSBNR/L Kr=75°  086	□SKNR/L Kr=75°  088	□SSNR/L Kr=45°  101	MTBNR/L Kr=75°  087
MTENN Kr=60°  102	□TFNR/L Kr=90°  089	□TGNR/L Kr=90°  090	MTJNR/L Kr=93°  086
MVJNR/L Kr=93°  091	MVQNR/L Kr=117° 30'  094	MVVNN Kr=72° 30'  091	MVUNR/L Kr=93°  093
□WLNR/L Kr=95°  092	SCACR/L Kr=90°  094	SCBCR/L Kr=75°  093	SCFCR/L Kr=90°  104
SCKCR/L Kr=75°  105	SCLCR/L Kr=95°  094	SCMCN Kr=50°  104	SDACR/L Kr=90°  095
SDJCR/L Kr=93°  096	SDNCN Kr=62° 30'  095	SRACR/L  103	SRDCN  096
SSBCR/L Kr=75°  099	SSDCN Kr=45°  100	SSKCR/L Kr=75°  100	SSSCR/L Kr=45°  099

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

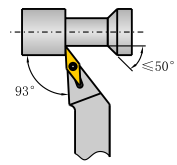
外圆车刀刀具 External Turning tools

STFCR/L
Kr=90°


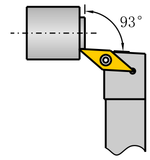
098

STGCR/L
Kr=90°


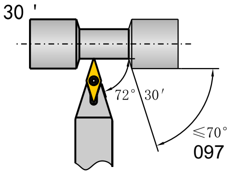
103

SVJ□R/L
Kr=93°


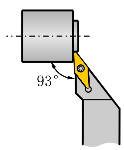
098

SVU□R/L
Kr=93°


105

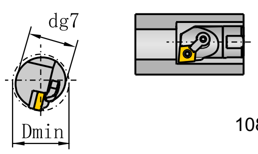
SVVBN
Kr=72° 30′


097

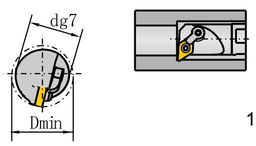
SVJ□R/L
Kr=93°


098

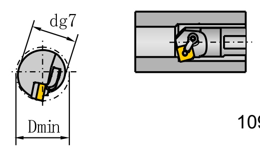
内孔车刀刀具 Internal turning tools

MCLNR/L


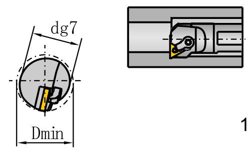
108

MDUNR/L


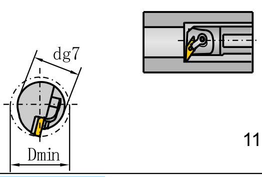
109

MSKNR/L


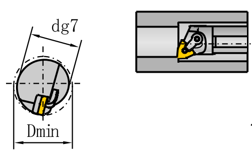
109

MTFNR/L


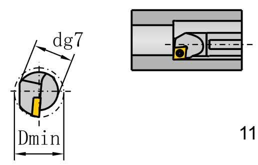
111

MVUNR/L


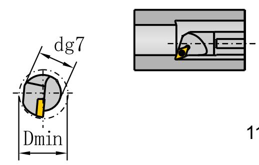
110

MWLNR/L


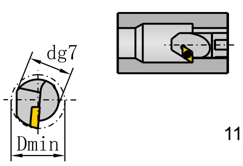
110

SCLCL/R


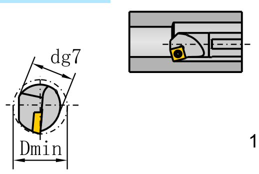
112

SDQCL/R


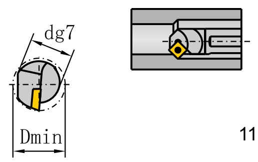
113

SDUCL/R


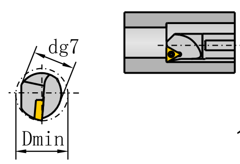
114

SSKCL/R


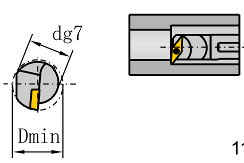
115

SSSCR/L


116

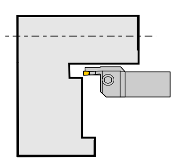
STFCL/R


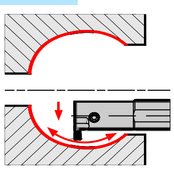
118

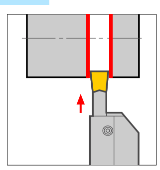
SVU□L/R


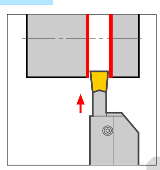
117

切断(槽)刀：Grooving tools

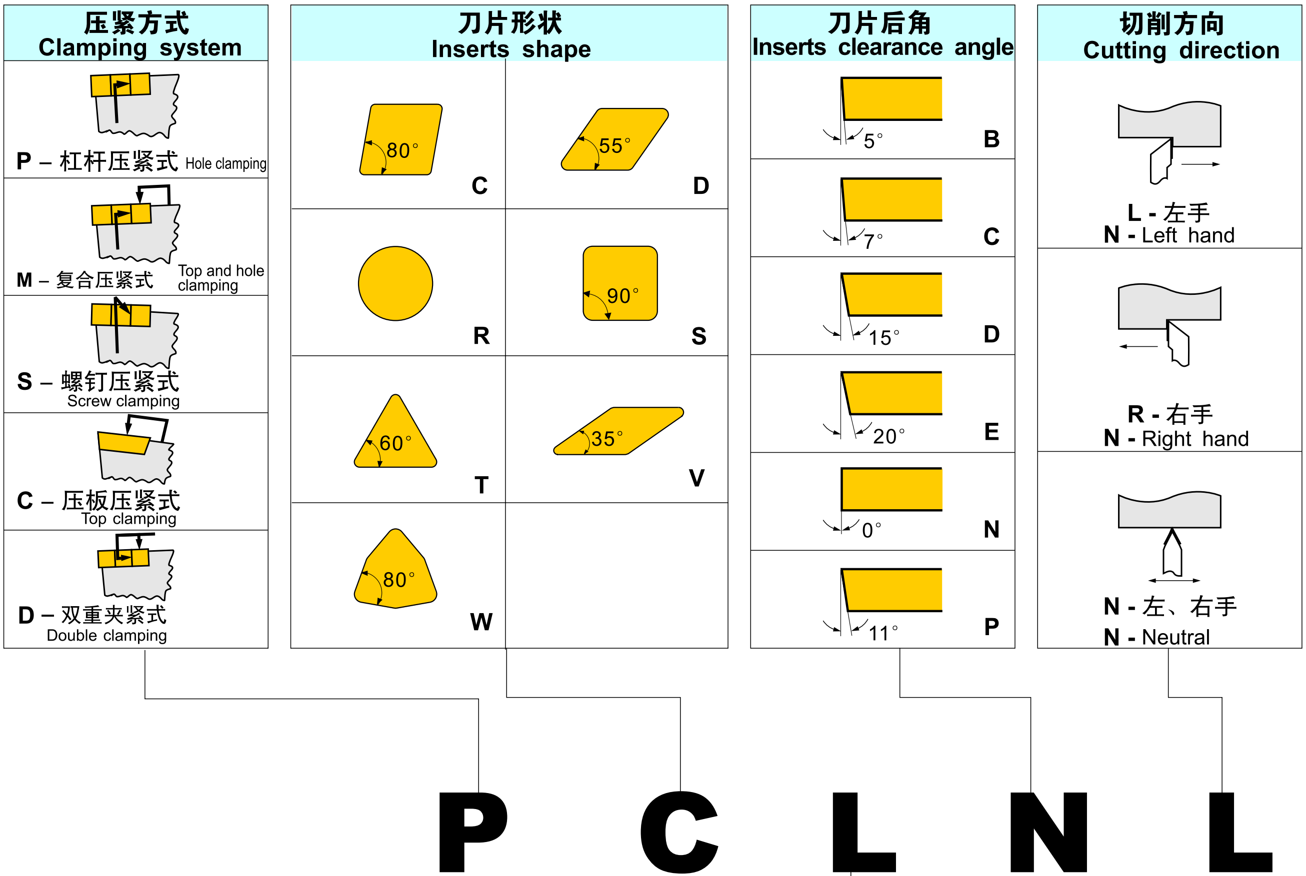
MGEHR/L

125

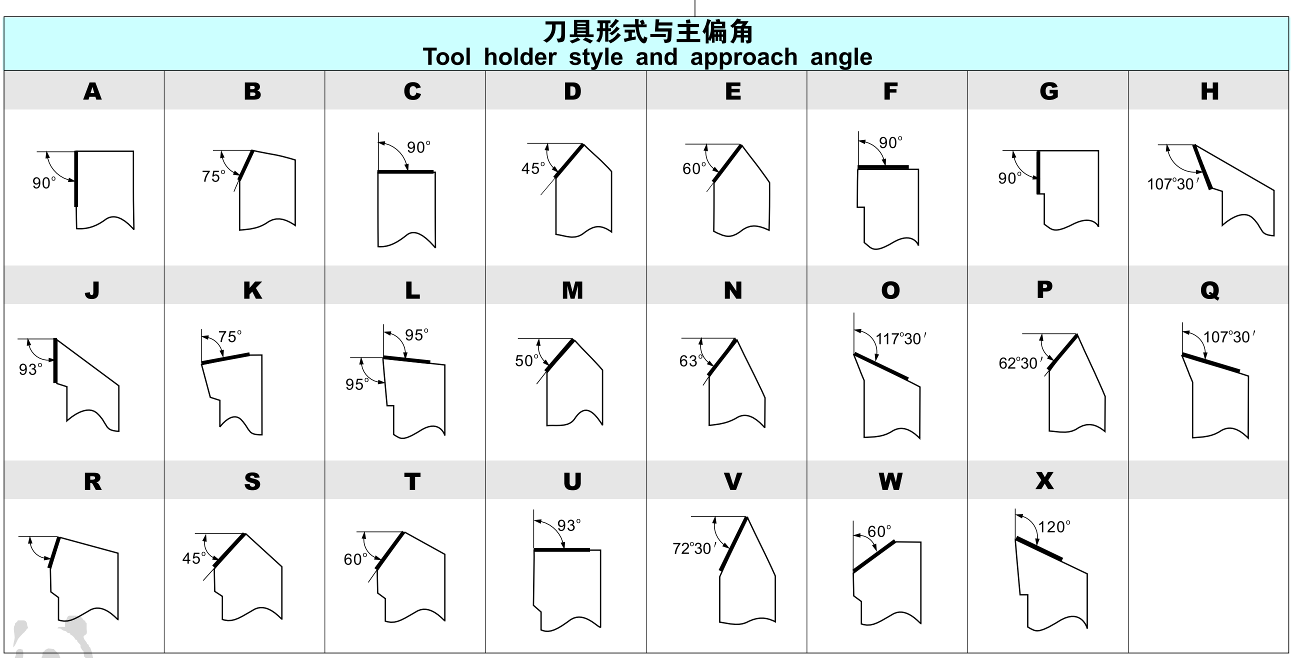
MGIVR/L

127

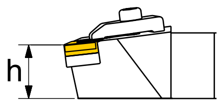
ZQ

124

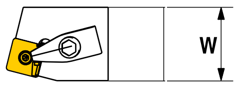
SPH

124

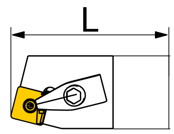
B2-2 外圆车削刀具命名规则 External turning tools code key



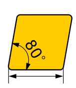
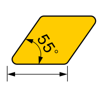
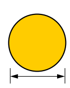
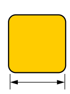
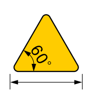
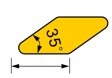
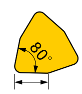


刀尖高度(mm) Nose height（mm）	
	
代号 Code	高度 Height
12	12
16	16
20	20
25	25
32	32
40	40
50	50

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

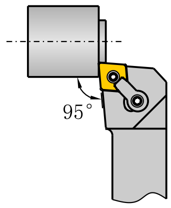
25 25 M 12

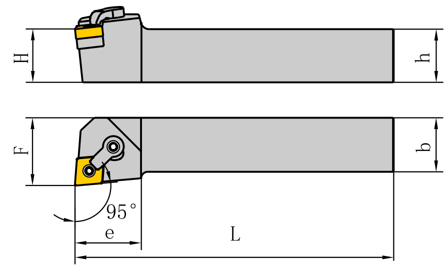
切削刃长 Length of cutting edge							
刀片形状 Inserts shape	**C**	**D**	**R**	**S**	**T**	**V**	**W**
							
内切圆I.C(mm) Inscribed circle（mm）	切削刃长度(mm) Length of cutting edge(mm)						
5.56	---	---	---	---	09	---	---
6.35	06	07	---	---	11	---	---
9.525	09	11	09	09	16	16	06
12.7	12	15	12	12	22	22	08
15.875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

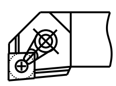
B2-3 外圆车刀刀具 External turning tools

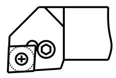
□CLNR/L

Kr=95°






M-Type


P-Type

型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工、端面加工 Turning.Facing h	b	L	e	H	F	配件 Parts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
MCLNR/L	1616H12	●	●	CN□□1204□□	16	16	100	32	16	20	MC1204	CTM617	HL1814	ML0625	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□□1606□□	25	25	150	35	25	32	MC1604	CTM822	HL2217	ML0830	L3.0,L4.0
	3232P16	○	○		32	32	170	35	32	40					
	3232P19	○	○	CN□□1906□□	32	32	170	36	32	40	MC1904	CTM1022	HL2217	ML0830	L4.0
	4040R19	○	○		40	40	200	36	40	50					

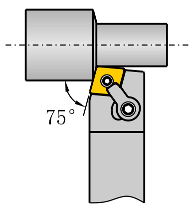
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工、端面加工 Turning.Facing h	b	L	e	H	F	配件 Parts 刀垫 Shim	杠销 Lever	螺钉 Screw	垫片销 Shim Pin	扳手 Wrench
PCLNR/L	1616H09			CN□□0903□□	16	16	100	20	16	20	MC0903B	LV3	VHX0617	SP10	L2.5
	2020K09				20	20	125	22	20	25					
	2525M09				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□□1606□□	25	25	150	33	25	32	MC1604B	LV5	VHX0825	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					

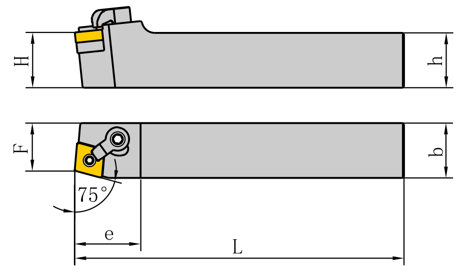
●库存 stock item ○准库存 be preparing for stock 其余订货 the others can be made to order

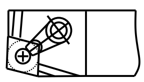
B2-3 外圆车刀刀具 External turning tools

□CBNR/L

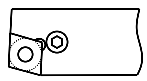
Kr=75°







M-Type



P-Type

型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
	2020K12	●	●		20	20	125	32	20	17					
	2525M12	●	●	CN□□1204□□	25	25	150	32	25	22	MC1204	CTM617	HL1814	ML0625	L2.5,L3.0
MCBNR/L	3232P12	●	●		32	32	170	32	32	27					
	3232P16	○		CN□□1606□□	32	32	170	36	32	27	MC1604	CTM822	HL2217	ML0830	L3.0,L4.0
	3232P19			CN□□1906□□	32	32	170	36	32	27	MC1904	CTM1022	HL2217	ML0830	L4.0

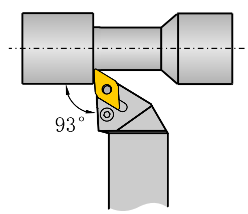
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 刀垫 Shim	杠销 Lever	螺钉 Screw	垫片销 Shim Pin	扳手 Wrench
	1616H12				16	16	100	27	16	20					
	2020K12			CN□□1204□□	20	20	125	27	20	25	MC1204B	LV4	VHX0821	SP4	L3.0
	2525M12				25	25	150	27	25	32					
PCBNR/L	2525M16			CN□□1606□□	25	25	150	33	25	32	MC1604B	LV5	VHX0825	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					

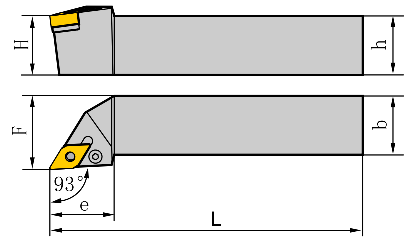
●库存 stock item　　○准库存 be preparing for stock　　其余订货 the others can be made to order

B2-3 外圆车刀刀具 External turning tools

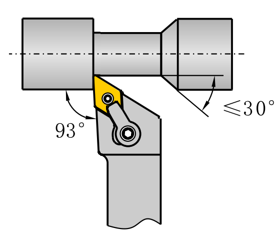
□DJNR/L

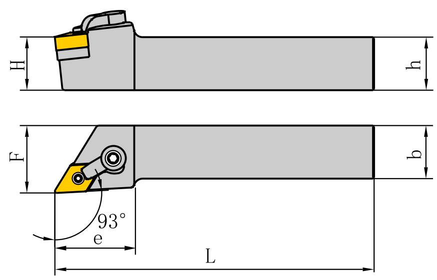
Kr=93°





型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工、端面加工、仿形加工Turning.Facing.Profiling h	b	L	e	H	F	配件 Parts 刀垫 Shim	杠销 Pin	螺钉 Clamp	垫片销 Screw	扳手 Wrench
PDJNR/L	1616H11			DN□□1104□□	16	16	100	25	16	20	MD1103B	LV3	VHX0617	SP3	L2.5
	2020K11				20	20	125	25	20	25					
	2525M11				25	25	150	30	25	32					
	2020K15			DN□□1504□□ DN□□1506□□	20	20	125	35	20	25	MC1504B MD1506B	LV4B	VHX0821	SP4	L3.0
	2525M15				25	25	150	35	25	32					
	3225P15				32	25	170	35	32	32					
	3232P15				32	32	170	35	32	32					





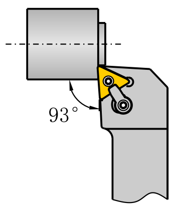
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工、端面加工、仿形加工Turning.Facing.Profiling h	b	L	e	H	F	配件 Parts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
MDJNR/L	1616H11	●	●	DN□□1104□□	16	16	100	32	16	20	MD1103	CTM513	HL1814	ML0625	L2.,L3.0
	2020K11	●	●		20	20	125	32	20	25					
	2525M11	●	●		25	25	150	32	25	32					
	2020K15	●	●	DN□□1504□□ DN□□1506□□	20	20	125	38	20	25	MD1504 MD1506	CTM619	HL2114	ML0625	L2.5,L3.0
	2525M15	○	○		25	25	150	38	25	32					
	3232P15				32	32	170	38	32	40					

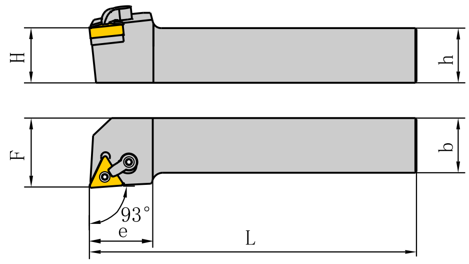
●库存 stock item ○准库存 be preparing for stock 其余订货 the others can be made to order

B2-3 外圆车刀刀具 External turning tools

MTJNR/L

Kr=93°

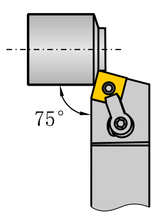


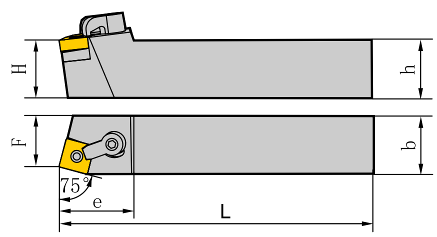


型 号 Type		库存 Stock Item R	L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
MTJNR/L	1616H16	●	●	TN□□1604□□	16	16	100	28	16	20	MT1603	CTM513	HL1814	ML0625	L2.0.,L3.0
	2020K16	●	●		20	20	125	28	20	25					
	2525M16	●	●		25	25	150	28	25	32					
	3232P16	●	○		32	32	170	28	32	40					
	2525M22	○		TN□□2204□□	25	25	150	32	25	32	MT2204	CTM617	HL1917	ML0830	L2.5,L4.0
	3232P22				32	32	170	32	32	32					
	4040R22				40	40	200	32	40	50					

□SBNR/L

Kr=75°





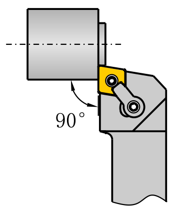
型 号 Type		库存 Stock Item R	L	适用刀片 Recommended inserts	适用条件 Application 车削加工、端面加工、仿形加工Turning.Facing.Profiling h	b	L	e	H	F	配件 Parts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
MSBNR/L	2020K12	●	○	SN□□1204□□	22	22	125	32.5	20	17	MS1204	CTM617	HL1814	ML0625	L2.5.,L3.0
	2525M12	●	○		25	25	150	32.5	25	22					
	3232P12				32	32	170	32.5	32	27					
	3232P19			SN□□19064□□	32	32	170	40	32	27	MS1904	CTM1022	HL2217	ML0830	L4.0
	4040S19				40	40	250	40	40	35					

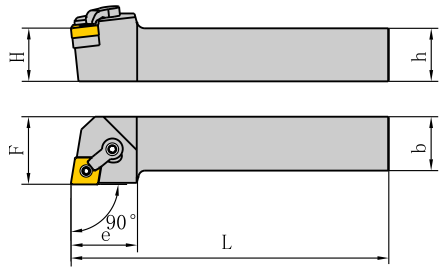
●库存 stock item　　○准库存 be preparing for stock　　其余订货 the others can be made to order

B2-3 外圆车刀刀具 External turning tools

MCGNR/L

Kr=90°

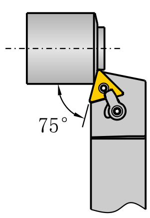


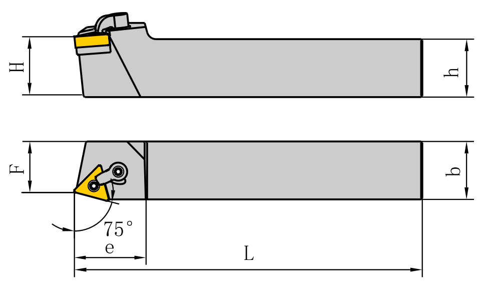


型号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工、端面加工 Turning.Facing h	b	L	e	H	F	配件 Parts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
MCGNR/L	2020K12	●	○	CN□□1204□□	20	20	125	32	20	25	MC1204	CTM617	HL1814	ML0625	L2.5,L3.0
	2525M12	●	○		25	25	150	32	25	32					
	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°





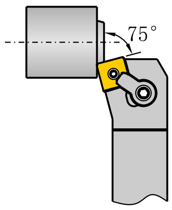
型号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
MTBNR/L	2020K16	●	○	TN□□1604□□	20	20	125	26	20	15.5	MT1603	CTM513	HL1814	ML0625	L2.0.,L3.0
	2525M16	●	○		25	25	150	26	25	20.5					

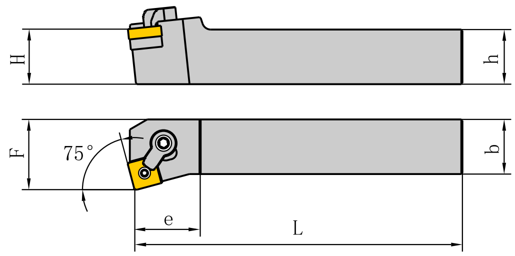
●库存 stock item　○准库存 be preparing for stock　其余订货 the others can be made to order

