



CBN



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方瀚工具源头生产厂家

上海方瀚精密工具有限公司
Shanghai Fonhae Precision Tools Co., Ltd.



上海方瀚精密工具有限公司

Shanghai Fonhae Precision Tools Co., Ltd

精密机械加工刀具制造商，成立于2016年，专业提供硬质合金、金属陶瓷刀具研发、生产、销售和服务的企业。

主要服务于航空航天、汽车、消费电子、液压气动、工程机械及精密机械等客户。

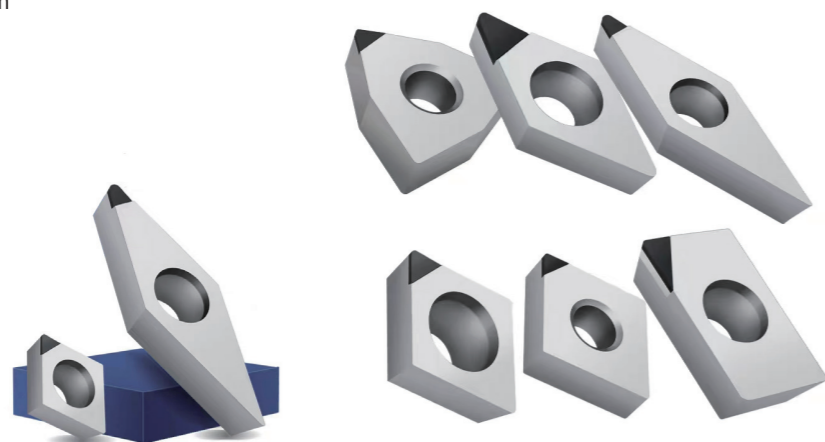
Manufacturer of precision tools, was established in 2016. The company specializes in providing tungsten carbide, cermet tools research and development, production, sales and service.

Mainly serve aerospace, automotive, consumer electronics, pneumatic hydraulic industry, engineering machinery and precision machinery customers.

公司提供的产品和服务

Products and services provided by the company

- 研究开发硬质合金材料、几何结构、涂层和加工工艺
- 依据客户要求开发非标刀具
- 客户服务和产品培训
- OEM-项目和加工工艺解决方案
- 效率和成本计算
- Researches and develops tungsten carbide materials, geometries, coatings and processes
- Develops special tools according to customer requirements
- Provides customer service and product training
- OEM - projects and process solutions
- Efficiency and cost calculation



CBN 刀片命名规则	CBN Inserts naming rules	p3	
材质特性	Material characteristics	p4	
负角刀片 Negative	单刀 Single tip	C	p5
		D	p6
		V	p8
		S	p9
		T	p10
		W	p11
	多刀 Multi tip	C	p12
		D	p14
		V	p17
		S	p19
		T	p21
正角刀片 Positive	单刀 Single tip	W	p23
		C	p25
		D	p27
		V	p28
		S	p31
	T	p32	

普通车削类型 General turning

TNGA160404 — **SFD** — **GF**

① ISO 代号 Code

② 刃口处理 Cutting edge treatment

③ 补充代号 Supplementary code

无	锋利刃口 Sharp edge	GA	小切深下优异的断屑槽型 Excellent geometry for small depth of cut
SFD	适合于精加工 Suitable for finishing	GF	半精加工下优异的断屑槽型 Excellent geometry for semi-finishing
STM	适合于精加工 - 半精加工 Suitable for finishing- semi-finishing	GH	强壮的断屑槽型 Strong geometry
STF	基本选择 - 通用型 Basic Selection - Universal type		
STH	适合于断续加工 Suitable for Interrupted		
STR	适合于强断续加工 Suitable for Strong interrupted		
STQ	适合于强断续下的重载加工 Suitable for heavy-duty under Strong interrupted		
W	有修光刃 With a wiper		
W-□	有修光刃的刃口处理 Cutting edge treatment with wiper		

多刀尖类型 Multi tip

3 — **HP** — **TNGA160404** — **SFD** — **GF**

① 切削刃数目代号
Cutting edge number code

② 类型 Type

2	单面多刀尖 Single-sided multi-tip	HP	普通焊接 General welding
3	双面多刀尖 Double-sided multi-tip	TH	贯穿焊接 Through welding

为什么需要使用CBN Why you need to use CBN

CBN

CBN (立方晶体氮化硼) 刀具是由硬度仅次于金刚石的立方晶体氮化硼粒子在高温高压下烧结成多结晶的刀具。

特征

高硬度且耐磨损性能优秀, 实现长寿命加工; 由于不易与铁发生反应, 适合淬火钢 (高硬度钢材)、铁系烧结金属、铸铁的高速加工; 热传导率高, 能实现快速散热、稳定加工。

正常的切削加工

刀具的硬度 ≥ 被加工材质硬度 × 3倍

切削工件所需的条件

淬火钢 (>50HRC) → >520Hv

硬质合金 → 1600Hv

PCBN (FN4500) → 3100Hv

CBN晶粒大小对表面粗糙度和切削速度的影响

CBN

CBN (cubic crystal boron nitride) tool is a tool that is sintered into polycrystalline by cubic crystal boron nitride particles second only to diamond in hardness under high temperature and pressure.

Characteristic

High hardness and excellent wear resistant for long-life; Because it is not easy to react with iron, it is suitable for high-speed of hardened steel (high hardness steel), iron sintered metal and cast iron; High thermal conductivity, can achieve rapid heat dissipation, stable.

Normal

The hardness of the tool is ≥ 3 times the hardness of the material to be machined

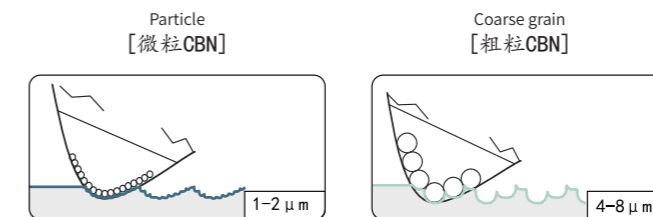
The conditions required to cut the workpiece

Hardened steel (> 50HRC) → 520Hv

Tungsten carbide → 1600Hv

PCBN (FN4500) → 3100Hv

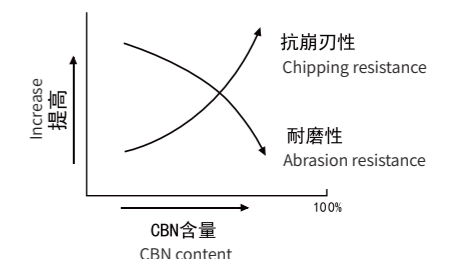
Effect of CBN grain size on surface roughness and cutting speed



微粒PCBN: 拥有锋利的刃口。良好的表面粗糙度
Particle PCBN: Sharp edge. Good surface roughness

粗粒PCBN: CBN颗粒牢固的结合。允许高速加工
Coarse grain PCBN: CBN particles firmly bonded. Allow high speed

用于加工淬火钢和其他高硬度材料的CBN材质的特性
Characteristics of CBN materials for hardened steel and other high hardness materials



更低的CBN含量, 增加了耐磨性
Lower CBN content for increased wear resistance
更高的CBN含量, 增加了抗崩刃性
Higher CBN content for increased chipping resistance

FONHAE的CBN (立方晶体氮化硼) FONHAE CBN (Cubic crystal Boron Nitride)

材质 Material	应用 Application	工况 Working condition	特性 Characteristic
FN1000	H	连续 - 轻微断续 Continuous - Light Interrupted	硬质粘合剂可提高耐磨损性, 中高速加工时重视加工面的品质 Hard adhesive can improve the wear resistance, and pay attention to the quality of the machined surface during medium and high speed.
	K	连续 Continuous	
FN4500	H	连续 - 轻微断续 Continuous - Light Interrupted	硬质粘合剂可提高耐磨损性, 中高速加工时重视加工面的品质 Hard adhesive can improve the wear resistance, and pay attention to the quality of the machined surface during medium and high speed.
	K	连续 Continuous	
FN5290	H	轻断续 - 中等断续 Light Interrupted - Medium Interrupted	中速领域, 抗崩刃性与耐磨性兼顾的材质 In the medium-speed field, it is a nature that combines chipping resistance and wear resistance.
FN9000	H	中断续 - 强断续 Interrupted - Strong interrupted	高抗崩刃性适用于淬火钢的强断续加工 High chipping resistance is suitable for Strong interrupted of hardened steel.
FN9500	H	强断续 Heavy Interrupted	淬火钢、烧结金属连接强断续加工的首选材质 The preferred material for Strong interrupted of hardened steel and sintered metal connections.
	烧结金属 Sintered metal	强断续 Heavy Interrupted	


负角刀片C型·单刀尖型

Negative form C · single tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊗

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1204	12.7	4.76	5.16	0.2-1.2	K	○	○			
1207	12.7	7.94	5.16	0.2-1.2	S					⊗
					H	○◐	○◐	⊕⊗	⊗⊗	⊗