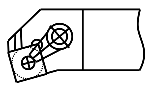
B2-3 外圆车刀刀具 External turning tools

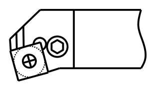
□SKNR/L

Kr=75°






M-Type


P-Type

型号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	车削加工 Turning h	b	L	e	H	F	刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
MSKNR/L	2020K12	●	○	SN□□1204□□	20	20	125	29	20	25	MS1204	CTM617	HL1814	ML0625	L2.5.,L3.0
	2525M12	●	○		25	25	150	29	25	32					
	2525M15			SN□□1506□□	25	25	150	32	25	32	MS1504	CTM822	HL2217	ML0830	L3.0,L4.0
	3232P15				32	32	170	32	32	40					
	3232P19			SN□□1906□□	32	32	170	36	32	40	MS1904	CTM1022	HL2217	ML0830	L4.0
	4040S19				40	40	250	40	40	50					

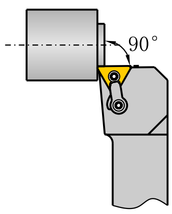
型号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	车削加工 Turning h	b	L	e	H	F	刀垫 Shim	杠销 Lever	螺钉 Screw	垫片销 Shim Pin	扳手 Wrench
PSKNR/L	2020K12			SN□□1204□□	20	20	125	26	20	25	MS1204B	LV4	VXH0821	SP4	L3.0
	2525M12				25	25	150	26	25	32					
	3232P12				32	32	170	26	32	40					

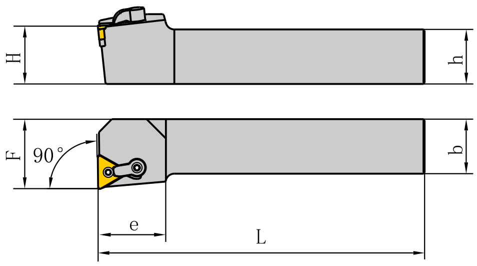
●库存 stock item　　○准库存 be preparing for stock　　其余订货 the others can be made to order

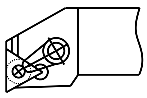
B2-3 外圆车刀刀具 External turning tools

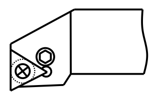
MTFNR/L

Kr=90°






M-Type


P-Type

型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 端面加工 Facing h	b	L	e	H	F	配件 Parts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
MTFNR/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					
	2525M16	●	●		25	25	150	28	25	32					
	3232P16	○			32	32	170	28	32	40					
	2525M22			TN□□2204□□	25	25	150	32	25	32	MT2204	CTM617	HL1917	ML0830	L2.5,L4.0
	3232P22				32	32	170	32	32	32					

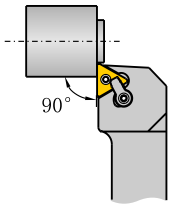
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 端面加工 Facing h	b	L	e	H	F	配件 Parts 刀垫 Shim	杠销 Lever	螺钉 Screw	垫片销 Shim Pin	扳手 Wrench
PTFNR/L	1616H16			TN□□1604□□	16	16	100	20	16	20	MT1603B	LV3	VXH0617	SP3	L2.5
	2020K16				20	20	125	20	20	25					
	2525M16				25	25	150	20	25	32					
	2525M22			TN□□2204□□	25	25	150	25	25	32	MT2204B	LV4	VHX0821	SP4	L3.0
	3232P22				32	32	170	25	32	40					

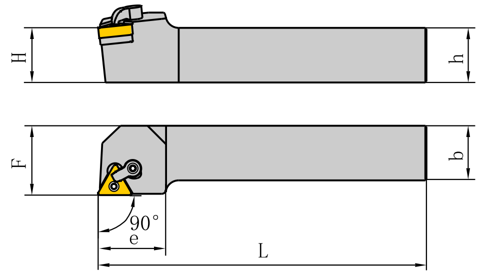
●库存 stock item　　○准库存 be preparing for stock　　其余订货 the others can be made to order

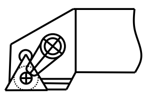
B2-3 外圆车刀刀具 External turning tools

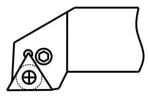
□TGNR/L

Kr=90°






M-Type


P-Type

型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
MTGNR/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					
	2525M16	●	●		25	25	150	28	25	32					
	2525P22			TN□□2204□□	32	32	170	32	32	40	MT2204	CTM617	HL1917	ML0830	L2.5,L4.0

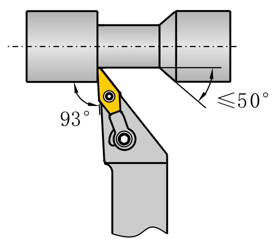
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 刀垫 Shim	杠销 Lever	螺钉 Screw	垫片销 Shim Pin	扳手 Wrench
PTGNR/L	1616H16			TN□□1604□□	16	16	100	20	16	20	MT1603B	LV3	VXH0617	SP3	L2.5
	2020K16				20	20	125	20	20	25					
	2525M16				25	25	150	20	25	32					
	2525M22			TN□□2204□□	25	25	150	28	25	32	MT2204B	LV4	VHX0821	SP4	L3.0
	3232P22				32	32	170	28	32	40					

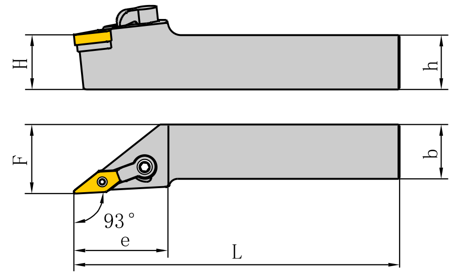
●库存 stock item　　○准库存 be preparing for stock　　其余订货 the others can be made to order

B2-3 外圆车刀刀具 External turning tools

MVJNR/L

Kr=93°

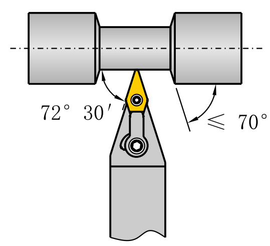


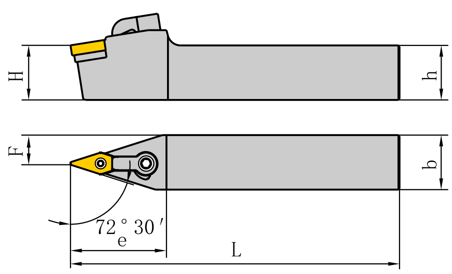


型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工、仿形加工 Turning.Profiling h	b	L	e	H	F	配件 Parts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
MVJNR/L	1616H16	●	○	VN□□1604□□	16	16	100	36	16	20	MV1603	CTM513	HL2414	ML0625	L2.0,L3.0
	2020K16	●	○		20	20	125	36	20	25					
	2525M16	○			25	25	150	42	25	32					
	3232P16				32	32	170	42	32	40					

MVVNN

Kr=72° 30 '





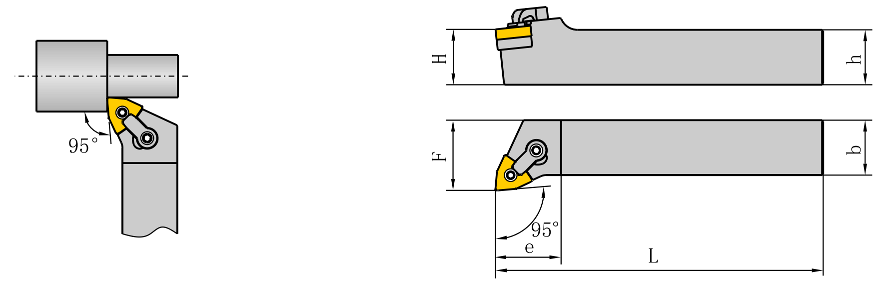
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工、端面加工、仿形加工 Turning.Facing.Profiling h	b	L	e	H	F	配件 Parts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
MVVNN	2020K16	●		VN□□1604□□	20	20	125	48	20	10	MV1603	CTM513	HL2414	ML0625	L2.0,L4.0
	2525M16	●			25	25	150	48	25	12.5					
	3232P16	○			32	32	170	48	32	16					

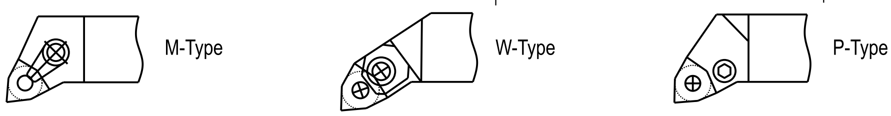
●库存 stock item　○准库存 be preparing for stock　其余订货 the others can be made to order

B2-3 外圆车刀刀具 External turning tools

□WLNR/L

Kr=95°





型号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工、端面加工、仿形加工 Turning.Facing.Profiling h	b	L	e	H	F	配件 Parts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
MWLNR/L	1616H06	○		WN□□0604□□	16	16	100	23	16	20	MW0603	CTM513	HL1814	ML0625	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	MW0804	CTM617	HL1814	ML0625	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 R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 刀垫 Shim	中心销 Pin	楔形压板 Clamp	压板螺丝 Screw	扳手 Wrench
WWLNR/L	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					

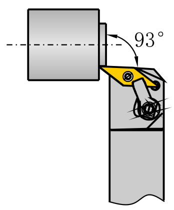
型号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 刀垫 Shim	杠销 Lever	螺钉 Screw	垫片销 Shim Pin	扳手 Wrench
PWLNR/L	1616H06			WN□□0604□□	16	16	100	20	16	20	MW0603B	LV3	VHX0617	SP3	L2.5
	2020K06				20	20	125	20	20	25					
	1616H08			WN□□0804□□	16	16	100	26	16	20	MW0804B	LV4	VHX0821	SP4	L3.0
	2020K08				20	20	125	26	20	25					
	2525M08				25	25	150	26	25	32					

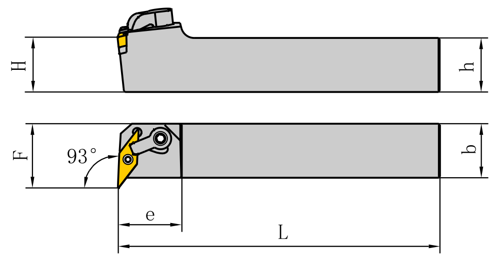
●库存 stock item ○准库存 be preparing for stock 其余订货 the others can be made to order

B2-3 外圆车刀刀具 External turning tools

MVUNR/L

Kr=93°

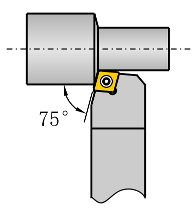


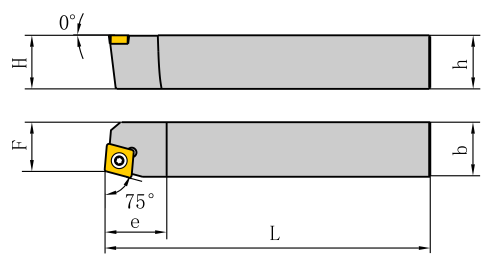


型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工、仿形加工 Turning.Profiling h	b	L	e	H	F	配件 Parts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
MVUNR/L	2525M16			VN□□1604□□	25	25	150	21	25	32	MV1603	CTM513	HL2414	ML0625	L2.0,L3.0

SCBCR/L

Kr=75°





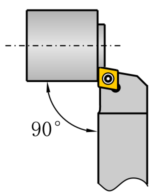
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw	扳手 Wrench
SCBCR/L	0808E06			CC□□0602□□	8	8	70	10	8	8	M2.5×8	T-8
	1010E06	○			10	10	70	10	10	10		
	1212F06	○			12	12	80	13	12	12		
	1212F09	○		CC□□09T3□□	12	12	80	13	12	12	M3.5×9	T-15

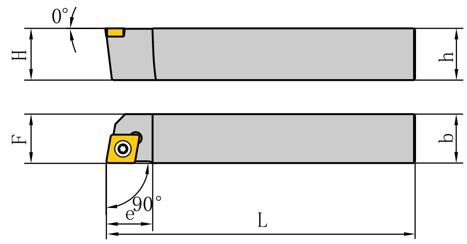
●库存 stock item　○准库存 be preparing for stock　其余订货 the others can be made to order

B2-3 外圆车刀刀具 External turning tools

SCACR/L

Kr=90°

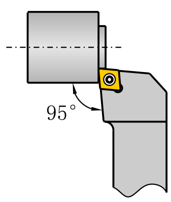


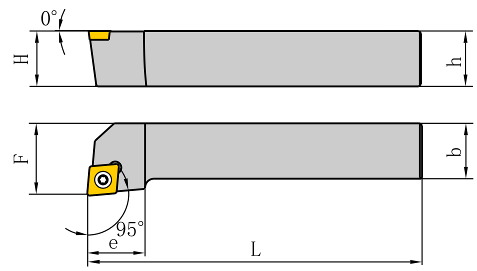


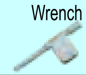
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts 	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw 	配件 Parts 扳手 Wrench 
SCACR/L	0808E06			CC□□0602□□	8	8	70	10	8	8	M2.5×8	T-8
	1010E06	○			10	10	70	10	10	10		
	1212F06	○			12	12	80	13	12	12		
	1212K09	○		CC□□09T3□□	12	12	80	13	12	12	M3.5×9	T-15

SCLCR/L

Kr=95°





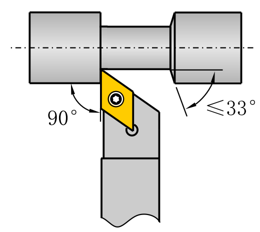
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts 	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw 	配件 Parts 扳手 Wrench 
SCLCR/L	1010E06	●	○	CC□□0602□□	10	10	70	13	10	5	M2.5×8	T-8
	1212F09	●	●	CC□□09T3□□	12	12	80	15	12	6	M3.5×9	T-15
	1616H09	●	●		16	16	100	15	16	8		
	2020K09	●	●		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		
	3232P12	○			32	32	170	20	32	40		

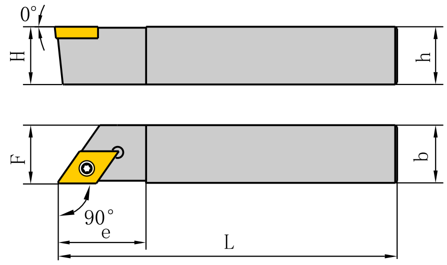
●库存 stock item　　○准库存 be preparing for stock　　其余订货 the others can be made to order

B2-3 外圆车刀刀具 External turning tools

SDACR/L

Kr=90°

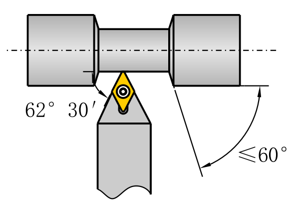


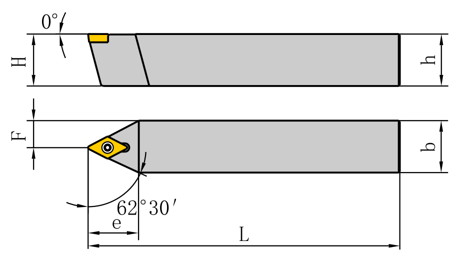


型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw	配件 Parts 扳手 Wrench
SDACR/L	0808E07			DC□□0702□□	8	8	70	15	8	8	M2.5×8	T-8
	1010E07				10	10	70	15	10	10		
	2020K07				12	12	125	15	12	12		
	1212K11			DC□□11T3□□	12	12	125	22	12	12	M3.5×9	T-15
	1616H11	○			16	16	100	22	16	16		
	2020K11	●			20	20	125	22	20	20		
	2525M11	○			25	25	150	22	25	25		

SDNCN

Kr=62° 30 '





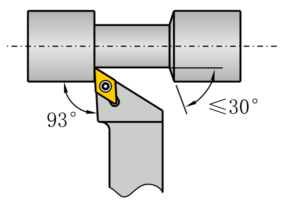
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw	配件 Parts 扳手 Wrench
SDNCN	1010E07	●	●	DC□□0702□□	10	10	70	5	10	12	M2.5×8	T-8
	1212E07	○	○		12	12	70	13	12	16		
	1212H11	●	●	DC□□11T3□□	12	12	100	14	12	16	M3.5×9	T-15
	1616H11	●	●		16	16	100	14	16	20		
	2020K11	●	●		20	20	125	16	20	25		
	2525M11				25	25	150	22	25	25		

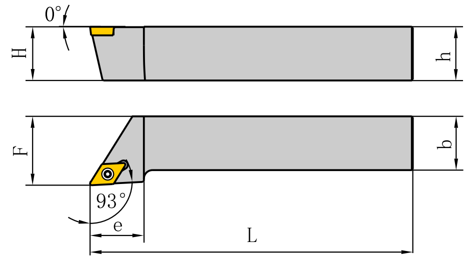
●库存 stock item ○准库存 be preparing for stock 其余订货 the others can be made to order

B2-3 外圆车刀刀具 External turning tools

SDJCR/L

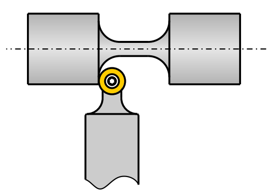
Kr=93°

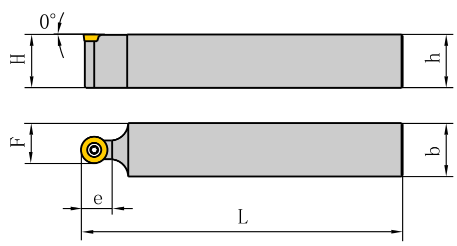




型号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw	扳手 Wrench
SDJCR/L	1010E07	●		DC□□0702□□	10	10	70	14	10	12	M2.5×8	T-8
	1212F07	●	○		12	12	80	14	12	16		
	1616H07	●	●		16	16	100	14	16	20		
	1212F11			DC□□11T3□□	12	12	80	20	12	16	M3.5×9	T-15
	1616H11	●	●		16	16	100	20	16	20		
	2020K11	●	●		20	20	125	20	20	25		
	2525M11	●	●		25	25	150	22	25	32		
	3232P11	○			32	32	170	23	32	40		
	4040R11				40	40	200	25	40	50		

SRDCN



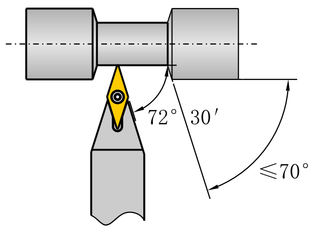


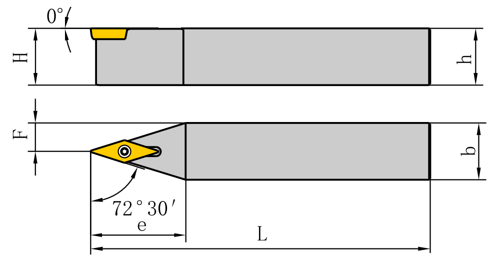
型号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw	扳手 Wrench
SRDCN	1616H08	○		RC□□0803□□	16	16	100	16	16	12	M2.5×8	T-8
	2020K08	○			20	20	125	16	20	14		
	2525M08	○			25	25	150	16	25	16.5		
	1010E10			RC□□1003□□	10	10	70	20.3	10	10	M3.5×9	T-15
	1212F10				12	12	80	20.3	12	11		
	1616H10	●			16	16	100	20.3	16	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

SVVBN

Kr=72° 30 '





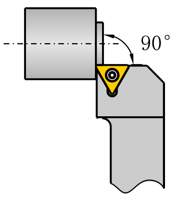
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw	配件 Parts 扳手 Wrench
SVVBN	1212F11	●		VB□□1103□□	12	12	80	24	12	6	M2.5×8	T-8
	1616H11	●			16	16	100	24	16	8		
	2020K11	●			20	20	125	24	20	10		
	2525M11	●			25	25	150	24	25	12.5		
	1616H16	●		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		

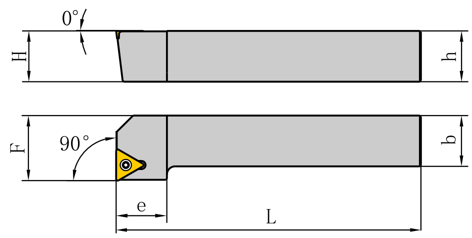
●库存 stock item ○准库存 be preparing for stock 其余订货 the others can be made to order

B2-3 外圆车刀刀具 External turning tools

STFCR/L

Kr=90°

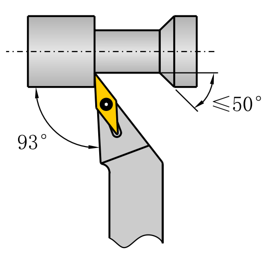


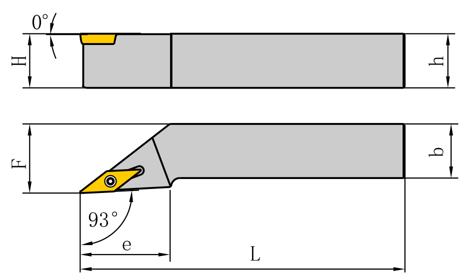


型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw	配件 Parts 扳手 Wrench
STFCR/L	1212F11	●		TC□□1102□□	12	12	80	14	12	16	M2.5×8	T-8
	1616H11	●	○		16	16	100	14	16	20		
	2020K16	●	○	TC□□16T3□□	20	20	125	22	20	25	M3.5×9	T-15
	2525M16	●	○		25	25	150	22	25	32		
	3232P16	○			32	32	170	22	32	40		

SVJ□R/L

Kr=93°





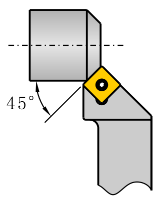
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw	配件 Parts 扳手 Wrench
SVJBR/L	1616H16	●	●	VB□□1604□□	16	16	100	32	16	20	M3.5×9	T-15
	2020K16	●	●		20	20	125	32	20	25		
	2525M16	●	●		25	25	150	32	25	32		
	3232P16	○			32	32	170	40	32	40		
SVJCR/L	1616H16	●	●	VC□□1604□□	16	16	100	32	16	20		
	2020K16	●	●		20	20	125	32	20	25		
	2525M16	●	●		25	25	150	40	25	32		
	3232P16	○			32	32	170	40	32	40		

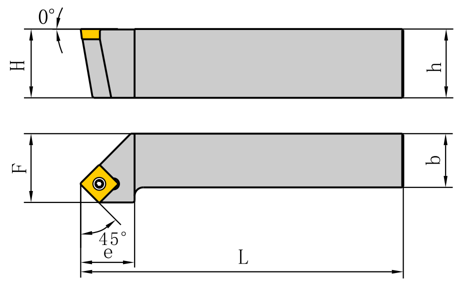
●库存 stock item　　○准库存 be preparing for stock　　其余订货 the others can be made to order

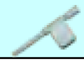
B2-3 外圆车刀刀具 External turning tools

SSSCR/L

Kr=45°

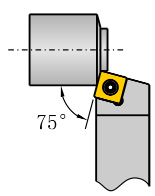


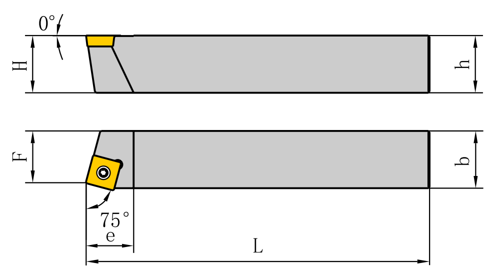


型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts 	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw 	扳手 Wrench 
SSSCR/L	1212F09	○		SC□□09T3□□	12	12	80	16	12	16	M3.5×9	T-15
	1616H09	●	●		16	16	100	16	16	20		
	2020K09	●	●		20	20	125	18	20	25		
	2525M09	●	●		25	25	150	25	25	32		
	2525M12	○		SC□□1204□□	25	25	150	25	25	32	M5×12	T-20

SSB□R/L

Kr=75°





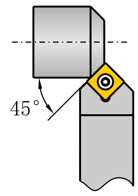
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts 	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw 	扳手 Wrench 
SSBCR/L	1212F09	●		SC□□09T3□□	12	12	80	14	12	9.5	M3.5×9	T-15
	1616H09	●			16	16	100	14	16	12		
SSBPR/L	2020K12			SP□□1203□□	20	20	125	32	20	17	M5×12	T-20
	2525M12				25	25	150	32	25	22		

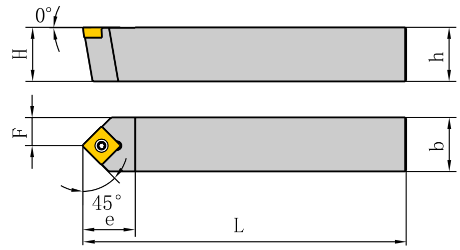
●库存 stock item ○准库存 be preparing for stock 其余订货 the others can be made to order