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500
	标准钝化 Edge-preparation	CNGA120402		0.2			●	●	●
		CNGA120404		0.4			●	●	●
	精加工 Finishing	CNGA120402	-SFD	0.2	●	●	●	●	●
		CNGA120404	-SFD	0.4	●	●	●	●	●
		CNGA120408	-SFD	0.8	●	●	●	●	●
		CNGA120412	-SFD	1.2	●	●	●	●	●
	精加工 - 半精加工 Finishing -semi-finishing	CNGA120402	-STM	0.2	●	●	●	●	●
		CNGA120404	-STM	0.4	●	●	●	●	●
		CNGA120408	-STM	0.8	●	●	●	●	●
		CNGA120412	-STM	1.2	●	●	●	●	●
	通用加工 Universal	CNGA120404	-STF	0.4	●	●	●	●	●
		CNGA120408	-STF	0.8	●	●	●	●	●
		CNGA120412	-STF	1.2	●	●	●	●	●
		CNGA120704	-STF	0.4	●	●	●	●	●
		CNGA120708	-STF	0.8	●	●	●	●	●
		CNGA120712	-STF	1.2	●	●	●	●	●
	断续加工 Interrupted	CNGA120404	-STH	0.4	●	●	●	●	●
		CNGA120408	-STH	0.8	●	●	●	●	●
		CNGA120412	-STH	1.2	●	●	●	●	●
		CNGA120704	-STH	0.4	●	●	●	●	●
		CNGA120708	-STH	0.8	●	●	●	●	●
	强断续加工 Strong interrupted	CNGA120712	-STH	1.2	●	●	●	●	●
		CNGA120408	-STR	0.8				●	●
		CNGA120412	-STR	1.2				●	●
	强断续加工 Strong interrupted	CNGA120708	-STR	0.8				●	●
		CNGA120712	-STR	1.2				●	●
		CNGA120408	-STQ	0.8				●	●
		CNGA120412	-STQ	1.2				●	●
强断续加工 Strong interrupted	CNGA120708	-STQ	0.8				●	●	
	CNGA120712	-STQ	1.2				●	●	

涂层可选Coating optional (C₂、CC)


负角刀片D型·单刀尖型

Negative form D · single tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊗

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1104	9.525	4.76	3.81	0.2-1.2	K	○	○			
1504	12.7	4.76	5.16	0.2-1.2	S					⊗
1506	12.7	6.35	5.16	0.2-1.2	H	○◐	○◐	⊕⊗	⊗⊗	⊗

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500	
	标准钝化 Edge-preparation	DNGA110402		0.2			●	●	●	
		DNGA110404		0.4			●	●	●	
		DNGA150402		0.2				●	●	●
		DNGA150404		0.4				●	●	●
		DNGA150602		0.2				●	●	●
		DNGA150604		0.4				●	●	●
	精加工 Finishing	DNGA110402	-SFD	0.2	●	●	●			
		DNGA110404	-SFD	0.4	●	●	●	●	●	
		DNGA110408	-SFD	0.8	●	●	●	●	●	
		DNGA110412	-SFD	1.2	●	●	●	●	●	
		DNGA150402	-SFD	0.2	●	●	●			
		DNGA150404	-SFD	0.4	●	●	●	●	●	
		DNGA150408	-SFD	0.8	●	●	●	●	●	
		DNGA150412	-SFD	1.2	●	●	●	●	●	
		DNGA150602	-SFD	0.2	●	●	●			
		DNGA150604	-SFD	0.4	●	●	●	●	●	
		DNGA150608	-SFD	0.8	●	●	●	●	●	
		DNGA150612	-SFD	1.2	●	●	●	●	●	
	精加工 - 半精加工 Finishing -semi-finishing	DNGA110404	-STM	0.4	●	●	●	●	●	
		DNGA110408	-STM	0.8	●	●	●	●	●	
		DNGA110412	-STM	1.2	●	●	●	●	●	
		DNGA150404	-STM	0.4	●	●	●	●	●	
		DNGA150408	-STM	0.8	●	●	●	●	●	
		DNGA150412	-STM	1.2	●	●	●	●	●	
		DNGA150604	-STM	0.4	●	●	●	●	●	
		DNGA150608	-STM	0.8	●	●	●	●	●	
		DNGA150612	-STM	1.2	●	●	●	●	●	

涂层可选Coating optional (C₂、CC)

负角刀片D型·单刀尖型

Negative form D·single tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ◑ 强断续Heavy Interrupted ◒

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1104	9.525	4.76	3.81	0.2-1.2	K	○	○			
1504	12.7	4.76	5.16	0.2-1.2	S					◒
1506	12.7	6.35	5.16	0.2-1.2	H	◐◑	◐◑	◑◒	◒◒	◒

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500
	通用加工 Universal	DNGA110404	-STF	0.4	●	●	●	●	●
		DNGA110408	-STF	0.8	●	●	●	●	●
		DNGA110412	-STF	1.2	●	●	●	●	●
		DNGA150404	-STF	0.4	●	●	●	●	●
		DNGA150408	-STF	0.8	●	●	●	●	●
		DNGA150412	-STF	1.2	●	●	●	●	●
		DNGA150604	-STF	0.4	●	●	●	●	●
		DNGA150608	-STF	0.8	●	●	●	●	●
	DNGA150612	-STF	1.2	●	●	●	●	●	
	断续加工 Interrupted	DNGA110404	-STH	0.4	●	●	●	●	●
		DNGA110408	-STH	0.8	●	●	●	●	●
		DNGA110412	-STH	1.2	●	●	●	●	●
		DNGA150404	-STH	0.4	●	●	●	●	●
		DNGA150408	-STH	0.8	●	●	●	●	●
		DNGA150412	-STH	1.2	●	●	●	●	●
		DNGA150604	-STH	0.4	●	●	●	●	●
		DNGA150608	-STH	0.8	●	●	●	●	●
	DNGA150612	-STH	1.2	●	●	●	●	●	
	强断续加工 Strong interrupted	DNGA110408	-STR	0.8				●	●
		DNGA110412	-STR	1.2				●	●
		DNGA150408	-STR	0.8				●	●
		DNGA150412	-STR	1.2				●	●
		DNGA150608	-STR	0.8				●	●
		DNGA150612	-STR	1.2				●	●

涂层可选Coating optional (C₂、CC)

负角刀片V型·单刀尖型

Negative form V·single tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ◑ 强断续Heavy Interrupted ◒

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1604	9.525	4.76	3.81	0.2-1.2	K	○	○			
					S					◒
					H	◐◑	◐◑	◑◒	◒◒	◒

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500	
	标准钝化 Edge-preparation	VNGA160402		0.2			●	●	●	
		VNGA160404		0.4			●	●	●	
		VNGA160408		0.8				●	●	●
		VNGA160412		1.2				●	●	●
	精加工 Finishing	VNGA160402	-SFD	0.2	●	●	●			
		VNGA160404	-SFD	0.4	●	●	●	●	●	●
		VNGA160408	-SFD	0.8	●	●	●	●	●	●
		VNGA160412	-SFD	1.2	●	●	●	●	●	●
	精加工 - 半精加工 -semi-finishing	VNGA160404	-STM	0.4	●	●	●	●	●	●
		VNGA160408	-STM	0.8	●	●	●	●	●	●
		VNGA160412	-STM	1.2	●	●	●	●	●	●
	通用加工 Universal	VNGA160404	-STF	0.4	●	●	●	●	●	●
		VNGA160408	-STF	0.8	●	●	●	●	●	●
		VNGA160412	-STF	1.2	●	●	●	●	●	●
	断续加工 Interrupted	VNGW160404	-STH	0.4	●	●	●	●	●	●
		VNGW160408	-STH	0.8	●	●	●	●	●	●
		VNGW160412	-STH	1.2	●	●	●	●	●	●

涂层可选Coating optional (C₂、CC)

负角刀片S型·单刀尖型

Negative form S·single tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊕

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1204	12.7	4.76	5.16	0.2-1.2	K	○	○			
					S					⊕
					H	○◐	○◐	◐⊕	⊕⊕	⊕

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500
	标准钝化 Edge-preparation	SNGA120402		0.2			●	●	●
		SNGA120404		0.4			●	●	●
	精加工 Finishing	SNGA120402	-SFD	0.2	●	●	●		
		SNGA120404	-SFD	0.4	●	●	●	●	●
		SNGA120408	-SFD	0.8	●	●	●	●	●
	精加工 - 半精加工 Finishing -semi-finishing	SNGA120412	-SFD	1.2	●	●	●	●	●
		SNGA120402	-STM	0.2	●	●	●		
		SNGA120404	-STM	0.4	●	●	●	●	●
	通用加工 Universal	SNGA120408	-STM	0.8	●	●	●	●	●
		SNGA120412	-STM	1.2	●	●	●	●	●
		SNGA120404	-STF	0.4	●	●	●	●	●
	断续加工 Interrupted	SNGA120408	-STF	0.8	●	●	●	●	●
		SNGA120412	-STF	1.2	●	●	●	●	●
		SNGA120404	-STH	0.4	●	●	●	●	●
	强断续加工 Strong interrupted	SNGA120408	-STH	0.8	●	●	●	●	●
		SNGA120412	-STH	1.2	●	●	●	●	●
	强断续加工 Strong interrupted	SNGA120408	-STR	0.8				●	●
		SNGA120412	-STR	1.2				●	●
强断续加工 Strong interrupted	SNGA120408	-STQ	0.8					●	
	SNGA120412	-STQ	1.2				●	●	

涂层可选Coating optional (C₂、CC)

负角刀片T型·单刀尖型

Negative form T·single tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊕

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1604	9.525	4.76	3.81	1.6	K	○	○			
					S					⊕
					H	○◐	○◐	◐⊕	⊕⊕	⊕

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500
	标准钝化 Edge-preparation	TNGA160402		0.2			●	●	●
		TNGA160404		0.4			●	●	●
	精加工 Finishing	TNGA160402	-SFD	0.2	●	●	●		
		TNGA160404	-SFD	0.4	●	●	●	●	●
		TNGA160408	-SFD	0.8	●	●	●	●	●
	精加工 - 半精加工 Finishing -semi-finishing	TNGA160412	-SFD	1.2	●	●	●	●	●
		TNGA160416	-SFD	1.6	●	●	●	●	●
		TNGA160402	-STM	0.2	●	●	●		
	通用加工 Universal	TNGA160404	-STM	0.4	●	●	●	●	●
		TNGA160408	-STM	0.8	●	●	●	●	●
		TNGA160412	-STM	1.2	●	●	●	●	●
	通用加工 Universal	TNGA160416	-STM	1.6	●	●	●	●	●
		TNGA160404	-STF	0.4	●	●	●	●	●
		TNGA160408	-STF	0.8	●	●	●	●	●
	断续加工 Interrupted	TNGA160412	-STF	1.2	●	●	●	●	●
		TNGA160416	-STF	1.6	●	●	●	●	●
		TNGA160404	-STH	0.4	●	●	●	●	●
	强断续加工 Strong interrupted	TNGA160408	-STH	0.8	●	●	●	●	●
TNGA160412		-STH	1.2	●	●	●	●	●	
TNGA160416		-STH	1.6	●	●	●	●	●	
强断续加工 Strong interrupted	TNGA160408	-STR	0.8				●	●	
	TNGA160412	-STR	1.2				●	●	
强断续加工 Strong interrupted	TNGA160416	-STR	1.6				●	●	

涂层可选Coating optional (C₂、CC)

负角刀片W型·单刀尖型

Negative form W·single tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊗

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
0804	12.7	4.76	5.16	0.2-1.2	K	○	○			
					S					⊗
					H	○◐	○◐	⊕⊗	⊗⊗	⊗

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500
	标准钝化 Edge-preparation	WNGA080402		0.2			●	●	●
		WNGA080404		0.4			●	●	●
	精加工 Finishing	WNGA080402	-SFD	0.2	●	●	●		
		WNGA080404	-SFD	0.4	●	●	●	●	●
		WNGA080408	-SFD	0.8	●	●	●	●	●
	精加工 - 半精加工 Finishing -semi-finishing	WNGA080412	-SFD	1.2	●	●	●	●	●
		WNGA080402	-STM	0.2	●	●	●		
		WNGA080404	-STM	0.4	●	●	●	●	●
	通用加工 Universal	WNGA080408	-STM	0.8	●	●	●	●	●
		WNGA080412	-STM	1.2	●	●	●	●	●
		WNGA080404	-STF	0.4	●	●	●	●	●
	断续加工 Interrupted	WNGA080408	-STF	0.8	●	●	●	●	●
		WNGA080412	-STF	1.2	●	●	●	●	●
		WNGA080404	-STH	0.4	●	●	●	●	●
	强断续加工 Strong interrupted	WNGA080408	-STH	0.8	●	●	●	●	●
		WNGA080412	-STH	1.2	●	●	●	●	●
		WNGA080404	-STR	0.4	●	●	●	●	●
	强断续加工 Strong interrupted	WNGA080408	-STR	0.8	●	●	●	●	●
		WNGA080412	-STR	1.2	●	●	●	●	●
		WNGA080404	-STQ	0.8				●	●
强断续加工 Strong interrupted	WNGA080408	-STQ	0.8				●	●	
	WNGA080412	-STQ	1.2				●	●	

涂层可选Coating optional (C₂、CC)

负角刀片C型·多刀尖型

Negative form C·multi-tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊗

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1204	12.7	4.76	5.16	0.2-1.2	K	○	○			
1207	12.7	7.94	5.16	0.2-1.2	S					⊗
					H	○◐	○◐	⊕⊗	⊗⊗	⊗

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500
	标准钝化 Edge-preparation	2HP-CNGA120402		0.2			●	●	●
		2HP-CNGA120404		0.4			●	●	●
	精加工 Finishing	2HP-CNGA120402	-SFD	0.2	●	●	●		
		2HP-CNGA120404	-SFD	0.4	●	●	●	●	●
		2HP-CNGA120408	-SFD	0.8	●	●	●	●	●
	精加工 - 半精加工 Finishing -semi-finishing	2HP-CNGA120412	-SFD	1.2	●	●	●	●	●
		2HP-CNGA120402	-STM	0.2	●	●	●		
		2HP-CNGA120404	-STM	0.4	●	●	●	●	●
	通用加工 Universal	2HP-CNGA120408	-STM	0.8	●	●	●	●	●
		2HP-CNGA120412	-STM	1.2	●	●	●	●	●
		2HP-CNGA120404	-STF	0.4	●	●	●	●	●
	断续加工 Interrupted	2HP-CNGA120704	-STF	0.4	●	●	●	●	●
		2HP-CNGA120708	-STF	0.8	●	●	●	●	●
		2HP-CNGA120712	-STF	1.2	●	●	●	●	●
	断续加工 Interrupted	2HP-CNGA120404	-STH	0.4	●	●	●	●	●
		2HP-CNGA120408	-STH	0.8	●	●	●	●	●
		2HP-CNGA120412	-STH	1.2	●	●	●	●	●
	强断续加工 Strong interrupted	2HP-CNGA120704	-STH	0.4	●	●	●	●	●
		2HP-CNGA120708	-STH	0.8	●	●	●	●	●
		2HP-CNGA120712	-STH	1.2	●	●	●	●	●
强断续加工 Strong interrupted	2HP-CNGA120408	-STR	0.8				●	●	
	2HP-CNGA120412	-STR	1.2				●	●	
	2HP-CNGA120708	-STR	0.8				●	●	
重载加工 Heavy-duty	2HP-CNGA120712	-STR	1.2				●	●	
	2HP-CNGA120408	-STQ	0.8				●	●	
	2HP-CNGA120412	-STQ	1.2				●	●	
重载加工 Heavy-duty	2HP-CNGA120708	-STQ	0.8				●	●	
	2HP-CNGA120712	-STQ	1.2				●	●	

涂层可选Coating optional (C₂、CC)

负角刀片C型·多刀尖型

Negative form C · multi-tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊗

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1204	12.7	4.76	5.16	0.2-1.2	K	○	○			
					S					⊗
					H	○◐	○◐	⊕⊗	⊗⊗	⊗

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500
	标准钝化 Edge-preparation	4HP-CNGA120402		0.2			●	●	●
		4HP-CNGA120404		0.4			●	●	●
	精加工 Finishing	4HP-CNGA120402	-SFD	0.2	●	●	●		
		4HP-CNGA120404	-SFD	0.4	●	●	●	●	●
		4HP-CNGA120408	-SFD	0.8	●	●	●	●	●
		4HP-CNGA120412	-SFD	1.2	●	●	●	●	●
	精加工 - 半精加工 Finishing -semi-finishing	4HP-CNGA120402	-STM	0.2	●	●	●		
		4HP-CNGA120404	-STM	0.4	●	●	●	●	●
		4HP-CNGA120408	-STM	0.8	●	●	●	●	●
		4HP-CNGA120412	-STM	1.2	●	●	●	●	●
	通用加工 Universal	4HP-CNGA120404	-STF	0.4	●	●	●	●	●
		4HP-CNGA120408	-STF	0.8	●	●	●	●	●
		4HP-CNGA120412	-STF	1.2	●	●	●	●	●
	断续加工 Interrupted	4HP-CNGA120404	-STH	0.4	●	●	●	●	●
		4HP-CNGA120408	-STH	0.8	●	●	●	●	●
		4HP-CNGA120412	-STH	1.2	●	●	●	●	●
	强断续加工 Strong interrupted	4HP-CNGA120408	-STR	0.8				●	●
		4HP-CNGA120412	-STR	1.2				●	●
	重载加工 Heavy-duty	4HP-CNGA120408	-STQ	0.8				●	●
		4HP-CNGA120412	-STQ	1.2				●	●

涂层可选Coating optional (C₂、CC)

负角刀片D型·多刀尖型

Negative form D · multi-tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊗

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1104	9.525	4.76	3.81	0.2-1.2	K	○	○			
1504	12.7	4.76	5.16	0.2-1.2	S					⊗
1506	12.7	6.35	5.16	0.2-1.2	H	○◐	○◐	⊕⊗	⊗⊗	⊗

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500	
	标准钝化 Edge-preparation	2HP-DNGA110402		0.2			●	●	●	
		2HP-DNGA110404		0.4			●	●	●	
		2HP-DNGA150402		0.2				●	●	●
		2HP-DNGA150404		0.4				●	●	●
		2HP-DNGA150602		0.2				●	●	●
		2HP-DNGA150604		0.4				●	●	●
	精加工 Finishing	2HP-DNGA110402	-SFD	0.2	●	●	●			
		2HP-DNGA110404	-SFD	0.4	●	●	●	●	●	
		2HP-DNGA110408	-SFD	0.8	●	●	●	●	●	
		2HP-DNGA110412	-SFD	1.2	●	●	●	●	●	
		2HP-DNGA150402	-SFD	0.2	●	●	●			
		2HP-DNGA150404	-SFD	0.4	●	●	●	●	●	
		2HP-DNGA150408	-SFD	0.8	●	●	●	●	●	
		2HP-DNGA150412	-SFD	1.2	●	●	●	●	●	
		2HP-DNGA150602	-SFD	0.2	●	●	●			
		2HP-DNGA150604	-SFD	0.4	●	●	●	●	●	
		2HP-DNGA150608	-SFD	0.8	●	●	●	●	●	
		2HP-DNGA150612	-SFD	1.2	●	●	●	●	●	
		2HP-DNGA110404	-STM	0.4	●	●	●	●	●	
		2HP-DNGA110408	-STM	0.8	●	●	●	●	●	
2HP-DNGA110412	-STM	1.2	●	●	●	●	●			
精加工 - 半精加工 Finishing -semi-finishing	2HP-DNGA150404	-STM	0.4	●	●	●	●	●		
	2HP-DNGA150408	-STM	0.8	●	●	●	●	●		
	2HP-DNGA150412	-STM	1.2	●	●	●	●	●		
	2HP-DNGA150604	-STM	0.4	●	●	●	●	●		
	2HP-DNGA150608	-STM	0.8	●	●	●	●	●		
	2HP-DNGA150612	-STM	1.2	●	●	●	●	●		

涂层可选Coating optional (C₂、CC)