B2-3 外圆车刀刀具 External turning tools

SSDCN

Kr=45°

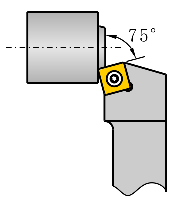


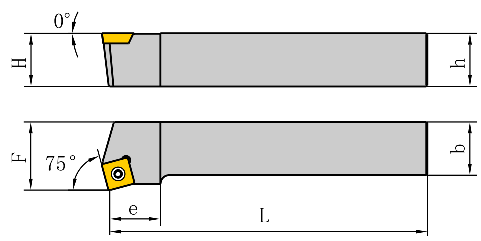


型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw	配件 Parts 扳手 Wrench
SSDCN	1212F09	○		SC□□09T3□□	12	12	80	16	12	6	M3.5×9	T-15
	1616H09	●			16	16	100	16	16	8		
	2020K09	●			20	20	125	16	20	10		
	2525M09	●			25	25	150	16	25	12.5		

SSKCR/L

Kr=75°





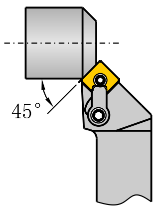
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw	配件 Parts 扳手 Wrench
SSKCR/L	1212F09	○		SC□□09T3□□	12	12	80	16	12	16	M3.5×9	T-15
	1616H09	●			16	16	100	16	16	20		
	2020K09	●			20	20	125	18	20	25		
	2525M09	●			25	25	150	25	25	32		
	2525M12	○		SC□□1204□□	25	25	150	25	25	32	M5×12	T-20

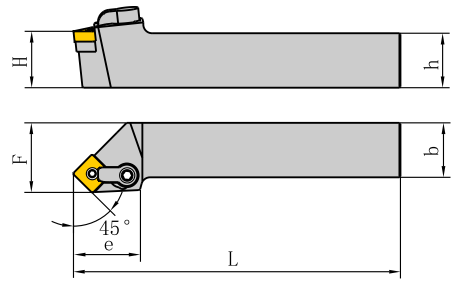
●库存 stock item　○准库存 be preparing for stock　其余订货 the others can be made to order

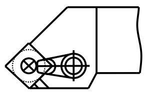
B2-3 外圆车刀刀具 External turning tools

□SSNR/L

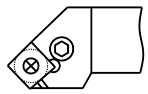
Kr=45°







M-Type



P-Type

型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
MSSNR/L	2020K12	●	●	SN□□1204□□	20	20	125	34	20	25	MS1204	CTM617	HL1814	ML0625	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□□1906□□	32	32	170	45	32	40	MS1904	CTM1022	HL2217	ML0830	L4.0
	4040S19				40	40	250	50	40	50					

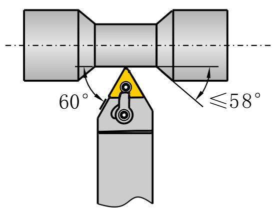
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 刀垫 Shim	杠销 Lever	螺钉 Screw	垫片销 Shim Pin	扳手 Wrench
PSSNR/L	2020K12			SN□□1204□□	20	20	125	26	20	25	MS1204B	LV4	VXH0821	SP4	L3.0
	2525M12				25	25	150	26	25	32					
	3232P12				32	32	170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

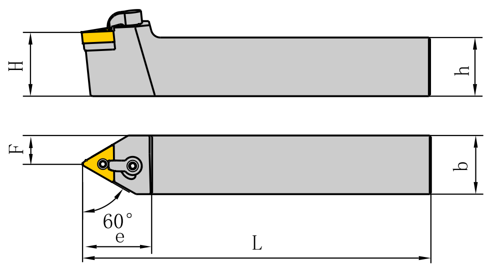
●库存 stock item　○准库存 be preparing for stock　其余订货 the others can be made to order

B2-3 外圆车刀刀具 External turning tools

MTENN

Kr=60°

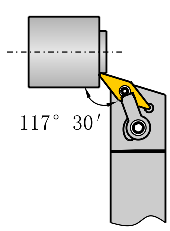


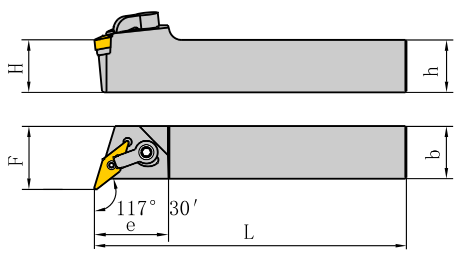


型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
MTENN	2020K16	●		TN□□1604□□	20	20	125	35	20	10	MT1603	CTM513	HL1814	ML0625	L2.0.,L3.0
	2525M16	●			25	25	150	35	25	12.5					
	3232P16	○			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 '





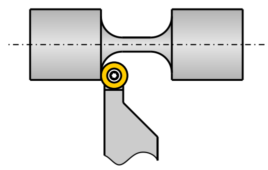
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工、端面加工、仿形加工 Turning.Facing.Profiling h	b	L	e	H	F	配件 Parts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
MVQNR/L	2020K16	●	○	VN□□1604□□	20	20	125	40	25	32	MV1603	CTM513	HL2414	ML0625	L2.0,L3.0
	2525M16	●	○		25	25	150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

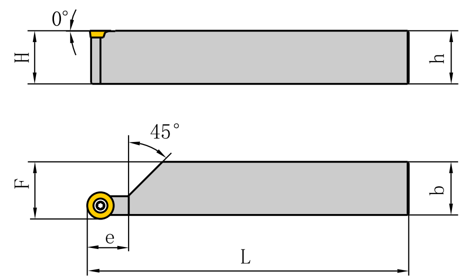
●库存 stock item　○准库存 be preparing for stock　其余订货 the others can be made to order

B2-3 外圆车刀刀具 External turning tools

SRACR/L

Kr=45°

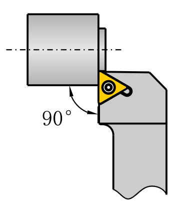


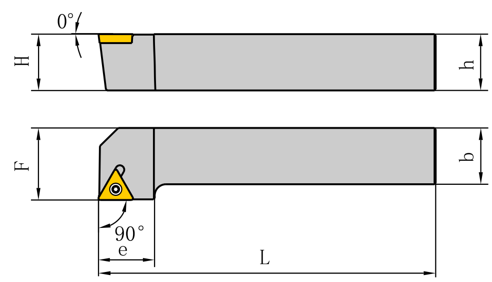


型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw	配件 Parts 扳手 Wrench
SRACR/L	1616H08	●	○	RC□□0803□□	16	16	100	16	16	16.5	M2.5×8	T-8
	2020K08	●	○		20	20	125	16	20	20.5		
	2525M08	○			25	25	150	16	25	25.5		
	2020K10	●	○	RC□□1003□□	20	20	125	20.3	20	20.4	M3.5×9	T-15
	2525M10	○			25	25	150	20.3	25	25.4		

STGCR/L

Kr=90°





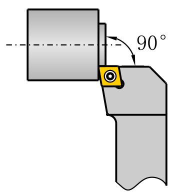
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw	配件 Parts 扳手 Wrench
STGCR/L	1616H11	●	○	TC□□1102□□	16	16	100	14	16	20	M2.5×8	T-8
	2020K16	●	○	TC□□16T3□□	20	20	125	20	20	25	M3.5×9	T-15
	2525M16	●	○		25	25	150	20	25	32		

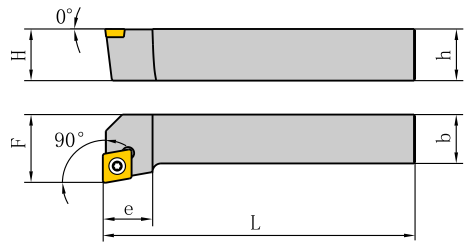
●库存 stock item　○准库存 be preparing for stock　其余订货 the others can be made to order

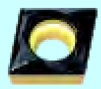
B2-3 外圆车刀刀具 External turning tools

SCFCR/L

Kr=90°

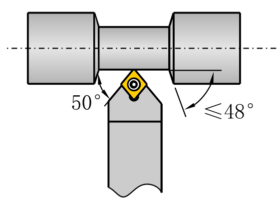


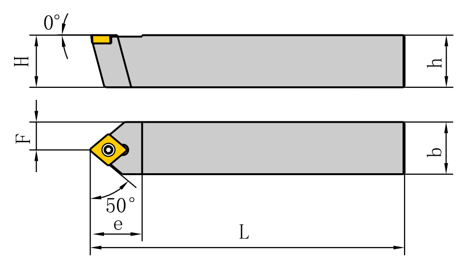


型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts 	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw 	配件 Parts 扳手 Wrench 
SCFCR/L	1212E06	●		CC□□0602□□	12	12	70	16	12	16	M2.5×8	T-8

SCMCN

Kr=50°





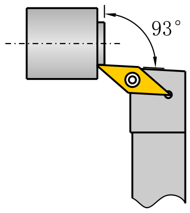
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts 	适用条件 Application 车削加工 Turning h	b	L	e	H	F	配件 Parts 螺钉 Screw 	配件 Parts 扳手 Wrench 
SCMCN	1010E06	●		CC□□0602□□	10	10	70	13	10	5	M2.5×8	T-8
SCMCN	1212F09	●		CC□□09T3□□	12	12	80	15	12	6	M3.5×9	T-15
SCMCN	1616H09			CC□□09T3□□	16	16	100	15	16	8	M3.5×9	T-15
SCMCN	2020K09			CC□□09T3□□	20	20	125	15	20	10	M3.5×9	T-15
SCMCN	2525M09			CC□□09T3□□	25	25	150	15	25	12.5	M3.5×9	T-15
SCMCN	2020K12			CC□□1204□□	20	20	125	20	20	10	M5×12	T-20
SCMCN	2525M12			CC□□1204□□	25	25	150	20	25	12.5	M5×12	T-20

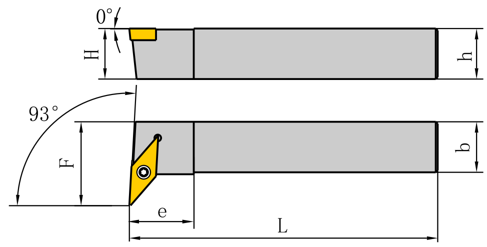
●库存 stock item ○准库存 be preparing for stock 其余订货 the others can be made to order

B2-3 外圆车刀刀具 External turning tools

SVU□R/L

Kr=93°

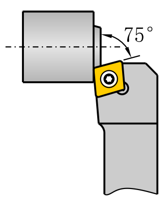


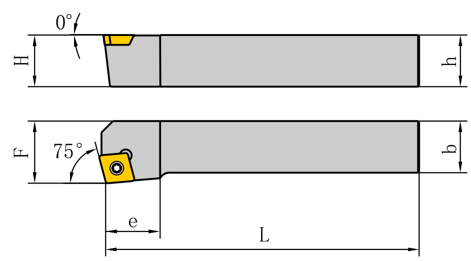


型 号 Type		库存 Stock Item		适用刀片 Recommended inserts	适用条件 Application 车削加工 Turning						配件 Parts	
		R	L		h	b	L	e	H	F	螺钉 Screw	扳手 Wrench
SVUBR/L	2020K16	○		VB□□1604□□	20	20	125	16	20	30	M3.5×9	T-15
	2525M16	○			25	25	150	16	25	35		
SVUCR/L	2020K16	○		VC□□1604□□	20	20	125	16	20	30	M3.5×9	T-15
	2525M16	○	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

SCKCR/L

Kr=75°





型 号 Type		库存 Stock Item		适用刀片 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
SCKCR/L	2020K09	●	○	CC□□09T3□□	20	20	125	23	20	25	M3.5×9	T-15
	2525M09	●	○		25	25	150	23	25	32		
	2020K12			CC□□1204□□	20	20	125	28	20	25	M5×12	T-20
	2525M12				25	25	150	28	25	32		

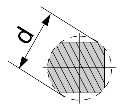
●库存 stock item　○准库存 be preparing for stock　其余订货 the others can be made to order

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

刀杆形式 Toolholders type

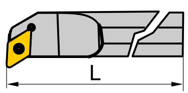
代号 Code	类型 Type
A	钢杆 + 内冷却孔 Steel Pole With Inner cooler hole
C	硬质合金杆 Cemented carbide toolholder
E	硬质合金杆 + 内冷却孔 Cemented carbide toolholder with Inner cooler hole
S	钢杆 Steel Pole
X	使用特殊刀片 For special inserts

刀杆直径 Diameter



代号 Code	直径 Diameter
08	08
10	10
16	16
20	20
25	25
32	32
40	40
50	50

刀杆长度 Length oftoolholder



代号 Code	长度 Length
H	100
K	125
M	150
N	160
Q	180
R	200
S	250
T	300
U	350
V	400

压紧方式 Clamping system

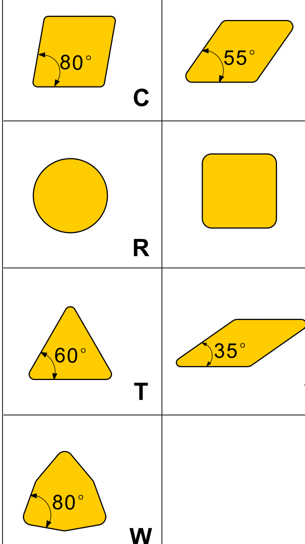
P – 杠杆压紧式
P – Hole clamping

M – 复合压紧式
Top and hole clamping

S – 螺钉压紧式
S – Screw

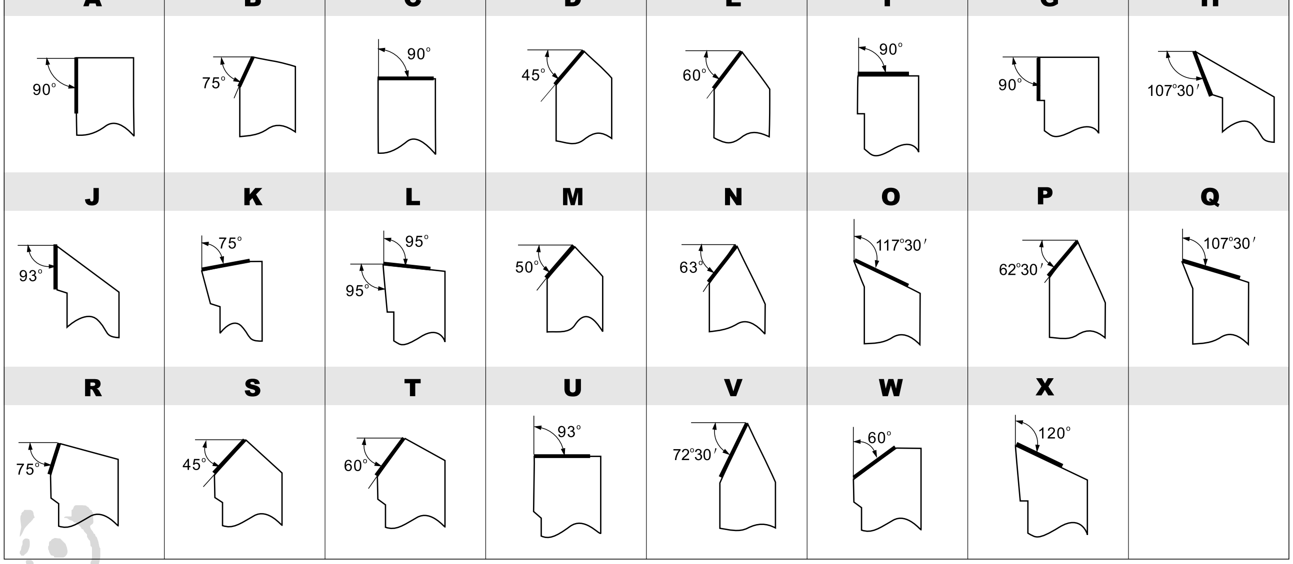
C – 压板压紧式
C – Top

刀片形状 Inserts shape



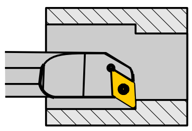
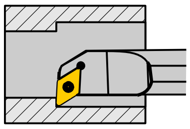
S 16 R - S D U

刀具形式与主偏角 Tool holder style and approach angle



B 普通车削 General Turning

刀片后角 Inserts clearance angle	
5°	B
7°	C
15°	D
20°	E
0°	N
11°	P

切削方向 Cutting direction
 L - 左手 L - Left hand
 R - 右手 R - Right hand

制造商选项	
D	加大偏置量 f 尺寸+1.0mm Increase offset f size+1. 0mm
E	加大偏置量 f 尺寸+2.0mm Increase offset f size+2. 0mm
R	圆刀柄 Round shank
W	楔块夹紧 Wedge clamping
X	背镗 Back boring

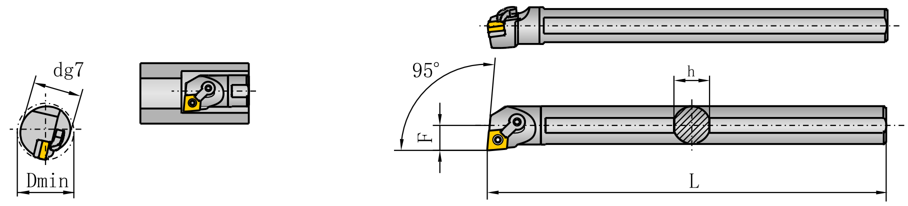
C R 07

切削刃长
Length of cutting edge

刀片形状 Inserts shape	C	D	R	S	T	V	W
	80°	55°			60°	35°	80°
内接圆I.C(mm) Inscribed circle (mm)	切削刃长度(mm) Length of cutting edge(mm)						
5.56	---	---	---	---	09	---	---
6.35	06	07	---	---	11	---	---
9.525	09	11	09	09	16	16	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

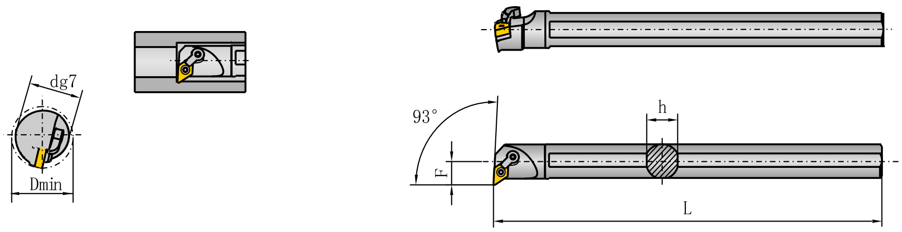


型 号 Type		库存 Stock Item		适用刀片 Recommended inserts	适用条件 Application 通孔加工 Through-hole maching 最小加工直径DMIN Minimum processing diameter	Φd	F	L	h	α°		配件 SpareParts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
S20Q	-MCLNR/L12	●	●	CN□□1204□□	25	20	13	180	19	15		X	CTM613	HL1810	ML0620	
S25R		●	●		32	25	17	200	24	12						
S32S		●	●		40	32	22.5	250	30	17						
S40T		●	○		50	40	27	300	38	15				HL1814	ML0625	L2.5,L3.0
S45U		○			55	45	29.5	350	43	15		MC1204	CTM617			
S50U					60	50	31	350	48	12						
S60V					70	60	36	400	58	10						
S50U	-MCLNR/L19			CN□□1906□□	60	50	31	350	48	12		MC1904	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

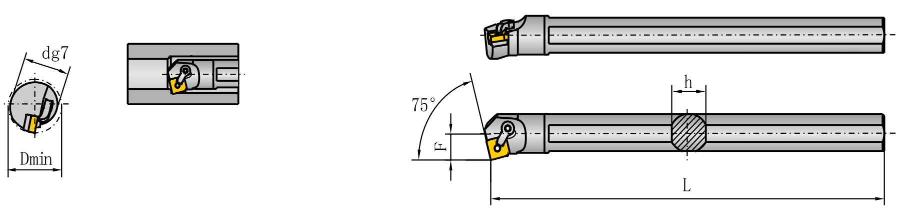
B2-5 内孔车削刀具 Internal turning tools

MDUNR/L



型号 Type		库存 Stock Item		适用刀片 Recommended inserts	适用条件 Application 通孔加工 Through-hole maching 最小加工直径DMIN Minimum processing diameter	Φd	F	L	h	α°	配件 SpareParts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
S25R	-MDUNR/L15	●	●	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					
S50U					60	50	32	350	48	12					
*H25R	-MDUNR/L15B				32	25	17	200	24	12	X	CTM613			
*H32S					40	32	22.5	250	30	17	MD1504	CTM617			
*H40T					50	40	26	300	38	15					
*H50U					60	50	33	350	48	12					

MSKNR/L

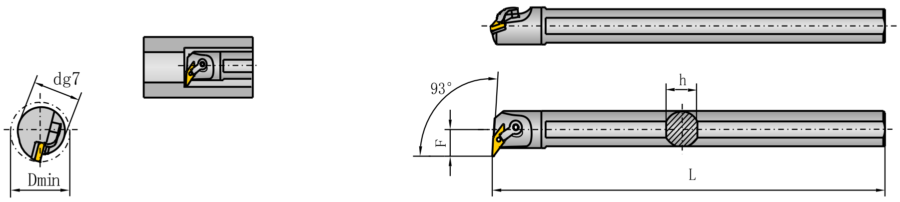


型号 Type		库存 Stock Item		适用刀片 Recommended inserts	适用条件 Application 通孔加工 Through-hole maching 最小加工直径DMIN Minimum processing diameter	Φd	F	L	h	α°	配件 SpareParts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
S20Q	-MSKNR/L12	●	○	SN□□1204□□	25	20	13	180	19	15	X	CTM613	HL1810	ML0620	L2.5,L3.0
S25R		●	○		32	25	17	200	24	12			HL1814	ML0625	
S32S		●	○		40	32	22	250	30	17	MC1204	CTM617			
S40T		○			50	40	27	300	38	15					
S45U					55	45	30	350	43	15					
S50U					63	50	34	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

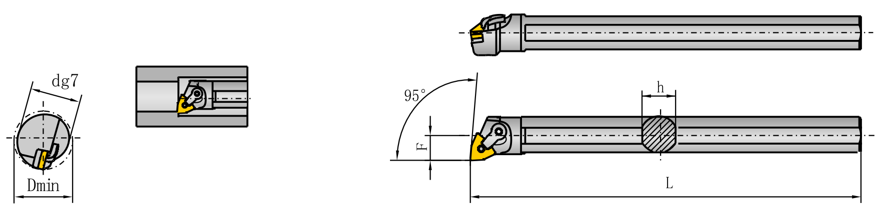
B2-5 内孔车削刀具 Internal turning tools

MVUNR/L



型 号 Type		库存 Stock Item		适用刀片 Recommended inserts	适用条件 Application 通孔加工 Through-hole maching 最小加工直径DMIN Minmum processing diameter	Φd	F	L	h	α°	配件 SpareParts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
S25R	-MVUNR/L16	●	○	VN□□1604□□	36	25	20	200	24	12	X	CTM510	HL2414	ML0620	L2.5,L3.0
S32S		●	○		42	32	22	250	30	17	MV1603	CTM513			
S40T		○			50	40	27	300	38	15					
S50U					63	50	32	350	48	12					
*H25R	-MVUNR/L16B				36	25	20	200	20	12	X	CTM510			
*H32S					42	32	22	250	30	17	MV1603	CTM513			
*H40T					50	40	27	300	38	15					
*H50U					63	50	32	350	48	12					

MWLNR/L

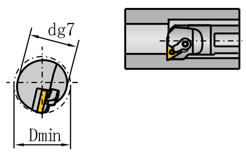


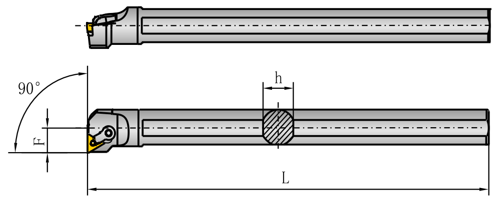
型 号 Type		库存 Stock Item		适用刀片 Recommended inserts	适用条件 Application 通孔加工 Through-hole maching 最小加工直径DMIN Minmum processing diameter	Φd	F	L	h	α°	配件 SpareParts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
S16N	-MWLNR/L06	●	○	WN□□0604□□	22	16	11	160	15	18	X	CTM510	HL1511	ML0518	L2.0,L2.5
S20Q		●	○		25	20	13	180	19	15				ML0520	
S25R		●	○		32	25	17	200	24	12					
S20Q	-MWLNR/L08	●	●	WN□□0804□□	25	20	13	180	19	15		CTM613	HL1810	ML0620	L2.5
S25R		●	●		32	25	17	200	24	12			HL1814	ML0625	L2.5,L3.0
S32S		●	●		41	32	22	250	30	17	MW0804	CTM617			
S40T		●	○		50	40	27	300	38	15					
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

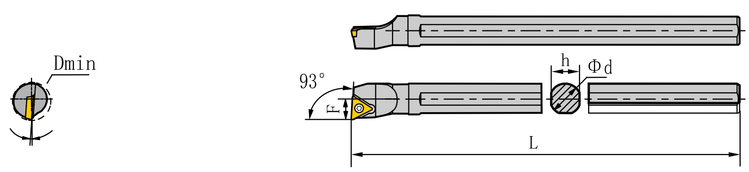
MTFNR/L





型 号 Type		库存 Stock Item		适用刀片 Recommended inserts	适用条件 Application 通孔加工 Through-hole maching 最小加工直径DMIN Minimum processing diameter	Φd	F	L	h	α°		配件 SpareParts 刀垫 Shim	销钉 Pin	压板 Clamp	双头螺丝 Screw	扳手 Wrench
S20Q	-MTFNR/L16	●	○	TN□□1604□□	25	20	13	180	19	15		X	CTM510	HL1810	ML0620	L2.0,L3.0
S25R		●	○		32	25	17	200	24	12				HL1814	ML0625	
S32S		●	○		41	32	22.5	250	30	17		MT1603	CTM513			
S40T		○			50	40	27	300	38	15						
S50U					60	50	31	350	48	12						
S40T	-MTFNR/L22			TN□□2204□□	50	40	27	300	38	15		MT2204	CTM617	HL1917	M;0830	L2.0,L4.0
S50U					60	50	31	350	48	12						

STUPL/R

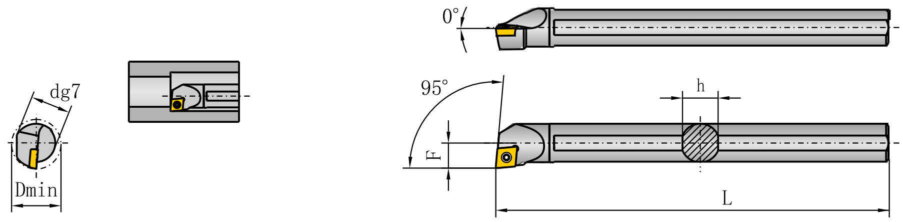


型 号 Type		库存 Stock Item R	L	适用刀片 Recommended inserts	适用条件 Application 仿形、通孔加工 Profiling ,Through hole machining 最小加工直径DMIN Minimum processing diameter	Φd	F	L	h	α°		配件 SpareParts 螺丝 Screw	扳手 Wrench
S10K	-STUPR/L1103	●	○	TC□□1103□□	13	10	7	125	9	12		M3×8	T-8
S12M		●	○		16	12	8	150	11	10			
S16N		●	○		20	16	10	160	15	8			
S20Q		●	○		24	20	13	180	19	6			
S20Q	-STUPR/L16	●	○	TC□□1604□□	24	20	13	180	19	4		M3.5×9	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	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

B2-5 内孔车削刀具 Internal turning tools

SCLCL/R

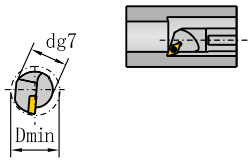


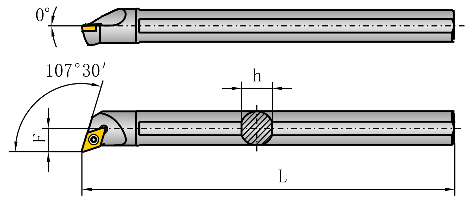
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts 	最小加工直径DMIN Minmum processing diameter	Φd	F	L	h	θ°		配件 SpareParts 螺丝 Screw 	配件 SpareParts 扳手 Wrench 
S07K	-SCLCR/L06	●	●	CC□□0602□□	9	7	5	125	7	15		M2.5×6	T-8
S08K	-SCLCR/L06	●	●		10	8	5.5	125	7	13			
S08K	-SCLCR/L06-A16	●	●		12	8	5	125	15	13			
S09K	-SCLCR/L06-A16	●	●		12	9	5	125	15	13			
S10K	-SCLCR/L06	●	●		13	10	7	125	9	12			
S10K	-SCLCR/L06-A16	●	●		13	10	6	125	15	12			
S12M	-SCLCR/L06	●	●		16	12	5.5	150	11	10			
S12M	-SCLCR/L09	●	●	CC□□09T3□□	16	12	9	150	11	12		M3.5×9	T-15
S14M	-SCLCR/L09-A16	●	●		17	14	9	180	19	12			
S16N	-SCLCR/L09	●	●		20	16	11	160	15	10			
S20Q	-SCLCR/L09	●	●		25	20	13	180	19	8			
S25R	-SCLCR/L09	●	●		31	25	17	200	24	6			
S32S	-SCLCR/L09	●	●		39	32	22	250	30	4			
S20Q	-SCLCR/L12	●	●	CC□□1204□□	25	20	13	180	19	8		M5×12	T-20
S25R	-SCLCR/L12	●	●		32	25	17	200	24	8			
S32S	-SCLCR/L12	●			39	32	22	250	30	6			
S40T	-SCLCR/L12	○			50	40	27	300	38	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



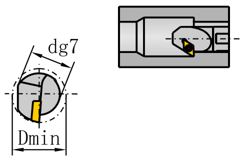


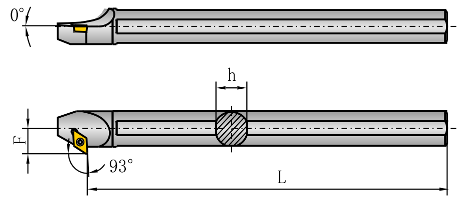
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 车削加工、端面加工、仿形加工 Turning, Facing,Profiling 最小加工直径DMIN Minmum processing diameter	Φd	F	L	h	θ°		配件 SpareParts 螺丝 Screw	配件 SpareParts 扳手 Wrench
S10K	-SDQCR/L07	●	●	DC□□0702□□	19	10	7	125	9	10		M2.5×6	T-8
S12M		●	●		23	12	9	150	11	8			
S16N		●	●		27	16	11	160	15	6		M2.5×8	
S20Q	-SDQCR/L11	●	●	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	-SDQCR/L07B			DC□□0702□□	13	10	7	125	9	10		M2.5×8	T-8
*H12M					16	12	9	150	11	8			
*H16N					20	16	10.5	160	15	6			
*H20Q	-SDQCR/L11B			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



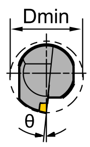


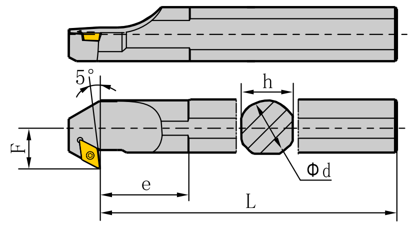
型号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 端面、通孔、盲孔加工 Facing, Through hole,Brad hole machining 最小加工直径DMIN Minimum processing diameter	Φd	F	L	h	θ°	配件 SpareParts 螺丝 Screw	扳手 Wrench
S10K		●	●		15	10	8	125	9	10		
S12M	-SDUCR/L07	●	●	DC□□0702□□	17	12	9	150	11	8	M2.5×6	T-8
S16N		●	●		22	16	11	160	15	6		
S20Q		●	●		25	20	13	180	19	6		
S25R		●	●		32	25	17	200	24	4		
S32S	-SDUCR/L11	●	○	DC□□11T3□□	39	32	22	250	30	4	M3.5×9	T-15
S40T					50	40	27	300	38	2		
S50U					60	50	31	350	48	0		
*H10K					15	10	8	125	9	10		
*H12M	-SDUCR/L07B			DC□□0702□□	17	12	9	150	11	8	M2.5×6	T-8
*H16N					22	16	11	160	15	6		
*H20Q					25	20	13	180	19	6		
*H25R					32	25	16	200	24	4		
*H32S	-SDUCR/L11B			DC□□11T3□□	39	32	20	250	30	4	M3.5×9	T-15
*H40T					50	40	24	300	38	2		
*H50U					60	50	29	350	48	0		
★C10H					13	10	7	100	9.5	8		
★C12K	-SDUCR/L07			DC□□0702□□	16	12	9	125	11	8	M2.5×6	T-8
★C16M					20	16	11	150	15	6		
★C20Q	-SDUCR/L11			DC□□11T3□□	25	20	13	180	19	6	M3.5×9	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

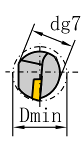
SDZCL/R

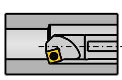


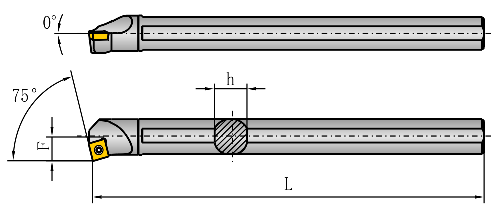


型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 仿形、通孔加工 Profiling ,Through hole machining 最小加工直径DMIN Minimum processing diameter	Φd	F	L	e	h	θ°	配件 SpareParts 螺丝 Screw	配件 SpareParts 扳手 Wrench
S10K	-SDZCR/L07	●	●	DC□□0702□□	15	10	8.5	125	30	9	12	M2.5×8	T-8
S12M		●	●		18	12	10	150	30	11	10		
S16N		●	●		24	16	13	160	30	15	8		
S20Q	-SDZCR/L11	●	●	DC□□11T3□□	28	20	15	180	40	19	8	M3.5×9	T-15
S25R		●	●		34	25	18	200	45	24	6		
S32S		●	○		38	32	22	250	50	30	4		
*H10K	-SDZCR/L07B			DC□□0702□□	15	10	8.5	125	30	9	12	M2.5×8	T-8
*H12M					18	12	9.5	150	30	11	10		
*H16N					24	16	11.5	160	30	15	8		
*H20Q	-SDZCR/L11B			DC□□11T3□□	28	20	14.5	180	40	19	8	M3.5×9	T-15
*H25R					34	25	17	200	45	24	6		

SSKCL/R







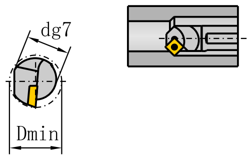
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 通孔加工 Through hole machining 最小加工直径DMIN Minimum processing diameter	Φd	F	L	h	θ°		配件 SpareParts 螺丝 Screw	配件 SpareParts 扳手 Wrench
S12M	-SSKCR/L09	●	○	SC□□09T3□□	16	12	8.5	150	11	12		M3.5×9	T-15
S16N		●	○		20	16	11	160	15	10			
S20Q		●	○		24	20	13	180	19	8			
S25R		○	○		31	25	17	200	24	6			
S12M	-SSKPR/L09			SP□□0903□□	16	12	8.5	150	11	8			
S16N					20	16	11	160	15	6			

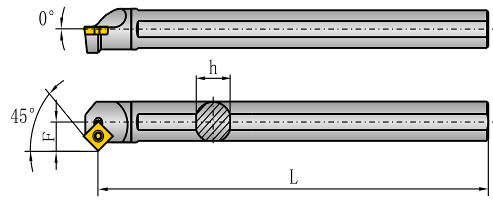
●库存 stock item ○准库存 be preparing for stock 其余订货 the others can be made to order

B 普通车削 General Turning

B2-5 内孔车削刀具 Internal turning tools

SSSCR/L



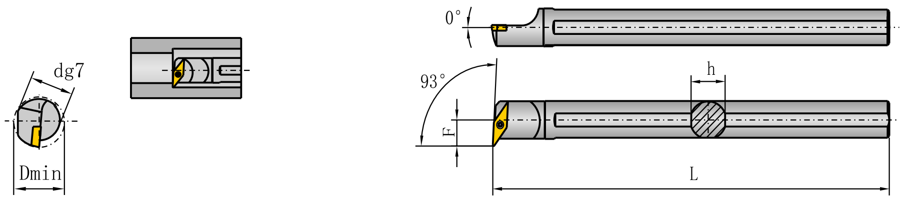


型 号 Type		库存 Stock Item		适用刀片 Recommended inserts	适用条件 Application 通孔加工,倒角 Through hole machining, Chamfering						配件 SpareParts	
		R	L		最小加工直径DMIN Minmum processing diameter	Φd	F	L	h	α°	螺丝 Screw	扳手 Wrench
S12M	-SSSCR/L09	●	●	SC□□09T3□□	16	12	8.5	150	11	12	M3.5×9	T-15
S16N		●	●		22	16	11.5	160	15	10		
S20Q		●	○		26	20	13.5	180	19	8		
S25R		○	○		31	25	17	200	24	6		
S32S		○	○		38	32	22	250	30	4		
*H12M	-SSSCR/L09B				16	12	8.5	150	11	12		
*H16N					22	16	11.5	160	15	10		
*H20Q					26	20	13.5	180	19	8		
*H25R					31	25	16	200	24	6		
*H32S					38	32	19.5	250	30	4		
S12M	-SSSPR/L09			SP□□09T3□□	16	12	9	150	11	8	M3.5×9	T-15
S16N					20	16	11	160	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



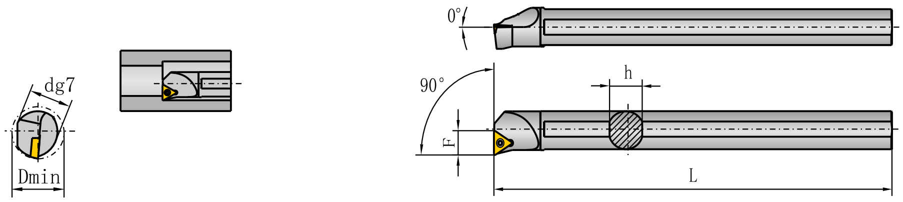
型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 仿形加工 Profiling 最小加工直径DMIN Minimum processing diameter	Φd	F	L	h	θ°	配件 SpareParts 螺丝 Screw	配件 SpareParts 扳手 Wrench
S16N	-SVUBR/L11	●	●	VB□□1103□□	22	16	11.5	160	15	10	M2.5×8	T-8
S20Q		●	●		27	20	14	180	19	8		
S20Q	-SVUBR/L16	●	●	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	-SVUBR/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 R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 通孔加工,倒角 Throught hole machining, Chamfering 最小加工直径DMIN Minimum processing diameter	Φd	F	L	h	θ°	配件 SpareParts 螺丝 Screw	配件 SpareParts 扳手 Wrench
S16N	-SVUCR/L11	●	●	VC□□1103□□	22	16	11.5	160	15	10	M2.5×8	T-8
S20Q		●	●		27	20	14	180	19	8		
S20Q	-SVUCR/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		
S50U					60	50	32	350	48	4		
*H20Q	-SVUCR/L16B			VC□□1604□□	31	20	19	180	19	8		
*H25R					35	25	20	200	24	6		
*H32S					42	32	22.5	250	30	8		
*H40T					51	40	27	300	38	6		
*H50U					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



型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 端面、通孔、盲孔加工 Facing, Through hole,Brad hole machining 最小加工直径DMIN Minmum processing diameter	Φd	F	L	h	θ°	配件 SpareParts 螺丝 Screw	配件 SpareParts 扳手 Wrench
S08K	-STFCR/L09	●	●	TC□□0902□□	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	-STFCR/L11	●	●	TC□□1102□□	13	10	7	125	9	12		
S12M		●	●		16	12	8.5	150	11	10		
S16N		●	●		20	16	11	160	15	8		
S20Q		●	●		25	20	13	180	19	6		
S20Q	-STFCR/L16	●	●	TC□□16T3□□	25	20	13	180	19	8	M3.5×9	T-15
S25R		●	●		31	25	17	200	24	6		
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

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

P 钢加工 Process on cast 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。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.

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。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.

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

K 铸铁加工 Process on cost iron

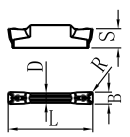
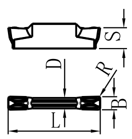
牌号 Grade	ISO分类 ISO classification	表面颜色 Surface color	应用推荐 Applications Recommended
BPS253	K25 (K10-K30	黄 Yellow	梯度合金基体涂覆厚膜耐磨CVD牌号。通用性广的牌号。 适于钢和铸钢件上的精加工到粗加工的连续切削以及间断切削。不锈钢材料连续切削和间断切削。 CVD coated carbide grade, Universal grade, suitable for steel and cast steel continuous cutting and interrupted cutting 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 carbde grade, with good sharpness , best used for aluminum cutting process and aluminum interruped cutting process.
BK10	N10 (N10-N20)		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.
BPG05B	N05 (N05-N10)	青灰黑 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.

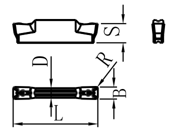
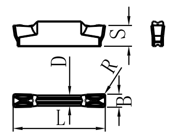
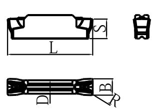
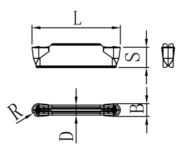
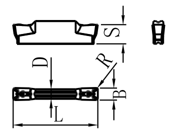
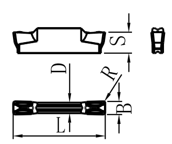
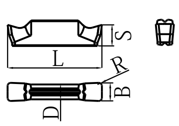
S 耐热合金加工 Heat Resistant alloys

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.

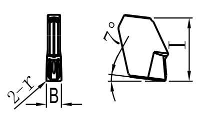
刀片基本形状The basic shape of inserts		型号 Type		基本尺寸 Dimension（mm）					材质推荐 Grade recommended							
									CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
				B	R	L	D	S	BPS253	BPS371	BPG20B	BPU206	BPG308	BU810	BU820	BP35
		MGMN	200-H	2	0.2	16	1.2	3.5	★		★					
			250-H	2.5	0.2	18.5	2	3.85	★		★					
			300-H	3	0.4	21	2.35	4.8	★		★					
			400-H	4	0.4	21	3.3	4.8	★		★					
			500-H	5	0.8	26	4.1	5.8	★		★					
		MGMN	150-L	1.5	0.15	16	1.2	3.5	★		★					
			200-L	2	0.2	16	1.6	3.5	★		★					
			300-L	3	0.4	21	2.35	4.8	★		★					
			400-L	4	0.4	21	3.3	4.8	★		★					
			500-L	5	0.8	26	4.1	5.8	★		★					

C
切断切槽
Parting Grooving

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

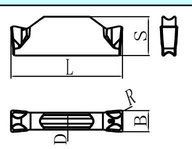
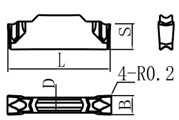
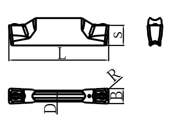
刀片基本形状The basic shape of inserts		型号 Type		基本尺寸 Dimension（mm）					材质推荐 Grade recommended							
									CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
				B	R	L	D	S	BPS253	BPS371	BPG20B	BPU206	BPG308	BU810	BU820	BP35
		MGMN	200-M	2	0.2	16	1.2	3.5	★		★					
			250-M	2.5	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	★		★					
		MGMN	200-T	2	0.2	16	1.5	3.5	★		★					
			300-T	3	0.4	21	2.35	4.8	★		★					
			400-T	4	0.4	21	3.3	4.8	★		★					
			500-T	5	0.8	25.86	4.12	5.8	★		★					
			600-T	6	0.8	26	5	5.8	★		★					
		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	200-G	2	0.2	16	1.5	3.5	★		★					
			300-G	3	0.4	21	2.35	4.8	★		★					
			400-G	4	0.4	21	3.3	4.8	★		★					
			500-G	5	0.8	25.86	4.12	5.8	★		★					
			600-G	6	0.8	26	5	5.8	☆		☆					
		MGGN	200-LH	2	0.2	16	1.5	3.5						★		
			300-LH	3	0.4	21	2.35	4.8						★		
			400-LH	4	0.4	21	3.3	4.8						★		
			500-LH	5	0.8	25.86	4.12	5.8						★		
			600-LH	6	0.8	26	5	5.8						★		

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

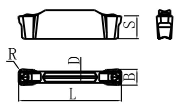
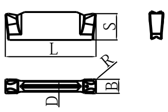
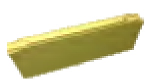
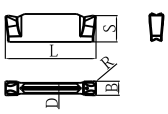
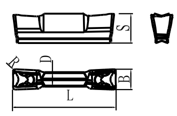
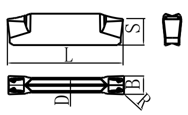
刀片基本形状The basic shape of inserts		型号 Type		基本尺寸 Dimension（mm）			材质推荐 Grade recommended							
							CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
				B	L	R	BPS253	BPS371	BPG20B	BPU206	BPG308	BU810	BU820	BP35
		BP	200	2.2	9.3	0.2	★		★					
			300	3.1	11.3	0.2	★		★					
			400	4.1	11.3	0.25	★		★					
			500	5.1	11.4	0.3	★		★					

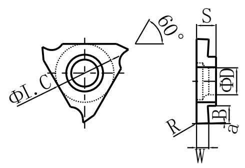
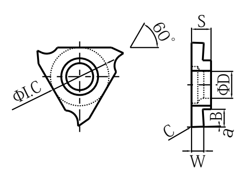
C

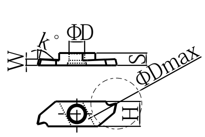
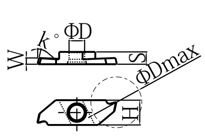
切断切槽 Parting Grooving

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							
								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	BPG20B	BPU206	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

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	BPG20B	BPU206	BPG308	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	-	★		★					
		GRIP4004Y	4	0.4	18.93	2.85	5.58	★		★					
		MGME 400-F	4	0.2	25.35	3.23	5.71	★		★					

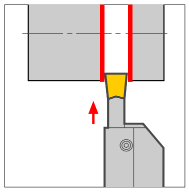
刀片基本形状The basic shape of inserts		型号 Type		基本尺寸 Dimension（mm）						材质推荐 Grade recommended							
										CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade		
				ΦI.C	S	Φd	B	W	R/C	BPS253	BPS371	BPG20B	BPU206	BPG308	BU810	BU820	BP35
		TGF32R/L	-033-005	9.525	3.18	4.4	0.8	0.33	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			★			★		

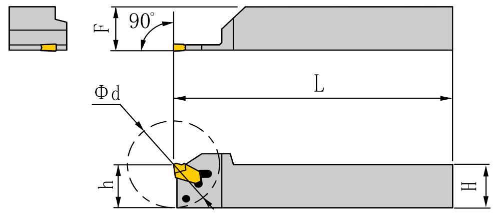
刀片基本形状The basic shape of inserts		型号 Type		基本尺寸 Dimension（mm）								材质推荐 Grade recommended						
												CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoated grade	
				最大切削直径	S	W	D	H	α	k	R	BPS253	BPS371	BPG20B	BPU206	BPG308	BU810	BU820
		KGF12R/L	-050-15-00	5	3.0	0.50	4.4	8.0	15°	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			★			☆	

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

C3 切槽刀刀具 Grooving tools

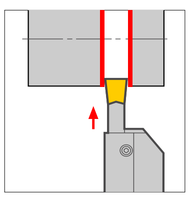
ZQ

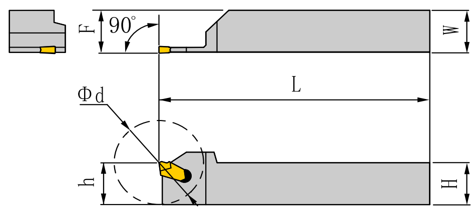




型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 外切削槽、切断 External Grooving, Parting off Φd	H	F	L	h	α°		配件 Parts 螺丝 Screw	配件 Parts 扳手 Wrench
ZQ	1616R/L-03	●	●	BP300	30	16	16	100	16	16.3		M3.5×9	T-15
	2020R/L-03	●	●		38	20	20	125	20	20.3			
	2525R/L-03	●	●		38	25	25	150	25	25.3			
	2020R/L-04	●	●	BP400	38	20	20	125	20	20.4			
	2525R/L-04	●	●		38	25	25	150	25	25.4			