负角刀片D型·多刀尖型

Negative form D · multi-tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊕

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1104	9.525	4.76	3.81	0.2-1.2	K	○	○			
1504	12.7	4.76	5.16	0.2-1.2	S					⊕
1506	12.7	6.35	5.16	0.2-1.2	H	○◐	○◐	⊕⊕	⊕⊕	⊕

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500
	通用加工 Universal	2HP-DNGA110404	-STF	0.4	●	●	●	●	●
		2HP-DNGA110408	-STF	0.8	●	●	●	●	●
		2HP-DNGA110412	-STF	1.2	●	●	●	●	●
		2HP-DNGA150404	-STF	0.4	●	●	●	●	●
		2HP-DNGA150408	-STF	0.8	●	●	●	●	●
		2HP-DNGA150412	-STF	1.2	●	●	●	●	●
		2HP-DNGA150604	-STF	0.4	●	●	●	●	●
		2HP-DNGA150608	-STF	0.8	●	●	●	●	●
		2HP-DNGA150612	-STF	1.2	●	●	●	●	●
	断续加工 Interrupted	2HP-DNGA110404	-STH	0.4	●	●	●	●	●
		2HP-DNGA110408	-STH	0.8	●	●	●	●	●
		2HP-DNGA110412	-STH	1.2	●	●	●	●	●
		2HP-DNGA150404	-STH	0.4	●	●	●	●	●
		2HP-DNGA150408	-STH	0.8	●	●	●	●	●
		2HP-DNGA150412	-STH	1.2	●	●	●	●	●
		2HP-DNGA150604	-STH	0.4	●	●	●	●	●
		2HP-DNGA150608	-STH	0.8	●	●	●	●	●
		2HP-DNGA150612	-STH	1.2	●	●	●	●	●
	强断续加工 Strong interrupted	2HP-DNGA110408	-STR	0.8				●	●
		2HP-DNGA110412	-STR	1.2				●	●
		2HP-DNGA150408	-STR	0.8				●	●
		2HP-DNGA150412	-STR	1.2				●	●
		2HP-DNGA150608	-STR	0.8				●	●
		2HP-DNGA150612	-STR	1.2				●	●

涂层可选Coating optional (C₂、CC)

负角刀片D型·多刀尖型

Negative form D · multi-tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊕

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1504	12.7	4.76	5.16	0.2-1.2	K	○	○			
					S					⊕
					H	○◐	○◐	⊕⊕	⊕⊕	⊕

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500	
	标准钝化 Edge-preparation	4HP-DNGA150402		0.2			●	●	●	
		4HP-DNGA150404		0.4			●	●	●	
	精加工 Finishing	4HP-DNGA150402	-SFD	0.2	●	●	●			
		4HP-DNGA150404	-SFD	0.4	●	●	●	●	●	
		4HP-DNGA150408	-SFD	0.8	●	●	●	●	●	
	精加工 - 半精加工 - semi-finishing	4HP-DNGA150412	-SFD	1.2	●	●	●	●	●	
		4HP-DNGA150404	-STM	0.4	●	●	●	●	●	
		4HP-DNGA150408	-STM	0.8	●	●	●	●	●	
	通用加工 Universal	4HP-DNGA150412	-STM	1.2	●	●	●	●	●	
		4HP-DNGA150404	-STF	0.4	●	●	●	●	●	
		4HP-DNGA150408	-STF	0.8	●	●	●	●	●	
	断续加工 Interrupted	4HP-DNGA150412	-STF	1.2	●	●	●	●	●	
		4HP-DNGA150404	-STH	0.4	●	●	●	●	●	
		4HP-DNGA150408	-STH	0.8	●	●	●	●	●	
	强断续加工 Strong interrupted	4HP-DNGA150412	-STH	1.2	●	●	●	●	●	
		4HP-DNGA150408	-STR	0.8				●	●	
			4HP-DNGA150412	-STR	1.2				●	●

涂层可选Coating optional (C₂、CC)

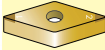
负角刀片V型·多刀尖型

Negative form V · multi-tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊗

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1604	9.525	4.76	3.81	0.2-1.2	K	○	○			
					S					⊗
					H	○◐	○◐	⊕⊗	⊗⊗	⊗

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500	
	标准钝化 Edge-preparation	2HP-VNGA160402		0.2			●	●	●	
		2HP-VNGA160404		0.4			●	●	●	
		2HP-VNGA160408		0.8				●	●	●
		2HP-VNGA160412		1.2				●	●	●
	精加工 Finishing	2HP-VNGA160402	-SFD	0.2	●	●	●			
		2HP-VNGA160404	-SFD	0.4	●	●	●	●	●	●
		2HP-VNGA160408	-SFD	0.8	●	●	●	●	●	●
		2HP-VNGA160412	-SFD	1.2	●	●	●	●	●	●
	精加工 - 半精加工 Finishing - semi-finishing	2HP-VNGA160404	-STM	0.4	●	●	●	●	●	●
		2HP-VNGA160408	-STM	0.8	●	●	●	●	●	●
		2HP-VNGA160412	-STM	1.2	●	●	●	●	●	●
	通用加工 Universal	2HP-VNGA160404	-STF	0.4	●	●	●	●	●	●
		2HP-VNGA160408	-STF	0.8	●	●	●	●	●	●
		2HP-VNGA160412	-STF	1.2	●	●	●	●	●	●
	断续加工 Interrupted	2HP-VNGA160404	-STH	0.4	●	●	●	●	●	●
		2HP-VNGA160408	-STH	0.8	●	●	●	●	●	●
2HP-VNGA160412		-STH	1.2	●	●	●	●	●	●	

涂层可选Coating optional (C₂、CC)

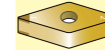
负角刀片V型·多刀尖型

Negative form V · multi-tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊗

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1604	9.525	4.76	3.81	0.2-1.2	K	○	○			
					S					⊗
					H	○◐	○◐	⊕⊗	⊗⊗	⊗

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500	
	标准钝化 Edge-preparation	4HP-VNGA160402		0.2			●	●	●	
		4HP-VNGA160404		0.4			●	●	●	
		4HP-VNGA160408		0.8				●	●	●
		4HP-VNGA160412		1.2				●	●	●
	精加工 Finishing	4HP-VNGA160402	-SFD	0.2	●	●	●			
		4HP-VNGA160404	-SFD	0.4	●	●	●	●	●	●
		4HP-VNGA160408	-SFD	0.8	●	●	●	●	●	●
		4HP-VNGA160412	-SFD	1.2	●	●	●	●	●	●
	精加工 - 半精加工 Finishing - semi-finishing	4HP-VNGA160404	-SFM	0.4	●	●	●	●	●	●
		4HP-VNGA160408	-SFM	0.8	●	●	●	●	●	●
		4HP-VNGA160412	-SFM	1.2	●	●	●	●	●	●
	通用加工 Universal	4HP-VNGA160404	-STF	0.4	●	●	●	●	●	●
		4HP-VNGA160408	-STF	0.8	●	●	●	●	●	●
		4HP-VNGA160412	-STF	1.2	●	●	●	●	●	●
	断续加工 Interrupted	4HP-VNGA160404	-STH	0.4	●	●	●	●	●	●
		4HP-VNGA160408	-STH	0.8	●	●	●	●	●	●
4HP-VNGA160412		-STH	1.2	●	●	●	●	●	●	

涂层可选Coating optional (C₂、CC)

负角刀片S型·多刀尖型

Negative form S·multi-tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ◑ 强断续Heavy Interrupted ☼

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1204	12.7	4.76	5.16	0.2-1.2	K	○	○			
					S					☼
					H	◐◑	◐◑	◑☼	☼☼	☼

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500
	标准钝化 Edge-preparation	2HP-SNGA120402		0.2			●	●	●
		2HP-SNGA120404		0.4			●	●	●
	精加工 Finishing	2HP-SNGA120402	-SFD	0.2	●	●	●		
		2HP-SNGA120404	-SFD	0.4	●	●	●	●	●
		2HP-SNGA120408	-SFD	0.8	●	●	●	●	●
	精加工 - 半精加工 Finishing -semi-finishing	2HP-SNGA120412	-SFD	1.2	●	●	●	●	●
		2HP-SNGA120402	-STM	0.2	●	●	●		
		2HP-SNGA120404	-STM	0.4	●	●	●	●	●
	通用加工 Universal	2HP-SNGA120408	-STM	0.8	●	●	●	●	●
		2HP-SNGA120412	-STM	1.2	●	●	●	●	●
		2HP-SNGA120404	-STF	0.4	●	●	●	●	●
	断续加工 Interrupted	2HP-SNGA120408	-STF	0.8	●	●	●	●	●
		2HP-SNGA120412	-STF	1.2	●	●	●	●	●
		2HP-SNGA120404	-STH	0.4	●	●	●	●	●
	强断续加工 Strong interrupted	2HP-SNGA120408	-STH	0.8	●	●	●	●	●
		2HP-SNGA120412	-STH	1.2	●	●	●	●	●
	重载加工 Heavy-duty	2HP-SNGA120408	-STR	0.8				●	●
		2HP-SNGA120412	-STR	1.2				●	●
	重载加工 Heavy-duty	2HP-SNGA120408	-STQ	0.8				●	●
		2HP-SNGA120412	-STQ	1.2				●	●

涂层可选Coating optional (C₂、CC)

负角刀片S型·多刀尖型

Negative form S·multi-tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ◑ 强断续Heavy Interrupted ☼

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1204	12.7	4.76	5.16	0.2-1.2	K	○	○			
					S					☼
					H	◐◑	◐◑	◑☼	☼☼	☼