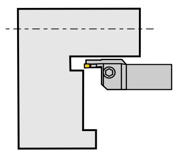
SPH

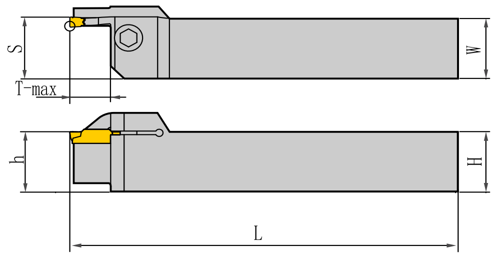




型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 切断 Parting off H=(h)	W	L	Φd	F(max)	配件 Parts 扳手 Wrench
SPH	316R/L			BP300,300R/L	16	16	100	32	16.3	L5.0
	320R/L			BP300,300R/L	20	20	120	40	20.3	
	420R/L			BP400,400R/L	20	20	120	50	20.4	
	520R/L			BP500,500R/L	20	20	120	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

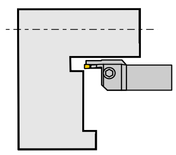


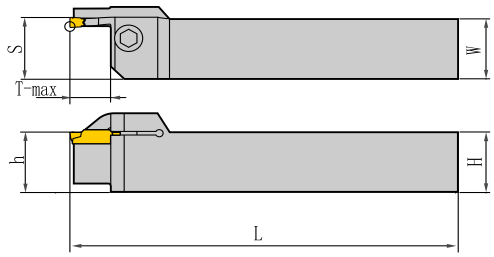


型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 外切削槽、车削加工 External Grooving, Turning H=(h)	W	L	S	T(max)	配件 Parts 螺丝 Screw	配件 Parts 扳手 Wrench
MGEHR/L	1616-1.5	○		MGMN150-G	16	16	100	16.25	14.5	LTX0512	L2.0
	2020-1.5	○			20	20	125	20.25	14.5		
	2525-1.5	○			25	25	150	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	18.5	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		
	3233-3.0-T10				32	32	170	32.4	10		
	2020-4.0	●	●	MGMN400-M MRMN400-M	20	20	125	20.4	18		
	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	150	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	150	20.5	23		
	2020-5-T15				20	20	150	20.5	15		
	2525-5	○	○		25	25	150	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	15		

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

C3 切槽刀刀具 Grooving tools

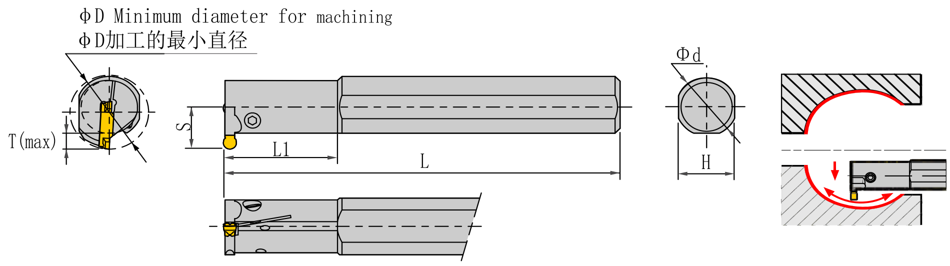




型号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 外切削槽、车削加工 External Grooving, Turning H=(h)	W	L	S	T(max)	配件 Parts 螺丝 Screw	配件 Parts 扳手 Wrench
MGEHR/L	2020 -6	○	○	MGMN600-M MRMN600-M	20	20	125	20.6	23	BHA0616	L5.0
	2020 -6-T15				20	20	125	20.6	15		
	2525 -6				25	25	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 -8			MRMN800-M	25	25	150	26.1	28		
	2525 -8-T15				25	25	150	26.1	15		
	3232 -8				32	32	170	33.1	28		
	3232 -8-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 -8A			MNGN800-A	25	25	150	26.1	28		
	2525-8A-T15				25	25	150	26.1	16		
	3232 -8A				32	32	170	33.1	28		
	3232-8A-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

C3 切槽刀刀具 Grooving tools



型 号 Type		库存 Stock Item R	库存 Stock Item L	适用刀片 Recommended inserts	适用条件 Application 内槽加工、车削加工 Internal Grooving, Turning ΦD	Φd	L	L1	T(max)	H	S	配件 Parts 螺丝 Screw	扳手 Wrench
MGIVR/L	2020-1.5	○		MGMN150-G	20	16	125	35	4	15	11.3	MHB0310	L2.5
	2525-1.5	○			25	20	150	45	4	18	13.1	MHA0512	L4.0
	3925-1.5				29	25	200	45	4	23	16.2		
	2016-2.0	○		MGMN200-G	20	16	125	35	5	15	12.4	MHB0310	L2.5
	2520-2.0	○			25	20	150	45	5	18	14	MHA0512	L4.0
	2925-2.0	○			29	25	200	45	5	23	17.2		
	2016-2.5			MGMN250-G	20	16	125	35	6	15	12.5	MHB0310	L2.5
	2520-2.5	○			25	20	150	45	6	18	15.1	MHA0512	L4.0
	2925-2.5	○			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	150	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	8	25	19.5		
	3732-5	○			37	32	250	65	8	30	21.5		
	3125-6			MGMN600-M MRMN600-M	31	25	200	45	8	23	19.4		
	3732-6				37	32	250	65	8	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		
	3125-6A			MRGN600-A	31	25	200	45	8	23	19.4		
	3732-6A				37	32	250	65	8	30	21.5		
	3732-8A			MNGN800-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

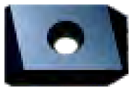
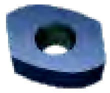
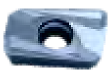
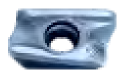
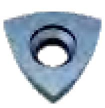
C 切断切槽 Parting Grooving

D 铣削 Milling

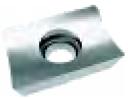
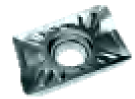
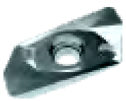
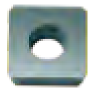
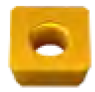
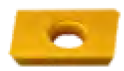
D1 铣削刀片一览表 List of milling inserts

面铣刀片 Inserts for face milling	TPCW**PDR/L	TPMR**	TPMR**-3	TPKR**PDR	TPKN**PPR/L	TPKN**PPR/L-D2	TPKN**PDR-SU
	TPKN**PDR-3	TPAN**PPN	TPAN**PPN-D2	SPCW**EDR/L	SPKW**EDFR/L	SEEW**AFN	SEKT**AESN
	SEET**T3-DR	SDET**-RF	SEKT**T3AEFN-LH	SDKT**AEFN-LH	SEKT**AFFN-LH2	SNAN1**ANN	SNAN**ENN
	SPCN**APN	SPGN**	SPKN**ZETR/L	SPKN**EDL-D2	SPKN**EDFR/L	SPKN**EDFR/L-D2	SPAN**EDR/L
	SDHW**AEFN	SPAN**EDR/L	SPMR**	SEMN**AFTN	SEKR**AZ-YM	SPEX**EDR/L	OPHN**ZZN
	OFER**NN	HEEN**	OFMT**NN	RPMW**MOE	RDMT**MO-V1	RPMT**MOE-BJS	RCHT**MO-SM
大进给铣刀 Inserts for high feed milling	SDMT**-DM	WPGT**ZSR	HNMU**ANEN-HD	ONMU**ANPN-MJ			
重型铣刀 Inserts for heavy-cutting milling	CNE**	CDE**L05	LNE**TL-Φ4.1	LNE**-02	N**-1	SNE**-01	LND424-DA
	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

重型铣刀 Inserts for heavy-cutting milling							
	SN**RK13-ING	LNHX**	NXE**-104	DIN**-M			
方肩铣刀片 Inserts for square shoulder milling							
	APMT**PDER-H2	APMT**PDER-H8	APMT**PDER-M2	APMT**R-EM	BR390**-PM	BR390**-PL	APKT**-LHC
							
	APKW**	GNMU**ZZR-M1					
浅孔钻 Inserts for shallow hole drilling							
	SPMG**-ZV	APMT**T-WT	WCGX**-ZV				
仿形铣刀 Inserts for profile milling							
	ZDGW**T2R10	SPMT**					
倒角铣刀 Inserts for chamfer milling							
	SPMT**						

铣削刀片一览表 List of milling inserts

铝的加工 Aluminum processing							
	RCGT**MO-LHC	APKT**PDER-LH	APKT**PDFR-G2C	APEX**FR-LHC	APKT**FR-LHC	APKT**T4PDFR-LH1C	LDHT**PDFR-LHC
							
	ADCT**PDER-LD	SEKT**T3AEFN-LH	SDKT**AEFN-LH	SEKT**AFFN-LH2			
其他 Others							
	P22215-**	P28*	P284*	P2800-*	P2816-1	P2894-*	P2803-1*
							
	P28451-1	P2922*	P28467-*	P28475-*	P270*	P2703-*R	P270*
							
	P2603-*	TMR/L331.1A**-WM	SOGX**EN-XN				
机夹刀片 Clamping system inserts							
	3**	3XH**	4XH**	4X**	4**		

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	表面颜色 Surface color	应用推荐 Applications Recommended
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。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.
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.
BPG217	P20(P15-P30)	黄 Yellow	使用高强度、耐磨损性及耐欠损相平衡的超细晶粒基体结合PVD TiAlN涂层，适于大多数工件材料的加工，可实现稳定车削及铣削加工。 Using high strength, high wear resistance and owe loss Phase Equilibrium ultrafine grain substrate with PVD TiAlN coating, suitable for most of the material machining,can achieve a stable turning and milling.
BPS321	P30(P25-P40)	黑/黄 Black/yellow	高强度基体与AL_2O_3CVD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	P30(P25-P40)	黑 Black	高强度基体与AL_2O_3CVD涂层结合，适于钢及铸铁的铣削加工。 High-strength matrix combined with AL_2O_3 coating suitable for steel and cast iron milling.
BPS411	P40(P35-P50)	黑/黄 Black/yellow	韧性CVD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	P40(P35-P50)	黑 Black	韧性CVD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BPS413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BPS413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 BPS413 should be working in stable conditions, such as short overhangs, surface milling, shallow shoulder milling.For toughness process, BPS413 is the best choice.suitable for mixed materials small batch production. Whether the coolant supply is excellent.

D2 铣削刀片材质 Grade for milling inserts

K 铸铁加工 Process on cost iron

牌号 Grade	ISO分类 ISO classification	表面颜色 Surface color	应用推荐 Applications Recommended
BPG05B	P05(P01-P15) M10(M05-M15) 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.

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	P05(P01-P15) M10(M05-M15)	青灰黑 Cyan-blue gray dark	PVD涂层硬质合金牌号，用于铣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.
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.
BPG318	M25(M15-M30)	紫黄 Purple yellow	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.
BPG40B	M35(M25-M40)	青灰黑 Cyan-blue gray dark	涂层硬质合金牌号，用于以中速铣削具有磨蚀趋势的不锈钢，例如铸造零件、铁素体/马氏体不锈钢和PH钢. Coated carbide grade for medium speed milling abrasive trends stainless steel, such as casting parts, ferritic / martensitic stainless steel, and PH steel.
BPS411	M40(M30-M40)	黑/黄 Black/yellow	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

85° A	82° B	80° C
55° D	75° E	H
55° K	L	86° M
O	P	R
S		35° V
80° W	其他 Others Z	

形状代号 Insert shape

公制 Metric

代号 Code	有无孔 With/Without hole	有无断屑槽 With/Without chipbreaker	刀片剖面 Section plane of Insert	代号 Code	有无孔 With/Without hole	有无断屑槽 With/Without chipbreaker	刀片剖面 Section plane of
B	有 With	无 Without	>65°	N	无 Without	无 Without	
H	有 With	单面 Single-side	>65°	R	无 Without	单面 Single-side	
C	有 With	无 Without	>65°	F	无 Without	双面 Double-side	
J	有 With	双面 Double-side	>65°	A	有 With	无 Without	
W	有 With	无 Without	≤65°	M	有 With	单面 Single-side	
T	有 With	单面 Single-side	≤65°	G	有 With	双面 Double-side	
Q	有 With	无 Without	≤65°	X	---	---	特殊 Special
U	有 With	双面 Double-side	≤65°				

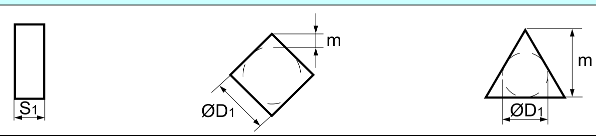
断屑槽及夹固形式 Chipbreaker and clamping system

S P K N

主切削刃后角 Clearance angle of main cutting edge

代号 Code	后角(度) Clearance angle	代号 Code	后角(度) Clearance angle
A	3°	B	5°
C	7°	D	15°
E	20°	F	25°
G	30°	N	0°
P	11°	O	其他的后角 Other clearance angle

允许偏差 Allowed tolerence



代号 Code	m允许偏差(mm) "m" tolerance range	内切圆ØD1允许偏差(mm) Inscribed circle ØD1 Tolerance(mm)	厚度S1允许偏差(mm) Thickness S1 Tolerance(mm)
A	±0.005	±0.025	±0.025
F	±0.005	±0.013	±0.025
C	±0.013	±0.025	±0.025
H	±0.013	±0.013	±0.025
E	±0.025	±0.025	±0.025
G	±0.025	±0.025	±0.13
J	±0.005	±0.05-±0.13	±0.025
K	±0.013	±0.05-±0.13	±0.025
L	±0.025	±0.05-±0.13	±0.025
M	±0.08-±0.18	±0.05-±0.13	±0.13
N	±0.08-±0.18	±0.05-±0.13	±0.025
U	±0.13-±0.38	±0.08-±0.25	±0.13

(参考）M级精度详细情况（按形状、大小分）
(Reference) details of M-class tolerance (identifed by shape and size)

● 刀尖高度 允许偏差(mm) Nose height tolerance(mm)

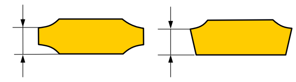
内切圆 Inscribed circle	T	S	80° C	55° K	35° V	R
6.35	±0.08	±0.08	±0.08	±0.11	±0.16	---
9.525	±0.08	±0.08	±0.08	±0.11	±0.16	---
12.7	±0.13	±0.13	±0.13	±0.15	---	---
15.875	±0.15	±0.15	±0.15	±0.18	---	---
19.05	±0.15	±0.15	±0.15	±0.18	---	---
25.4	---	±0.18	---	---	---	---

● 内切圆ØD1允许偏差（mm）· Tolerance of Inscribed Circle ØD1(mm)

内切圆 Inscribed circle	T	S	80° C	55° K	35° V	R
6.35	±0.05	±0.05	±0.05	±0.05	±0.05	---
9.525	±0.05	±0.05	±0.05	±0.05	±0.05	±0.05
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

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				
5.56					09		
6.0			06				
6.35	06	07			11	11	
8.0			08				
9.525	09	11	09	09	16	16	06
10.0			10				
12.0			12				
12.7	12	15	12	12	22	22	08
15.875	16	19	15	15	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	0.99
01	1.59
T1	1.98
02	2.38
T2	2.78
03	3.18
T3	3.97
04	4.76
T4	4.96
05	5.56
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

Kr		αn	
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)

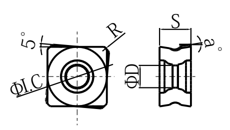
F	0-5°	0-0.10	K
	1-10°	1-0.15	
E	2-15°	2-0.20	P
	3-20°	3-0.25	
T	4-25°	4-0.30	W
	5-30°	5-0.35	
		6-0.40	
S		7-0.45	不标 No mark

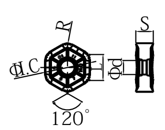
断屑槽型代号 Chipbreaker code

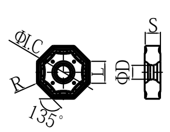
切削方向 Cutting direction

R	右 Right hand
L	左 Left hand
N	双向 Neutral

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				
			ΦI.C	S	r	α			BPS253	BPS321	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		SOGX1206EN-XN	12	4.76	0.8	9°					★			★	☆		☆		☆			

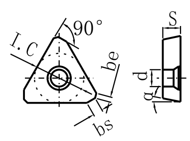
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade					非涂层牌号 Uncoating grade				
			I.C	S	d	r	a°		BPS153	BPS253	BPS321	BPS411	BPG10A	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		HNMU0905ANEN-HD	9.525	3.97	4	1.2	0				☆	★		★	☆		☆					

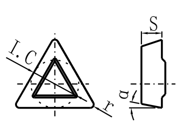
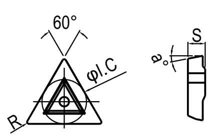
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade					非涂层牌号 Uncoating grade				
			I.C	S	d	r	a°		BPS153	BPS253	BPS321	BPS411	BPG10A	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		ONMU0705ANPN-MJ	7.94	3.5	4	1.5	0°				☆	★		★	☆		☆					
		ONMU08TX08-PM	17.25	6.18	7.5	0.8	0°				☆	★		★	☆		☆					

D 铣削 Milling

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

D4 面铣刀片 Inserts for face milling

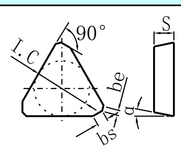
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
									CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.C	S	d	bs	be	α	BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		TPCW2204PDR/L	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	α			BPS153	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°								★			☆		☆			

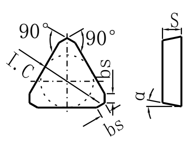
★ 主推荐牌号Recommended grade ☆ 可选牌号Optional grade

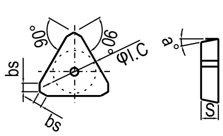
D 铣削 Milling

D4 面铣刀片 Inserts for face milling



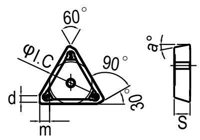
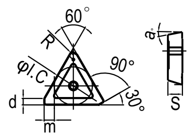
刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade					
		I.C	S	bs	be	α		BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
	TPKR1603PDR	9.525	3.18	1.2	0.7	11°							★	☆		☆		☆			
	TPKR2204PDR	12.7	4.76	1.4	0.7	11°							★	☆		☆		☆			

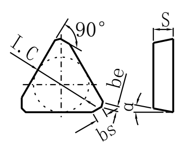
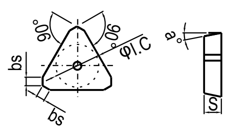




刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended														
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade					
		I.C	S	bs	α			BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
	TPKN1603PPR/L	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°								★	☆		☆		☆			
	TEKN2204PDTR/L	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°								★	☆		☆		☆			
	TEKN2204PDTR/L-D2	12.7	4.76	1.4	20°								★	☆		☆		☆			
	TFAN2203PFR/L-D2	12.7	3.18	2.5	25°								★	☆		☆		☆			

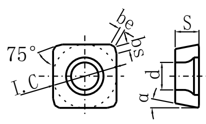
★ 主推荐牌号Recommended grade ☆ 可选牌号Optional grade

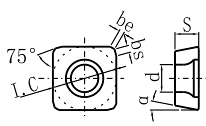
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
									CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.C	S	d	α			BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		TPKN2204PDR-SU	12.7	4.76	1.4	11°								★	☆		☆		☆			
		TPKN2204PDR-3	12.7	4.76	1.4	11°								★	☆		☆		☆			

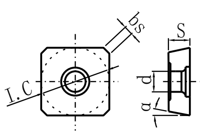
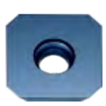
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
									CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.C	S	bs	α			BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		TPAN1103PPN	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°								★	☆		☆		☆			
		TPKN2204PPN	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°								★	☆		☆		☆			

D 铣削 Milling

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

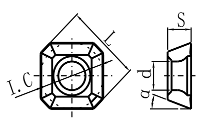
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended														
									CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.C	S	d	a	bs	be	BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		SPCW1504EDR/L	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	BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		SPKW1204EDFR/L	12.7	4.76	5.5	11°	1.4	1						★	☆		☆		☆			
		SPKW1204EDSR/L	12.7	4.76	5.5	11°	1.4	1						★	☆		☆		☆			
		SPKW1204EDTR/L	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		BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		SEEW1504AFN	15.875	4.76	5.5	20°	2.85							★	☆		☆		☆			

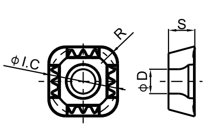
★ 主推荐牌号Recommended grade ☆ 可选牌号Optional grade

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													
								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	α	L		BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
	SEKT1204AESN	12.7	4.76	5.5	20°	15.23							★	☆		☆		☆			

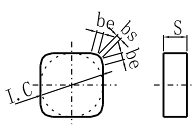
刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
		I.C	S	d	α	R		BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
	SEET12T3-DR	12.7	4.76	5.5	20°	2.4							★	☆		☆		☆			

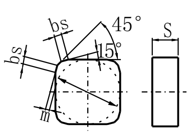


刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
		I.C	S	d	α	R		BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
	SDET120408-RF	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

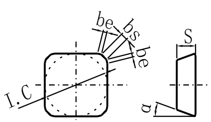
D4　面铣刀片 Inserts for face milling

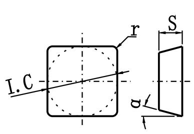
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
									CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.C	S	a	bs	be		BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		SNAN1204ANN	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							★	☆		☆		☆			

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	m			BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	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								★	☆		☆		☆			

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

D4 面铣刀片 Inserts for face milling

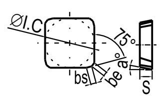
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
									CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.C	S	a	bs	be		BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		SPCN1204APN	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								★	☆		☆		☆			

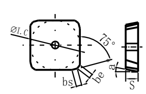
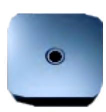
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
									CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.C	S	a	r			BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		SPGN090304	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				★				★	☆		☆		☆			

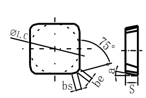
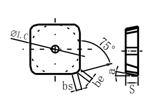
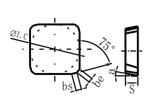
D
铣削 Milling

★ 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													
									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		BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		SPKN1204ZETR/L	12.7	4.76	11°	1.93	0.6			★				★	☆		☆		☆			
		SPCN1504ZETR/L	15.875	4.76	11°	2	1			★				★	☆		☆		☆			
		SPKN1504ZEFR/L	15.875	4.76	11°	2	0.8			★				★	☆		☆		☆			

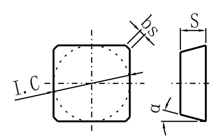
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
									CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.C	S	bs	m			BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		SPKN1504EDL-D2	15.875	4.76	11°	1.4				★				★	☆		☆		☆			

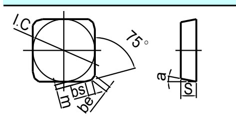
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
									CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.C	S	a	bs	be		BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		SPKN1203EDFR/L	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				★				★	☆		☆		☆			

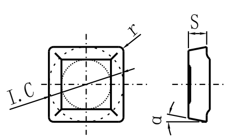
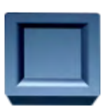
D
铣削 Milling

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

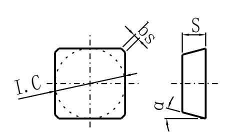
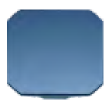
D4 面铣刀片 Inserts for face milling

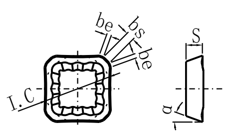
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
									CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.C	S	a	bs			BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		SDHW0903AEFN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

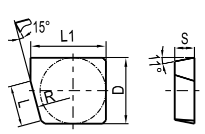
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
									CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.C	S	a	bs			BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		SPAN1203EDR/L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

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

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	α	L			BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		SEMN1203AFTN	12.7	3.18	20°	15.7				★				★	☆		☆		☆			

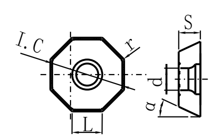
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.C	S	a	bs	be		BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		SEKR1203AZ-YM	12.7	3.18	20°	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			★				★	☆		☆		☆			

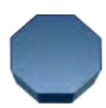
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.C	S	a	R	L1		BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		SPEX1203EDR/L	12.7	3.18	11°	500	15							★	☆		☆		☆			
		SPKX1504EDFR/L	15.88	4.76	11°	500	19.37							★	☆		☆		☆			