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500
	标准钝化 Edge-preparation	3HP-SNGA120402		0.2			●	●	●
		3HP-SNGA120404		0.4			●	●	●
	精加工 Finishing	3HP-SNGA120402	-SFD	0.2	●	●	●		
		3HP-SNGA120404	-SFD	0.4	●	●	●	●	●
		3HP-SNGA120408	-SFD	0.8	●	●	●	●	●
	精加工 - 半精加工 Finishing -semi-finishing	3HP-SNGA120412	-SFD	1.2	●	●	●	●	●
		3HP-SNGA120402	-STM	0.2	●	●	●		
		3HP-SNGA120404	-STM	0.4	●	●	●	●	●
	通用加工 Universal	3HP-SNGA120408	-STM	0.8	●	●	●	●	●
		3HP-SNGA120412	-STM	1.2	●	●	●	●	●
		3HP-SNGA120404	-STF	0.4	●	●	●	●	●
	断续加工 Interrupted	3HP-SNGA120408	-STF	0.8	●	●	●	●	●
		3HP-SNGA120412	-STF	1.2	●	●	●	●	●
		3HP-SNGA120404	-STH	0.4	●	●	●	●	●
	强断续加工 Strong interrupted	3HP-SNGA120408	-STH	0.8	●	●	●	●	●
		3HP-SNGA120412	-STH	1.2	●	●	●	●	●
	重载加工 Heavy-duty	3HP-SNGA120408	-STR	0.8				●	●
		3HP-SNGA120412	-STR	1.2				●	●
	重载加工 Heavy-duty	3HP-SNGA120408	-STQ	0.8				●	●
		3HP-SNGA120412	-STQ	1.2				●	●

涂层可选Coating optional (C₂、CC)

负角刀片T型·多刀尖型

Negative form T·multi-tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊗

规格 Specification	内切圆 Incircle Φ_d	厚度 Thickness s	孔径 Aperture Φ_{d_1}	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1604	9.525	4.76	3.81	0.2-0.6	K	○	○			
					S					⊗
					H	◐	◐	⊕	⊕	⊗

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500
	标准钝化 Edge-preparation	3HP-TNGA160402		0.2			●	●	●
		3HP-TNGA160404		0.4			●	●	●
	精加工 Finishing	3HP-TNGA160402	-SFD	0.2	●	●	●		
		3HP-TNGA160404	-SFD	0.4	●	●	●	●	●
		3HP-TNGA160408	-SFD	0.8	●	●	●	●	●
		3HP-TNGA160412	-SFD	1.2	●	●	●	●	●
		3HP-TNGA160416	-SFD	1.6	●	●	●	●	●
	精加工 - 半精加工 Finishing -semi-finishing	3HP-TNGA160402	-STM	0.2	●	●	●		
		3HP-TNGA160404	-STM	0.4	●	●	●	●	●
		3HP-TNGA160408	-STM	0.8	●	●	●	●	●
		3HP-TNGA160412	-STM	1.2	●	●	●	●	●
		3HP-TNGA160416	-STM	1.6	●	●	●	●	●
	通用加工 Universal	3HP-TNGA160404	-STF	0.4	●	●	●	●	●
		3HP-TNGA160408	-STF	0.8	●	●	●	●	●
		3HP-TNGA160412	-STF	1.2	●	●	●	●	●
		3HP-TNGA160416	-STF	1.6	●	●	●	●	●
	断续加工 Interrupted	3HP-TNGA160404	-STH	0.4	●	●	●	●	●
		3HP-TNGA160408	-STH	0.8	●	●	●	●	●
		3HP-TNGA160412	-STH	1.2	●	●	●	●	●
		3HP-TNGA160416	-STH	1.6	●	●	●	●	●
强断续加工 Strong interrupted	3HP-TNGA160408	-STR	0.8				●	●	
	3HP-TNGA160412	-STR	1.2				●	●	
	3HP-TNGA160416	-STR	1.6				●	●	

涂层可选Coating optional (C₂、CC)

负角刀片T型·多刀尖型

Negative form T·multi-tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊗

规格 Specification	内切圆 Incircle Φ_d	厚度 Thickness s	孔径 Aperture Φ_{d_1}	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1604	9.525	4.76	3.81	0.2-0.6	K	○	○			
					S					⊗
					H	◐	◐	⊕	⊕	⊗

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500
	标准钝化 Edge-preparation	6HP-TNGA160402		0.2			●	●	●
		6HP-TNGA160404		0.4			●	●	●
	精加工 Finishing	6HP-TNGA160402	-SFD	0.2	●	●	●		
		6HP-TNGA160404	-SFD	0.4	●	●	●	●	●
		6HP-TNGA160408	-SFD	0.8	●	●	●	●	●
		6HP-TNGA160412	-SFD	1.2	●	●	●	●	●
		6HP-TNGA160416	-SFD	1.6	●	●	●	●	●
	精加工 - 半精加工 Finishing -semi-finishing	6HP-TNGA160402	-STM	0.2	●	●	●		
		6HP-TNGA160404	-STM	0.4	●	●	●	●	●
		6HP-TNGA160408	-STM	0.8	●	●	●	●	●
		6HP-TNGA160412	-STM	1.2	●	●	●	●	●
		6HP-TNGA160416	-STM	1.6	●	●	●	●	●
	通用加工 Universal	6HP-TNGA160404	-STF	0.4	●	●	●	●	●
		6HP-TNGA160408	-STF	0.8	●	●	●	●	●
		6HP-TNGA160412	-STF	1.2	●	●	●	●	●
		6HP-TNGA160416	-STF	1.6	●	●	●	●	●
	断续加工 Interrupted	6HP-TNGA160404	-STH	0.4	●	●	●	●	●
		6HP-TNGA160408	-STH	0.8	●	●	●	●	●
		6HP-TNGA160412	-STH	1.2	●	●	●	●	●
		6HP-TNGA160416	-STH	1.6	●	●	●	●	●
强断续加工 Strong interrupted	6HP-TNGA160408	-STR	0.8				●	●	
	6HP-TNGA160412	-STR	1.2				●	●	
	6HP-TNGA160416	-STR	1.6				●	●	

涂层可选Coating optional (C₂、CC)

负角刀片W型·多刀尖型

Negative form W · multi-tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊗

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
0804	12.7	4.76	5.16	0.2-1.2	K	○	○			
					S					⊗
					H	◐	◐	⊕	⊗	⊗

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500
	标准钝化 Edge-preparation	3HP-WNGA080402		0.2			●	●	●
		3HP-WNGA080404		0.4			●	●	●
	精加工 Finishing	3HP-WNGA080402	-SFD	0.2	●	●	●		
		3HP-WNGA080404	-SFD	0.4	●	●	●	●	●
		3HP-WNGA080408	-SFD	0.8	●	●	●	●	●
		3HP-WNGA080412	-SFD	1.2	●	●	●	●	●
	精加工 - 半精加工 Finishing - semi-finishing	3HP-WNGA080402	-STM	0.2	●	●	●		
		3HP-WNGA080404	-STM	0.4	●	●	●	●	●
		3HP-WNGA080408	-STM	0.8	●	●	●	●	●
		3HP-WNGA080412	-STM	1.2	●	●	●	●	●
	通用加工 Universal	3HP-WNGA080404	-STF	0.4	●	●	●	●	●
		3HP-WNGA080408	-STF	0.8	●	●	●	●	●
		3HP-WNGA080412	-STF	1.2	●	●	●	●	●
	断续加工 Interrupted	3HP-WNGA080404	-STH	0.4	●	●	●	●	●
		3HP-WNGA080408	-STH	0.8	●	●	●	●	●
		3HP-WNGA080412	-STH	1.2	●	●	●	●	●
	强断续加工 Strong interrupted	3HP-WNGA080404	-STR	0.4	●	●	●	●	●
		3HP-WNGA080408	-STR	0.8	●	●	●	●	●
		3HP-WNGA080412	-STR	1.2	●	●	●	●	●
	重载加工 Heavy-duty	3HP-WNGA080408	-STQ	0.8				●	●
3HP-WNGA080412		-STQ	1.2				●	●	

涂层可选Coating optional (C₂、CC)

负角刀片W型·多刀尖型

Negative form W · multi-tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊗

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
0804	12.7	4.76	5.16	0.2-1.2	K	○	○			
					S					⊗
					H	◐	◐	⊕	⊗	⊗

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500
	标准钝化 Edge-preparation	6HP-WNGA080402		0.2			●	●	●
		6HP-WNGA080404		0.4			●	●	●
	精加工 Finishing	6HP-WNGA080402	-SFD	0.2	●	●	●		
		6HP-WNGA080404	-SFD	0.4	●	●	●	●	●
		6HP-WNGA080408	-SFD	0.8	●	●	●	●	●
		6HP-WNGA080412	-SFD	1.2	●	●	●	●	●
	精加工 - 半精加工 Finishing - semi-finishing	6HP-WNGA080402	-STM	0.2	●	●	●		
		6HP-WNGA080404	-STM	0.4	●	●	●	●	●
		6HP-WNGA080408	-STM	0.8	●	●	●	●	●
		6HP-WNGA080412	-STM	1.2	●	●	●	●	●
	通用加工 Universal	6HP-WNGA080404	-STF	0.4	●	●	●	●	●
		6HP-WNGA080408	-STF	0.8	●	●	●	●	●
		6HP-WNGA080412	-STF	1.2	●	●	●	●	●
	断续加工 Interrupted	6HP-WNGA080404	-STH	0.4	●	●	●	●	●
		6HP-WNGA080408	-STH	0.8	●	●	●	●	●
		6HP-WNGA080412	-STH	1.2	●	●	●	●	●
	强断续加工 Strong interrupted	6HP-WNGA080404	-STR	0.4	●	●	●	●	●
		6HP-WNGA080408	-STR	0.8	●	●	●	●	●
		6HP-WNGA080412	-STR	1.2	●	●	●	●	●
	重载加工 Heavy-duty	6HP-WNGA080408	-STQ	0.8				●	●
6HP-WNGA080412		-STQ	1.2				●	●	


涂层可选Coating optional (C₂、CC)