D
铣削
Milling

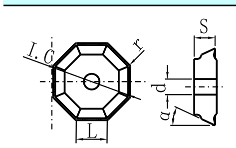
★ 主推荐牌号Recommended grade　☆ 可选牌号Optional grade

D4 面铣刀片 Inserts for face milling

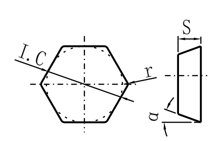


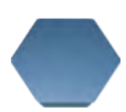


刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
		L	I.C	S	r	α		BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
	OPHN0504ZZN	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	α	BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
	OFER070405NN	7.46	18	4.76	2.3	0.5	25°			★			★	☆		☆		☆			

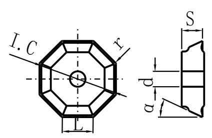


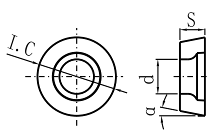


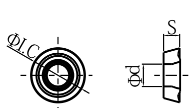
刀片外形 Inserts shape	型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
								CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
		ΦI.C	S	r	α			BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
	HEEN532	15.875	4.76	0.8	20°					★			★	☆		☆		☆			
	HDEN0625	6	2.48		15°					★			★	☆		☆		☆			

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

D4 面铣刀片 Inserts for face milling

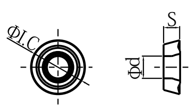
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
									CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			L	ΦI.C	S	Φd	r	α	BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		OFMT05T305NN	5.26	12.7	3.97	4.4	0.5	25°						★	☆		☆		☆			
		OFMT070405NN	7.46	18	4.76	5.5	0.5	25°						★	☆		☆		☆			

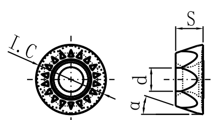
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
									CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			ΦI.C	S	Φd	α			BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		RPMW0803MOE	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°								★	☆		☆		☆			

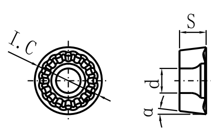
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
									CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			ΦI.C	S	Φd	α			BPS253	BPS321	BPS411	BPG05B	BPG118	BPG218	BPG318	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		RCHT0803MO-SM	08	3.18	3.4	7°					☆		☆	★	☆							
		RCHT1204MO-MM	12	4.76	4.4	7°					☆		☆	★	☆							
		RCHT1606MO-ML	16	6.35	4.4	7°					☆		☆	★	☆							

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

D4 面铣刀片 Inserts for face milling

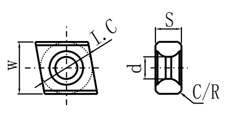
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended													
									CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			ΦI.C	S	Φd	α			BPS153	BPS253	BPS411	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		RDMT0802MO-V1	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°								★	☆		☆		☆		☆	

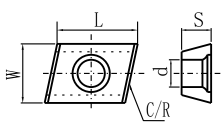
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended												
									CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			ΦI.C	S	Φd	α			BPS153	BPS253	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		RPMT0803MOE-BJS	8	3.18	3.4	11°							★	☆		☆		☆		☆	
		RPMT10T3MOE-BJS	10	3.97	4.4	11°							★	☆		☆		☆		☆	
		RPMT1204MOE-BJS	12	4.76	4.4	11°							★	☆		☆		☆		☆	

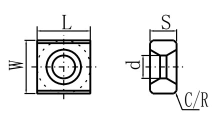
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended												
									CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			ΦI.C	S	Φd	α			BPS153	BPS253	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		RCGT0602MO-LHC	6	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		BPS153	BPS253	BPS321	BPS411	BPG05B	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			☆				★	★			★			☆

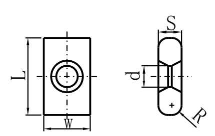
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）					材质推荐Material recommended												
								CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade				
			L	W	S	d	C/R	BPS153	BPS253	BPS321	BPS411	BPG05B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
		CDE323L05	12.7	9.525	4.76	4.5	C1.0		☆				★	★			★			☆
		CDE323L05	12.7	9.525	4.76	4.5	C1.0		☆				★	★			★			☆

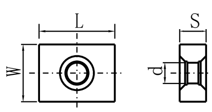
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐Material recommended												
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade				
			L	W	S	d	C/R		BPS153	BPS253	BPS321	BPS411	BPG05B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
		LNE0904TL-Φ4.1	9.53	9.53	4.76	4.1	C0.5			☆				★	★			★			☆

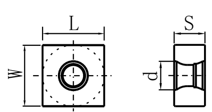
D 铣削 Milling

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

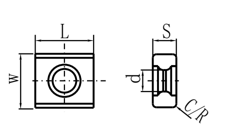
D5　重型铣刀片　Inserts for heavy-cutting milling

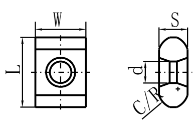
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐Material recommended												
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade				
			L	W	S	d	C/R		BPS153	BPS253	BPS321	BPS411	BPG05B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
		LNE434-02	19.05	14.29	6.35	5.4	C1.0			☆				★	★			★			☆
		N18404-JH	15.875	12.7	7.94	5.5	C0.4			☆				★	★			★			☆

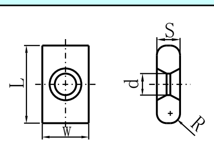
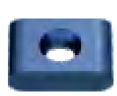
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐Material recommended												
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade				
			L	W	S	d			BPS153	BPS253	BPS321	BPS411	BPG05B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
		N18-1	15.875	12.7	7.94	5.5				☆				★	★			★			☆
		L19.05x14.3x6.35-R7-Φ5.35	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			BPS153	BPS253	BPS321	BPS411	BPG05B	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				☆				★	★			★			☆

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

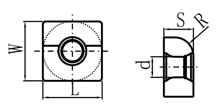
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐Material recommended												
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade				
			L	W	S	Φd1	R		BPS153	BPS253	BPS321	BPS411	BPG05B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
		LND424-DA	13	12.7	6.35	6	2.0			☆				★	★			★			☆
		N136	15.875	12.7	7.94	5.5	2.0			☆				★	★			★			☆

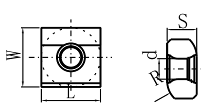
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐Material recommended												
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade				
			L	W	S	d	C/R		BPS153	BPS253	BPS321	BPS411	BPG05B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
		SNE1507-4R3	15.88	15.88	7.94	5.5	R3.0			☆				★	★			★			☆
		LNC305-YT	17.46	12.7	7.15	5.5	R5.0			☆				★	★			★			☆

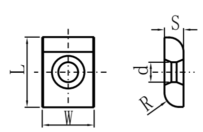
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐Material recommended												
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade				
			L	W	S	d	R		BPS153	BPS253	BPS321	BPS411	BPG05B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
		LNE323-02	15.875	9.525	4.76	4.4	2			☆				★	★			★			☆
		LND624-DA	15.5	12.7	7.35	6	2.80			☆				★	★			★			☆

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

D5 重型铣刀片 Inserts for heavy-cutting milling

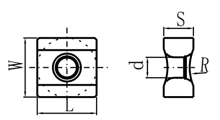
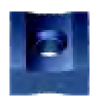
刀片外形 Insert shape	型号 Type	基本尺寸 Dimension（mm）					材质推荐Material recommended												
							CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade				
		L	W	S	d	R	BPS153	BPS253	BPS321	BPS411	BPG05B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
 	SN155R10-P50	15.875	15.875	7.94	5.5	10		☆				★	★			★			☆
	SN55R8-EB50	16.875	16.875	7.94	5.5	8		☆				★	★			★			☆

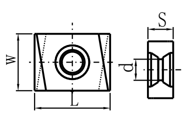
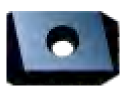
刀片外形 Insert shape	型号 Type	基本尺寸 Dimension（mm）					材质推荐Material recommended												
							CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade				
		L	W	S	d	R	BPS153	BPS253	BPS321	BPS411	BPG05B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
 	SN55R6.5	15.875	15.875	7.94	5.5	6.5		☆				★	★			★			☆
	SN55R40	15.875	15.875	7.94	5.5	40		☆				★	★			★			☆

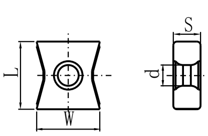
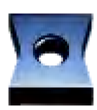
刀片外形 Insert shape	型号 Type	基本尺寸 Dimension（mm）					材质推荐Material recommended												
							CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade				
		L	W	S	d	R	BPS153	BPS253	BPS321	BPS411	BPG05B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
 	GLOL20021R5	15.28	12.7	7.94	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

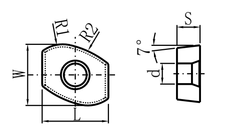
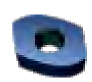
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐Material recommended												
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade				非涂层牌号 Uncoating grade				
			L	W	S	d	R		BPS153	BPS253	BPS321	BPS411	BPG05B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
		SN55RK13-ING	15.875	15.875	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												
									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			BPS153	BPS253	BPS321	BPS411	BPG05B	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												
									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			BPS153	BPS253	BPS321	BPS411	BPG05B	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				☆				★	★			★			☆
		LNKX1506PN-N-MM	15	13.9	6	4.6				☆				★	★			★			☆

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

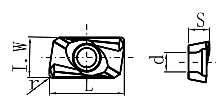
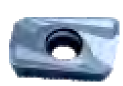
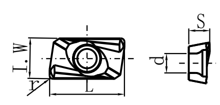
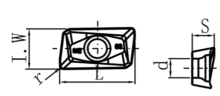
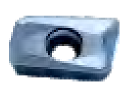
D5　重型铣刀片　Inserts for heavy-cutting milling

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				
			L	W	S	d	R1	R2	BPS153	BPS253	BPS321	BPS411	BPG05B	BPG20B	BPG30B	BPG40A	BP20	BP35	BK10	BU810	BU820
		DIN7168-M	15.875	14.53	6	5.4	8.0	22		☆				★	★			★			☆

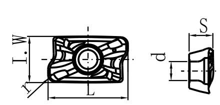
D 铣削 Milling

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

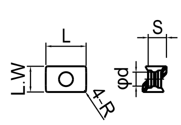
D8 方肩铣刀片 Inserts for square shoulder milling

刀片外形 Insert shape		型号 Type	I.W	L	S	Φd	r		BPS153	BPS253	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
			基本尺寸 Dimension（mm）						CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
		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-H8	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						★	☆		☆					

材质推荐 Material recommended

刀片外形 Insert shape		型号 Type	I.W	L	S	Φd	r		BPS153	BPS253	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
			基本尺寸 Dimension（mm）						CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
		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						★	☆		☆					

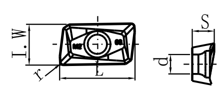
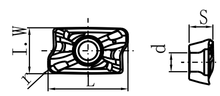
材质推荐 Material recommended

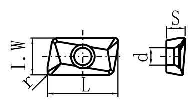
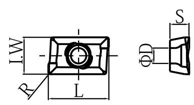
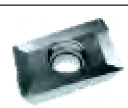
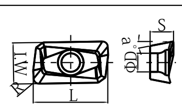
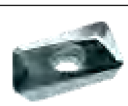
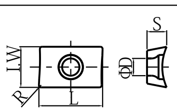
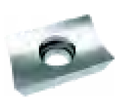
刀片外形 Insert shape		型号 Type	I.W	L	S	Φd	r		BPS153	BPS253	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
			基本尺寸 Dimension（mm）						CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
		GNMU110605ZZR-M1	7.08	11	5.18	3.8	0.5					☆	★	☆		☆				★	

材质推荐 Material recommended

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

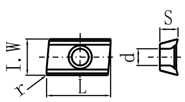
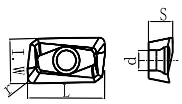
D8 方肩铣刀片 Inserts for square shoulder milling

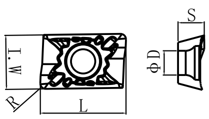
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended												
									CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.W	L	S	Φd	r		BPS153	BPS253	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		BR390-11T308-PM	6.9	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						★	☆		☆					

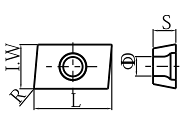
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended												
									CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.W	L	S	Φd	r		BPS153	BPS253	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		APKT11T304-LHC	6.5	12.24	3.6	2.8	0.4					☆		☆		☆				★	
		APKT11T308-LHC	6.5	12.24	3.6	2.8	0.8					☆		☆		☆				★	
		APKT1035PDER-LH	6.7	11	3.5	2.8	0.4					☆		☆		☆				★	
		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					☆		☆		☆				★	

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

D8　方肩铣刀片　Inserts for square shoulder milling

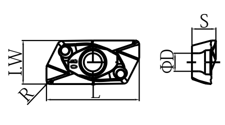
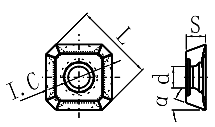
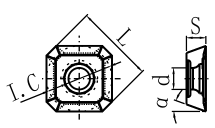
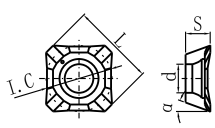
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended												
									CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.W	L	S	Φd	r		BPS153	BPS253	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		APKT160402FR-LHC	9.8	16.88	4.76	4.4	0.2					☆		☆		☆				★	
		APKT160404PDFR-LHC	9.8	16.88	4.76	4.4	0.4					☆		☆		☆				★	
		APKT160408PDFR-LHC	9.8	16.88	4.76	4.4	0.8					☆		☆		☆				★	
		APKT160416PDFR-LHC	9.8	16.88	4.76	4.4	1.6					☆		☆		☆				★	
		APKT16T4PDFR-LH1C	9.5	17	4.96	4.4	0.8														
		APKT1652PDFR-LH2C	9.8	16.88	4.76	4.4	3.2					☆		☆		☆				★	

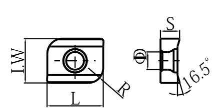
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended												
									CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.W	L	S	Φd	r		BPS153	BPS253	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		LDHT1504PDFR-LHC	9.9	15.2	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												
									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	Φd	r		BPS153	BPS253	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		APKW160404	9.525	16.8	4.76	4.4	0.4					☆		☆		☆				★	

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

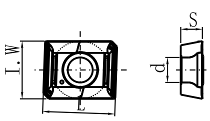
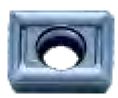
D8 方肩铣刀片 Inserts for square shoulder milling

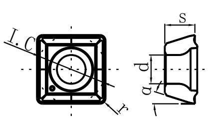
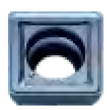
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended												
									CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.W	L	S	Φd	r		BPS153	BPS253	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		ADCT140408PDER-LD	8.2	17.47	4.5	3.4	0.8					☆		☆		☆				★	
		ADPT140420PDER-HD	8.15	17.47	4.5	3.4	2.0					☆		☆		☆				★	
		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°						☆		☆		☆				★	
		SEKT1204AFFN-LH2	12.7	4.76	5.5	20°	16					☆		☆		☆				★	
		SDHT1204AEFN-LH2	12.7	4.76	5.5	15°	15.76					☆		☆		☆				★	
		SEKT1204AFFN-LH2C	12.7	4.76	5.5	20°	16					☆		☆		☆				★	
		SDHT1204AEFN-LH2C	12.7	4.76	5.5	15°	15.76					☆		☆		☆				★	

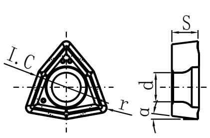
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）					材质推荐 Material recommended												
								CVD涂层牌号 CVD coating grade		PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			I.W	L	S	Φd	r	BPS153	BPS253	BPG05B	BPG108	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		TMR/L331.1A-155015-WM	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				★		☆		☆					

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

D6 浅孔钻 Inserts for shallow hole drilling

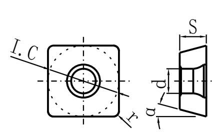
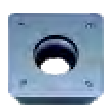
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended									
									CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoating grade			
			I.W	L	S	d			BPS251	BPS253		BPU200	BPG20B	BPG30B	BP35	BK10	BU810	BU820
		APMT1504T-WT	15.88	12.7	4.76	5.5			★	★			★					

刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended									
									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	d	r	a°		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°		★				★				☆	

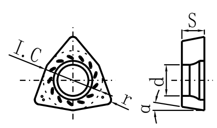
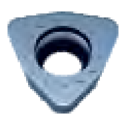
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended									
									CVD涂层牌号 CVD coating grade			PVD涂层牌号 PVD coating grade			非涂层牌号 Uncoating grade			
			ΦI.C	S	Φd	R	α		BPS251	BPS253		BPU200	BPG20B	BPG30B	BP35	BK10	BU810	BU820
		WCGX030204-ZV	5.56	2.38	2.5	0.4	7°		★	★			★			☆	☆	
		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

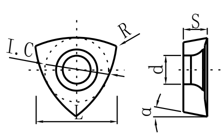
仿形铣刀 Inserts for profile milling

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	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
	SDMT09T312-DM	9.525	3.97	4	1.2	15°				★		★	☆		☆					
	SDMT120412-DM	12.7	4.76	4.4	1.2	15°				★		★	☆		☆					

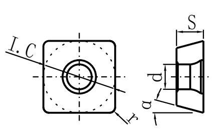
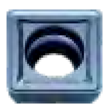
刀片外形 Insert shape	型号 Type	基本尺寸 Dimension（mm）					材质推荐 Material recommended CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade					非涂层牌号 Uncoating grade				
		I.C	S	d	r	a°	BPS153	BPS253	BPS321	BPS411	BPG10A	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
	WPGT050315ZSR	7.94	3.5	4	1.5	11°				★		★	☆		☆					
	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°				★		★	☆		☆					

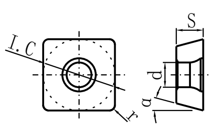



刀片外形 Insert shape	型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
		ΦI.C	S	Φd	L	R	a°	BPS153	BPS253	BPS303	BPC102	BPG05B	BPG10A	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
	ZDGW08T2R10	6.75	2.78	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			★	☆			★	☆		☆		☆			

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

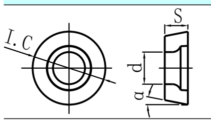
D7 仿形铣刀 Inserts for profile milling

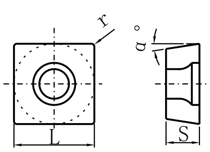
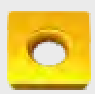
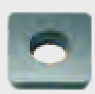
刀片外形 Insert shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended														
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade						非涂层牌号 Uncoating grade				
			ΦI.C	S	Φd	L	R	a°	BPS153	BPS253	BPS303	BPC102	BPG05B	BPG10A	BPG20B	BPG308	BPG25B	BPG30B	BP20	BP35	BK10	BU810	BU820
		SPMT060304	6.35	3.18	2.8	6.35	0.4	11°			★	☆			★	☆		☆		☆			
		SPMT120408	12.7	4.76	5.5	12.7	0.8	11°			★	☆			★	☆		☆		☆			
		SDMT090308	9.525	3.18	4.4	9.525	0.8	15°			★	☆			★	☆		☆		☆			

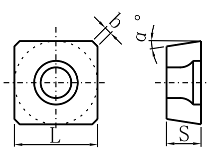
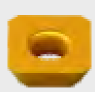
刀片外形 Inserts shape		型号 Type	基本尺寸 Dimension（mm）						材质推荐 Material recommended															
									CVD涂层牌号 CVD coating grade				PVD涂层牌号 PVD coating grade					金属陶瓷 Cermet		非涂层牌号 Uncoating grade				
			I.C	S	d	r	a°		BPS153	BPS253	BPS303	BPC102	BPU106	BPU200	BPU206	BPG208	BPG308	BN201	BN301	BP20	BP35	BK10	BU810	BU820
		SPMT120408	12.7	4.76	5.5	0.8	11°		★	★	★	★												

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

D13 其他 Others

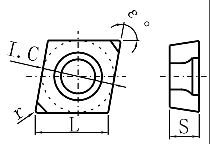
刀片外形 Insert shape		型号Type	基本尺寸Dimension（mm）			
			I.C	S	a	d
		P22215-00	8	2.38	14°	3.4
		P22215-14	12	4.76	11°	5.5

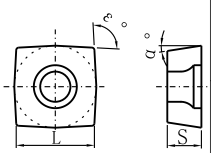
刀片外形 Insert shape		型号Type	基本尺寸Dimension（mm）			
			L	S	a°	r
		P2801-0	9.52	3.18	14	0.8
		P2808-1	12.7	4.76	11	0.8
		P2809-1	12.7	4.76	11	0.8
		P28415-00	6.35	3.18	11	0.4
		P28415-0	9.52	3.18	14	0.8
		P28495-1	12.7	4.76	11	0.8
		P2800-0	9.52	3.18	11	0.8
		P2800-2	15.88	4.76	11	1.2
		P2816-1	12.7	4.76	11	C0.7

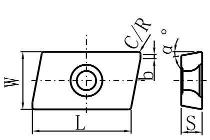
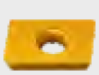
刀片外形 Insert shape		型号Type	基本尺寸Dimension（mm）			
			L	S	a°	b
		P2894-1	12.7	4.76	20	2
		P2894-2	15.88	4.76	20	2.1
		P2803-1R	12.7	4.76	11	1.4
		P2803-1L	12.7	4.76	11	1.4
		P28451-1	1.27	4.76	11	1.4

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

D13 其他 Others

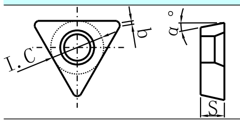
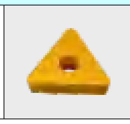
刀片外形 Insert shape		型号Type	基本尺寸Dimension（mm）					
			I.C	L	S	a°	ε°	r
		P29221-04	6.35	6.45	2.38	7	80	0.4
		P29221-14	9.525	9.67	3.97	7	80	0.4
		P29223-02	6.35	6.45	2.38	7	80	0.2
		P29223-12	9.525	9.525	3.97	7	80	0.2

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

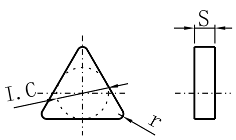
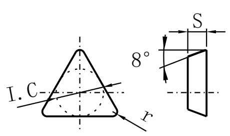
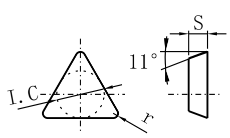
刀片外形 Insert shape		型号Type	基本尺寸Dimension（mm）					
			L	W	S	a°	C/R	b
		P2700-0	8.3	8.3	3.18	11	R0.5	
		P2700-3R	15	9.52	3.18	14	R0.8	
		P2700-3L	15	9.52	3.18	14	R0.8	
		P2703-3R	15	9.52	3.18	14		1.4
		P2703-4R	20	12.7	4.76	11		1.5
		P2706-3R	15.88	12.7	4.76	11	C1.1	
		P2706-4R	20	12.7	4.76	11	C0.8	
		P2706-4L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

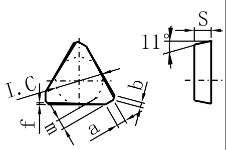
D13 其他 Others

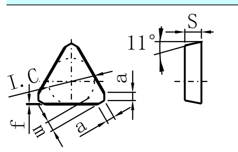
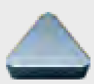
刀片外形 Insert shape		型号Type	基本尺寸Dimension（mm）			
			I.C	S	a°	b
		P2603-2	9.52	4.76	11	1.2
		P2603-3	12.7	4.76	11	1.2

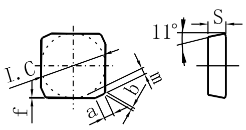
D14 机夹刀片 Clamping system inserts

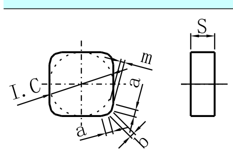
刀片外形 Insert shape		型号Type	基本尺寸Dimension（mm）		
			I.C	S	r
		304050	4.0±0.05	2.5±0.13	0.5
		307050	7.0±0.05	3.0±0.13	0.5
		310050	10.0±0.05	3.5±0.13	0.5
		313050	13.0±0.08	4.5±0.13	0.5
		316050	16.0±0.10	5.5±0.13	0.5
		316100	16.0±0.10	5.5±0.13	1
		307058	7.0±0.05	3.0±0.13	0.5
		310058	10.0±0.05	3.5±0.13	0.5
		313058	13.0±0.05	4.5±0.13	0.5
		313108	13.0±0.08	4.5±0.13	1
		316058	16.0±0.10	5.5±0.13	0.5
		316108	16.0±0.10	5.5±0.13	1
		3070511	7.0±0.05	3.0±0.13	0.5
		3100511	10.0±0.05	3.5±0.13	0.5
		3130511	13.0±0.05	4.5±0.13	0.5
		3131011	13.0±0.08	4.5±0.13	1
		3160511	16.0±0.10	5.5±0.13	0.5
		3161011	16.0±0.10	5.5±0.13	1