正角刀片C型·单刀尖型

Positive form C·single tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊕

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd ₁	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
0602	6.35	2.38	2.80	0.2-1.2	K	○	○			
09T3	9.525	3.97	4.40	0.2-1.2	S					⊕
1204	12.7	4.76	5.50	0.2-1.2	H	○◐	○◐	⊕⊕	⊕⊕	⊕
形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500	
	标准钝化 Edge-preparation	CCGW060202		0.2			●	●	●	
		CCGW060204		0.4			●	●	●	
		CCGW09T302		0.2				●	●	●
		CCGW09T304		0.4				●	●	●
	精加工 Finishing	CCGW060202	-SFD	0.2	●	●	●			
		CCGW060204	-SFD	0.4	●	●	●	●	●	
		CCGW060208	-SFD	0.8	●	●	●	●	●	
		CCGW060212	-SFD	1.2	●	●	●	●	●	
		CCGW09T302	-SFD	0.2	●	●	●	●	●	
		CCGW09T304	-SFD	0.4	●	●	●	●	●	
		CCGW09T308	-SFD	0.8	●	●	●	●	●	
		CCGW09T312	-SFD	1.2	●	●	●	●	●	
		CCGW120402	-SFD	0.2	●	●	●	●	●	
		CCGW120404	-SFD	0.4	●	●	●	●	●	
		CCGW120408	-SFD	0.8	●	●	●	●	●	
		CCGW120412	-SFD	1.2	●	●	●	●	●	
	精加工 - 半精加工 Finishing - semi-finishing	CCGW060202	-STM	0.2	●	●	●			
		CCGW060204	-STM	0.4	●	●	●	●	●	
		CCGW060208	-STM	0.8	●	●	●	●	●	
		CCGW060212	-STM	1.2	●	●	●	●	●	
		CCGW09T302	-STM	0.2	●	●	●			
		CCGW09T304	-STM	0.4	●	●	●	●	●	
		CCGW09T308	-STM	0.8	●	●	●	●	●	
		CCGW09T312	-STM	1.2	●	●	●	●	●	
		CCGW120402	-STM	0.2	●	●	●			
		CCGW120404	-STM	0.4	●	●	●	●	●	
		CCGW120408	-STM	0.8	●	●	●	●	●	
		CCGW120412	-STM	1.2	●	●	●	●	●	


涂层可选Coating optional (C₂、CC)

正角刀片C型·单刀尖型

Positive form C·single tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊕

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd ₁	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
0602	6.35	2.38	2.80	0.2-1.2	K	○	○			
09T3	9.525	3.97	4.40	0.2-1.2	S					⊕
1204	12.7	4.76	5.50	0.2-1.2	H	○◐	○◐	⊕⊕	⊕⊕	⊕
形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500	
	通用加工 Universal	CCGW060204	-STF	0.4	●	●	●	●	●	
		CCGW060208	-STF	0.8	●	●	●	●	●	
		CCGW060212	-STF	1.2	●	●	●	●	●	
		CCGW09T304	-STF	0.4	●	●	●	●	●	
		CCGW09T308	-STF	0.8	●	●	●	●	●	
		CCGW09T312	-STF	1.2	●	●	●	●	●	
		CCGW120404	-STF	0.4	●	●	●	●	●	
		CCGW120408	-STF	0.8	●	●	●	●	●	
		CCGW120412	-STF	1.2	●	●	●	●	●	
		断续加工 Interrupted	CCGW060204	-STH	0.4	●	●	●	●	●
			CCGW060208	-STH	0.8	●	●	●	●	●
			CCGW060212	-STH	1.2	●	●	●	●	●
	CCGW09T304		-STH	0.4	●	●	●	●	●	
	CCGW09T308		-STH	0.8	●	●	●	●	●	
	CCGW09T312		-STH	1.2	●	●	●	●	●	
	CCGW120404		-STH	0.4	●	●	●	●	●	
	CCGW120408		-STH	0.8	●	●	●	●	●	
	CCGW120412		-STH	1.2	●	●	●	●	●	
	强断续加工 Strong interrupted		CCGW09T308	-STR	0.8				●	●
			CCGW09T312	-STR	1.2				●	●
			CCGW120408	-STR	0.8				●	●
		CCGW120412	-STR	1.2				●	●	

涂层可选Coating optional (C₂、CC)

正角刀片D型·单刀尖型

Positive form D · single tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊗

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd ₁	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
0702	6.35	2.38	2.80	0.2-1.2	K	○	○			
11T3	9.525	3.97	4.40	0.2-1.2	S					⊗
					H	○◐	○◐	⊕⊗	⊕⊗	⊗

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500	
	标准钝化 Edge-preparation	DCGW070202		0.2			●	●	●	
		DCGW070204		0.4			●	●	●	
		DCGW11T302		0.2				●	●	●
		DCGW11T304		0.4				●	●	●
	精加工 Finishing	DCGW070202	-SFD	0.2	●	●	●			
		DCGW070204	-SFD	0.4	●	●	●	●	●	
		DCGW070208	-SFD	0.8	●	●	●	●	●	
		DCGW070212	-SFD	1.2	●	●	●	●	●	
		DCGW11T302	-SFD	0.2	●	●	●			
		DCGW11T304	-SFD	0.4	●	●	●	●	●	
		DCGW11T308	-SFD	0.8	●	●	●	●	●	
		DCGW11T312	-SFD	1.2	●	●	●	●	●	
	精加工 - 半精加工 -semi-finishing	DCGW070204	-STM	0.4	●	●	●	●	●	
		DCGW070208	-STM	0.8	●	●	●	●	●	
		DCGW070212	-STM	1.2	●	●	●	●	●	
		DCGW11T304	-STM	0.4	●	●	●	●	●	
		DCGW11T308	-STM	0.8	●	●	●	●	●	
		DCGW11T312	-STM	1.2	●	●	●	●	●	
	通用加工 Universal	DCGW070204	-STF	0.4	●	●	●	●	●	
		DCGW070208	-STF	0.8	●	●	●	●	●	
		DCGW070212	-STF	1.2	●	●	●	●	●	
		DCGW11T304	-STF	0.4	●	●	●	●	●	
		DCGW11T308	-STF	0.8	●	●	●	●	●	
		DCGW11T312	-STF	1.2	●	●	●	●	●	
	断续加工 Interrupted	DCGW070204	-STH	0.4	●	●	●	●	●	
		DCGW070208	-STH	0.8	●	●	●	●	●	
		DCGW070212	-STH	1.2	●	●	●	●	●	
		DCGW11T304	-STH	0.4	●	●	●	●	●	
DCGW11T308		-STH	0.8	●	●	●	●	●		
DCGW11T312		-STH	1.2	●	●	●	●	●		
强断续加工 Strong interrupted	DCGW11T308	-STR	0.8				●	●		
	DCGW11T312	-STR	1.2				●	●		

涂层可选Coating optional (C₂、CC)

正角刀片V型·单刀尖型

Positive form V · single tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ⊕ 强断续Heavy Interrupted ⊗

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd ₁	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
0802	4.76	2.38	2.30	0.2-1.2	K	○	○			
1103	6.35	3.18	2.80	0.2-1.2	S					⊗
1604	9.525	4.76	4.40	0.2-1.2	H	○◐	○◐	⊕⊗	⊕⊗	⊗

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500
	标准钝化 Edge-preparation	VCGW080202		0.2	●	●	●	●	●
		VCGW080204		0.4	●	●	●	●	●
		VCGW110302		0.2	●	●	●	●	●
		VCGW110304		0.4	●	●	●	●	●
		VCGW160402		0.2	●	●	●	●	●
		VCGW160404		0.4	●	●	●	●	●
	精加工 Finishing	VCGW080202	-SFD	0.2	●	●	●		
		VCGW080204	-SFD	0.4	●	●	●	●	●
		VCGW080208	-SFD	0.8	●	●	●	●	●
		VCGW080212	-SFD	1.2	●	●	●	●	●
		VCGW110302	-SFD	0.2	●	●	●		
		VCGW110304	-SFD	0.4	●	●	●	●	●
		VCGW110308	-SFD	0.8	●	●	●	●	●
		VCGW110312	-SFD	1.2	●	●	●	●	●
		VCGW160402	-SFD	0.2	●	●	●		
		VCGW160404	-SFD	0.4	●	●	●	●	●
		VCGW160408	-SFD	0.8	●	●	●	●	●
		VCGW160412	-SFD	1.2	●	●	●	●	●
	精加工 - 半精加工 -semi-finishing	VCGW080204	-STM	0.4	●	●	●	●	●
		VCGW080208	-STM	0.8	●	●	●	●	●
		VCGW080212	-STM	1.2	●	●	●	●	●
		VCGW110304	-STM	0.4	●	●	●	●	●
		VCGW110308	-STM	0.8	●	●	●	●	●
		VCGW110312	-STM	1.2	●	●	●	●	●
		VCGW160404	-STM	0.4	●	●	●	●	●
		VCGW160408	-STM	0.8	●	●	●	●	●
		VCGW160412	-STM	1.2	●	●	●	●	●

涂层可选Coating optional (C₂、CC)


正角刀片V型·单刀尖型

Positive form V·single tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ◑ 强断续Heavy Interrupted ☼

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
0802	4.76	2.38	2.30	0.2-1.2	K	○	○			
1103	6.35	3.18	2.80	0.2-1.2	S					☼
1604	9.525	4.76	4.40	0.2-1.2	H	○◐	○◐	◐☼	☼☼	☼