D14 机夹刀片 Clamping system inserts

刀片外形 Insert shape		型号Type		基本尺寸Dimension（mm）					
		右	左	I.C±0.025	S±0.025	m±0.013	a	b	f
		3XH06Y	3XH06Z	6	2.8	1.651	0.8	0.2	0.1
		3XH08Y	3XH08Z	8	3.5	2.23	1	0.3	0.1
		3XH10Y	3XH10Z	10	3.5	2.756	1.2	0.5	0.2
		3XH13Y	3XH13Z	13	4.5	3.669	1.4	0.7	0.4
		3XH16Y	3XH16Z	16	5.5	4.528	1.6	1	0.6

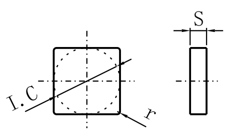
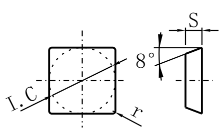
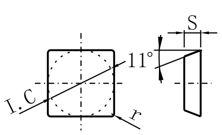
刀片外形 Insert shape		型号Type	基本尺寸Dimension（mm）				
			I.C±0.025	S±0.025	m±0.013	a	f
		3XH07	7	3	1.696	1	0.2
		3XH10	10	3.5	2.621	1.2	0.2
		3XH13	13	4.5	3.548	1.4	0.4
		3XH16	16	5.5	4.469	1.6	0.6

刀片外形 Insert shape		型号Type		基本尺寸Dimension（mm）					
		右	左	I.C±0.025	S±0.025	m±0.013	a	b	f
		4XH13Y	4XH13Z	13	3.5	0.926	1.4	1	0.2
		4XH16Y	4XH16Z	16	4.5	1.263	1.4	1	0.4
		4XH19Y	4XH19Z	19	5.5	1.513	1.6	1.2	0.4
		4XH25Y	4XH25Z	25	7	2.186	1.6	1.2	0.6

刀片外形 Insert shape		型号Type	基本尺寸Dimension（mm）				
			I.C±0.025	S±0.025	m±0.013	a	b
		4X13	13	4.5	0.834	1.4	1
		4X16	16	4.5	1.171	1.4	1
		4X19	19	5.5	1.408	1.6	1.2
		4X25	25	7	2.082	1.6	1.2

D 铣削 Milling

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

刀片外形 Insert shape		型号Type	基本尺寸Dimension（mm）		
			I.C	S	r
		410050	10±0.05	3.5±0.13	0.5
		413050	13±0.08	4.5±0.13	0.5
		413100	13±0.08	4.5±0.13	1
		413200	13±0.10	4.5±0.13	2
		416050	16±0.10	4.5±0.13	0.5
		416100	16±0.10	4.5±0.13	1
		416200	16±0.10	4.5±0.13	2
		419100	19±0.10	5.5±0.13	1
		419200	19±0.10	5.5±0.13	2
		410058	10±0.05	3±0.13	0.5
		413058	13±0.08	3.5±0.13	0.5
		413108	13±0.08	3.5±0.13	1
		416058	16±0.10	4.5±0.13	0.5
		416108	16±0.10	4.5±0.13	1
		416158	16±0.10	4.5±0.13	1.5
		419108	19±0.10	5.5±0.13	1
		419208	19±0.10	5.5±0.13	2
		420108	20±0.13	7.0±0.13	1
		4100511	10±0.05	3±0.13	0.5
		4130511	13±0.08	3.5±0.13	0.5
		4130511T	13±0.08	4.5±0.13	0.5
		4131011	13±0.08	3.5±0.13	1
		4131011T	13±0.08	4.5±0.13	1
		4160511	16±0.10	4.5±0.13	0.5
		4161011	16±0.10	4.5±0.13	1
		4161511	16±0.10	4.5±0.13	1.5
		4191011	19±0.10	5.5±0.13	1
		4192011	19±0.10	5.5±0.13	2
		4251011	25±0.13	7.0±0.13	1
		4252011	25±0.13	7.0±0.13	2

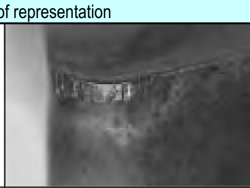
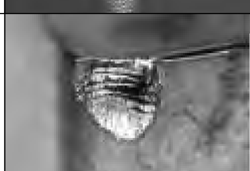
D15 铣削技术资料 Milling Technical information

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

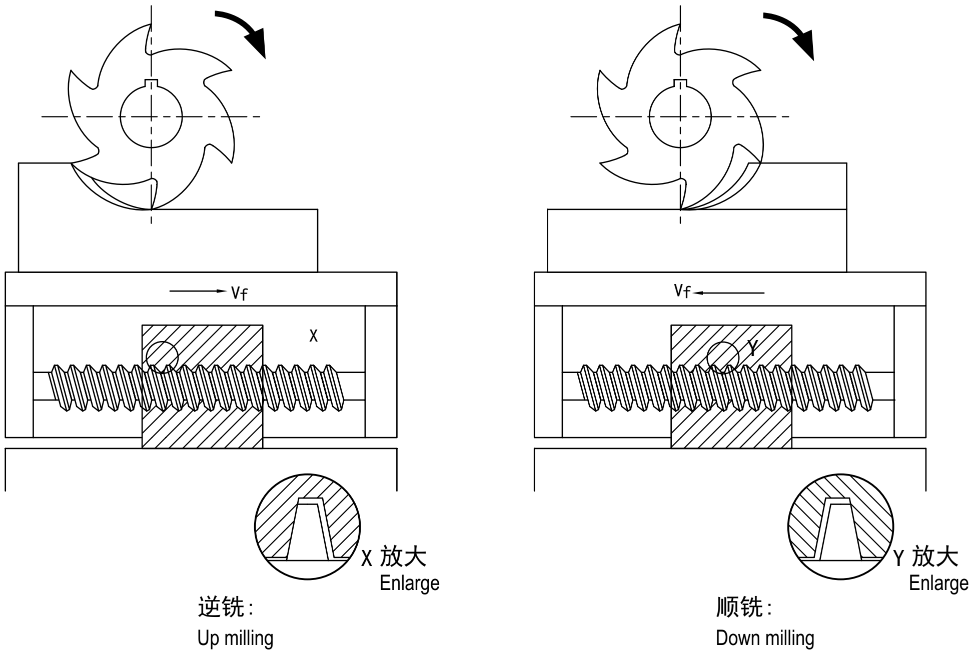
对策与检查要点 Main points of solution and inspection / 故障内容 Failure description			刀具材料选择 Selection of tool material		切削条件 Cutting condition					刀具形状 Tool shape								机床装夹 Machine tool clamping		
			硬度更高的材料 higher hardness Material	韧性好的材料 Material with perfect toughness	切削速度 Cutting speed	进给 Feed rate	切深 Cutting 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	动力、机床间隙 Power, gap
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		✓							↑	↑			✓	✓	✓	✓	✓	✓
	热冲击破损 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								↓		↑								
	积屑瘤粘结 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	✓		↓	↑	↑		✓			↑			修光刃调整 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								↓			↑	✓						

D15 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质 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质 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	改用硬度更高的材质 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质 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 改用韧性更大的材质 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	改用韧性更大的材质 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 Increas the radius of the cutter tip The use of rigid and better tools
热龟裂性崩损 Thermal cracking damage		由热循环而崩损 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 Blade low toughness. 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.

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。

Doun 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 extend , 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 extend 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.

D15 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)
疏 齿 Coarse pitch  不等齿距设计 Differential pitch	密 齿 Close pitch 	超密齿 Extra close pitch 
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.	一般用途铣削和多种混合生产。 General milling function and multiple mixed productions	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.

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，这有助与减少径向力、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 entrying 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	$h_{ex}=f_z \times \sin kr$
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	$h_{ex}=\frac{\sqrt{iC^2 \times (iC-2a_p)^2}}{iC} \times f_z$

D
铣削 Milling

D15 铣削技术资料 Milling Technical information

e 通用公式 General formula

Vc : 切削速度（m/min） cutting speed(m/min)	Vf : 工作台进给量（进给速度）（mm/min） feed rate of worktable (feed speed)(mm/min)	Q : 金属去除率（cm^3/min） metal removal rate(cm3/min)
Dc : 铣刀公称直径（mm） nominal diameter of milling tool(mm)	fz : 每齿进给量（mm/z） feed rate per tooth(mm/z)	fn : 每转进给量（mm/rev） feed rate per revolution (mm/rev)
n : 主轴转速（rev/min） spindle speed(rev/min)	π : 圆周率≈3.14 circumference ratio≈3.14	L : 实际走刀距离(mm) Real cutting distance(mm)
Zn : 刃数 number of teeth	Tc : 加工时间（min） machining time(min)	

● 切削速度 Cutting speed

$$Vc = \frac{\pi \times D_c \times n}{1000} \ (m/min)$$

● 主轴转速 Spindle speed

$$n = \frac{1000 \times Vc}{\pi \times D_c} \ (rev/min)$$

● 工作台进给量（进给速度）(mm/min)
Feed rate of worktable (feed speed)

$$Vf = fz \times n \times z_n$$

● 每齿进给量 Feed rate per tooth

$$fz = \frac{Vf}{n \times Z_n} \ (mm/z)$$

● 每转进给量 Feed rate per revolution

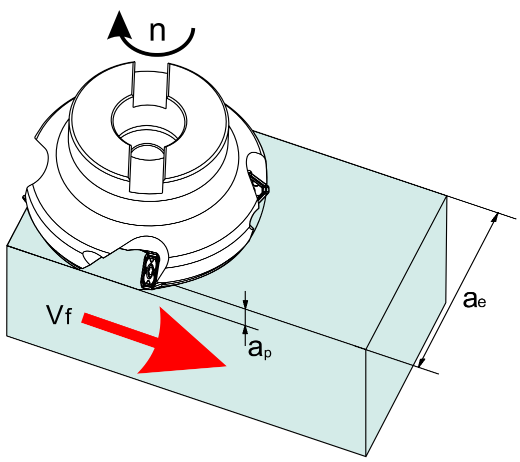
$$fn = \frac{Vf}{n} \ (mm/rev)$$

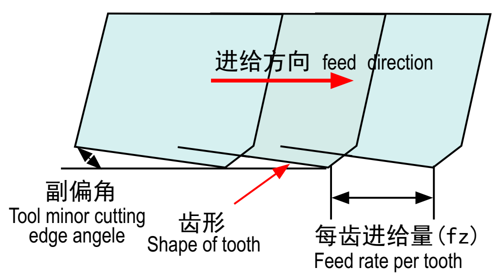
● 加工时间 Machining time

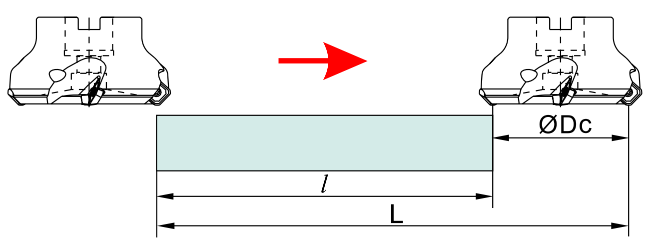
$$Tc = \frac{L}{Vf} \ (min)$$

● 金属去除率 Metal removal rate

$$Q = \frac{a_p \times a_e \times V_f}{1000} \ (cm^3/min)$$



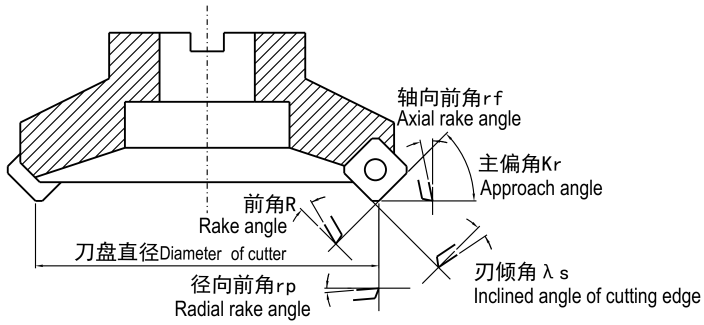




D15 铣削技术资料 Milling Technical information

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

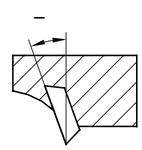
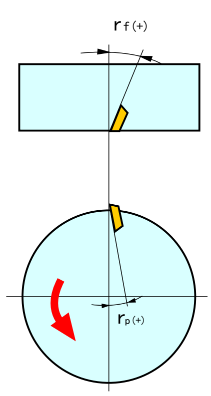
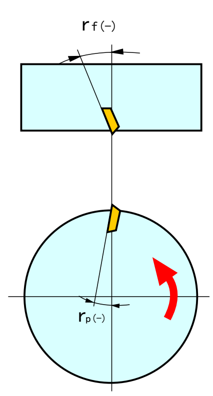
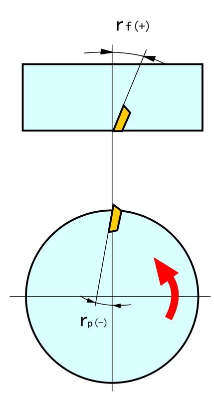
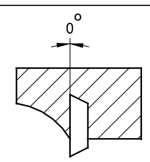
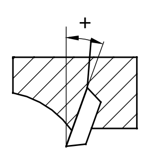
平面铣刀主要角度
Main angles of face mills



平面铣刀主要角度标注 Main angles of face mills

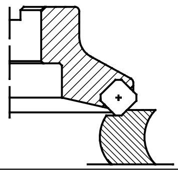
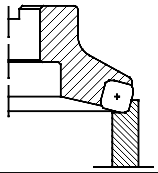
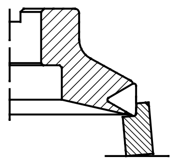
名称 Designation	作用 Function	效果 Effect		
轴向前角 r_f Axial rake angle rf	决定排屑方向 Determining the chip direction	角度为负：排屑性能好 negative angle, excellent capability of chip removal		
径向前角 r_p Radial rake angle rp	决定切削轻快与否 Determining whether the cutting is light and fast or not	角度为正：切削性能好 Positive angle, good cutting performance		
主偏角 Kr Approach angle Kr	决定切屑厚度 Determining the chip direction thickness	Kr↑，切屑厚度↑；Kr↓，切屑厚度↓； Kr↑，chip thickness↑；Kr↓，chip thickness↓		
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 λs 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

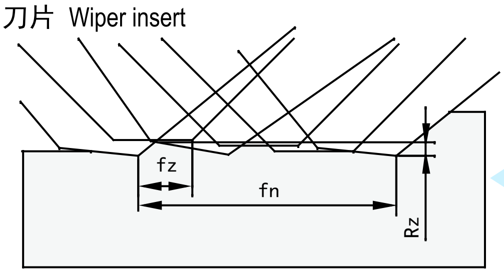
		双正前角 Double positivec	双负前角 Double negative	一正一负前角 One positive, one negative
负型前角 Negative rake angle				
零度前角 0° rake angle				
正型前角 Positive rake angle				
轴向前角 r_f Axial rake angle rf		+	—	+
径向前角 r_p Radial rake angle rp		+	—	—
适合加工材料 Applicable material machined	P	√		√
	M	√		√
	K		√	√
	N	√		
	S	√		√

D15 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



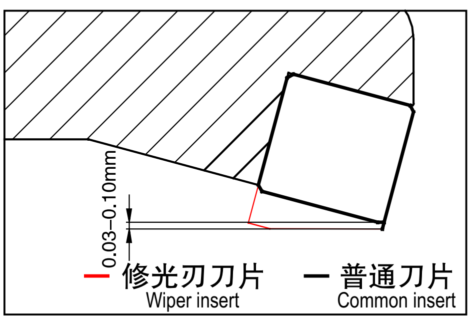
由于刀体和刀片存在制造误差，所以，刀具存在端刃的端面圆跳动和圆周刃的径向圆跳动，端刃的端面圆跳动将导致已加工表面粗糙度Ra值升高，使表面质量达不到要求。

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

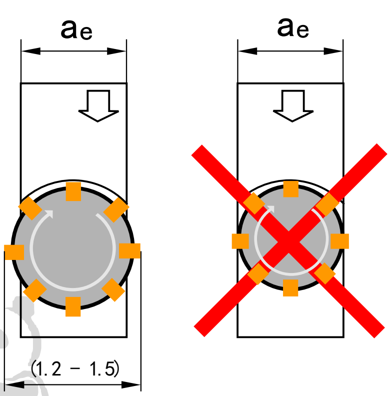
用法
usage



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



Dc ： 刀具切削直径 Tool cutting drameter
ae： 切削宽度 Cutting width

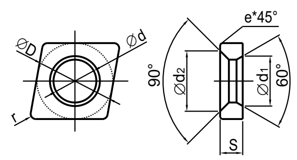
一般来说，切削宽度与刀具的切削直径与切宽的关系为：Dc=（1.2-1.5）ae.
在实际加工中尽量避免刀具中心与工件中心相重合

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

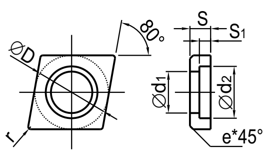
D 铣削 Milling

E 刀垫 Shim

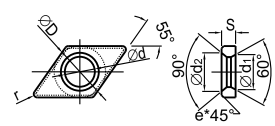
E1 C*A

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

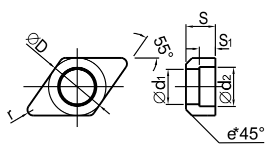
E2 C*B

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	

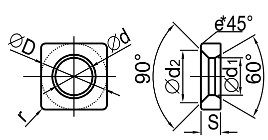
E3 D*A

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

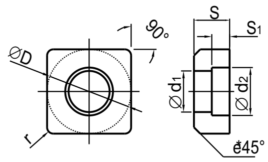
E4 D*B

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	
	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	DNMM/G15
	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	
	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

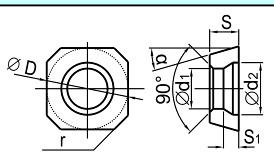
刀片基本形状	产品型号	D	S	d	r	d1	d2	e	适用刀片
	S09A	8.53	3.18	4.6	0.4	5.6	6.6	0.2	SNMM/G09
	S12A	11.7	3.18	6.1	0.8	7.3	8.5	0.2	SNMM/G12
	S15A	14.88	4.76	7.1	1.2	8.5	10	0.2	SNMM/G15
	S19A	18.05	6.35	8.7	1.6	10.3	11.5	0.2	SNMM/G19
	S22A	21.23	6.35	8.7	1.6	10.3	11.5	0.2	SNMM/G22
	S25A	24.4	6.35	10.1	2.4	12	13	0.2	SNMM/G25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



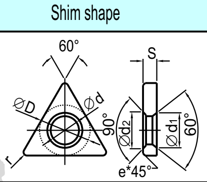
刀垫外形 Shim shape	产品型号Type	D	S	r	d1	d2	S1	e	适用刀片 applicative inserts
	S09B	8.53	3.18	0.4	5.6	7	1.5	0.2	SNMM/G09
	S12B	11.7	3.18	0.8	6.6	8	1.5	0.2	SNMM/G12
	S15B	14.88	4.76	1.2	7.6	9	2	0.2	SNMM/G15
	S19B	18.05	6.35	1.6	8.6	10	2	0.2	SNMM/G19
	S22B	21.23	7.93	1.6	9.6	11	2.5	0.2	SNMM/G22
	S25B	24.4	7.93	2.4	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	
	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	
	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	SNMM/G15
	S1504B	15.48	4.76	0.8	9.85	10.9	2.65	0.5	

E7 SE*



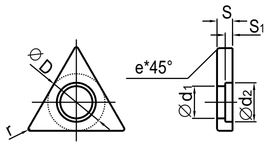
刀垫外形 Shim shape	产品型号Type	D	S	r	d1	d2	S1	α	适用刀片 applicative inserts
	SEF12	10.5	3	2X45°	5.4	6.7	1.2		SEKT12
	SE445	10.3	3.18	2.5x45°	5.1	6.6	1.68	16°	SEKT12

E8 T*A

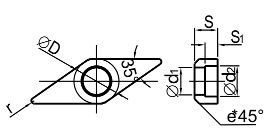


刀垫外形 Shim shape	产品型号Type	D	S	d	r	d1	d2	e	适用刀片 applicative inserts
	T16A	8.53	3.18	4.6	0.4	5.6	6.6	0.2	TNMM/G16
	T22A	11.7	3.18	6.1	0.8	7.3	8.5	0.2	TNMM/G22
	T27A	14.88	4.76	7.1	1.2	8.5	10	0.2	TNMM/G27

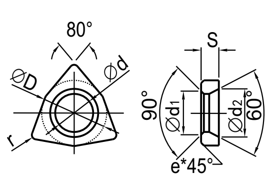
E9 T*B

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

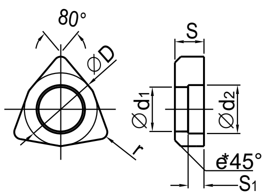
刀垫外形 Shim shape	产品型号Type	D	S	r	d1	d2	S1	e	适用刀片 applicative inserts
	IVSN-322	9.14	3.18	0.79	5.94	6.63	1.85	0.5	VNMM/G16**08
	IVSN-433	12.32	4.76	1.57	7.52	8.2	2.59	0.5	VNMM/G22**12
	SMV-321	8.3	3.2	0.8/0.2	5.4	6.5	1.7	0.5	
	MSV-321	8.6	3.2	0.8/0.2	5.6	6.6	1.5	0.5	
	SV1603	9	3.18	0.8	5.95	7.05	1.75	0.5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

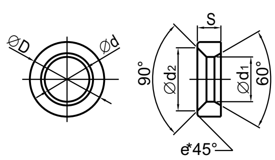
刀垫外形 Shim shape	产品型号Type	D	S	d	r	d1	d2	e	适用刀片 applicative inserts
	W08A	11.7	3.18	6.1	0.8	7.3	8.5	0.2	WNMM/G08
	W10A	14.88	4.76	7.1	1.2	8.5	10	0.2	WNMM/G10
	W13A	18.05	6.35	8.7	1.6	10.3	11.5	0.2	WNMM/G13
	SW317	9.35	2.7	5	0.8	6.3	6.6	0.5	
	TW0803	11.65	3.18	6.9	0.8	7.9	8.6	0.5	WNMM/G08
	SW42	12.5	3.18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

E 刀垫 Shim

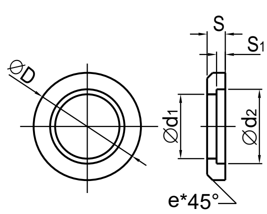
E12 W*B

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	
	SMW-432	12.3	4.8	1.2	7.4	8.2	2.6	0.5	WNMM/G08
	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

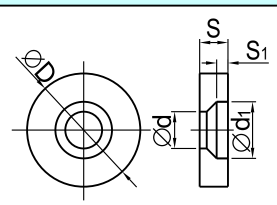
E13 R*A

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

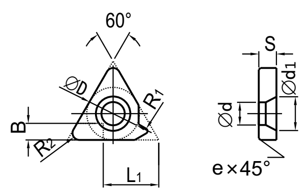
刀垫外形 Shim shape	产品型号Type	D	S	d1	d2	S1	e	适用刀片 applicative inserts
	R09B	9.4	4.76	4.6	5.8	2	0.2	RNMM/G10
	R12B	12.5	4.76	6.1	7.4	2	0.2	
	IRSN-43	12.47	4.77	7.34	8	2.24	0.76	RNMM/G12
	IRSN-44	12.47	6.41	7.34	8	2.24	0.76	
	IRSN-62	18.77	3.18	11.25	13.03	1.53	0.76	RNMM/G19
	R1003B	9.6	3.18	5.85	6.7	1.75	0.3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

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 safely using 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

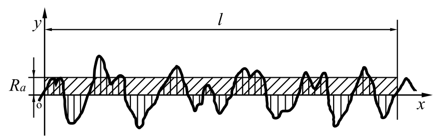
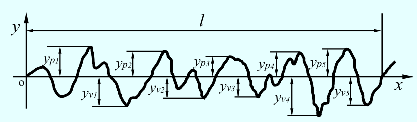
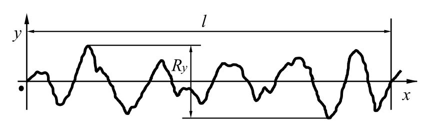
9）已经磨损的合金刀具和合金刀具的碎片请妥善收藏好，避免伤害他人。