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500
	通用加工 Universal	VCGW080204	-STF	0.4	●	●	●	●	●
		VCGW080208	-STF	0.8	●	●	●	●	●
		VCGW080212	-STF	1.2	●	●	●	●	●
		VCGW110304	-STF	0.4	●	●	●	●	●
		VCGW110308	-STF	0.8	●	●	●	●	●
		VCGW110312	-STF	1.2	●	●	●	●	●
		VCGW160404	-STF	0.4	●	●	●	●	●
		VCGW160408	-STF	0.8	●	●	●	●	●
	断续加工 Interrupted	VCGW080204	-STH	0.4	●	●	●	●	●
		VCGW080208	-STH	0.8	●	●	●	●	●
		VCGW080212	-STH	1.2	●	●	●	●	●
		VCGW110304	-STH	0.4	●	●	●	●	●
		VCGW110308	-STH	0.8	●	●	●	●	●
		VCGW110312	-STH	1.2	●	●	●	●	●
		VCGW160404	-STH	0.4	●	●	●	●	●
		VCGW160408	-STH	0.8	●	●	●	●	●
VCGW160412	-STH	1.2	●	●	●	●	●		

涂层可选Coating optional (C₂、CC)


正角刀片V型·单刀尖型

Positive form V·single tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ◑ 强断续Heavy Interrupted ☼

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
1103	6.35	3.18	2.80	0.2-1.2	K	○	○			
1604	9.525	4.76	4.40	0.2-1.2	S					☼
					H	○◐	○◐	◐☼	☼☼	☼

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500	
	标准钝化 Edge-preparation	VBGW110302		0.2			●	●	●	
		VBGW110304		0.4			●	●	●	
		VBGW160402		0.2				●	●	●
		VBGW160404		0.4				●	●	●
	精加工 Finishing	VBGW110302	-SFD	0.2	●	●	●			
		VBGW110304	-SFD	0.4	●	●	●	●	●	
		VBGW110308	-SFD	0.8	●	●	●	●	●	
		VBGW110312	-SFD	1.2	●	●	●	●	●	
		VBGW160402	-SFD	0.2	●	●	●			
		VBGW160404	-SFD	0.4	●	●	●	●	●	
		VBGW160408	SFD	0.8	●	●	●	●	●	
		VBGW160412	SFD	1.2	●	●	●	●	●	
	精加工 - 半精加工 -semi-finishing	VBGW110304	-STM	0.4	●	●	●	●	●	
		VBGW110308	-STM	0.8	●	●	●	●	●	
		VBGW110312	-STM	1.2	●	●	●	●	●	
		VBGW160404	-STM	0.4	●	●	●	●	●	
		VBGW160408	-STM	0.8	●	●	●	●	●	
		VBGW160412	-STM	1.2	●	●	●	●	●	
	通用加工 Universal	VBGW110304	-STF	0.4	●	●	●	●	●	
		VBGW110308	-STF	0.8	●	●	●	●	●	
		VBGW110312	-STF	1.2	●	●	●	●	●	
		VBGW160404	-STF	0.4	●	●	●	●	●	
		VBGW160408	-STF	0.8	●	●	●	●	●	
		VBGW160412	-STF	1.2	●	●	●	●	●	
断续加工 Interrupted	VBGW110304	-STH	0.4	●	●	●	●	●		
	VBGW110308	-STH	0.8	●	●	●	●	●		
	VBGW110312	-STH	1.2	●	●	●	●	●		
	VBGW160404	-STH	0.4	●	●	●	●	●		
	VBGW160408	-STH	0.8	●	●	●	●	●		
	VBGW160412	-STH	1.2	●	●	●	●	●		

涂层可选Coating optional (C₂、CC)


正角刀片S型·单刀尖型

Positive form S·single tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ◑ 强断续Heavy Interrupted ◒

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)					
09T3	9.525	3.97	4.40	0.2-1.2	K	○	○				
1204	12.7	4.76	5.50	0.2-1.2	S						◒
					H	◐◑	◐◑	◑◒	◒◒	◒	

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500		
	标准钝化 Edge-preparation	SCGW09T302		0.2			●	●	●		
		SCGW09T304		0.4			●	●	●		
		SCGW120402		0.2				●	●	●	
		SCGW120404		0.4				●	●	●	
	精加工 Finishing	SCGW09T302	-SFD	0.2	●	●	●				
		SCGW09T304	-SFD	0.4	●	●	●	●	●		
		SCGW09T308	-SFD	0.8	●	●	●	●	●	●	
		SCGW09T312	-SFD	1.2	●	●	●	●	●	●	
		SCGW120402	-SFD	0.2	●	●	●	●	●		
		SCGW120404	-SFD	0.4	●	●	●	●	●	●	
		SCGW120408	-SFD	0.8	●	●	●	●	●	●	
		SCGW120412	-SFD	1.2	●	●	●	●	●	●	
	精加工 - 半精加工 Finishing - semi-finishing	SCGW09T302	-STM	0.2	●	●	●				
		SCGW09T304	-STM	0.4	●	●	●	●	●		
		SCGW09T308	-STM	0.8	●	●	●	●	●	●	
		SCGW09T312	-STM	1.2	●	●	●	●	●	●	
		SCGW120402	-STM	0.2	●	●	●	●	●	●	
		SCGW120404	-STM	0.4	●	●	●	●	●	●	
		SCGW120408	-STM	0.8	●	●	●	●	●	●	
		SCGW120412	-STM	1.2	●	●	●	●	●	●	
	通用加工 Universal	SCGW09T304	-STF	0.4	●	●	●	●	●	●	
		SCGW09T308	-STF	0.8	●	●	●	●	●	●	
		SCGW09T312	-STF	1.2	●	●	●	●	●	●	
		SCGW120404	-STF	0.4	●	●	●	●	●	●	
		SCGW120408	-STF	0.8	●	●	●	●	●	●	
		SCGW120412	-STF	1.2	●	●	●	●	●	●	
		断续加工 Interrupted	SCGW09T304	-STH	0.4	●	●	●	●	●	●
			SCGW09T308	-STH	0.8	●	●	●	●	●	●
	SCGW09T312		-STH	1.2	●	●	●	●	●	●	
	SCGW120404		-STH	0.4	●	●	●	●	●	●	
	SCGW120408		-STH	0.8	●	●	●	●	●	●	
	SCGW120412		-STH	1.2	●	●	●	●	●	●	
	强断续加工 Strong interrupted		SCGW09T308	-STR	0.8				●	●	
			SCGW09T312	-STR	1.2				●	●	
		SCGW120408	-STR	0.8				●	●		
		SCGW120412	-STR	1.2				●	●		

涂层可选Coating optional (C₂、CC)


正角刀片T型·单刀尖型

Positive form T·single tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ◑ 强断续Heavy Interrupted ◒

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)					
0902	5.56	2.38	2.50	0.2-1.2	K	○	○				
1102	6.35	2.38	2.80	0.2-1.2	S						◒
1103	6.35	3.18	3.00	0.2-1.2	H	◐◑	◐◑	◑◒	◒◒	◒	
16T3	9.525	3.97	4.40	0.2-1.2							

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500	
	标准钝化 Edge-preparation	TCGW090202		0.2			●	●	●	
		TCGW090204		0.4			●	●	●	
		TCGW110202		0.2				●	●	●
		TCGW110204		0.4				●	●	●
		TCGW110302		0.2				●	●	●
		TCGW110304		0.4				●	●	●
		TCGW16T302		0.2				●	●	●
		TCGW16T304		0.4				●	●	●
	精加工 Finishing	TCGW090202	-SFD	0.2	●	●	●			
		TCGW090204	-SFD	0.4	●	●	●	●	●	
		TCGW090208	-SFD	0.8	●	●	●	●	●	●
		TCGW090212	-SFD	1.2	●	●	●	●	●	●
		TCGW110202	-SFD	0.2	●	●	●			
		TCGW110204	-SFD	0.4	●	●	●	●	●	
		TCGW110208	-SFD	0.8	●	●	●	●	●	●
		TCGW110212	-SFD	1.2	●	●	●	●	●	●
		TCGW110302	-SFD	0.2	●	●	●			
		TCGW110304	-SFD	0.4	●	●	●	●	●	●
		TCGW110308	-SFD	0.8	●	●	●	●	●	●
		TCGW110312	-SFD	1.2	●	●	●	●	●	●
		TCGW16T302	-SFD	0.2	●	●	●			
		TCGW16T304	-SFD	0.4	●	●	●	●	●	●
		TCGW16T308	-SFD	0.8	●	●	●	●	●	●
		TCGW16T312	-SFD	1.2	●	●	●	●	●	●
	精加工 - 半精加工 Finishing - semi-finishing	TCGW090202	-STM	0.2	●	●	●			
		TCGW090204	-STM	0.4	●	●	●	●	●	●
		TCGW090208	-STM	0.8	●	●	●	●	●	●
		TCGW090212	-STM	1.2	●	●	●	●	●	●
		TCGW110202	-STM	0.2	●	●	●			
		TCGW110204	-STM	0.4	●	●	●	●	●	●
		TCGW110208	-STM	0.8	●	●	●	●	●	●
		TCGW110212	-STM	1.2	●	●	●	●	●	●
		TCGW110302	-STM	0.2	●	●	●			
		TCGW110304	-STM	0.4	●	●	●	●	●	●
		TCGW110308	-STM	0.8	●	●	●	●	●	●
		TCGW110312	-STM	1.2	●	●	●	●	●	●

涂层可选Coating optional (C₂、CC)

正角刀片T型·单刀尖型

Positive form T-single tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ◑ 强断续Heavy Interrupted ◒

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd ₁	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
0902	5.56	2.38	2.50	0.2-1.2	K	○	○			
1102	6.35	2.38	2.80	0.2-1.2	S					◒
1103	6.35	3.18	3.00	0.2-1.2	H	◐◑	◐◑	◑◒	◒◒	◒
16T3	9.525	3.97	4.40	0.2-1.2						