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

F2 安全使用切削工具的注意事项 Cautions for safely using 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. 请做好灭火器材准备。 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。 Burrs 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已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险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散导致伤害。 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 Computing method	计算方法例（图） legend
轮廓算术平均偏差 Arithmetic average deviation of profi le	Ra	在取样长度l内轮廓偏距绝对值的算术平均值． Within sampling length l, the arithmetic average absolute value of profile deviation is 式中轮廓偏距y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O。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 y is the distance between profile points and reference line in the measuring direction.Reference line is the profile least-square average line O. This line divide the profile and make the sum of squares of profile deviation to be the minimum within the sampling length.	 轮廓算术平均偏差Ra
微观不平度十点高度 Irregularity ten-point high	Rz	在取样长度l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 l, the sum of the average value of heights of five highest profile peak and the depths of five deepest profile valleys 式中 :ypi是第i个最大的轮廓峰高 yvi是第i个最大的轮廓谷深。轮廓最大高度Ry:在取样长度l内轮廓峰顶线与轮廓谷底线之间的距离． In the formula, ypi means the height of 'i',the highest profile peak. In the formula,yvi means the depth of 'i'the deepest profile Valley.Maximum height of profile Ry: the distance between the top profile peak line and the bottom profile valley line in the longitudinal direction within the sampling length l.	 微观不平度十点高度Rz
轮廓最大高度 Maximum height of profile	Ry	在取样长度l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 l. 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	 轮廓最大高度Ry

取样长度1和评定长度1n的取值

The value Of Sampling leng 1 and rva1uation length 1n

Ra/um	Rz/um	1/mm	1n=51/mm
＞0.008~0.02	≧0.025~0.10	0.08	0.4
＞0.02~0.1	□0.1~0.50	0.25	1.25
＞0.1~0.2	□0.50~10.0	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

F 技术资料 Technical information

碳钢Carbon steel

中国China	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
GB	JIS	W.-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	AISI/SAE
15	STKM12A/STKM12C/S15C	1.0038/1.0401/1.1141	RSt.37-2/C15/Ck15	4360 40 C/080M15	– /32C	E24-2Ne/CC12/XC12	– /C15, C16/C16	– /F.111/C15K	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	Cf35	060A35	–	XC38TS	C36	–	1572	1035
Ck45	S45C	1.1191	Ck45	080M46	–	XC42	C45	C45K	1672	1045
50	S50C	1.1213	Cf53	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	S58C	1.1221	Ck60	080A62	43D	XC60	C60	–	1678	1060

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

中国China	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
GB	JIS	W.-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	AISI/SAE
OCr19Ni10	SUS304L	1.4306	X2CrNi1911	304S11	–	Z2CN18.10	X2CrNi18.11	–	2352	304L
OCr18Ni9	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
OCr17Ni11Mo2	SUS316	1.4401	X5CrNiMo1810	316S16	58J	Z6CND17.11	X5CrNiMo1712	F.3543	2347	316
OCr17Ni13Mo	SUS316LN	1.4429	X2CrNiMoN1813	–	–	Z2CND17.13	–	–	2375	316LN
OCr27Ni12Mo3	SCS16/SUS316L	1.4435	X2CrNiMo1812	316S13	–	Z2CND17.12	X2CrNiMo1712	–	2353	316L
OOCr19Ni13Mo	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
Cr18Ni12Mo2T	–	1.4571	X10CrNiMoTi1810	320S17	58J	Z6CNDT17.12	X6CrNiMoTi1712	F.3535	2350	316Ti
1Cr23Ni13	SUH309	1.4828	X15CrNiSi2012	309S24	–	Z15CNS20.12	X6CrNi2520	–	–	309
OCr25Ni20	SUH310	1.4845	X12CrNi2521	310S24	–	Z12CN2520	X6CrNi2520	F.331	2361	310S
1Cr18Ni9Ti	SUS321	1.4878	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 coantries

合金钢Alloy steel

中国China	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
GB	JIS	W.-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	AISI/SAE
55Si2Mn	-	1.0904	55Si7	250A53	45	55S7	55Si8	56Si7	2085	9255
Gr15 45G	SUJ2	1.3505	100Cr6	534A99	31	100C6	100Cr6	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	34Cr4(KB)	35Cr4	-	5132
40Cr	SCr440(H)	1.7035	41Cr4	530M40	18	42C4	41Cr4	42Cr4	-	5140
18CrMn	-	1.7131	16MnCr5	(527M20)	-	16MC5	16MnCr5	16MnCr5	2511	5115
30CrMn	SCM420/SCM430	1.7218	25CrMo4	1717CDS110/708M20	-	25CD4	25CrMo4(KB)	55Cr3	2225	4130
35CrMo	SCM432/SCCRM3	1.722	34CrMo4	708A37	19B	35CD4	35CrMo4	34CrMo4	2234	4137/4135
40CrMoA	SCM440	1.7223	41CrMo4	708M40	19A	42CD4TS	41CrMo4	42CrMo4	2244	4140/4142
42CrMo/42CrMnMo	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
CrWMo	SKS31/SKS2,/SKS3	1.2419	105WCr6	-	-	105WC13	100WCr6/107WCr5KU	105WCr5	2140	-
5CrNiMo	SKT4	1.2713	55NiCrMoV6	BH224/5	-	55NCDV7	-	F.520.S	-	L6
Cr12	SKD1	1.208	X210Cr12	BD3	-	Z200C12	X210Cr13KU/X250Cr12KU	X210Cr12	-	D3 /ASTM D3
40CrMoV5	SKD61	1.2344	X40CrMoV51/X40CrMoV51	BH13	-	Z40CDV5	X35CrMoV05KU/X40CrMoV51KU	X40CrMoV5	2242	H13/ASTM H13
100CrMoV5	SKD12	1.2363	X100CrMoV51	BA2	-	Z100CDV5	X100CrMoV51KU	X100CrMoV5	2260	A2
30WCrV9	SKD5	1.2581	X30WCrV93	BH21	-	Z30WCV9	X28W09KU	X30WCrV9	-	H21
V	SKS43	1.2833	100V1	BW2	-	Y1105V	-	-	-	W210
W18Cr4VCo5	SKH3	1.3255	S18-1-2-5	BT4	-	Z80WKCV	X78WCo1805KU	HS18-1-1-5	-	T4
X45CrSi93	SUH1	1.4718	X45CrSi93	401S45	52	Z45CS9	X45CrSi8	F.322	-	HW3
M2	SKH9,	SKH51	1.3343	S6/5/2	BM2	-	Z85WDCV	HS6-5-2-2	F.5603	2722
M7	-	1.3348	S	2002/9/2	-	-	-	HS2-9-2	HS2-9-2	2782

耐热钢Heat-resistant steel

中国China	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
GB	JIS	W.-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	AISI/SAE
-	SUH330	1.4864	X12NiCrSi3616	-	-	Z12NCS35.16	-	-	-	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 coantries

不锈钢（铁素体类,马氏体类）Stainless Steel(Ferrite type/Martensitic type)

中国China	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
GB	JIS	W.-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	AISI/SAE
OCr13/1Cr12	SUS403	1.4	X7Cr13	403S17	-	Z6C13	X6Cr13	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	X6CrMo17	434S17	-	Z8CD17.01	X8CrMo17	-	2325	434
OCr13Al	SUS405	1.4724	X10CrA113	403S17	-	Z10C13	X10CrA112	F.311	-	405
Cr17	SUS430	1.4742	X10CrA118	430S15	60	Z10CAS18	X8Cr17	F.3113	-	430
5Cr2Mn9Ni4N	SUH35	1.4871	X53CrMnNiN219	349S54	-	Z52CMN21.09	X53CrMnNiN219	-	-	EV8

灰口铸铁Gray cast iron

中国China	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
GB	JIS	W.-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	AISI/SAE
HT150	FC150	0.6015	GG15	Grade150	-	Ft15 D	G15	FG15	115	No 25 B
HT200	FC200	0.602	GG20	Grade220	-	Ft20 D	G20	-	120	No 30 B
HT250	FC250	0.6025	GG25	Grade260	-	Ft25 D	G25	FG25	125	No 35 B
HT300	FC300	0.603	GG30	Grade300	-	Ft30 D	G30	FG30	130	No 45 B
HT350	FC350	0.6035	GG35	Grade350	-	Ft35 D	G35	FG35	135	No 50 B
HT400	-	0.604	GG40	Grade400	-	Ft40 D	-	-	140	No 55 B

球墨铸铁Nodular cast iron

中国China	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
GB	JIS	W.-nr.	DIN	BS	EN	AFNOR	UNI	UNE	SS	AISI/SAE
QT400-18	FCD400	0.704	GGG 40	SNG 420/12	-	FCS 400-12	GS 370-17	FGE 38-17	07 17-02	60-40-18
QT500-7	FCD500	0.705	GGG 50	SNG 500/7	-	FGS 500-7	GS 500	FGE 50-7	07 27-02	80-55-06
QT600-3	FCD600	-	GGG 60	SNG 600/3	-	FGS 600-3	-	-	07 32-03	-
QT700-18	FCD700	0.707	GGG 70	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

类别	使用分类代号 分类	使用分类代号 代号	CDBP 邦普	SANDVIK 山特维克	ISCAR 伊斯卡	KENNAMETAL 肯纳金属	TaeguTec 特固克	WALTER 瓦尔特	MiTSUBiSHi 三菱	SUMITOMO 住友电气工业	TUNGALOY 泰珂洛	KYOCERA 京瓷	KORLOY 克洛伊	SECO 山高工具	ZCC. CT 株硬刀具
车削	K	K01	BPC052	GC3205	IC5005 IC4028	KCK05 KC9315	TT1300	WAK10	UC5105	AC405K AC410K	T5105 T5010	CA4505 CA4010	NC6105 NC305K	TK1000	YBD052 YBD102
车削	K	K10 K20	BPC102 BPS101	GC3210	IC5010 IC5100	KCK15 KC9325	TT7310	WAK20	UC5115	AC420K	T5115 T5125	CA4515 CA4115 CA4120	NC6110 NC6010	TK2000	YBD252 YBC252
车削	P	P01 P10	BPS051 BPS101	GC4205 GC4215	IC8150 IC9150	KCP05 KCP10	TT8115	WPP05 WPP10	UE6105 UE6110	AC700G AC810P	T9005 T9115	CA5505 CA5515	NC3010	TP0500 TP1500	YBC151 YBC152
车削	P	P20	BPS251	GC4225 GC4025	IC8250 IC9250	KCP25 KC9125	TT8125 TT5100	WPP20 WAP20	UE6020	AC820P PAC2000	T9125	CA5525 CR7025	NC3015 NC3120 NC3020	TP2000 TP2500	YBC251 YBC252
车削	P	P30	BPS371	GC4235 GC4035	IC8350 IC9350	KCP30 KCP40 KC9140	TT8135 TT7100	WPP30 WAP30	UE6035 UH6400	AC830P AC3000	T9135	CA5535 CR9025	NC3030 NC500H	TP3000 TP3500	YBC351 YBM351
车削	M	M10	BPG05B	GC2015	IC907	KCM15	TT9215	WAM10	US7020 VP05RT	AC610M AC510U	T6020	CA6515	PC8110 NC9020	TM2000 TP200	YBG201
车削	M	M20	BPG20B	C2025	IC9300	KCM25	TT9225	WAM20	US735	AC630M AC520U	T6030	CA6525	NC9025	CP500	YBG202
车削	M	M30	BPG30B	GC2035	IC3028	KCM35	TT9235 TT8020	WAM30	UH6400	AC630M AC530U		PR630	NCS330 PC9030	TM4000 TP400	YBG203
车削	M						GC3215		AC2000					KCK20	
车削	S	S05 S15	BPG118 BPG218	GCS05F GC1105 GC1115	IC907	KC5510	TT5080	WSM10	VP05RT VP10RT	AC510U	AH110	PR1005 PR930	PC8110	TH1000 TH1500 TS2000 TS2500	
车削	S	S25	BPG318	GC1125	IC908	KC5525	TT9080	WSM20 WSM30	VP15TF VP20RT	AC520U	AH120	PR1025 PR1125 PR1225	PC5300 PC9530	CP500	

F5 牌号对照表 Comparison table of Grade

铣削材料对照表

类别	使用分类代号 分类	使用分类代号 代号	CDBP 邦普	SANDVIK 山特维克	ISCAR 伊斯卡	KENNAMETAL 肯纳金属	TaeguTec 特固克	WALTER 瓦尔特	MiTSUBiSHi 三菱	SUMITOMO 住友电气工业	TUNGALOY 泰珂洛	KYOCERA 京瓷	KORLOY 克洛伊	SECO 山高工具	ZCC. CT 株硬刀具
铣削	K	K01	BPG108	GC3220	IC410	KC915M	TT6800		MP8010					T150M	
				GC3020	IC810		TT6080	WKK25	VP10TF	ACZ310		PR510	PC6510	MK2000	YBG102
		K10	BPC122	GC1020	IC910					ACK200		PR610	PC215K		YBD152
		K20	BPS321							ACK300		PR905			YBD152
	P	P10	BPG05B	GC4220	IC950		TT6800	WAM10	F7030	ACP100		PR830	PC3500	MP2500	YBG252
		P20	BPG20B	GC4020			TT7080	WAM20				PR1025	PC3535	T250M	
							TT7030	WKP25				PR1225	PC3525		
											AH725		PC130		
				GC4230	IC808	KC522M	TT9080	WAM30	VP15TF	ACP200	GH330	PR1225	PC9530	F30M	YBG202
		P30	BPG25B	GC4030	IC908	KC635M	TT9030								YBM251
			BPS321	GC4240	IC830	KC725M	TT8020	WKP35	VP30RT	ACP300		PR1225	NCM325	F40M	
		P40	BPS411	GC4040	IC928	KC735M	TT8080	WSP45	F7030	ACZ350	AH730	PR1230	NCM335	T350M	YBM351
						KC935M	TT7800				AH140		PC3545		
	M	M10	BPG05B	GC1010	IC808	KC522M	TT9080	WAM30	VP15TF	ACP200	AH120	PR1025		F30M	YBG202
		M20	BPG20B	GC1030	IC908	KC525M	TT9030	WQM35				PR1225			YBG205
		M25	BPG30B	GC2030								PR905			
		M30	BPG25B				TT8020								YBG302
		M40	BPG40A	GC2040	IC830	KC725M	TT8020	WXM35	VP30RF	ACP300	AH130	PR1535		F40M	
					IC928		TT8080	WSM35							
								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 分类	代号	CDBP 邦普	SANDVIK 山特维克	ISCAR 伊斯卡	KENNAMETAL 肯纳金属	TaeguTec 特固克	WALTER 瓦尔特	iTSUBiSHi 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
车削	P	P01													ST05		
		P10	BP10	S1P	IC70	P10	P10			ST10P	TX10S		SRT	WS10	ST10		YC10
		P20	BP20	SMA	IC70 IC50M	K125M TTM	P20		UTi20T	ST20E	TX20 TX25		SRT DX30	EX35	ST20		
		P30	BP35	SM30	IC50M IC54	GK K600 TTR	P30		UTi20T	A30 A30N	TX30 UX30	PW30	SR30 DX30	EX35 EX40	ST30A		
		P40		S6	IC54	G13				ST40E	TX40		SR30 DX35	EX45			YC40
	M	M10	BM10	H10A		K313	M10			EH510 U10E	TU10		UMN	WA10B	U10	890	YC10
		M20	BM15A BM25A	H13A	IC08	K68 KMF K125M TTM	M20		UTi20T	EH520 U2	TU20 UX30		DX25 UMS	EX35	U20	HX 883	
		M30		H10F SM30	IC08 IC28	K600 TTR			UTi20T	A30 A30N	UX30		DX25 UMS	EX40 EX45	ST30A		YC40
		M40		S6	IC128	G13	M40				TU40		UM40	EX45	U40		
	K	K01		H1P		K605			UTi05T	H1 H2	TH03 KS05F		KG03	WH05	H02		YD051
		K10	BK10 BU810 BK10UF	H1P H10 HM	IC20	K313 K110M THM THM-U	K10		HTi10	EH10 EH510	G1F TH10	KW10	KG10 KT9	WH10	H01	890	YD101
		K20	BU820 BK20UF	H13A	IC20 IC10	K715 KMF K600	K20		UTi20T	G10E EH20 EH520	G2F KS15F G2 KS20	GW10	CR1 KG20	WH20	G10	890 HX 883	YD201
		K30	BU820 BK30UF		IC10 IC28	THR			UTi20T	G10E	G3		KG30		G3	883	
	N	N01		H10 H13A		K605				H1 H2	KS05F		KG03				
		N10	BU810 BK10UF			K313 K110M THM THM-U	K10	WK10	HTi10	EH10 EH510	TH10 H10T		KG10 KT9		H01	890 H15	YD101
		N20	BU820 BK30UF			K715 KMF K600	K20			G10E EH20 EH520	KS15F		CR1 KG20			HX KX 883 H15 H25	YD201
		N30				G13 THR							KG30			H25	
	S	S01							RT9005				KG03				
		S10		H10 H10A H10F H13A		K10 K313 THM	K10		RT9005 RT9010	EH10 EH510	KS05F TH10		FZ05 KG10		H01	890	YD101
		S20				K715 KMF			RT9010 TF15	EH20 EH520	KS15F KS20		FZ15 KG20			890 883 HX H25	
		S30				G13 K600 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	KENNAMETAL 肯纳金属	TaeguTec 特固克	WALTER 瓦尔特	MITSUBISHI 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
铣削 Milling	P	P10	BP10	S1P									SRT				YC10
		P20	BP20		IC50M IC28	K125	P10		UTi20T	A30N	TX25		SRT DX30	EX35	ST20		
		P30	BP35		IC50M IC28	GX K600	P20		UTi20T	A30N	UX30	PW30	SR30 DX30	EX35 EX40	ST30A		
		P40			IC28		P30					PW30	SR30	EX45	ST40		YC40
	M	M10				K110M	M10						UMN		U10		YC10
		M20	BM15A BM25A			K313	M20		UTi20T	A30N			DX25 UMS	EX35	U20		
		M30			IC28	KFM K600			UTi20T	A30N	UX30		DX25 UMS	EX40 EX45			YC40
		M40			IC28		M40				TU40			EX45	U40		
	K	K01							UTi05T				KG03		H01		YD051
		K10	BU810 BK10	H1P	IC20	K110M K313	K10	WK10	HTi10	G10E	TH10	KW10	KG10	WH10	H05 H10		YD101
		K20	BU820		IC20 IC10	KFM	K20		UTi20T	G10E			KT9 CR1 KG20	WH20	G10	HX	YD201
		K30	BU820		IC10 IC28				UTi20T				KG30				

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	CDBP 邦普合金	ZCCT 株硬刀具	SANDVIK 山特维克	KORLOY 克洛伊	TaeguTec 特固克	WALTER 瓦尔特	SECO 山高	MISTUBISHI 三菱	SUMITOMO 住友	KENNAMETAL 肯纳	DIJET 黛杰	HITACHI 日立	TUNGALOY 泰珂洛	KYOCERA 京瓷	VALANTTE 万耐特
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
P	精加工（修光） Finishing(Fix light blade)			WK W WP			PF	W-F1	SW	LUW	FW					
P	半精加工 Semi finishing	MD	HM	UM PM	HMP C25	MT CMX	PS5 PM5	F2	MV 全周	MU	MF	FT	JE	PM 23 24	HQ XQ GK	PM2 PM4
P	半精加工（修光） Semi finishing(Fix light blade)			WM			PM		MW		MW					
M	精加工 Finishing	FW	EF	MF	HFP	FA FG	PF4		SV					SS		1A 2A
M	半精加工 Semi finishing	MD	EM	MM	HMP C25	MT CMX	PS5 PM5		MV 全周							PM2 PM4
K	半精加工 Semi finishing	MD	HM HR 无槽 HM HR No slot GH	KF KM KR	HMP C25	MT CMX	MW PS5 PM5		无槽 No slot GH	无槽 No slot GH		FT		无槽 No slot GH	无槽 No slot GH	PM2 PM4
S	精加工/半精加工 Finishing, semi finishing						PF4 PS5 PM5		FJ	SC	LF HP					PM2 1A 2A
N	通用切削 General cutting	LH	LH	AL	TA AK MA	FL	PM2			AG	HP	ALU ACB		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 邦普合金	ZCCCT 株硬刀具	SANDVIK 山特维克	KORLOY 克洛伊	TaeguTec 特固克	WALTER 瓦尔特	SECO 山高	MISTUBISHI 三菱	SUMITOMO 住友	KENNAMETAL 肯纳	DIJET 黛杰	HITACHI 日立	TUNGALOY 泰珂洛	KYOCERA 京瓷	VALANTTE 万耐特
P	超精加工 Super finishing			QF	HU		NF3	FF1	PK FH FY	FA FL	UF FF		FE	01 TF ZF	DP GP VF XP XP-T	F1
	精加工 Finishing	FW	DF	PF MF	HF	FG	NS6	MF2	C SA SH	SU LU SX	LF FN	PF UR UA UT	BE CE	NS 27 TS AS	HQ CQ	F2(2B) F5(5C)
	精加工(软钢)		SF		HF				SY					17	XQ XS	
	精加工（修光） Finishing(Fix light blade)		WG	WP WF	HW		NF	W-MF2	SW	LUW	FW			AFW ASW	WP WQ	
	半精加工 Semi finishing	MD	DM PM	PM QM SM	HA HC HM	MC ML MP	NM4 NM6	MF3 M3 M5	MV MA MH	GU UG UX	MG MN	PG UB	AB AY AE	NM ZM TM DM 37	CJ GS PS HS PT CS	F3 F4(8A) M2(2C) M3 M4 M5(5B) M6 M7 55 M8
	半精加工（修光） Semi finishing(Fix light blade)		WG	WM			NM	W-M3	MW	GUW	MW					
	粗加工(修光) Rough machining(Fix light blade)		DR(双面) DR(Double-sided)	PR		MT MG	NM9	MR7	GH	MU MX	RN	UD GG	AR RE	TH	GT HT	
	轻载粗加工 Light load balancing	RA	DR(单面) HDR DR(Single) HDR	QR PR HR	HR HH	RT RH	NR6	R4 R6 R7 PR9	HZ HX HV	MP HG HP	MR RM RH	UC	HX HE	57 65 TU	HX	R3 R4 R6(9A) R7(9B) R9(9C)
M	精加工 Finishing	LH SJ	EF	MF	HA	FG SF	NF4		FS	SU	K FP		SE	SS	GU	F1 F2(2B) F5(5C)
	半精加工 Semi finishing	SN	EM	MM	HS	ML MP	NM4		MS ES	EX UP	P MP	SF SG	DE	SA SM S	SU HU ST	F3 F4(8A) M2(2C) M3 M4 M5(5B) M6 M7 55 M8
	粗加工 Rough machining	RA	ER	MR	GS HM	MT RH	NR4	M5 MR7	GH HZ	MP	RP					R3 R4 R6(9A) R7(9B) R9(9C)
K	精加工 Finishing	U CX	PM	KF	无断屑槽 No broken flocks slot	FG	MA		全周 All Week	UZ	FN			CM	全周 C All Week C	F2(2B)
	半精加工 Semi finishing	U CQ	PM	KM	全周槽 HM Whole Weeks slot	MC MT MG	MA NM5		全周 All Week	UX	全周 UN All Week UN			33 全周 All Week	ZS GC	M5(5B) M6 M8
	粗加工 Rough machining	GH 无槽 RA No slot	无槽 No slot	KR	GR HR GH	RT RH	MA		无断屑槽 No broken flocks slot	无断屑槽 No broken flocks slot					无断屑槽 No broken flocks slot	R3 R4 R7(9B)
S	精加工 Finishing		NF			SF	NF4	56 R6	FJ		FS K					F5(5C) M2(2C)
	半精加工 Semi finishing		NM	NGP 23			NM4	MF1	MJ	SU	NGP			SA		M4 M5(5B) M7 55
	粗加工 Rough machining			SR			NR4	M1	GJ		MS					
N		LH														

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