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500	
	精加工 - 半精加工 Finishing - semi-finishing	TCGW16T302	-STM	0.2	●	●	●			
		TCGW16T304	-STM	0.4	●	●	●	●	●	
		TCGW16T308	-STM	0.8	●	●	●	●	●	
		TCGW16T312	-STM	1.2	●	●	●	●	●	
	通用加工 Universal	TCGW090204	-STF	0.4	●	●	●	●	●	●
		TCGW090208	-STF	0.8	●	●	●	●	●	●
		TCGW090212	-STF	1.2	●	●	●	●	●	●
		TCGW110204	-STF	0.4	●	●	●	●	●	●
		TCGW110208	-STF	0.8	●	●	●	●	●	●
		TCGW110212	-STF	1.2	●	●	●	●	●	●
		TCGW110304	-STF	0.8	●	●	●	●	●	●
		TCGW110308	-STF	1.2	●	●	●	●	●	●
TCGW110312		-STF	0.8	●	●	●	●	●	●	
TCGW16T304		-STF	1.2	●	●	●	●	●	●	
TCGW16T308		-STF	0.2	●	●	●	●	●	●	
TCGW16T312		-STF	0.4	●	●	●	●	●	●	
断续加工 Interrupted	TCGW090204	-STH	0.4	●	●	●	●	●	●	
	TCGW090208	-STH	0.8	●	●	●	●	●	●	
	TCGW090212	-STH	1.2	●	●	●	●	●	●	
	TCGW110204	-STH	0.4	●	●	●	●	●	●	
	TCGW110208	-STH	0.8	●	●	●	●	●	●	
	TCGW110212	-STH	1.2	●	●	●	●	●	●	
	TCGW110304	-STH	0.4	●	●	●	●	●	●	
	TCGW110308	-STH	0.8	●	●	●	●	●	●	
	TCGW110312	-STH	1.2	●	●	●	●	●	●	
	TCGW16T304	-STH	0.4	●	●	●	●	●	●	
	TCGW16T308	-STH	0.8	●	●	●	●	●	●	
	TCGW16T312	-STH	1.2	●	●	●	●	●	●	
强断续加工 Strong interrupted	TCGW090208	-STR	0.8		●	●		●	●	
	TCGW090212	-STR	1.2		●	●		●	●	
	TCGW110208	-STR	0.8		●	●		●	●	
	TCGW110212	-STR	1.2		●	●		●	●	
	TCGW110308	-STR	0.8		●	●		●	●	
	TCGW110312	-STR	1.2		●	●		●	●	
	TCGW16T308	-STR	0.8		●	●		●	●	
	TCGW16T312	-STR	1.2		●	●		●	●	

涂层可选Coating optional (C₂、CC)

正角刀片T型·单刀尖型

Positive form T-single tip type



连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ◑ 强断续Heavy Interrupted ◒

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd ₁	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
0802	4.76	2.38	2.30	0.2-1.2	K	○	○			
0902	5.56	2.38	2.50	0.2-1.2	S					◒
1102	6.35	2.38	2.80	0.2-1.2	H	◐◑	◐◑	◑◒	◒◒	◒
1103	6.35	3.18	3.00	0.2-1.2						

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500		
	标准钝化 Edge-preparation	TPGW080202		0.2			●	●	●		
		TPGW080204		0.4			●	●	●		
		TPGW090202		0.2				●	●	●	
		TPGW090204		0.4				●	●	●	
		TPGW110202		0.2				●	●	●	
		TPGW110204		0.4				●	●	●	
		TPGW110302		0.2				●	●	●	
		TPGW110304		0.4				●	●	●	
		精加工 Finishing	TPGW080202	-SFD	0.2	●	●	●			
			TPGW080204	-SFD	0.4	●	●	●	●	●	●
			TPGW080208	-SFD	0.8	●	●	●	●	●	●
			TPGW080212	-SFD	1.2	●	●	●	●	●	●
	TPGW090202		-SFD	0.2	●	●	●				
	TPGW090204		-SFD	0.4	●	●	●	●	●	●	
	TPGW090208		-SFD	0.8	●	●	●	●	●	●	
	TPGW090212		-SFD	1.2	●	●	●	●	●	●	
	TPGW110202		-SFD	0.2	●	●	●				
	TPGW110204		-SFD	0.4	●	●	●	●	●	●	
	TPGW110208		-SFD	0.8	●	●	●	●	●	●	
	TPGW110212		-SFD	1.2	●	●	●	●	●	●	
	精加工 - 半精加工 Finishing - semi-finishing	TPGW110302	-SFD	0.2	●	●	●				
		TPGW110304	-SFD	0.4	●	●	●	●	●	●	
		TPGW110308	-SFD	0.8	●	●	●	●	●	●	
		TPGW110312	-SFD	1.2	●	●	●	●	●	●	
		TPGW080202	-STM	0.2	●	●	●				
		TPGW080204	-STM	0.4	●	●	●	●	●	●	
		TPGW080208	-STM	0.8	●	●	●	●	●	●	
		TPGW080212	-STM	1.2	●	●	●	●	●	●	
		TPGW090202	-STM	0.2	●	●	●				
		TPGW090204	-STM	0.4	●	●	●	●	●	●	
		TPGW090208	-STM	0.8	●	●	●	●	●	●	
		TPGW090212	-STM	1.2	●	●	●	●	●	●	
	TPGW110202	-STM	0.2	●	●	●					
	TPGW110204	-STM	0.4	●	●	●	●	●	●		
	TPGW110208	-STM	0.8	●	●	●	●	●	●		
	TPGW110212	-STM	1.2	●	●	●	●	●	●		
TPGW110302	-STM	0.2	●	●	●						
TPGW110304	-STM	0.4	●	●	●	●	●	●			
TPGW110308	-STM	0.8	●	●	●	●	●	●			
TPGW110312	-STM	1.2	●	●	●	●	●	●			

涂层可选Coating optional (C₂、CC)

正角刀片T型·单刀尖型

Positive form T·single tip type

连续Continuous ○ 弱断续Light Interrupted ◐ 中等断续Medium Interrupted ◑ 强断续Heavy Interrupted ◒

规格 Specification	内切圆 Incircle Φd	厚度 Thickness s	孔径 Aperture Φd_1	刀尖半径 Tip radius r	材质 Material	加工难易度 Machining condition (连续 Continuous、弱断续 Light Interrupted、中等断续 Medium Interrupted、强断续 Heavy Interrupted)				
0802	4.76	2.38	2.30	0.2-1.2	K	○	○			
0902	5.56	2.38	2.50	0.2-1.2	S					◒
1102	6.35	2.38	2.80	0.2-1.2	H	◐◑	◐◑	◑◒	◒◒	◒
1103	6.35	3.18	3.00	0.2-1.2						

形状 Shape	规格 Specification	型号 Order number	倒棱 Chamfering	刀尖圆弧半径 Tip radius	FN1000	FN4500	FN5290	FN9000	FN9500		
通用加工 Universal	通用加工 Universal	TPGW080204	-STF	0.4	●	●	●	●	●		
		TPGW080208	-STF	0.8	●	●	●	●	●		
		TPGW080212	-STF	1.2	●	●	●	●	●		
		TPGW090202	-STF	0.2	●	●	●	●	●		
		TPGW090204	-STF	0.4	●	●	●	●	●		
		TPGW090208	-STF	0.8	●	●	●	●	●		
		TPGW090212	-STF	1.2	●	●	●	●	●		
		TPGW110202	-STF	0.2	●	●	●	●	●		
		TPGW110204	-STF	0.4	●	●	●	●	●		
		TPGW110208	-STF	0.8	●	●	●	●	●		
		TPGW110212	-STF	1.2	●	●	●	●	●		
		TPGW110302	-STF	0.2	●	●	●	●	●		
		TPGW110304	-STF	0.4	●	●	●	●	●		
		TPGW110308	-STF	0.8	●	●	●	●	●		
		TPGW110312	-STF	1.2	●	●	●	●	●		
		断续加工 Interrupted	断续加工 Interrupted	TPGW080204	-STH	0.4	●	●	●	●	●
				TPGW080208	-STH	0.8	●	●	●	●	●
				TPGW080212	-STH	1.2	●	●	●	●	●
				TPGW090202	-STH	0.2	●	●	●	●	●
				TPGW090204	-STH	0.4	●	●	●	●	●
				TPGW090208	-STH	0.8	●	●	●	●	●
				TPGW090212	-STH	1.2	●	●	●	●	●
				TPGW110202	-STH	0.2	●	●	●	●	●
				TPGW110204	-STH	0.4	●	●	●	●	●
TPGW110208	-STH			0.8	●	●	●	●	●		
TPGW110212	-STH			1.2	●	●	●	●	●		
TPGW110302	-STH			0.2	●	●	●	●	●		
TPGW110304	-STH	0.4	●	●	●	●	●				
TPGW110308	-STH	0.8	●	●	●	●	●				
TPGW110312	-STH	1.2	●	●	●	●	●				
强断续加工 Strong interrupted	强断续加工 Strong interrupted	TPGW080208	-STR	0.8				●	●		
		TPGW080212	-STR	1.2				●	●		
		TPGW090208	-STR	0.8				●	●		
		TPGW090212	-STR	1.2				●	●		
		TPGW110208	-STR	0.8				●	●		
		TPGW110212	-STR	1.2				●	●		
TPGW110308	-STR	0.8				●	●				
TPGW110312	-STR	1.2				●	●				

涂层可选Coating optional (C₂、CC)



应用技术是检验刀具性能的关键一步，设计制造的刀具是否可以满足客户要求，是否可以提升客户的加工效率，降低成本，都需要应用技术的支持。同样一把刀具，不同的加工参数和策略，结果可能会差异巨大。

如有任何需要请联系我们，期待与您合作!

Application technology is a key step to test tool performance. Whether the tool designed and manufactured can meet customer requirements, whether it can improve customer processing efficiency and reduce costs, all need the support of application technology. The same tool, different processing parameters and strategies, the results may be very different.

If you have any needs, please contact us and look forward to cooperating with you.